

## Chapter 33

# Learn to Learn to Integrate ERP–Systems and Content Knowledge Using Problem Based Learning and Cases: A Swedish Business School’s Experiences

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### **ABSTRACT**

*Research in the integration of technology and content knowledge using problem-based learning (PBL) is a challenge. Thus, the aim of this chapter is to describe experiences and lessons learned from integrating ERP-systems (enterprise resource planning systems) into economic topics course using PBL and cases created for the integration of technology and content knowledge in a business school setting. The mission was to develop the economic students’ analyzing abilities using a ERP-system as a pedagogical tool. A summary table describes how problem-based learning and cases were developed and used within collaboration among universities, colleagues, businesses, and students to accomplish integration of both technology and content knowledge. The experience was that students developed abilities to analyze technology from both theory and a deeper understanding of theory by analyzing technology. The lessons learned were that integration of technology and content knowledge using problem based learning and cases is a never-ending cooperative and learning process.*

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## INTRODUCTION

Research on integrating technology and content knowledge using problem-based learning (PBL) has been described as a challenge (Fishman and Davis, 2006; Hyo-Jeong and Bosung, 2009). One explanation is that insufficient repertoires are available for integrating technology and subject fields using problem-based learning (Hyo-Jeong and Bosung, 2009). I agree with these authors that insufficient repertoires are a challenge. Nevertheless, use of technology to enhance students understanding has been studied by Barak et al. (2005) - but in chemistry. The results were that theories and chemical concepts were better understood.

According to Ferdig (2001), innovations need to contain authentic, real-world problems because they are interesting and are engaging the students. One technology that businesses use frequently is ERP-systems, but the leaders' buyer competence has been found to be limited. Future leaders also need to use the ERP-system as a tool for decision-making. Thus, they need to learn how to use and integrate business processes with the information in the system (Davenport, 1998; Dechow and Mouritsen, 2005). The problem is that learning takes time and learning within projects can exceed the time and budget frames. One way to solve this problem is to learn about business processes before participating in an ERP-project (Andersson and Linderöth, 2008) or before becoming a participant in business that need to use ERP-systems as tools in their daily routines.

Therefore, we need to share experiences from integrating ERP-systems, methods, subject fields and pedagogy that have been both successful and failures. Together we can learn how to create exercises that are a challenge, and Ferdig (2006) argues that the exercises should not be too hard or too easy to engage the students. Ferdig (2006) discussed this dilemma and referred to Vygotsky (1978) and his definition of the "Zone of Proximal Development". However, individuals that are engaged in a learning situation and the

"Zone of Proximal Development" probably differ among students. To satisfy individuals and keep them interested and not frustrated, as claimed by Ferdig (2006), perhaps is the challenge. Our business school has implemented "ERP-systems as a pedagogical tool" with a learning perspective and shown that we learn more together by participating in the development of methods and applications. The system is used to understand business processes and to learn how to analyze and make decisions built on theory learned, for example, from organizational learning, change, marketing, finance and accounting.

In this chapter methodologies and applications used in the project "ERP-system as a pedagogical tool" will be described within a business school in Scandinavia. The education projects' history, start-up considerations and changes required concerning the methods and applications are also discussed. The methods developed and used are described, and this projects collaboration among colleagues, IT-personnel, students and other universities are discussed. This project was indeed dependent on those actors. The chapter describes methods and implementation concerns that have been tried. Accounts also come from student evaluations of their ability to use a ERP-system for exercises and analysis to acquire a deeper knowledge in for instance, marketing, finance and entrepreneurship. Further, evaluations and advice from teachers that had a connection to the project were taken into consideration every time before lessons were created. Finally, evaluations from students and colleagues were used to develop the educational methods.

In this chapter the experiences as a project leader and a driving force within the project are described. A complete member and actor in a study could be related to Gold (1958), who describes levels of participation with the respondents in the project. At the same time that I am the author who has participated in this project as a coordinator, tutor and examiner. It is a self response, i.e., because the author was a complete member, it was not possible

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