Chapter VIII

An Interactive System for the Collection and Utilization of Both Tacit and Explicit Knowledge

Karen Neville
University College Cork, Ireland

Philip Powell
University of Bath, UK

ABSTRACT

This chapter outlines the proposed development of a "Knowledge Base Support Environment" for a university. The system is completely interactive allowing every end user the opportunity to extract from and add to the system. As well as providing a support system for both students and staff alike, the system or environment (see Figure 1) will profile both the academic and technical interests of its end-users. The environment will test student's problem-solving skills with "real world" simulations and cases providing feedback to both lecturers and students. The environment will grow and change as both staff and students collaborate to add and extract material from the system. Duplication of work by staff will be dramatically reduced, freeing staff to concentrate on other tasks. The environment itself can be used by organizations in training, and in the management and creation of knowledge.

INTRODUCTION

The World Wide Web in its entirety offers the learner access to a seemingly endless supply of information, captivating graphics video and audio, making it an effective, user-friendly, method of delivering training or educational material to learners (McCormack et al., 1997; Driscoll, 1998). The delivery of material over the Web is commonplace in today's technological environment. The Web provides access to a tremendous amount of information, therefore, an education or knowledge system must be customised to the needs of the learners (McCormack et al., 1997; Driscoll, 1998) to ensure use of the system (Sano, 1996). As an instructional technology, the Web offers the learner access to resources such as search engines and discussion forums to collaborate with other learners or experts in the field queried. The WWW, therefore, has the potential, if used carefully, to become the most comprehensive communication tool (Crossman, 1997) and ultimately the knowledge Web. It could be argued that advances in technology, such as multimedia and virtual simulations, have left the traditional classroom trailing behind with learners expecting more and more. The WWW is the latest challenge to the education and knowledge "norm." Web-based education is described as an education delivery system in which the WWW is its medium of delivery (Driscoll, 1998). The WWW can enable instructors to generate new environments to cope with the limitations of the old. While the two approaches are different, both require careful planning to deliver effective education. The traditional approach requires as much thought in its design as does the Web-based format, however it is limited by both time and space as student numbers continue to escalate. Web-based education cannot replace the traditional approach but it can provide a necessary balance to its limitations (Driscoll, 1998) and allow users to access a Web of knowledge.

BACKGROUND

This chapter focuses on the design of a knowledge base environment to support students and academics in the pursuit of both tacit and explicit knowledge. The research outlines the different components necessary to assemble the different types of knowledge created in an environment such as a university. It also highlights the potential of the knowledge base (KB) to overcome the physical barriers of the traditional classroom.

THEORETICAL FOUNDATION

Cuban (1993) argued that the traditional classroom, with the instructor at the head of the room, has been in place since the early 1900s and nothing has changed since. The widely accepted criticism of the teacher-centered model is

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