Critical Perspectives

Transformation for sustainability: The role of complexity in tourism students' understanding of sustainable tourism

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\textbf{A B S T R A C T}

With the ever-growing imperative of sustainability, there is an increasing need for capable graduates who can address the wicked problems of sustainability. This research examined undergraduate tourism students' understanding of the concept of sustainability before and after participating in an undergraduate sustainable tourism course. Prior to the course, students had simple stereotypical conceptions of sustainability. Whereas after the course they had an enhanced relational understanding of the triple bottom line as well as community and social dimensions of sustainability. Learner-centred critical and transformative approaches are important in facilitating the development of more complex ways of thinking about sustainability.

1. Introduction

With the end of the decade of education for sustainable development, 2005–2014, \textit{(United Nations, 2015)} the imperative of sustainability is as important now as it was at the start of the decade \textit{(Gonçalves, Pereira, Leal Filho, & Miranda Azeiteiro, 2012; Zellermayer & Tabak, 2013)}. The earth’s systems are undergoing large-scale change and are significantly impacting on our socio-economic systems necessitating a fundamental change to maintain present conditions \textit{(Reid et al., 2010)}. Despite awareness of the problems there has been continued failure to mitigate the impacts as evidenced by the non-achievement of all the millennium development goals \textit{(Fukuda-Parr, Greenstein, & Stewart, 2013)} the continued lack of success of global agreements on sustainability is typified in the platitudinous rather than action-oriented Rio + 20 summit \textit{(Bigg, 2012; Pearsall, Pierce, & Krueger, 2012)}. Whilst the Conference of the Parties, COP 21 – Paris Climate Change agreement is an encouraging development, the task of transforming energy and production systems is still a major challenge and the certainty of appropriate action remains unclear \textit{(Hermwille, 2016)}. The need for change in the socioeconomic systems of production and consumption has never been greater \textit{(Brand, 2012; Griggs et al., 2013; Jackson, 2011)}, however, these problems are “wicked” \textit{(Rittel & Webber, 1973)} and feature great complexity in their nature and thus the response required will not come as a single, correct, optimal solution \textit{(Stewart, Desai, & Walters, 2011; Van Bueren, Klijn, & Koppenjan, 2003)}. Environmental education can play a pivotal role in the transformation of the complex socio-environmental problems that societies face into potential solutions \textit{(Ferkany & Whyte, 2011)}. Progress in education for sustainable development has been limited, especially when global sustainability indicators are used to judge the merits of the decade of education for sustainability \textit{(Gonçalves et al., 2012; Tilbury, 2011; Zellermayer & Tabak, 2013)}. Despite a lack of significant progress, there has been some change and progress made in sustainable practices in higher education in terms of government led incentives, socio-economic expectations of education, partnership platforms, student leadership and experimental practice in the curriculum \textit{(Tilbury, 2011)}. However, Tilbury \textit{(2011)} suggests that such changes have not been ‘deep’ or sustained in universities and have failed to acknowledge the political
nature of innovative approaches that would achieve outcomes in line with the imperatives of the decade of education for sustain-
ability (Zellermayer & Tabak, 2013).

Globally in higher education tourism studies, education for sustainable development has been implemented across the curriculum throughout many tourism programs (Busby & Huang, 2012; Busby, 2003; Wilson, von der Heidt, Lamberton, & Morrison, 2012). However, we agree with other tourism scholars (Bellahsen & Caton, 2011; Doyle, Wilson, & Dimmock, 2015; Farber Canziani, Sönmez, Hsieh, & Byrd, 2012; Fullagar & Wilson, 2012; Jamal, 2004; Jamal, Taillon, & Dredge, 2011; Wilson & von der Heidt, 2013; Wilson et al., 2012; Wilson, 2015) that most of these programs do not have a critical dimension to the extent that the major social, economic and environmental problems, noted above, are pedagogically addressed in order to produce more critically reflexive tourism practitioners that are more than simply work ready graduates. There are signs of change. There has been increasing attention towards more critical approaches in tourism studies exemplified by increasing number of conferences on the topic, increased research attention and greater teacher awareness and practice (Crosley, 2017). However, fundamental shifts in tourism education are still needed to address the increasing challenges of global issues now facing societies throughout the world (García-Rosell, 2014; Joppe & Elliot, 2015; Sheldon, Fesenmaier, & Tribe, 2011). A key pedagogical approach suited to progressive enactments of sus-
tainability in the classroom is the facilitation of the adaptive capacity of individuals and groups to uncertainty. The transformative potential of this form of learning has been identified in environmental education (Sterling, 2010a; Wals, 2010) and in tourism studies emerging work can be found in identifying the potential of transformative learning for tourism education (Boyle et al., 2015; Stone & Duffy, 2015). Herein, transformative learning is associated with “transforming a problematic frame of reference to make it more dependable ... by generating opinions and interactions that are more justified. We become critically reflective of those beliefs that become problematic”. (Mezirow, 2000; p.20 in Sterling, 2010a). There is a need for more attention to sustainability education in higher education with a conscious focus on the purpose of education and associated pedagogies to offer a transformative educational experience that enables students to develop the capacity for solutions to complex and wicked problems (Blake, Sterling, & Goodson, 2013; Cotterell, Arcodia, & Ferreira, 2017; Sterling, 2010a; Stewart, 2010).

To address the problem of enacting transformational learning this research adopted two research questions. The first question was to determine tourism student conceptions of sustainability prior to students undertaking a course in ‘sustainable tourism’. The second was to determine changes in student conceptions of sustainability based on their experience and learning engagements in the course. The interpretation of the findings to the two questions can assist in understanding how students develop more complex thinking about sustainability and the implications for teaching pedagogy. Subsequently, this research contributes to the sustainable tourism education field through whether or not teaching and learning experiences lead to transformations in students’ conceptions of sus-
tainability and how this might occur. This paper is framed by Bateson (1972) work on transformational learning. Bateson notes (1973, p. 480) that, “... the problem of how to transmit our ecological reasoning to those whom we wish to influence in what seems to us to be an ecologically ‘good’ direction is itself an ecological problem. We are not outside the ecology for which we plan - we are always and inevitably a part of it.” (Bateson, 1972, p. 480). Subsequently, the paper is punctuated with the use of the first person to denote the value-full position from which this research was based (Denzin & Lincoln, 2003; Macbeth, 2005).

Having established the context for this paper, four further sections follow. First and next, the paper examines extant literature related to more complex thinking about sustainability in terms of developing concepts and ideology. Second, the methodological approach and techniques used are briefly described and therein we demonstrate the complexity in students ‘understanding about sustainability. Third, the findings are presented, which examine the complexity of understandings and the changes in students' conceptions as a result of undertaking the sustainable tourism course. Four, implications based on the findings associated with teaching practices that may assist educators in developing complex thinking in students.

2. Depth, complexity and sustainability in tourism education

This paper examines how complex understandings of sustainability develop in university students who are studying tourism. The underlying assumption of the research (and teaching) was that the development of students’ personal understanding of complexity is an important educational goal and one that fits with developing critical thinking skills in higher education situations (Haggis, 2009; Sterling, 2012). This is important because sustainability is a complex phenomenon in terms of operationalising it at the business level (Angela Espinosa, Harnden, & Walker, 2008; Espinosa & Porter, 2011) as well as understanding the environmental and social di-
mensions of complex systems (Holling, 2001).

Typically, education for sustainable development conforms to ecological modernisation perspectives on the role of growth and development. An overview of the different themes of environmental education is given by Sauvé (2005) and concludes that education for sustainability has dominated as an environmental education paradigm since the 1980s. Sauvé states that “Learning to make rational use of today's resources is essential if there are to be enough for everyone and enough remaining to meet the needs of future generations. Environmental education thus becomes one tool among others in the cause of sustainable development” (Sauvé, 2005, p.11). The emphasis here is on education being the tool for sustainable development. The function of education in sustainable development is encapsulated in passages of the United Nations Agenda 21. It states that “education in sustainable development is mainly to develop human capital and encourage technical progress, as well as fostering the cultural conditions favouring social and economic change” (United Nations, 1992, Chapter 36, p.1). This has led to instrumental and deterministic tendencies of development that favour traditional transmission pedagogies dominating education for sustainability because it is a product and a carrier of globalizing forces (Jickling & Wals, 2008). Dealing with justice issues, deliberative democracy, the rights of nature and emancipatory features of knowledge production tend to be marginalised and excluded in the dominant approach to education for sustainability (Martusewicz, Edmundson, & Lupinacci, 2014; Wals, 2010).
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