

Sustainable Education and Education for Sustainability: Importance of Sustainable Development in Higher Education

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Abstract

Sustainability is a symbiosis between economic development, human development and the conservation of the environment in the current global context. Sustainable Development (SD) can also be defined as the set of actions and thoughts that condition the way in which contemporaries meet their needs without exhausting or putting at risk the capacity and resources of future generations to meet their own needs and expectations of quality of life. Beyond a theoretical perspective, Sustainability represents an emerging paradigm of new knowledge production and innovation, which was originally promoted and maintained by UNESCO as a multidisciplinary and transdisciplinary research agenda with a political and social base. Therefore, this document contains a brief review of the literature about the linkage of Higher Education and SD or Sustainability. Through Grounded Theory method and from a theoretical sampling, a conceptual exploration guided by semantic networks designed by Atlas.ti software (version 7.5) is accomplished. Discussion is focused on similarities and differences between the concepts of Sustainable Education (SE) and Education for Sustainability (ES) and the contributions of both to educational field. Conclusions highlight the sociological and epistemological value of sustainability in the university context.

Keywords: Sustainable Education, Sustainability, Higher Education

Introduction

Sustainability is being incorporated to universities classrooms and curriculum, this interaction causes multi-perspective and problem-driven knowledge production, innovation and research. In this sense, the aim of this study is to identify empirical research approaches on sustainability in university contexts in recent scientific literature.

Methodology

This study is based on qualitative research features because it is useful for “contributing insights from existing or new concepts that may help to explain social behavior and thinking” (Yin, 2016: 9). Since Sustainability and SD represents a substantive and emergent area of knowledge and research, it was feasible to adopt Grounded Theory that “is an iterative process in which data collection and analysis occur simultaneously, with each informing the other” (Thornberg & Charmaz, 2011: 41) also it requires systematic comparisons to construct concepts. This is achieved by Theoretical Sampling defined as an “purposeful selection of a sample according to the developing categories and emerging theory. Initial decisions are based on a general subject or problem area, not on a preconceived theoretical framework” (Coyne, 1997: 629). The sample consist of emprirical research articles accepted or published in peer-reviewed journals between 2016 and 2017 years (N=28), by performing keyword combiation searches (university or higher education + sustainability or sustainable + students or teacher) in papers allowed in databases (Taylor&Francis and ScienceDirect). Qualitative data analysis software (*Atlas.ti*, 7.5) was used for generating data representation and semantic layout (Frieze, 2012). Finally, in the first cycle coding method Descriptive and Holistic Coding were used, then in the second cycle Focused and Axial Coding were applied (Saldaña, 2012).

Results and Discussion

The review and systematization of the research articles allows the grouping of the studies into fourth (4) investigative approaches (see: Figure 1) due to similarities in research objectives and conclusions they presented:

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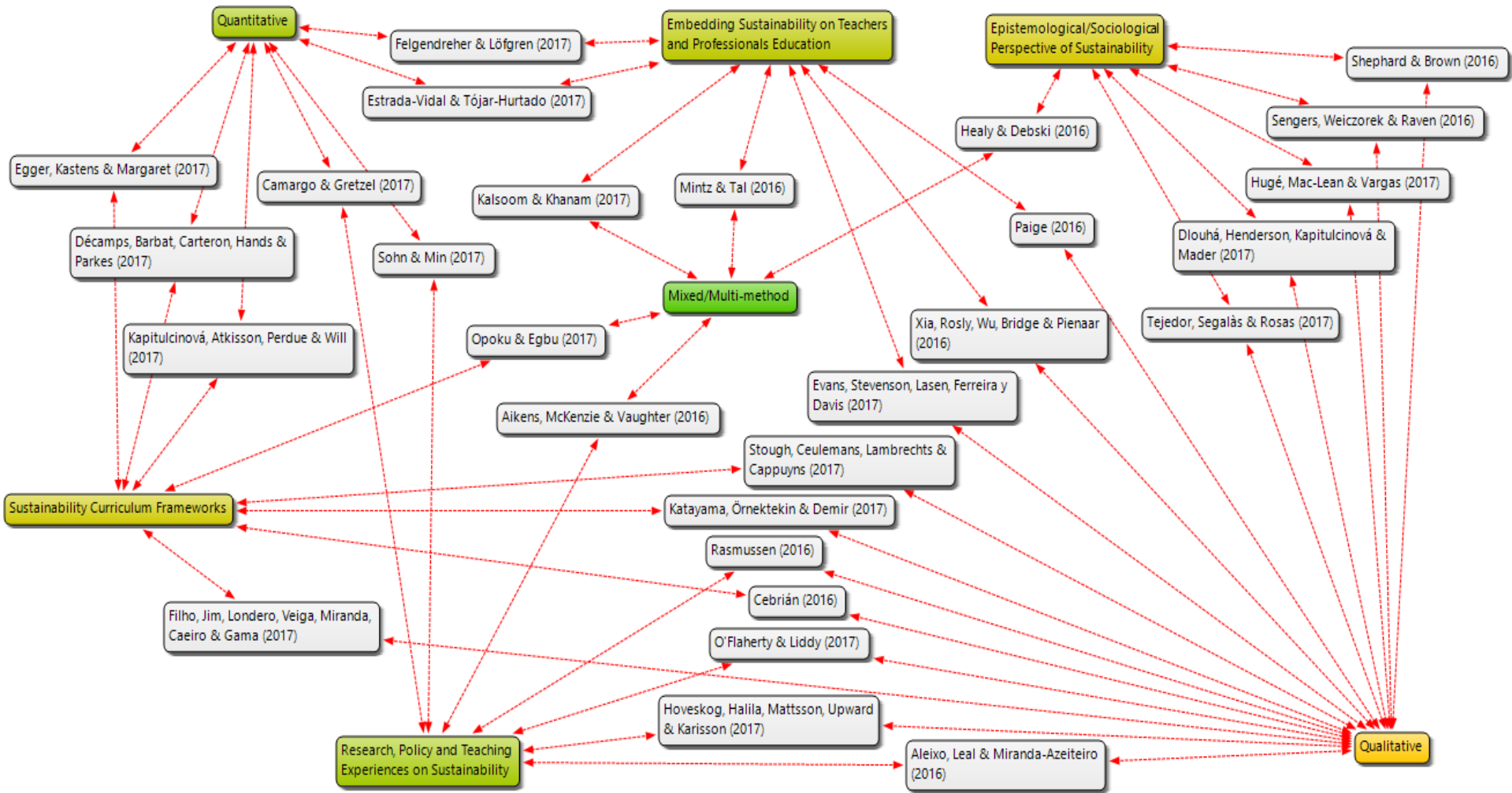
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1. Sustainability Curriculum Frameworks (SCF): these investigations are aimed at improving the integration and institutionalization of sustainability in the curriculum, through the creation of new specific or interdisciplinary disciplinary programs. At a deeper level, it inquires the relevance of contents, knowledge, competences and pedagogies, as well as the policies and standards that support sustainable literacy. Analysis and description of the fundamental obstacles or opportunities to promote sustainable development requires the identification of key actors and stakeholders (Egger, Kastens & Margaret, 2017; Cebrián, 2016; Filho, Jim, Londero, Veiga, Miranda, Caeiro & Gama, 2017; Katayama, Örnektekin & Demir, 2017; Opoku & Egbu, 2017; Stough, Ceulemans, Lambrechts & Cappuyns, 2017; Décamps, Barbat, Carteron, Hands & Parkes, 2017).
2. Research, Policy and Teaching Experiences on Sustainability (RPTES): this research approach explores the link between technical knowledge and work experience on real-world sustainability issues (climate change, water and food shortage, environmental and social justice, etc.). In general, the conclusions serve to inform the effectiveness of the pedagogical strategies, to propose the deconstruction of the disciplinary structure or to criticize the policy development on education for sustainability (Aikens, McKenzie & Vaughter, 2016; Sohn & Min, 2017; Rasmussen, 2016; O'Flaherty & Liddy, 2017; Hoveskog, Halila, Mattsson, Upward & Karisson, 2017; Camargo & Gretzel, 2017; Aleixo, Leal & Miranda-Azeiteiro, 2016).
3. Embedding Sustainability on Teachers and Professionals Education (ESTPE): in this studies the main purpose is transforming student's relationship with the environment and society by reflecting on their own attitudes, individual consciousness and cultural awareness. Researchers consider that sustainability education implies a set of cognitive and affective learning outcomes, for that reason transformational pedagogical experiences are inquired in opposition to indoctrination practices (Kalsoom & Khanam, 2017; Xia, Rosly, Wu, Bridge & Pienaar, 2016; Mintz & Tal, 2016; Estrada-Vidal & Tójar-Hurtado, 2017; Paige, 2016; Evans, Stevenson, Lasen, Ferreira y Davis, 2017; Felgendreher & Löfgren, 2017).
4. Epistemological and Sociological Approaches to Sustainability (ESAS): university students learn while they acquire values, social habits and ideologies about shared well-being. Researchers inquiry social-learning process and ascertain knowledge and discourses dissemination that supports reformist perspectives on green transformation and human behavioral changes for a more sustainable and just society. To sum up, this studies focus on participant's communication and active involvement for sharing meanings as a central component of societal transition towards sustainable development (Shephard & Brown, 2016; Sengers, Weiczorek & Raven, 2016; Healy & Debski, 2016; Hugé, Mac-Lean & Vargas, 2017; Dlouhá, Henderson, Kapitulcinová & Mader, 2017; Tejedor, Segalàs & Rosas, 2017).

It should be noted that propounded research approaches are not excluyent nor simplistic because exist metodological and theoretical conections among them. However studies of SCF and ESTPE approaches evidence objectivity and depersonalization proper to disciplines with incipient interdisciplinarity with the sciences of education for that they are compatible with ES. In contrast, the ESTPE and ESAP approaches exploit direct interaction with the participants and includes pedagogical and learning theories that is why they are close to SE.

Figure 1. Research Approaches and Research Types codes and family codes.



Source: Network view generated by Atlas.ti



Conclusion

SE and ES in higher education context point out the importance of promoting the environmental advocacy in relation with the balance between professional life and personal life of educational community members. Currently studies on Sustainability inform the impact of implementing transformative and organizational learning models, decision making and even extra-curricular activities on educational settings, taking into account the international community development goals. Relevant research initiatives employed interdisciplinary case courses that involve researchers, teachers and students with challenges of theoretical and methodological rigor.

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