

# An innovative approach to accounting education at the first-year level

JH de Wet  
Department of Accounting  
and Finance  
University of Pretoria

MC van Niekerk  
Department of Accounting  
and Finance  
University of Pretoria

## Abstract

In an educational environment in which global trends prompt educators to consider alternative approaches to teaching and learning, new ways should be found to educate more efficiently and effectively. In line with this learner/customer-centred approach, the first-year students in Financial Accounting at the University of Pretoria were requested to complete a questionnaire in order to identify weaknesses in the current approach, highlight possible areas to be developed or make suggestions regarding the improvement of the course.

The results yielded several clear indications of the changes that could be made and new ideas that could be considered. Some of these suggestions have been implemented. The results, which are being monitored continuously, are reported in this article.

## Key words

*Accounting education*

*Computers as an instructional device*

*Educational needs*

*Electronic learning*

*Innovations*

## 1 Introduction

Major changes in the international and local environment have led to the realisation that accounting education and educators are faced with a comprehensive and continuous rethink of their approach towards teaching and learning in order to remain relevant. Global phenomena, such as the revolution in information technology, emergence of international capital markets and increasing importance of international accounting standards, have had a far-reaching impact on the requirements (and what is being offered) in respect of accounting education (Adhikari, Flanigan & Tondkar 1999).

In South Africa, additional factors, such as the diversity of students and the pursuit of equality in accounting education (Botes 2000) have had a significant influence on national education policy, which also embraces outcomes-based education (Olivier 1998; South African Qualifications Authority (SAQA) Act 1995).

The University of Pretoria, like most other educational institutions, has unique circumstances and faces unique challenges as it aspires to be in step with the times. The mission statement of the University of Pretoria includes its intention to be "internationally competitive and locally relevant" (University of Pretoria, Vertrekpunte; Op pad na die nuwe millennium 1998-2001). To achieve this goal, the University has to provide and develop teaching and research programmes that are worthy of international recognition and accreditation. The use of technology for electronic learning as well as flexibility and innovation in teaching methods are encouraged in the striving towards these goals.

## **2 Background**

All students that enrol for a degree in the commercial field at the University of Pretoria are obliged to take the course in Financial Accounting at the first-year level. Prior knowledge of Accounting is not a prerequisite for admission to the course. Approximately 2 400 students enrolled for the course in 2000. The number of enrolments increased by more than 10% in 2001 and further increases are expected in the future.

The students are a very diverse group. They are representative of various cultures, have varying attitudes towards study and display divergent learning styles. For many of them, the two languages that are used as mediums of instruction at the University, i.e. English and Afrikaans, are their second and third languages.

The physical facilities and manpower resources for the training of this large, diverse group of students are limited. In addition to these constraints, the following considerations render it imperative to make innovative changes in the teaching of Accounting: The priority to comply with the goals set in the National Education Plan, i.e. to prepare students to become lifelong learners, and with the policy of the University, i.e. to deliver students that will keep abreast of the latest developments and are capable of adapting to these developments (including developments in the Accounting field).

### 3 Aims of the study

The aims of this study were to:

- Investigate the latest approaches in higher education in order to determine how the first-year course in Financial Accounting can be adjusted to keep up with the latest developments;
- determine how, with the limited resources at the disposal of the University, computer technology can be used to assist large groups of students that have diverse needs;
- obtain inputs from students regarding constraints/stumbling blocks in the course as well as proposals on how these constraints can be overcome to make the study of the subject more enjoyable;
- use the information gathered, as described above, to make adjustments to the course in order to optimise the service rendered to students; and to
- determine the effect of the changes made.

### 4 Methodology

The method followed, entailed a literature review to determine general trends in education and to establish how computers can be utilised as an educational medium for large, diverse groups of students. Thereafter a questionnaire was used to obtain input from students on their needs and the problems they encounter in the first-year Accounting course. The information was analysed to identify innovations from which the students could benefit and that would be in line with the latest approaches in education.

#### 4.1 Literature review

##### 4.1.1 General trends in education

The most prevalent and recent trends in accounting education can be summarised as follows:

- *A student-centred approach and lifelong learning*

Harwood (1999) states the need to change traditional lecturer-centred teaching approaches as follows: "Recent efforts to improve accounting education challenged professors to shift their focus from what they teach, to what the students learn."

Milner (2000) states unambiguously the current increasing need for employees that have become lifelong learners: "As we move into the 21st century and deeper into the New Economy, leaders

in business organizations are searching for new employees with requisite knowledge and skills as well as the ability for continuous learning. Lifelong learning has become a necessity for keeping pace with the competition in almost every industry.”

- *Assessment systems and feedback from students*

In order to understand, and to respond effectively to, the needs of students, information should be gathered at various levels (Green, Calderon, Gabbin & Habegger 1999). Such gathering of information is especially important where first-year students are concerned, because their learning experience could have a pivotal effect. The first year of study is the point of entry into higher education for students and it often determines whether a student will continue with higher education (Amos 1998).

- *More emphasis on internationally relevant accounting education*

The globalisation of economies, capital markets and businesses as well as an increasing acceptance of international accounting standards, have necessitated the inclusion of international accounting topics in accounting courses (Adhikari, Flanigan & Tondkar 1999). This view is supported by Rezaee, Szendi and Elmore, (1997), who state that: “The evolution of accounting education in the United States suggests that international education in the accounting curriculum has evolved from whether to teach international accounting to how to teach international accounting and, in the light of current globalization initiatives, how to globalize the entire accounting program.”

- *A ‘concepts before rules’ approach and a greater emphasis on skills*

There is a need to move away from rules and to give precedence to concepts of accounting and also to enhance skills in the process. This approach provides students with a foundation that permits them to subsequently comprehend the rules better and to remember them longer. In addition, this approach facilitates other commonly stated goals of accounting education, such as to develop thinking, communication and problem-solving skills and a capability for lifelong learning (Jennings 1998). Green *et al* (1999) argue that the true test of a sound curriculum is whether it prepares students for a career in business by developing the following skills:

- Relevant technical skills
- Communication skills
- Teamwork and interpersonal skills

- Decision-making and problem-solving skills
- Technology skills

Stone and Shelley (1997) state that instructional processes should be changed to an 'educating for expertise' approach that emphasises the development of intellectual skills and attitudes.

- *Teamwork and problem-based tutorship*

The ability to work as a member of a team is widely recognised as one of the most important skills required of a young accountant. The development of these skills can be encouraged at the tertiary level by means of group work and the incorporation of case studies and problem-solving tutorials (Hommes 2000; McConnell & Sasse 1999). Ramsay, Hanlon and Smith (2000) state that: "Cooperative learning is a way of obtaining greater student involvement in the learning process while at the same time enhancing communication and team-building skills." They also point out that institutions should apply various learning approaches to suit the cognitive styles of the students in order to make accounting more attractive to students.

#### **4.1.2 Computers and education**

Fast-changing computer technology has had, and still has, a profound effect on business in general and on accounting in particular. Computer tools, such as the Internet, computer-integrated manufacturing, image processing and expert systems, have improved efficiency and the communication of information in business. This development has also proved to be a liability for the accountant, because a purely electronic audit trail has serious shortcomings in respect of accountability and confidentiality for a business and creates scope for fraudulent activities (Jordan 1999).

Against this background, it is imperative that students in accounting should be given adequate exposure to new computer technology to prepare them for their future working environment. The Internet also presents teachers of accounting with numerous and varied opportunities to offer their students different learning approaches and experiences. Baker and White (1999) state that universities want to be known as 'high tech' environments; students want more exposure to computers and the accounting profession wants more technically knowledgeable graduates. They also assert that by bringing the Internet into the classroom, a wide array of interesting applications has opened up and that these applications are continuously being expanded.

Vernooii, Thijssen and Schermerhorn (2000) found that the use of the Internet in distance learning permits students to enter into an active, constructive and self-regulated process that improves the quality of learning. On the downside, technical problems cause disappointment and frustration. They concluded that the potential of the new media can only be realised by getting students to express their expectations of it.

The use of the Internet in the teaching of accounting is on the increase while, according to Hall (2000), a great deal more can still be done. Londt (1999) states that the intranet makes it possible for students to access tutorials, information and data on demand. He found that students generally welcome the Web-based elements of the course. However, he cautioned that the usefulness of the Web should not be overstated and that it should be viewed as a tool to provide an extra dimension to teaching and greater flexibility to students.

Boyce (1999) refers to the importance of placing the adopted learning technology within a pedagogical framework and states that the emphasis in computer-assisted learning should be on *learning*, i.e. on what the student does. He also emphasizes that, as the computer becomes more important, more time should be devoted to considering the human dimensions of accounting and to developing human and interpersonal skills.

## **4.2 Questionnaire**

A questionnaire was developed to elicit from students among other things their views on how the course could be structured to add more value and to make it more enjoyable. The questionnaire was completed by 1 294 students that enrolled for the first-year course in Accounting in 2000. No limitation was placed on the number of suggestions that a student could make. The fact that 1199 responses were received does not therefore mean that a similar number of students responded.

The responses were analysed and categorised. A total of 87,2% of the responses could be allocated into seven broad categories, namely:

- Make study material more accessible
- Expect less from students (less work; easier tests and exams)
- Make the subject more practice-orientated
- Coach students for tests and exams
- Improve the service rendered to students
- Change the lecturing approach
- Change the assessment methods

The rest of the responses were of diverse nature and none of the suggestions represented more than 3,9% of the total number of responses. These responses were omitted for the purposes of the study.

Within the framework of the literature review and the suggestions received from students, an attempt was made to restructure the 2001 course in an innovative way so that it would meet the needs of the students to a greater extent, support the policy of the University and be in line with the national policy. These innovative actions are discussed below.

## **5 Innovative actions taken**

The innovative actions embarked upon can be categorised as follows:

- Utilization of the available technology and computer assistance
- Assistance with study material
- Development of lifelong learners

### **5.1 Computer assistance**

The computer assistance rendered to students was of the following nature:

- Students that had no accounting background or whose background was inadequate when they commenced the course worked through a structured, interactive computer package (known as Byzantium) during the first seven weeks of the first module. They did this in addition to the formal lectures.
- Students were required to complete a Pastel computer course in basic accounting as part of the first-year course in Financial Accounting. They were also required to complete two tasks and to sit for an examination at the end of the course.
- Furthermore, the computer was used to disseminate information to students on the Department's website.

#### **5.1.1 Interactive software package (Byzantium)**

After gathering information about applicable interactive computer packages that had been developed in various countries, it was decided to use the Byzantium Interactive Package, which had been developed in England. The advantages of this package are that no prior knowledge of accounting or computers is required and that the terminology used in this package is similar to that used in South Africa.

The computer software comprises 16 tutorials. Each tutorial contains a brief explanation of the accounting material covered in the tutorial, followed by practice questions and assignments that can be marked by the Byzantium automatic marker. The work can be screened to reveal what is correct and what incorrect.

### **5.1.2 Pastel package in Basic Accounting**

Various computer packages were evaluated. The contents of the Pastel package correlated well with the work covered in the first-year course in Accounting and it was decided that it was best suited to the needs of the students.

The course entails the creation of a complete set of accounts for a company on the computer, recording of transactions and compilation of financial statements. The outcomes-based nature of this course could contribute to the preparation of students for the workplace.

### **5.1.3 Website**

Because all the students have access to computers, either because they have their own or because they have access to computers in the library facilities at the University or at internet cafés, it was decided that the website of the department and WebCT were suitable means of communicating the following information to students:

- Question papers used in previous years to give students an indication of the level and nature of questions that could be expected of them in tests and examinations.
- Solutions to the questions and test papers.
- Discussions of the most common mistakes that students had made in the tests, with additional explanations that could increase the level of the students' knowledge. The time available in lectures is too limited to return to work previously dealt with.
- Additional questions and solutions at the request of students in the case of difficult topics.

## **5.2 Assistance with study material**

More than a fifth of the responses received on the first questionnaire revealed that students had a need for more accessible study material (See table A and table B in the addendum). In addition to the distribution of information via the website (see 5.1.3), the following was done:

- Learning guides were developed as an aid to accessing the information in the textbook and to assist students in respect of self-study.
- All the prescribed exercises for which no solutions are provided in the Exercise and Solutions Book were made available to students in book form.

Each of the above study aids is discussed briefly in the following paragraphs.



### **5.2.1 Development of learning guides or “wrap arounds”**

Learning guides were developed for three modules of the course. The aim of a learning guide is to present the student as far as possible with a visual picture of the composition of each learning area in a particular module in order to highlight the most important aspects that the student should understand in the learning area and to guide the student to the applicable paragraphs in the textbook. The learning guide for a specific topic should therefore be the point of departure for the study of the learning area.

The format and layout of the learning guides were planned in co-operation with experts in the field of effective learning. Each page is divided into three columns without the use of column lines. The first narrow column supplies key words for each paragraph. The key words are useful for revision and for reference to a specific paragraph. The second broad column contains visual portrayals in the form of diagrams to highlight the most important components of the learning area. The third narrow column contains a textbook reference opposite each main aspect as well as the questions that were specifically selected to suit that topic.

### **5.2.2 Suggested solutions to exercises**

The suggested solutions to questions were made available in book form instead of as handouts in the classroom. This was done to enhance the learning process. It enables the student to look at the suggested solution when he/she is confronted with a problem and assists the student to determine where he/she lacks knowledge. The student can then immediately study that specific portion of the work and continue with the remainder of the exercise. This facility equips the student to participate actively in class discussions concerning problem areas in exercises, which in turn improves the student's communication skills.

## **5.3 Developing lifelong learners**

In accordance with general trends in education (see 4.1.1), the following actions were embarked upon:

- Restructuring of the classroom situation
- Introduction of group sessions

### **5.3.1 Restructuring of the classroom situation**

Traditionally, the lecturer dictated proceedings in the classroom while the students assumed a passive role. However, in recent years, the emphasis has shifted towards the learner and the learning activity and

away from teaching. The following steps were taken to stimulate active student participation:

- Students were required to prepare for lectures and were confronted in class with questions on the work they were required to study.
- Students were expected to participate in discussions while the lecturer acted as a facilitator instead of an instructor.
- The remainder of the time was used to address problem areas in the material.

### **5.3.2 Group sessions**

In recent times and in an increasing measure, business leaders have expressed an urgent need for employees that have life-skills, for example interpersonal, communication and teamwork skills (see 4.1.1). In responding to this need for the development of various sets of skills in students that will equip them to a greater extent for entry into the business world, it was decided to introduce group sessions for the first-year students in Accounting in which they could work together under the supervision of tutors who had received special training in this regard. The idea of group sessions is also in line with the student-centred approach and endeavours to provide students with another opportunity to become actively involved in the learning process and to stimulate their creativity and critical thinking.

The approach envisaged was one in which the published financial statements of listed companies are used as the most important documents for the setting of questions and for tasks to be discussed and solved on a group basis. The suggested solutions should be presented in writing and submitted by each group for evaluation. Initially the attendance of the group sessions would be on a voluntary basis and the performance of groups would therefore not form part of the mark for the module.

The ideal situation would be that the group would comprise no more than four to six students and that a maximum of 10 groups would be allowed per session. This procedure would, however, have caused logistical problems, making it impossible to implement the group sessions in that year.

## **6 Results**

The success of the innovative actions was tested by requesting the students that had enrolled for the Financial Accounting course in 2001 to complete the same questionnaire as the students that enrolled for the course in 2000, and by comparing the responses of the two groups.

Although 1 420 students completed the questionnaire in 2001, only 462 responses were received. A total of 76,2% of the responses could be classified in the same seven categories that were used for the 2000 group. The rest of the responses were again of such diverse nature that none represented more than 3,5% of the total responses and could therefore be omitted.

The fact that the number of suggestions regarding the restructuring of the course decreased from 1 199 in 2000 to 439 in 2001, is an indication that the students were substantially more satisfied with the course after the changes described above had been made.

A detailed analysis (see table B) revealed the following:

- Students are satisfied that the assistance they received in respect of study material has made the material more accessible. This improvement was achieved by means of the development of learning guides, provision of suggested solutions to exercises in book form and making important information available on the website (Category 1).
- Students' attitudes towards the course had changed. This trend can probably be attributed to the fact that, with the restructuring of the classroom situation and the use of the interactive Byzantium computer package, the focus in the learning activity had shifted from the lecturer to the student (Category 2).
- Students continued to request that the course should be more practical. This request is probably due to the fact that the group sessions that had been planned could not be implemented (Category 3).
- Students still have a need to be coached. Although the number of students expressing this need declined, the number of these requests, expressed as a percentage of the total number of responses, increased. This trend could indicate that some students still do not comprehend that Accounting is an applied subject in which each situation is unique and that it cannot be approached in a predetermined way (Category 4).
- Students are of the opinion that the service rendered to them has improved (Category 5).
- Although the restructuring of the classroom situation is a means of addressing the need of students for a change in the way that the material is presented, there is still a great deal of room for improvement in this regard. The number of students that commented on this topic actually decreased by more than 50%, but 9,5% of the students still indicate this area to be problematic (Category 6).
- Although only a few students made suggestions regarding alternative assessment methods, the awarding of marks for group tasks done in group sessions may well be a way of

making assessment methods more acceptable to students (Category 7).

## **7 Limitations, benefits and lessons**

The study was limited by two main constraints. The most important of these constraints is the fact that it was not possible to determine the effect of the innovative actions on the performance of the students that completed the questionnaires. The reason for this lack is that the innovative actions could only be implemented a year later and that approximately 85% of the students included in the study enrolled for Financial Accounting on the first-year level only. The second constraint was that logistical considerations prevented the group sessions from getting off the ground in 2001.

The benefits derived from the new innovations mainly involved the creation of a climate or environment that is conducive to self-learning and lifelong learning, which is in line with contemporary thinking on education as well as with the national policy on education. The creation of such a climate or environment and attempts to keep abreast of new developments is, however, an ongoing process that should be nurtured and monitored in order for it to remain effective.

The lessons to be learnt, can be summarised by stating that the changing of teaching and learning approaches is a continuous process that cannot be accomplished in one year. The same applies to the changing of the attitudes of students. Unless students' attitudes are changed, no lasting changes will be achieved. This matter could be addressed by future research.

**Table A: Suggestions on how the course could be structured to add more value for the student and to make it more enjoyable**

<b>Category</b>	<b>Responses</b>
Make study material more accessible	<ul style="list-style-type: none"><li>- Make available past tests, question papers and memos</li><li>- Make available answers to questions in question book</li><li>- Make available more class notes to simplify learning</li><li>- Use website for answers to questions</li></ul>
Expect less of students	<ul style="list-style-type: none"><li>- Less theory</li><li>- Slower pace</li><li>- Bridging course for students who did not have Accounting at school</li><li>- Less exercises, but treated more intensely</li><li>- Simplify the work</li><li>- Less homework</li><li>- Easier tests and exams</li><li>- More time allowed during tests and exams</li><li>- Promote without exams</li></ul>

Table A (continue)

<b>Category</b>	<b>Responses</b>
Make subject more practice-orientated	<ul style="list-style-type: none"> <li>- Practical cases discussed</li> <li>- Practice visits</li> <li>- Projects</li> <li>- Interesting tasks to challenge students</li> </ul>
Coach students more	<ul style="list-style-type: none"> <li>- More examples</li> <li>- Do exercises in class similar to questions in tests and exams</li> <li>- Do exercises in more detail in class</li> </ul>
Provide better client service	<ul style="list-style-type: none"> <li>- Do not exchange lecturers</li> <li>- More personal contact between students and lecturers</li> <li>- Introduce a 3<sup>rd</sup> semester so that students need not repeat a year</li> <li>- Semester courses, not modules</li> <li>- Lecturers and tutors should be willing to listen to grievances of students</li> <li>- Lecturers should be positive</li> <li>- Lecturers should be willing to assist at all times</li> <li>- Marks to be made available sooner</li> </ul>
Change way of presentation	<ul style="list-style-type: none"> <li>- Highlight links between topics</li> <li>- Discuss problem areas of papers in class</li> <li>- Give prior reading before discussing a topic</li> <li>- Explain work before giving homework</li> <li>- Present theory in more structured way</li> <li>- Show transparencies for longer periods</li> <li>- More classes</li> <li>- Supply calculations and explanations with suggested solutions</li> <li>- Better explanations</li> <li>- Lecturers should make classes interesting</li> <li>- Present lectures on time management and examination technique</li> </ul>
Change assessment methods	<ul style="list-style-type: none"> <li>- Give working assignments</li> <li>- Compulsory homework</li> <li>- More module tests</li> <li>- Group tasks with combination of students with school accounting and others without</li> <li>- Tests marked by students themselves</li> <li>- Open-book tests</li> </ul>

**Table B: Responses to questionnaires (in numbers and percentages)**

	<b>Categories</b>	<b>2000</b>	<b>% of total responses</b>	<b>2001</b>	<b>% of total responses</b>
1.	Make study material more accessible	266	22,2	24	5,2
2.	Expect less of students	226	18,9	57	12,3
3.	Make subject more practical	167	13,9	109	23,6
4.	Coach students more	116	9,7	67	14,5
5.	Provide better client service	104	8,7	28	6,1
6.	Change way of presentation	99	8,3	44	9,5
7.	Change assessment methods	66	5,5	37	8,0
	Total number of responses	1 199		462	
	Number of students that completed the questionnaire	1 294		1 420	

## **Bibliography**

Adhikari, A., Flanigan, M.A. and Tondkar, R.H. 1999. *A survey of international accounting education in the US and some other countries*, Journal of Accounting Education, No. 17, pp.175-189.

Amos, T.L. 1998. *Teaching and learning the discipline of management at the first year level in a changing South African higher education context: Empirical study of student experiences*, Management Dynamics, Vol. 7, No. 4, pp.14-37.

Baker, R.E. and White, C.E. 1999. *Internet uses in accounting education: survey results*, Journal of Accounting Education, No. 17, pp.255-266.

Botes, V.L. 2000. *In pursuit of equality in accounting education: A Technikon Witwatersrand experience*, Paper at the SAAA-congress, pp.276-285.

Boyce, G. 1999. *Computer-assisted teaching and learning in accounting: pedagogy or product?*, Journal of Accounting Education, No. 17, pp.191-220.

Green, B.P., Calderon, T.G., Gabbin, A.L., Habegger, J.W. 1999. *Perspectives on implementing a framework for evaluating effective teaching*, Journal of Accounting Education, No. 17, pp.71-98.

Hall, O.P. 2000. *Knowledge transfer in an Internal Environment: An application to distance learning business programs*, Paper at 7th EDINEB International Conference, Newport Beach, USA.

Harwood, E.M. 1999. *Student perceptions of the effects of classroom assessment techniques (CATs)*, Journal of Accounting Education, No. 17, pp.51-70.

Hommes, J. 2000. *Becoming a tutor in a Problem-Based Curriculum: an inventarization of ideal conditions and possible pitfalls*, Paper at 7th EDINEB International Conference, Newport Beach, VSA.

Jennings, R.G. 1998. *Concepts before rules: A new approach to intermediate accounting*, Issues in Accounting Education, Nov. 98, Vol. 13, Issue 4, pp.833-851.

Jordan, A.S. 1999. *The impact technology is having on the accounting profession*, Journal of Accounting Education, No. 17, pp.341-348.

Londt, D. 1999. *Using an intranet to facilitate student-centred learning*, Journal of Accounting Education, No. 17, pp.293-320.

McConnell, C.A. and Sasse, C.M. 1999. *An anticipatory case for management teams and team projects*, Issues in Accounting Education, February 1999, Vol. 14, Issue 1, pp.41-55.

Militer, R. 2000. *Editorial*, EDINEB Newsletter, Vol. 1, No. 7, pp.1-20.

Olivier, C. 1998. *How to educate and train Outcomes-Based*, Van Schaik, Pretoria.

Ramsay, A., Hanlon, D. and Smith, D. 2000. *The association between cognitive style and accounting students' preference for corporative learning: an empirical investigation*, Journal of Accounting Education, Vol. 18, Issue 3, pp.215-228.

Rezaee, Z., Szendi, J.Z. and Elmore, R.C. 1997. *International Accounting Education: Insights from Academicians and Practitioners*, The International Journal of Accounting, Vol. 32, No. 1, pp.99-117.

*South African Qualifications Authority (SAQA) Act No. 58 of 1995*, Government Gazette No. 1521 (4 October), Government Printer, Pretoria.

Stone, D.N. and Shelley, M.K. 1997. *Educating for Accounting Expertise: A Field Study*, Journal of Accounting Research, Vol. 35, Supplement 1997, pp.35-61.

University of Pretoria 1998. *Vertrekpunte; Op pad na die nuwe millennium: 1998-2001*.

Vernooii, A.T.J., Thijssen, J.P.T. and Schermerhorn, R.H. 2000. *Innovation in Computer Assisted Study Anywhere*, A presentation at the 7th EDINEB International Conference, California, USA.