



## **Pedagogy for Education on Sustainability: Integrating Digital Technologies and Learning Experiences Outside School**

Sandyha Coll,  
*University of the South Pacific*

### INTRODUCTION TO THE AUTHOR AND THE RESEARCH CONTEXT

The research reported in this article stems from my own interest in providing learning experiences outside school (LEOS) and also the increasing use of the Internet by students. In selecting this area of research, I have been influenced by my former years of secondary school teaching and learning experiences in both New Zealand and Fiji. Being an effective science teacher entails much more than just changing one or two variables of my teaching and maintaining high expectations from my students. Instead, I realised that there is a need to enact a successful chain of interactions, not just for one person, or even one person at a time, but for a social network, producing and sustaining learning environments that build upon 'fluent transactions' that facilitate collective and individual outcomes. Teaching science is a collective endeavour, and it is important that all participants, teachers, and students enact practices intended not only to promote their achievement, but to expand the agency of learning for others. As a result of these experiences, I came to the conclusion that the learning of science should not be confined to the walls of the classroom. Students need to visit sites outside school where science could be seen and experienced and also share these findings using a learning management system (LMS). In the process, I came across a valuable research resource framework for this inquiry; a digitally integrated learning model.

### A DIGITAL INTEGRATED RESEARCH FRAMEWORK

As a former Head of Department at various secondary schools, I was always interested in encouraging my teachers to take learning outside school. Often I experienced that there was lack of teacher preparation, and also observed that most teachers only played a passive role during LEOS, such as managing student behaviour and using work sheets. I came to realise that in order to enhance learning outcomes from out-of-school activities, teachers should plan accordingly, linking out-of-school visits to specific curriculum objectives, include some degree of choice, and link these objectives directly to activities during the visit. I came to the conclusion that a well-structured LEOS should provide meaning to abstract science ideas studied in the classroom. Not only that, but students should be encouraged to take a more active role in learning of science content that has current relevance. So while it was important to engage in LEOS, particularly for teaching concepts such as *Education for Sustainability*, it was equally important to establish an environment where useful information is generated and multiple data sources from the Internet are used to develop more meaningful and integrated knowledge.



## FINDINGS AND IMPLICATIONS OF THE WORK FOR PRACTICE

For me *Education for Sustainability* is a critical issue for New Zealand, both environmentally, economically, culturally (Maori culture- *taonga*), politically, and socially. We need to learn how to live 'smarter' and to reduce our impact on the environment for future generations.

Structuring learning around a unifying theme such as sustainability provides opportunities for students to make connections between learning areas, competencies, and values. It requires teaching and learning approaches that draw on all elements of effective pedagogy and focuses on empowering students to take action for a sustainable future.