What inspired you to study educational change?

My interest in educational change spans the past 30 years during which I worked as a developer of e-learning programs and strategies in Australian vocational and higher education. Over these years, I witnessed very little progress, both in Australia and around the world, in the rate of innovation and adoption of digital technologies in teaching practice, beyond the implementation of Learning Management Systems (LMS) and experiments with Massive Open Online Courses (MOOCs). I attended many presentations at education conferences and workshops around the world where enthusiastic educators, who were early adopters of digital technologies, demonstrated the effectiveness of their innovations for teaching and learning. As my professional experience and evidence from the research literature shows, very few of these innovations ever go on to achieve further, let alone mainstream, adoption by other educators. This lag in education is in sharp contrast to the ongoing, prolific and rapid rate of digital technology innovation adoption occurring in our workplaces and homes. This problem led me to develop a method for investigating how universities could build institutional capacity for mainstreaming the adoption of teaching innovations.

What and/or who inspires you in the field? Why?

The first theoretician to inspire my research was the late Professor Everett Rogers, through his seminal Diffusion of Innovations (DoI) theory and research. Since 1962, Rogers’ DoI theory has continued to evolve and influence research, theory development and discussion about the process of mainstreaming innovation adoption. Shortly before he died in 2004, Rogers, together with his colleagues Medina, Rivera and Wiley, explored an extension of his DoI theory by introducing concepts from Complex Adaptive Systems (CAS) theory. In proposing a hybrid theory of DoI and CAS, Rogers and his colleagues broke away from the original portrayal of DoI as a linear process (Rogers et al., 2005). In their DoI/CAS hybrid proposition...
the key feature is nonlinearity, characterized by the multilevel relationships between the roles of the members of a system. The need for a shift in focus to nonlinearity and relationships associated with complex systems has, over the past decade, started to emerge as a concern in educational research. One of the leaders promoting this new field of inquiry is Professor Jim Levin from the University of California, San Diego who is my Adjunct Associate PhD Supervisor. In my PhD study, I applied Professor Levin’s Multi Mediator Modeling computer simulation which uses Agent Based Modeling software for investigating the complexity of education systems and how change within these systems occurs, the subject of my study (for more information please go to http://hdl.handle.net/2328/37345). Professor Levin’s work continues to be a main inspiration in my PhD research along with my husband Dr. Gerald (Gerry) White’s pioneering application and investigation of the role of collaboration in the system-wide diffusion of educational technologies which also extended the work of Rogers.

What do you believe to be the biggest challenge for educational change and what would be a first step to address this challenge?

Innovation adoption research in education has, over the past two to three decades, mostly been conducted using case studies which have largely focused on understanding the causes and effects of educational change. Identifying the parts, such as the actors and factors that play a role in educational change, provides a useful first step in researching innovation adoption. However, research about the nature of the relationships between the roles represented by these actors and factors, is necessary for viewing educational change from a complex system perspective - as a whole. Simulating the modeling of all these relationships together has remained a challenge for social science researchers as it requires the application of data using skills in computer programming. Another challenge is and continues to be how to explore and interpret the data as it is being modeled in real time.

“Another challenge is and continues to be how to explore and interpret the data as it is being modeled in real time.”

What are some new areas of inquiry and/or directions you think the field should be headed?

New methodologies, that harness digital technologies, are needed that extend educational research beyond a current focus on causality to modeling and interpreting the complexity of educational change. For my PhD research, I developed an original method for researching institutional capacity building in mainstreaming teaching innovations in higher education that has potential for application in any university undergoing transition and development of new educational practices. The method uses the findings from a literature review of case studies, as a first step in developing a baseline model for a computer simulation to which the lived experiences of study participants are applied and explored in real time during an interview. Both real and ideal scenarios of the relationships between the roles played by institutional stakeholders are modeled and explored throughout the interview. Participant insights that emerge from viewing the impact of the relationships, depicted when running the model, are
recorded, compared and then analyzed against previous findings in the research literature. This method has proven to be successful in bringing computer modeling into conversations and conversations into computer modeling and offers a new direction for educational change research.

References
IRENA WHITE

Irena White's experience in vocational and higher education spans the past three decades. During the early 1990s, Irena was amongst the first educators in Australia to utilize emerging digital technologies in developing online content and flexible learning strategies for teachers and students. Her professional and academic roles and research interests since then have remained in this field. Irena’s specializations are in educational design and the dissemination and marketing (both in Australia and internationally) of online educational content and services. Irena’s achievements include working with education providers to research and develop strategies that harness innovations for teaching, learning and critical inquiry. The PhD thesis Irena is currently completing addresses the sustainability of the diffusion of e-learning by modeling the complexity of mainstreaming innovation adoption in higher education teaching practice. This study has produced a new research method, Interpretive Case-based Modelling, which reveals the complex nature of institutional stakeholder relationships within education systems. Findings from the study indicate a potential for wider applications of this new method in developing and testing scenarios for building institutional capacity for transforming teaching practice. Irena aims to share the use of this method within the education community that has inspired and nurtured her 30-year research, professional, and academic career.