

Chapter 13

Knowledge Sharing in the Learning Process: Experience with Problem-Based Learning

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ABSTRACT

Knowledge is the most important resource of an organisation. The exchange of knowledge and knowledge management enhance organisational learning that in turn leads to innovation. Central to knowledge management is the concept of knowledge sharing. The future of knowledge sharing is not technical, but social. Knowledge sharing is fundamental to learning among students. This paper begins with a brief review of knowledge sharing, followed by the importance of knowledge sharing for learning, especially in problem-based learning. The authors then describe how successful knowledge sharing can be achieved for students to share knowledge in problem-based learning. The paper concludes with implications for effective knowledge sharing for student learning.

INTRODUCTION

Knowledge management systems have been used by companies to manage the vast array of hidden knowledge of employees. However, the management of knowledge is not trivial. Central to this is the issue of knowledge sharing. Knowledge sharing is defined as a set of behaviours involving exchange of knowledge or assistance to others. Any large and complex organisation such as a university owns a considerable amount of knowledge, such as

the methods of developing its courses and learning materials and ways of delivering better services to its learners and ‘customers’. Until the late 20th Century, knowledge would often be held locally within such an organisation (e.g. by individuals and within departments) and would be strictly segregated according to organisational level (e.g. ‘management’ and lecturers would have different knowledge assets). In this type of environment knowledge would often be ‘hoarded’ or closely guarded as a way of achieving or maintaining personal power or security (Sveiby, 1997). Today, by contrast, knowledge has come to be considered

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as an organisational asset (Carneiro, 2000) and it has long been assumed that every experience an individual has is potentially of use to many others in the same organisation, not necessarily only those in the same 'job category' (Basili & Rombach, 1991). Usually such organisations aim to exploit this knowledge by developing systems and processes to create new knowledge and to aid the effective sharing and utilisation of existing knowledge (Abell & Oxbrow, 2001), sometimes to great effect. 'Identifying, managing, and transferring knowledge and best practices has worked for some companies, sometimes saving or earning them literally billions' (O'Dell & Grayson, 1998).

The potential value of this knowledge to the organisation, and the difficulty the organisation may have in acquiring and replicating the knowledge, makes it a strategic commodity in many sectors (e.g. Sharkie, 2003; Susarla *et al.*, 2003). It is sometimes pointed out that it is not the simple act of possessing the knowledge that gives the organisation an advantage, but the way in which 'added value' can be given in terms of its future use by sharing (Teece, 1998). Although the knowledge is often acquired by (and often held by) individuals, the possession of knowledge by individuals cannot guarantee this 'added value'. Individuals often may not share their knowledge, integrate the knowledge they hold with that held by others, or may move between firms taking the knowledge with them (Grant, 1996). There is also the problem of change in technology-driven organisations, as the 'rate of change in technologies exceeds the time to develop subject matter experts, training courses, and human resource interventions' (Marler, 1999). Clearly, there are serious implications in this for technological universities, and knowledge management (KM) emerged as a discipline to overcome the problems of acquiring and sharing knowledge and to gain maximum 'added value' from it.

Knowledge sharing is not only vital for firms, but important for students in their learning too. For students to learn effectively, they must con-

struct knowledge and collaborate with their peers. This is especially fundamental to problem-based learning (PBL). However, knowledge sharing is not easy for students. How do we promote knowledge sharing among students in PBL? This paper discusses a case study involving the experiences of one of the authors in her work in PBL to promote knowledge sharing among students. The paper briefly reviews knowledge and knowledge sharing. This is followed by a brief review of Problem-Based Learning and its benefits. The next section describes how students share knowledge in PBL. Factors affecting students knowledge sharing are then discussed. The paper concludes with suggestions for further research.

KNOWLEDGE AND KNOWLEDGE MANAGEMENT

The basic problem with KM is the ambiguity and lack of definition of the concept of 'knowledge' itself. It is difficult to discuss the topic without arriving at a general agreement of the definition and characteristics of the subject. Clearly, a categorisation of KM, with suitable definitions, is necessary, and this has been attempted on a number of occasions. Knowledge is defined as a dynamic human process of justifying personal belief towards the truth (Nonaka & Takeuchi, 1995). It can also be defined as 'know-why', 'know-how' and 'know-who', or an intangible economic resource from which future resources will be derived (Rennie, 1999). Knowledge is built from data, which is first processed into information (i.e. relevant associations and patterns). Information becomes knowledge when it enters the system and when it is validated (collectively or individually) as a relevant and useful piece of knowledge to implement in the system (Carrillo *et al.*, 2000).

Besides the meaning of knowledge is the identification of the kind of knowledge that is to be managed. Polanyi (1967) originally identified

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