

Chapter 25

The Design and Implementation of English Instruction in Four High Schools With CSIEC System

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ABSTRACT

It is an important but complicated issue to investigate the long-term effect of the intelligent Web-based English instruction system CSIEC on students' learning performance with satisfying reliability and validity. This chapter introduces three years' process of the design and implementation of English instruction in four diverse high schools with the CSIEC system (i.e. the integration of CSIEC system into English instruction in four high schools: the project team organization, the survey and user needs analysis before the project implementation, system design, programming and test, the process of CSIEC's integration into English classes, and phase meetings). The management issues of the project were thought to guarantee its successful implementation in four different high schools located in distant provinces in China.

INTRODUCTION

The literature research in Chapter 2 demonstrates that it is valuable and meaningful to design and implement quasi-experiments for a longer time in several different schools located in various areas to check the experiment results' reliability. Based on the author's previous work with the intelligent web-based English instruction system CSIEC introduced in Chapter 3, the quasi-experiments should be oriented to assess the impact of CSIEC system on students' learning performance in English subject. That is just the research objective of the project "The blended instruction research of high school English subject supported by intelligent tutoring system CSIEC" sponsored by National Social Science Foundation of China from July 2010 to December 2012.

The integration of educational technology in teaching and learning needs to adjust incentive, reward and support structures to new realities, and needs to design a well coordinated workflow (Zellweger Mosera, 2007). The design and implement of quasi-experiments for a longer time in several different

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schools around China should be viewed from the point of a complicated project management. According to A Guide to the Project Management Body of Knowledge, PMBOK Guide (2000), published by Project Management Institute (PMI) founded in the United States in 1969, project management is defined as “the application of knowledge, skills, tools, and techniques to a broad range of activities in order to meet the requirements of a particular project.”

Shenhar and Dvir (1996), Lester (1998) and Sheasley (1999) all emphasized that project teams involved in innovation operated with high levels of uncertainty. Rogers (1995) linked the degree of uncertainty associated with implementing an innovation to the “amount of knowledge” it required of staff to adopt it. The level of uncertainty increased with the degree of change expected of the individuals. “The more radical an innovation, indexed by the amount of knowledge that organisational members must acquire in order to adopt, the more uncertainty it creates and the more difficult its implementation.” (Rogers, 1995, p.397) The simplicity and easy use of the CSIEC system, as introduced in Chapter 3, do not need special technological knowledge of the teacher and the students, thus decrease the uncertainty by project implementation to the minimum level.

To measure the learning performance of the students, the research focused on exam scores for three reasons. The first two reasons are the same as the two ones argued by Margolis, Nussbaum, Rodriguez, and Rosas (2006). First, student test scores are a commonly reported measure of learning in educational studies, and can be used as an indicator for a comparative analysis. Second, the importance of student testing recognized by the teachers, students, parents and education administrators has a long tradition in China, just as in the USA and around the world, therefore the effect of a new technology on student test scores is an increasingly applicable criterion for public policy-makers deciding between alternative educational interventions. The third one is that the collection of students’ scores in regular exams does not require the schools and teachers to change the original schedule and arrange new periods for the specially designed test just for the research objectives.

The key to plan and implement an empirical study to investigate if the CSIEC system’s long-term integration into English instruction could improve the students’ learning outcome is to find the experiment schools, teachers and students. The research team succeeded in selecting four such schools. Because class scheduling and teacher planning considerations made it difficult to balance the control and treatment groups, in every school one English teacher was selected to teach two classes, one as treatment group and another as control group. Such arrangement of the teachers was hoped to guarantee the teaching content and method of two classes as similar as possible on the one side, on the other side to attempt to decrease the possible John Henry Effect (Cook & Campbell, 1979; Keeves, 1995) that was observed by Rosas, Nussbaum, Cumsille, Marianov, Correa, & Flores (2003), if one teacher responsible for experiment class and another one responsible for control class may actively compete with each other so that potentially the testing results may be biased upward of the control group.

Before introducing the four schools in the sequence of participation time in this project, this chapter would give some overall information about English learning in high schools in China. Subsequent to six years of primary education, Chinese secondary students study a number of subjects, and English language is one core subject that will be accessed in the exam to higher education. Secondary schools are encouraged to allocate seven to eight periods per week to the teaching of English language. The six years of secondary education comprise three years of junior high school from Grade One to Grade Three and three years of senior high school from Grade One to Grade Three. The three years education in a junior high school plus six years’ education in a primary school comprise nine years’ compulsory

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