Chapter 4

ACTION RESEARCH AND DESIGN IN INFORMATION SYSTEMS
Two Faces of a Single Coin

António Dias de Figueiredo and Paulo Rupino da Cunha
University of Coimbra, Portugal

Abstract: As the production of knowledge moves from a linear innovation model in an explanations-oriented world to a networked innovation model in a solutions-oriented world, the practice of design in engineering and industry and the practice of research in academia are getting closer and closer. This proximity is calling for a renewal of the debates on the nature of academic research, on the epistemology of design, and on the relationship between research and design. This is particularly challenging as we concentrate on the specific field of information systems. It is, also, mostly enlightening as we look into the philosophical groundings of both the design disciplines and action research. This chapter attempts to escort the reader in the examination of these issues. It starts with a brief characterization of the two main modes of knowledge production, followed by a debate on the relationships between research and design. It then puts forward a simple philosophical framework that will be used to put in perspective the designerly ways of knowing, their relationship with action research, and the resulting implications on information systems research. The chapter closes with the re-examination, under this new perspective, of some recent debates on topics such as the rigor vs relevance dilemma and the ethical dimension of action research in information systems.

Key words: action research, critical discussion, design, epistemology, ethics, methodology, mode 2, ontology, relevance, rigor, value proposal.

1. INTRODUCTION

The inquiry into the changing relationship between Industry and University has led, in recent years, to the emergence of a variety of research
schools concerned with what has become known as “the new modes of knowledge production”. One of the earliest books in this movement, *The New Production of Knowledge*, by Gibbons, Limoges, Nowotny, Schwartzman, Scott, & Trow (1994), sparked a wave of debates on science and technology policy and generated multiple research questions on the role of knowledge in society, on the relationship between universities and the economy, and, of course, on the creation of new approaches to scientific research.

The concept of “Mode 2” knowledge production, one of the key notions of the movement, calls the attention of academia to the emerging challenges of a solutions-oriented world where research agendas are driven by economic and social contexts, where theory and practice are mixed together, and where experimental activity follows the principles of industrial, engineering, and architectural design. Paradoxically, this occurs at a time when a significant part of the design researchers’ community is declaring the incompatibility between design and science, arguing that the epistemology of science is in disarray, that it has little to offer to an epistemology of design (Cross, 2001a, p.51), and that what the design community needs is to concentrate on the “designerly” ways of knowing, thinking and acting (Cross, 2001b).

This chapter argues that the conciliation between science and design is not only possible but very promising, and that its implications upon the concept of action research are particularly auspicious when action research is to be conducted in knowledge domains where design plays a central role, such as the information systems field. In this sense, it argues for the significance of “designerly action research” as a way to carry out research in information systems and examines, under this perspective, the topics of rigor, relevance, and ethics in information systems research.

The chapter starts with a paragraph on the new modes of knowledge production. It then moves to the challenges of bridging the gap between theory and practice, comments on the scientization of design, and analyses the relationships between design and scientific research. Next, it puts forward a philosophical framework that, in spite of its general applicability, will be used here to discuss the designerly ways of knowing, their relationship with action research, and the resulting implications on information systems. The last paragraph before the conclusions is devoted to the discussion of the use of designerly action research in information systems and of the implications of adopting a designerly approach to action research in this field, namely in what regards its more sensitive dimensions of rigor, relevance, and ethics.