



Attitudinal Trends of Teachers-in-training on Transformative Environmental Education

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ABSTRACT

This study aims to obtain the attitudinal tendencies of a group of teachers in initial training in Spain ($N = 889$; 83.4% women and 16.6% men; 53.6% in Primary Education, and 44.8% in Early Childhood Education), from cluster analysis of the data collected through a previously constructed and validated scale that relates their attitudes: (a) facing socio-environmental problems, and (b) toward transformative environmental education. This analysis reveals the existence of critical and conformist attitudes that suggests that trainee teachers are not prepared to face sustainability challenges, although there is also a transformative profile consistent with environmental education focused on sustainable action. The results obtained may contribute to making training proposals in this field and in other contexts and to identifying those elements that should be reinforced.

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Tendencias actitudinales del profesorado en formación hacia una educación ambiental transformadora

RESUMEN

El fin de este estudio es obtener las tendencias actitudinales de un grupo de profesorado en formación inicial en España ($N = 889$; 83.4% mujeres y 16.6% hombres; 53.6% de Educación Primaria y 44.8% de Educación Infantil), a partir del análisis clúster de los datos conseguidos a través de una escala, previamente construida y validada, que relaciona las actitudes: (a) frente a la problemática socioambiental, y (b) hacia una educación ambiental transformadora. Dicho análisis pone de manifiesto la existencia de actitudes acríicas y conformistas, que sugieren que el profesorado en formación no está preparado para afrontar los retos de la sostenibilidad, aunque también aparece un perfil transformador que concuerda con una educación ambiental enfocada hacia la acción sostenible. Los resultados obtenidos pueden contribuir a realizar propuestas formativas en este campo y en otros contextos y a identificar aquellos elementos que deben ser potenciados.

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Introduction

Recent reports by prestigious international bodies (GEO-5, 2012; Worldwatch Institute, 2013) are warning about the rapid environmental damage that our planet is experiencing, and they primarily link it to the dominant socioeconomic model and to some human

activities that are becoming increasingly more involved in a globalized, industrialized, consumerist and interconnected world. Thus, authors like Jensen and Schnack (2006), Silo (2013) or Stevenson, Wals, Dillon, and Brody (2013) argue that the solutions to environmental problems should be sought in the fields of culture, socio-economy and politics.

Each person builds their own lifestyle through the process of socialisation, learning and attitude and behaviour development. The acquisition of this particular way of life depends not only on individual aspects but also on the socio-cultural environment where the

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individual develops (Gavidia & Rodes, 2004). Consequently, an important challenge is to expand upon and deepen how the influences of these areas contribute to shaping values, attitudes and behaviours (Gifford, 2014). So, education plays a key role.

Therefore, schools can and should provide an opportunity to promote the development of sustainable lifestyles (Varela-Losada, Vega-Marcote, Pérez-Rodríguez, & Álvarez-Lires, 2016). Education must develop the ability to think in a critical, ethical and creative way when evaluating socio-environmental situations as well as develop the capacity and the commitment to act, individually and collectively, in ways that sustain and improve the world we live in (Stevenson & Stirling, 2010).

From this perspective, sustainability offers an attractive and dynamic context for education because it can increase the interest and involvement of the student and provide useful preparation for public participation in socio-environmental problems such as mitigation of and adaptation to climate change (Feinstein, 2011). It allows, in addition, for the integration of science with other sources of knowledge in order to develop contextualized responses to real challenges (Feinstein & Kirchgasler, 2015; Pedretti & Nazir, 2011).

In this way, transformative environmental education requires a teaching staff that is committed to sustainability, who understand the interdisciplinary and globalised nature of environmental issues and share the goal of action using non-traditional teaching methods (Álvarez & Vega, 2009). Therefore, priming a responsible, participatory citizenry able to make responsible decisions in a global and complex world assumes that schools should foster critical reflection (Kyburz-Graber, 2013), giving particular emphasis to the socioeconomic framework that determines the current unsustainable trends (Vega & Álvarez, 2012), should promote student participation in lessons and in the resolution of environmental issues (Mogensen & Schnack, 2010) and facilitate collaboration with communities (Wals, 2007).

Developing sustainable practices should fall within the framework of sustainability and problem-solving research (Gottlieb, Vigoda-Gadot, & Haim 2013; Kyburz-Graber, 2013; Mogensen & Mayer, 2005). Priority must be given to acquiring environmental literacy. This environmental literacy leads to the development of people who make knowledgeable behavioural decisions in the face of prominent environmental problems. Therefore, it involves relating critical thinking with an efficient use of decision-making skills (Kincheloe, 2008; Uskola, Maguregi, & Jiménez-Aleixandre, 2011).

Thus, a key factor in leveraging socio-environmental transformation from schools are the educators (Skamp, Boyes, & Stanisstreet, 2013), since they are directly responsible for teaching and the learning process. There is abundant literature on the impact of the relationships between teachers and students in a classroom (e.g., Jourdan, Pironom, Berger, & Carvalho, 2012; Roorda, Koomen, Spilt, & Oort, 2011) and on the importance of teachers and other adults as role models in the development of environmental literacy (e.g., Higgs & McMillan, 2006; Rickinson, 2001; Stern, Powell, & Hill, 2014). It is thus essential to define the teachers' roles in teaching environmental education (here in after EE), by linking their pro-environmental attitudes and their educational practices.

Teacher training needs with regard to environmental education

One of the main causes of the failure and low implementation of EE in schools seems to be inadequate teacher training (Knapp, 2000). Thus, teachers and trainee teachers do not seem to have a clear understanding of environmental thinking, of its components or how these components interact in a systemic way in different countries, as this and numerous other studies illustrate (e.g., Butler, Simmie, & O'Grady, 2015; Van Petegem, Bliet, & Van Ongevalle, 2007). In addition, research on their conceptual understanding of sustainable development has also shown gaps and a lack of holistic understanding (Borg, Gericke, Höglund, & Bergman, 2014; Summers & Childs, 2007).

On the other hand, there is abundant evidence that both soon-to-be and current teachers do not have the knowledge necessary to understand complex environmental issues (e.g., Boubonari, Markos, & Kevrekidis, 2013; Cakir, Irez, & Kivilcan, 2010; Michail, Stamou, & Stamou, 2007).

Furthermore, research confirms that teachers-in-training in different contexts express moderate levels of pro-environmental attitudes although they are linked to gaps and weaknesses in different EE-related aspects (see the studies of Esa, 2010; Tuncer et al., 2009). Current teachers also seem to show positive attitudes toward teaching environmental issues, but they often do not cover them even though they believe these issues are important for their students (Kim & Fortner, 2006; Marx & Harris, 2006).

In this way, Kim and Fortner (2006) show that teachers' perceived ability for EE teaching reveal shortcomings related to providing real experiences in student involvement and resolution of socio-environmental problems. This work also demonstrates how teachers tend to believe that external and logistical barriers (lack of time and searching for curricular standards) are higher than the internal and personal ones (lack of conceptual and educational knowledge). Franklin and Johnson (2008) also point out that emphasising state curriculum standards and evaluations often produce isolated areas of knowledge. They focus only on textbooks and study plans and produce a tendency to leave out topics which are considered extra-curricular despite providing valuable opportunities. Thus, teachers and teachers in training tend to see certain aspects of science education and EE as low priority components of school programmes (Marx & Harris, 2006; Pujol, 2007).

In addition, there is evidence that, when teachers begin their professional career, they tend to not use the knowledge gained during their training and to base their work on existing curricular frameworks, also uncritically assuming the guidelines that establish the educational materials regarding the selection of the topics that must be taught (Fletcher & Luft, 2011; Rodríguez & Marrero, 2003). In this sense, Firth and Winter (2007) indicate that trainee teachers often focus their planning and education process on the curriculum and not on the students, showing a lack of understanding of the constructivist approach (Driver & Oldham, 1986). Added to this is the fact that their talk tends to be more innovative than their actual practice (Rodríguez & López, 2006). Thus teachers are not familiar with innovative methodologies and, therefore, do not integrate them into their educational practices (Joyce & Showers, 1988).

All of this is a challenge in contexts where teachers are expected to teach differently from the way they learned during their own schooling (Millar, Leach, & Osborne, 2000), especially in the EE framework, whose teaching must be focused on the development of a competence for action (Mogensen & Schnack, 2010), strengthened by critical thinking, autonomous decision-making, participation and interrelating schools and communities (Varela-Losada et al., 2016).

In this context, it is necessary to go deeper into the study of what teachers' environmental attitudes are in relation to their use of transformative pedagogical methods; due to the fact that these aspects have been poorly addressed in the literature. The purpose of this work, therefore, is to analyse the attitudinal trends of teachers in training regarding two topics: (a) their attitudes towards socio-environmental problems, and (b) their attitudes towards transformative EE. As a launch point, the hypothesis is that teachers in training would have attitudes significantly different.

Method

Participants

A non-probability sampling was carried out to create the study. The sample was selected according to availability criteria, ensuring that it was as broad as possible in order to be the most representative. The

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