



Academics in the field of Education for Sustainable Development: Their conceptions of sustainable development

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ARTICLE INFO

Article history:

Received 6 February 2017

Received in revised form

23 February 2018

Accepted 25 February 2018

Available online 27 February 2018

Keywords:

Education for Sustainable Development
The concept of Sustainable Development
Holistic approach
Academics' conceptions

ABSTRACT

Recent policy and academic voices in the field of Education for Sustainable Development put forward the importance of a holistic approach to the concept of Sustainable Development. We investigated the personal understanding of 'Sustainable Development' of scholars involved in teacher training programs and in the academic field of Education for Sustainable Development. To this purpose, an on-line survey was conducted based on the principle of comparative judgement. After careful selection, 249 academics were found to fit the specific profile for inclusion into the study. All of them were invited and 56 of them participated. The instrument consisted of 16 statements built specifically to reflect different interpretations of sustainable development: fragmented, separated, holistic and integrated perspectives. Each participant compared 12 pairs of statements and were asked to decide which one better represented their interpretation of the concept of Sustainable Development in the context of Education for Sustainable Development. Using the D-PAC methodology for comparative judgement, our results show that the statements that were most often chosen prioritized an understanding of Sustainable Development according to which two or three of the dimensions of the concept (environment, society, economy) are seen as separated to each other and less often in an integrated way. The scale reliability was equal to 0.79, indicating good quality of the measurement. The results show that academics in the field of Education for Sustainable Development do not conceive of the concept of Sustainable Development holistically. There is also a tendency towards social and economic aspects of Sustainable Development. Implications for Education for Sustainable Development research and teacher training are discussed.

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1. Introduction

Sustainable Development (SD) is often considered as an integrated concept of three pillars: environmental, economic and social (Giddings et al., 2002). Accordingly, Education for Sustainable Development (ESD) addresses sustainable development issues, which are not only environmental problems, but also social and economic ones (e.g., Corney and Reid, 2007). Rauch (2002)

described what could be perceived as sustainable within each dimension. He identified environmental SD as the preservation of natural resources, which ensures the natural function of local ecosystems and of nature in general. He outlined social SD as solidification and cooperation with other communities. Economic SD ensures quality of life through economic self-determination and self-development of both individuals and societies. The UN's publication *Transforming our World: the 2030 Agenda for Sustainable Development* contains 17 Sustainable Development Goals, which, according to the agenda are "integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental" (UN, 2015, para 2, 5, 18 & 55). In addition to this, many scholars in the field of ESD consider a holistic approach to the SD concept important (see, for example, Sandell et al., 2005; Boeve-

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de Pauw et al., 2015).

This study is an attempt to respond to the call in the final report of the UN Decade of Education for Sustainable Development (DESD), entitled *Shaping the Future We Want*. The final report raised the issue of monitoring ESD practice (UNESCO, 2014a). The focus of this study lies in initial teacher training programmes. Initial teacher education has an impact on ESD teaching at school (Nolet, 2013), partly because it influences teachers' conceptions (Stodolsky, 1993). Trainee teachers can be seen as university students, who are future citizens and leaders (Collins, 2017; Lozano, 2006). Trainee teachers are those educating students in the near future. Student teachers' understanding of sustainability is an important prerequisite for cultivating teachers' skills in ESD (Firth and Winter 2007; Hofman, 2015). However, student teachers and teachers do not hold a holistic understanding of SD (e.g., Birdsall, 2014). Initial teacher education may provide us with explanations for this.

Student teachers' learning is based on university-based sources of learning, such as academic literature, discussion sessions and other activities during the university courses, which are aimed at subject learning (Corney and Reid, 2007). Academics engaged in teacher training programmes (ETUCE, 2008) play an important role since they provide student teachers with learning experiences (European Commission, 2013). They influence student teachers through both how and what they teach (Loughran and Berry, 2005). They function implicitly, or not, as role models for trainee teachers (Lunenburg et al., 2007). As Loughran (1997) argued, teacher educators give student teachers the opportunity to understand and experience teaching. It is then, the role of the student teachers to make their personal decisions as to how to incorporate this (Loughran, 1997). The ESD specialists who give ESD courses in teacher training programmes are responsible for educating students in the concepts and approaches of SD (Lozano, 2006; Yuan et al., 2013). Academics who give ESD courses to trainee teachers need to hold a holistic view of the SD concept in order to communicate it to student teachers (Hofman, 2015; ETUCE, 2008).

In the field of teacher education in ESD, no research has been conducted so far on the personal conceptual SD understanding of academics teaching student teachers and, thus, the aim of this study is to determine the degree to which the SD conceptions of academics in the field of Education for Sustainable Development, who teach trainee teachers, are considered holistic. To do so, it is necessary to determine "... the center of gravity between these three dimensions ...", as proposed by Borg et al. (2014, p. 530).

The research questions for this study are:

1. To what extent do academics in the field of Education for Sustainable Development, who teach trainee teachers, conceive the concept of Sustainable Development in a holistic way?
2. Are there any differences in their conceptions of Sustainable Development?

2. The concept of sustainable development in ESD

The concept of SD became familiar to the public with the report 'Our Common Future', which was published in 1987 by the World Commission on Environment and Development. In the report, also known as the 1987 Brundtland Report, sustainable development was defined as '... development that meets the needs of the present without compromising the ability of the future generations to meet their own.' (WCED, 1987, p. 41). This definition addresses the environmental issues, but it also focuses on their social and economic implications (Berglund et al., 2014). Many scholars put emphasis on the interconnections of the three dimensions. Among them were Giddings et al. (2002), who argued about the multi-level

structure of the concept. They held the view that the economy depends on society and, in turn, society depends on the environment. Lozano (2003 in Lozano, 2006) provides a definition, which nicely integrates all three aspects: "... a change process, in which the societies improve their quality of life, reaching dynamic equilibrium between the economic and social aspects, while protecting, caring for and improving the natural environment. This integration and equilibrium among these three aspects must be taught and transferred from this generation to the next and the next".

The concept of SD is not static but rather dynamic, meaning that the concept of SD can be understood in several ways, according to different perspectives (Haubrich, 2007; Makrakis, 2010). Due to the dynamic nature of the concept, there is no tangible definition (Berglund et al., 2014). Therefore, the researcher who examines SD should give a detailed description of the meaning, which she/he assigns to it (Bonnett, 1999; Berglund et al., 2014).

Teaching based on a holistic approach to the content of ESD aims at distinguishing the implications of SD issues within each dimension from different points of view (Boeve-de Pauw et al., 2015; Olsson et al., 2015; Berglund and Gericke, 2016). If we deal with each dimension separately, the contradictions among the dimensions will not be obvious. However, we have to deal with the conflicting implications of the dimensions, when we have to take decisions. We end up having to set priorities among the dimensions in order to be able to reach a decision (Berglund and Gericke, 2016). The adoption of a holistic approach to ESD was criticized by Kopnina (2014) who argued that it lets students focus on economic and social aspects of SD issues and eventually, distracting them from environmental issues and this obscures eco-centric perspectives. However, Boeve-de Pauw et al. (2015) found that when teachers adopt a holistic approach during teaching, students have a greater degree of knowlengness of environmental issues. This refers to only to factual knowledge but it has also an affective based component (Olsson and Gericke, 2016; Olsson et al., 2015). Research in ESD considers two ways of seeing the SD concept holistically. That is, all three dimensions are involved either in a separate way (e.g., Boeve-de Pauw et al., 2015; Berglund and Gericke, 2016) or in an integrated way (e.g., Giddings et al., 2002; Berglund and Gericke, 2016).

To unravel a holistic understanding of the SD concept, innovative teaching approaches should be applied (Du et al., 2013). Du et al. (2013) argued that teaching approaches, such as self-regulated learning, active learning, experiential learning theory based on Kolb's learning circle, constructive learning, problem-based and project-based learning promote a holistic understanding of SD. This holds true for inter-disciplinary teaching approaches as well (Ferrer-Balas et al., 2010; Lozano, 2010). As an attempt to develop a holistic understanding of the SD concept, an exploratory study was conducted by Pappas et al., in 2013. They developed a curriculum model based on the Bloom's Taxonomy of educational objectives (1956). They allowed students to understand the interrelations among the dimension by using a systems perspective. Jensen (2015, 2016) proved that participatory action research educational programmes could help integrate all three pillars in an ESD curriculum. Action research educational programmes are suitable for social settings with conflicting values and interests as SD issues (Herr and Anderson, 2005). By applying a pluralistic teaching approach to ESD, students are encouraged to critically consider different perspectives and interests when dealing with SD issues. This approach is considered vital for the students to understand SD holistically (Öhman, 2008; Sterling, 2010; Borg et al., 2012). Accordingly, action research educational programmes have the potential to apply a pluralistic approach. It is possible that action research could appear in instruments that can be used in other settings as well (Herr and Anderson, 2005; Jensen, 2015, 2016).

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