Chapter X

Using the Personal Response System to Enhance Student Learning: Some Evidence from Teaching Economics

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Abstract

Recent increases in class size in higher education have focused more attention on the nature of the face-to-face learning experience. This chapter examines how a keypad technology facilitates active learning in the lecture hall using a number of pedagogically proven approaches. We survey 219 first-year business studies students tackling introductory economics, and find that the technology enhances learning in lectures because, among other things, it improves concentration, provides instantaneous and more effective student feedback, and allows students to make comparisons on how well they fare relative to their peers. Interestingly, we find less statistical support for the benefits of using the technology to allow students to respond anonymously, and explore...
some reasons for this result. Finally, we demonstrate our use of the tool to engage in teaching the Prisoner’s Dilemma game. This forms part of the emerging knowledge on how to teach classroom experiments using keypad technology.

Introduction

This chapter will show how the personal response system (PRS), one form of audience response system, has been used to enhance student learning by improving interactivity and participation in the classroom, particularly the large lecture hall. The tool works in a familiar way: each student is given a small handset, similar to a television remote control. The tutor poses questions and activities and students respond by pressing the appropriate numbered button on their keypad. The responses are received by infrared receivers, and then automatically graphed and displayed on the projection screen for all to see.

We have found the PRS useful in developing and embedding learning, particularly in large group teaching situations, and report on a survey of 219 first-year business studies students who used the technology in economics lectures. Our use of the PRS with this group was fairly extensive. It was used as an icebreaker; as a way to build classroom communities; to engage in formative and diagnostic assessment; to facilitate interactive engagement between peers through deeper questioning; and to direct teaching based on student voting. We have also begun to use this technology to make the student actively and successfully participate in the famous Prisoner’s Dilemma game, and report on this later in the chapter.

Our chapter develops as follows. The following section provides a brief environmental context and pedagogical rationale for using the PRS. The third section outlines how we used the PRS with our survey group. The fourth section summarises our survey data, and this is followed by a discussion of the results. The penultimate section shows how we have extended the use of the PRS to teach elementary game theory to economics and business students. We conclude by briefly reflecting on our findings.

The Rationale for Using the PRS

A number of factors have contributed to our increased use of the PRS. Over the past 25 years, the UK has experienced a dramatic growth in the numbers and diversity of the student body in higher education (Dearing, 1997). However, this has taken on a new meaning in recent times as the Government has increased the target participation rate of home based 18 to 30 year olds in higher education to 50% by 2010, and continues to encourage universities to increase their numbers of overseas students (DFES, 2003, 2003a). Students have also become more consumer oriented. This is partly due to increased indebtedness. Postgraduate fees have been raised, whilst home undergraduate students now pay a fee, and have had grants abolished in favour of government-
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