

Measuring the Effect of Innovations in Teaching Methods on the Performance of Accounting Students

An Empirical Study Into the Relationship Between Learning Objectives, Teaching Methods, Knowledge Levels and the Performance of Students in an Accounting Context.

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1. INTRODUCTION

Research on teaching methods that are employed in courses in abstract subject areas such as mathematics, physics and also accounting, shows that traditional methods of instructing and evaluating students still predominate to a large extent, based on teaching and evaluation methods such as lectures and multiple choice exams⁸. However, there are also examples of instructors or institutions that have either revised individual courses or have redesigned their entire curriculum to modernize and improve the educational process⁹. Teachers that are engaged in improving the educational process by looking for new and innovative ways to design their courses or organize their curriculum, inherently face the problem of measuring the impact of such changes. Usually, the effect of course revisions is measured by using student evaluations or changes in exam results. The primary argument of this article is that such instruments may provide an inadequate basis for evaluating the impact of educational changes on student performance. This premise was based on the experiences taken from the revision

⁸ For an overview of teaching methods used in accounting curricula of US institutions see Dow and Feldmann (1997)

⁹ For accounting related examples see f.e. Stout and Mohanan (1998), Kirch and Cavalho (1998] and Porter and Carr (1999]

of an intermediate accounting course for business economics students. In the course discussed in this article the passing rate for the final written exam had been a problem for a number of years as less than 50% of the students passed the course exam, indicating that the applied teaching methods did not adequately prepare them to meet the course objectives. However, the annual student evaluations of this course revealed that the quality of this structure was rated satisfactory and students typically complained only on minor practical elements of the course that should be improved. These mixed signals eventually resulted in a project involving teaching staff, students and educationalists in which the structure of the course was re-evaluated through re-examining the learning objectives and the instructional design of the course. New learning objectives were specifically aimed at teaching students cognitive strategies to apply existing knowledge on accounting procedures in a new (unfamiliar) setting. From the objectives defined, a new instructional design was developed explicitly aimed to meet the course objectives. Given the inconsistent results of the student survey and the exam results, a research project was undertaken to assess the consequences of the changes in educational methods that were adopted.

The aim of this article is, therefore, to demonstrate the effectiveness of a change in teaching methods that was based on an explicit restructuring of learning objectives in the context of an intermediate accounting course. In doing so, the article discusses the measurement of educational innovations that aim to attaining specifically defined learning goals, particularly the ability of students to acquire meta-knowledge and procedural knowledge instead of declarative knowledge. Secondly, the article addresses the ongoing debate on the need for changes in both the content and teaching methods used in accounting courses, in order to better prepare accounting students for the requirements of business practices. The empirical part of the article focuses on the effects of teaching methods on the performance of students, using specifically designed research instruments together with student surveys or exam results. It aims to examine in various ways whether the innovations in accounting education succeeded in realizing the course objectives differentiating between various knowledge levels.

2. MOTIVATION FOR CURRICULUM CHANGE

Abstract, model-oriented academic courses deviate from other types of courses to the extent in which the courses' participants have to rely on abstract models – in contrast, for instance, to reproductive knowledge. In terms of the taxonomy of Anderson (1990), such courses place a high emphasis on the ability of students to acquire meta-knowledge and procedural knowledge, instead of declarative knowledge. Intermediate bookkeeping courses are examples of such abstract courses, where students are required to obtain insight in the (high order)

rules of accounting problems. In many cases, courses on fundamental accounting procedures (such as bookkeeping) are treated as skills training, where students are required to reproduce accounting procedures in a (semi-) familiar setting. As a result of this approach, students acquire little insight into the general structure of accounting procedures and they lack the ability to apply the skills they have been taught, in unfamiliar settings, which they will encounter in practice. Therefore, courses on accounting procedures should aim to provide students with strategies to apply existing knowledge on accounting procedures and concepts (acquired in first level accounting courses) in settings that they have not faced before. In this respect, accounting educators face problems that are also documented in other educational fields such as physics (see Chi et al. [1981]) and mathematics (see Bonner & Walker [1994]).

Bonner (1999) argues that specifying learning objectives¹⁰ should be the first step in the process in choosing appropriate teaching methods. In general, three types of learning objectives may be distinguished: verbal information, intellectual skills and cognitive strategies (Gagné, 1984). Verbal information is at the lower end of the scale and refers to the factual content of a particular area of knowledge. Given this type of objective, students are expected to reproduce factual knowledge presented to them, for example in the form of a definition. In this setting, students should be presented with factual information in an organized way, where the instructor facilitates the reproduction of knowledge by relating the teaching material to examples, explanations or related topics so that students can develop various ways to recall the information.

Intellectual skills involve various skills that all relate to the application of knowledge to novel situations. Such skills can vary from classification skills, where students are able to recognize particular instances to more general concepts (e.g., recognize a transaction as being a revenue or expense), to more advanced skills, where students are required to generate new rules by combining old rules (for example generate a journal entry for an accelerated depreciation method from existing knowledge on linear depreciation). In this context, instructors should present and facilitate the recollection of factual knowledge and rules. They should also facilitate the application of these rules to novel situations, by providing multiple examples from which students can generalize their knowledge and develop a framework from which they can apply their knowledge in a new – but not entirely unfamiliar - context.

The highest level of learning objectives involves the development of cognitive strategies by students. Given this objective, students are required to develop an effective and efficient strategy to solve an unfamiliar problem situation. Students may be familiarized with accounting procedures for leasing

¹⁰ A learning objective can be defined as a formal description of the projected outcome of the educational process.



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