Chapter V

ICT Developments:
Resource Discovery

Introduction

Information seeking and resource discovery, for which library/information science researchers and developers have devised the techniques and approaches introduced in the previous chapter, may be engaged in by teachers seeking information and learning resources that they can reuse or reconfigure in their own teaching. Resource discovery may also be engaged in by learners themselves—either within the context of a formal course of study in which they are given the opportunity to seek out information and resources for themselves, or as autonomous self-regulated learners operating outside the context of any formal course. Library/information science is concerned with the seeking and discovery of information and resources in both of these contexts. As educationists have developed information and computer technology (ICT)-based approaches to learning design and teaching (which will be introduced in Chapter VI), so library and information scientists have developed ICT-based approaches to enabling and facilitating effective information seeking and resource discovery. These approaches—including ICT-based standards—form the focus of the present chapter.

Tools and Techniques to Support Information Seeking and Resource Discovery

Relative to the concerns of library and information science, computer assisted learning systems have tended to focus predominantly on the deep analysis and representation of small volumes of homogeneous subject content, providing high levels of pedagogical mediation. Early systems were not particularly concerned with either interoperability or resource discovery, although as we will see in chapters VII and VIII, this is changing with the development of educational informatics systems.

Compared to the ICT-based educational systems introduced in the next chapter, those developed within library/information science have traditionally entailed less semantically deep and less sophisticatedly structured knowledge representations. They have also tended to be less geared to attempting to provide supplantation (in which the system engages in cognitive processing on behalf of the user) compared, that is, with ICT-based intelligent tutoring systems. Library/information science has typically been concerned with developing and utilizing relatively shallow representations of a relatively large volume of more heterogeneous subject content. Its concerns have been centred on controlling vocabulary used to describe concepts, and on indicating hierarchical relationships between concepts, and the resource discovery systems developed have not sought to provide any significant level of pedagogical mediation.

A principal focus of library/information science is on cataloguing, indexing, and classifying information sources to aid their discovery and retrieval on the part of relatively autonomous information seekers, and on the information behaviour of people engaged in information seeking and resource discovery. Thus, the concern of educational computing with pedagogical mediation in selecting and presenting information is countered in library and information science with a concern for autonomous information seeking and resource discovery. This has entailed an emphasis on standards for interoperability, cross searching of multiple heterogeneous databases, and the international exchange of metadata between libraries and other organizations.

This complexity of information needs combines with the complexity of both the information environment and the tools available to search it. Information may be sought via a range of channels, from libraries and bookshops to databases and the Web. There is also a wide range of digital tools designed to enable people to search for information within and sometimes across these channels. These information seeking and resource discovery tools vary considerably in terms of the techniques they use and the facilities they offer—from *best match* and Boolean searching, through query expansion and recommender systems to retrieval tools that learn to improve their own performance via machine learning mechanisms.