Chapter XI

Information Systems Curriculum Development as an Ecological Process

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INTRODUCTION

The discipline of Information Systems (IS), in common with the other major branches of computing, is subject to constant and continuing change as new technologies appear and new methodologies and development techniques are devised. IS professionals working in the computer industry need to keep abreast of these changes to remain useful and, of necessity, curriculum in information systems must also undergo frequent revisions and changes.

To those of us involved in research and teaching in information systems, it is clear that curriculum innovation and change in this area is complex, and anything but straightforward (Longenecker & Feinstein, 1990). Of course, all curriculum innovation is complex (Boomer, Lester, Onore, & Cook, 1992; Fullan, 1993; Fullan & Hargreaves, 1992; Kemmis & Stake, 1988) due to the involvement of a large number of human actors, but in information systems curriculum change, this is particularly so, due to the need also to consider the part played by such non-human actors (Latour, 1996) as the technology itself.

We will argue that if you want to understand *how* IS curriculum is built, and how both the human and non-human interactions involved contribute to

the final product, then you need to use approaches that allow the complexity to be traced, and not diminished by categorisations (Law, 1999) or assumptions about intrinsic attributes of humans and non-humans. One way that this can be achieved is by using models and metaphors that relate to how people interact with each other, with the environment, and with non-human artefacts. One such approach is provided by the ecological metaphor described in this chapter.

MODELS CURRICULUM DEVELOPMENT

Curriculum change can be modelled in many different ways, and we will here consider just a few of those we consider most relevant. Models of change based upon a process of Research, Development, and Dissemination (RDD) are a common way of attempting an explanation of the process of curriculum development (Nordvall, 1982). In models like this, a rational and orderly transition is posited from research to development to dissemination to adoption.

Although much of the literature relates to the use of these models to explain curriculum change in *schools*, they are also commonly applied to the development of higher education curriculum – the subject of this chapter. Models of this sort suggest that curriculum development follows a logical process of working out the objectives of a particular program, matching these to curriculum elements, developing materials, and then spreading the good word among educators so that the new curriculum will be speedily adopted. We will argue, however, that curriculum change involves a much more complex process than this, and although this approach is one commonly cited in the literature, other models should also be considered. We will now look at four other such models.

An approach that is related to RDD models suggests that many curriculum statements result from the conscious or unconscious copying of 'authoritative' existing statements, rather than from any new thought (Clements, Grimison, & Ellerton, 1989). Although this approach, sometimes known in Australia as the 'Colonial Echo Model,' may have some credence in consideration of curriculum areas such as school mathematics or history, it has been shown to have less relevance in information systems curricula (Tatnall, 1993) at the university level. In most industrialised countries, information systems curriculum was developed primarily in response to local needs (Tatnall, 1993), at least up until the mid-1980s.

Figure 1: Research, Development, Diffusion and Dissemination models

Research ▸▸ Development ▸▸ Production ▸▸ Dissemination ▸▸ Adoption

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