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Preface

The 2014 SAAA Teaching and Learning Conference was presented in partnership with the Southern African Accounting Association. All papers submitted for the 'refereed category' were subjected to a rigorous process of blind peer review.

Objective of conference

The SAAA Teaching and Learning Conference aims to contribute towards the achievement of the SAAA vision of promoting excellence in Accountancy higher Education and Research in Southern Africa. By providing a research and information-sharing platform that focuses on teaching and learning in Accountancy, academics can play an active and leading role in Accounting Education in Southern Africa.

Review process and comments

The papers were submitted to two experts within an independent South African University for blind review. Comments and suggested amendments from the reviewers were communicated to authors and the reviewers decided on the acceptance of the papers for presentation at the conference and inclusion in the conference proceedings. Experts also declined certain papers and these were not included in these conference proceedings.

Prof Lana Hanner Weldon

President: Southern African Accounting Association

Associate Prof Ilse Lubbe (editor)

Subject Expert: Accounting Education and convenor of the conference
Southern African Accounting Association

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Paper 1:

Authors: **F. Steyn** (University of the Western Cape), **C. Cairney** (University of the Western Cape) & **N. van der Merwe** (North-West University)

A follow-up investigation into the evaluation of an integrated case study as a tool to develop professional skills in South African accountancy students

Abstract

The literature suggests that many accounting curricula fail to adequately address professional skills development even though it is a requirement of many professional bodies. Van der Merwe (2013) addresses this by administering an integrated business case study, requiring group work and oral presentation, to third year accounting students and investigates their perceptions regarding their development of these skills with a survey questionnaire. He found that the most obvious benefits of the assignment relate to the perceived level of learning that takes place and the perceived contribution to the development of professional skills. Some students did, however, experience high levels of stress and time constraints.

This paper reports on a follow-up study whereby the original case study was adapted and administered at a different institution with a larger population composed predominantly of students from previously disadvantaged communities, similar to the original study. The findings of this follow-up study are generally corroborative of the students' learning experiences and perceptions regarding skills development as reported in the original paper. The adaptations made appear to have had some influence on students' perceptions regarding aspects of their skills development, particularly in the area of presentation skills and teamwork.

Keywords: professional skills development; group work; presentation and communication skills; integrated accounting case study.

Introduction

Professional skills development of future accountants is high on the agenda of modern accounting education with professional bodies and practitioners demanding concerted efforts in instilling workplace skills in accounting students (De Villiers, 2010; Montaña, Cardoso & Joyce, 2004; Wessels, 2008). This paper is a continuation of a previous study (Van der Merwe, 2013) investigating the perceptions of South African accountancy students at a particular tertiary institution and the author's observations on the introduction of an integrated case study and business simulation assignment as a means of addressing the need for developing certain professional skills as part of the accountancy curriculum. The follow-up study adapted the original case study and administered it at a different institution with a larger population composed of students with mostly the same demographic characteristics as the original study.

The previous study focused on the development and administering of a case study and business simulation assignment integrated across all four of the main subject areas of the professional accountancy curriculum (Van der Merwe, 2013). The study had the following main objectives:

1. To support teaching goals, the study aimed to address the lack of integration across subject areas (Apostolou, Hassell, Rebele & Watson, 2010), as well as insufficient exposure of accountancy students to the development of specific professional skills and attributes as required by the profession, most notably the South African Institute of Chartered Accountants (SAICA)¹ (2014); and
2. As a research goal, the author aimed to provide some evidence of students' experiences of such an integrated assignment that can inform the development of future assignments.

Van der Merwe (2013) reported that students' perceptions regarding the effectiveness of the case study in developing their profession skills were positive. It is uncertain whether such findings would hold true in a different setting. The current study aims to contribute to the field in the following two ways: 1) in corroborating (or not) the results of the original study, and 2) by expanding on certain areas of the original study, namely investigating:

- I. The effect of including of a two-day short course focussed on presentation skills, case analysis and group work;
- II. the effect of instructor imposed (as opposed to student selected) groups on the perceived development of teamwork skills and the perceived effectiveness of the learning experience;
- III. the effect of withholding instructor assistance during the assignment;
- IV. students' ethical awareness;
- V. the effect of more time pressure on the perceived development of time and stress management skills;
- VI. the effect of increasing the technical complexity on perceived learning; and
- VII. the motivational effect of making the assignment compulsory and having it contribute to students' continuous assessment marks.

¹ The professional qualification of Chartered Accountant (South Africa) (CA(SA)) has as prerequisite the completion of a three year accountancy degree at a SAICA-accredited university.

The above aims are investigated through statistical analyses of students' responses to a questionnaire regarding their perceived learning and skills development through participating in the case study assignment. By addressing these aims, accounting educators gain reassurance of the value of integrated case studies in developing professional skills, as well as additional insights into the effects that differences in the manner of applying case study tools may have on learning and skills development. The remainder of the paper reports on recent literature involving professional skills development needs and the value of case studies in this regard, before describing the nature of the assignment and reporting on the statistical findings. The paper is concluded with a discussion of the implications for accounting educators.

Literature review

The original study that inspired this paper was developed in response to a paucity of attention given in accountancy curricula to certain professional skills and attributes (Van der Merwe, 2013), including:

- "soft" skills that are crucial to the modern workplace (De Villiers, 2010; Stoner & Milner, 2010);
- oral and written communication and presentation skills (Kerby & Romine, 2009; Matherly & Burney, 2009; Lynn & Vermeer, 2008; Cheng, 2007);
- information and communication technology (ICT) skills – including working with spreadsheets (Schmidt, Green & Madison, 2009; Wessels, 2008; Rhodes, 2012);
- time management skills and the ability to plan (De Jager & Bitzer, 2013); Stoner & Milner, 2010; Fischer & Lehman, 2005);
- interpersonal, social, teamwork and leadership skills (e.g. Schmidt, Green & Madison, 2009; Kennedy & Sorensen, 2006; Jackling & De Lange, 2009);
- team work and experience with real world problems (Wells, Gerbic, Kranenburg & Bygrave, 2009);
- financial literacy (Louw, Fouché & Oberholzer, 2013);
- critical, conceptual and analytical thinking, problem-solving, self-criticism/reflection and other intellectual skills (e.g. Tonge & Willett, 2009; Jones & Davidson, 2007; Correll, Jamal & Robinson, 2007);
- the ability to apply professional judgment (e.g. Barth, 2008); and
- integration of ethics as part of existing courses, as opposed to a separate ethics course (Madison & Schmidt, 2006).

While the original study found that students perceived the assignment to influence their learning positively in most areas, the actual learning that took place was not addressed in that paper. In his conclusion, Van der Merwe (2013) noted that students reported serious time constraints and high levels of stress, and suggested that future assignments carefully consider allowing more time to complete the assignment, as well as offering additional support in order to reduce the negative experiences which may impair the level of learning that takes place.

The professional skills and attributes listed above are in line with the qualities and skills that the SAICA Competency Framework (2014) requires successful CA candidates to demonstrate at the entry

point into the profession. These pervasive qualities and skills include ethical behaviour and professionalism, certain personal attributes, such as effective teamwork and time management, as well as professional skills like problem solving and critical thinking.

Students' ways of knowing and applying professional judgement

The International Federation of Accountants' (IFAC) International Education Standards (IES) for Professional Accountants affirm "life-long learning" as essential in maintaining professional competence. It also regards "a questioning spirit and a life-long desire to learn" the enabling factors for a professional accountant to engage in life-long learning (IFAC, 2003a:38). These standards also state that surface approaches to learning are not in the interest of the professional accountant or the profession, as knowledge may become outdated (supporting the educational theory of perennialism). Therefore, more important than the personal knowledge base upon entering the profession are the intellectual skills of understanding, application, analysis and evaluation (IFAC, 2003b:51), and case studies is a useful teaching and assessment tool to develop such competencies as they promote the development of professional skills (Cheng, 2007). Case study material can also be organised in such a manner to encourage problem-based learning (Milne & McConnell, 2001) – for example, by making them "real and complex" (Montaño, Cardoso & Joyce, 2004:191). Weil, Oyelere, Yeoh and Firer (2001) agree that the major benefits of using case studies are exposure to real-world complexity and the fact that they teach students that there is seldom only one correct solution to business problems.

Cairney (2010:9) is of the view that South African accounting academics perceive students at both undergraduate level, and worryingly at postgraduate level, to have an extreme focus on assessment, being interested only in "what they need to know". As a result students study using methods that are characterised by rote learning, memorisation, pattern recognition and cue seeking in order to identify "what the examiner wants" (linking with the theory of behaviourism), instead of developing their own understanding of the subject areas by engaging in critical thinking and reflection. Even though this general perception reflects anecdotal evidence from interactions with colleagues and students, similar concerns are raised in the markers' and umpires' comments on students' performance in the board exams (SAICA, 2003 – 2014). Cairney (2010:10) concluded that "at present the extent to which students are applying their knowledge and thinking through problems in a contextual way is below that at which both accounting academics and the profession consider desirable, and as expressed in the Competency Framework".

Gray and Collison (2002) urged educators to be deliberate in addressing the contextualisation of a technical body of knowledge and encourage reflection thereon, as there is a risk that the technical nature of the discipline can absorb the student's attention, sacrificing the student's development. This is supported by SAICA's view that the teaching and assessment of the discipline should take place with reference to contextualised problems, similar in spirit to those that would be encountered in the business environment (SAICA, 2014).

Biggs (1996) found that a formal academic environment, which emphasises marked summative assessment, encourages strategic (cue consciousness and being driven by the demands of assessment) approaches to learning, which distracts (and can dissuade) students from taking a deep

approach to learning. In her study comparing the examination of the ways of knowing between the four main subject areas, an ethics course and life in general, Cairney (2010:44) found that “some element(s) of the academic environment (which includes the subject matter studied) is discouraging students assuming a more contextual view of the discipline”. These notions support the purpose of the original study by Van der Merwe (2013) which was to “explore more creative ways of delivering accounting curricula that will have a greater impact on skills development”. This is a concern also raised by Riley, Cadotte, Bonney and MacGuire (2013) who found that accounting students are not making the connection between the relatively sterile classroom activities and the chaotic “real world”.

Research methodology

The approach of the assignment and survey was similar to the original study by Van der Merwe (2013) whereby students were given an integrated case study assignment to complete in groups by orally presenting their solutions. Thereafter the students were asked to complete a survey questionnaire to evaluate their perceptions on the effectiveness of the learning experience and the perceived development and/or enhancement of certain skills as a result of participating in the assignment. The approach involves collection of data, reflection, and adjustment to the learning environment based on the reflection, and is promoted for use in accounting education by Cunningham (2008), as well as Baker and Logan (2006). The results of the two studies were then compared descriptively and statistically using Mann-Whitney’s u-Test for non-parametric independent samples.

A business simulation assignment incorporating a hypothetical case study adapted from Van der Merwe (2013) was given to 156 third-year Chartered Accountancy (CA) students during the final semester of their undergraduate studies at the institution the main author was affiliated with². A total of 132 respondents completed the survey questionnaire upon completion of the assignment. The original study was applied to a group of 56 participants. The demographics of the two populations were similar as being mostly from historically disadvantaged backgrounds. This is particularly useful as both SAICA and the universities in South Africa share the objective of achieving transformation in the demographics of the accounting profession (SAICA, 2013; Sadler & Erasmus, 2005).

Prior to the assignment being handed out, all the students attended a two-day course on presentation skills and case study analysis which was delivered by training specialists from a local auditing and professional services firm. The original study did not utilise a similar course prior to administering the assignment.

The students’ perceptions of the assignment were evaluated using a questionnaire borrowed from Van der Merwe (2013) based on a questionnaire developed by Fouché and Visser (2008). The questionnaire consisted of 25 Likert-scale type questions to which two additional questions were

² For the purpose of this paper the institution where the original study was conducted and the institution where this follow-up study was conducted will be referred to as ‘University A’ (UA) and ‘University B’ (UB) respectively.

added in the current study, the detail of which will be described in the next section. In the rest of the paper, the survey questions will be referred to as “aspects” of the assignment.

The results of the two studies were analysed descriptively by comparison of means and mean rankings, and 25 null hypotheses (H0) were set to test whether the distributions for each of the 25 aspects across the two institutions (University A and University B) were significantly different, or not:

Table 1: Null hypotheses (H0) of the current study

H0-1: The distributions of “My interest in chartered accountancy has been enhanced by the assignment” are the same for both institutions.	H0-14: The distributions of “Participating in the assignment developed/enhanced my stress management skills” are the same for both institutions.
H0-2: The distributions of “Participating in the assignment enhanced my technical competencies” are the same for both institutions.	H0-15: The distributions of “Participating in the assignment broadened my understanding of real-life practice” are the same for both institutions.
H0-3: The distributions of “Participating in the assignment broadened my view of the role of an accountant” are the same for both institutions.	H0-16: The distributions of “The assignment was an effective learning experience” are the same for both institutions.
H0-4: The distributions of “The assignment tested my ability to think for myself” are the same for both institutions.	H0-17: The distributions of “What I have learned during the assignment will stay with me in the long run” are the same for both institutions.
H0-5: The distributions of “Participating in the assignment developed/enhanced my soft skills in general” are the same for both institutions.	H0-18: The distributions of “The assignment increased my insight into the relationship between theory and practice” are the same for both institutions.
H0-6: The distributions of “Participating in the assignment developed/enhanced my computer skills” are the same for both institutions.	H0-19: The distributions of “I am now more motivated to become a qualified accountant because of this assignment” are the same for both institutions.
H0-7: The distributions of “Participating in the assignment developed/enhanced my presentation skills” are the same for both institutions.	H0-20: The distributions of “I prefer such assignments instead of lectures” are the same for both institutions.
H0-8: The distributions of “Participating in the assignment developed/enhanced my communication skills” are the same for both institutions.	H0-21: The distributions of “I enjoyed the social aspects of the assignment” are the same for both institutions.
H0-9: The distributions of “Participating in the assignment developed/enhanced my teamwork	H0-22: The distributions of “I took the assignment seriously” are the same for both

skills” are the same for both institutions.	institutions.
H0-10: The distributions of “Participating in the assignment developed/enhanced my report writing skills” are the same for both institutions.	H0-23: The distributions of “I was motivated by the assignment” are the same for both institutions.
H0-11: The distributions of “Participating in the assignment developed/enhanced my language skills” are the same for both institutions.	H0-24: The distributions of “The assignment demanded insight/application from me and not only knowledge replication” are the same for both institutions.
H0-12: The distributions of “Participating in the assignment developed/enhanced my research skills” are the same for both institutions.	H0-25: The distributions of “The assignment increased my knowledge” are the same for both institutions.
H0-13: The distributions of “Participating in the assignment developed/enhanced my time management skills” are the same for both institutions.	

These independent samples were compared using Mann-Whitney’s u-Test with the statistical software package SPSS.

Details of the assignment

The integrated simulation assignment was borrowed, with permission, from Van der Merwe (2013) and tailored for the specific syllabus of the institution where the follow-up study was conducted. The execution of the assignment is briefly outlined below:

1. Prior to commencement of the assignment a local auditing and professional services firm provided specialist training on case analysis and presentation skills.
2. The case developed by Van der Merwe (2013) was adapted further to include more technically complex principles, requiring students to do further reading and research online. The assessment requirements were distributed to students in the form of an e-mail that posed questions from the hypothetical client.
3. Even though Van der Laan Smith and Spindle (2007) found that self-selected groups increased the effectiveness of both individual and cooperative learning, and Bacon, Stewart and Silver (1999) found that self-selection positively affects team experiences, it was decided to impose heterogeneous groups based on prior academic results in order to simulate the real world where professionals cannot always choose their colleagues. Further rationalisation for instructor-imposed heterogeneity were:
 - I. Fairness, since the marks formed part of the students’ continuous assessment mark, which is in line with the views of Oakley, Brent, Felder and Elhaji (2004) who support heterogeneous selection methods; and

- II. The logistics of 156 students selecting their own groups of five made self-selection impractical.
4. Van der Merwe (2013) noted in his conclusion that students reported serious time constraints and suggested that future assignments carefully consider the time allowed for completion in order to reduce the negative experiences which may impair the level of learning that takes place. In this follow-up study however, the groups were given less than two weeks to prepare for the presentations. This is considerably less than the three full academic weeks and a week of university recess the original study allowed. It is therefore hypothesised that the perceived level of learning will be less and for students to hold more negative views compared to the original study. It is also expected to influence the perceived development of time and stress management skills.
5. The deliverables included an Excel model for a net present value (NPV) calculation, to incorporate computer skills, and a 25 minute Powerpoint presentation in which all five team members had to participate.
6. In the original study Van der Merwe notes a lack of ethical awareness amongst students. In an attempt to ascertain whether they are completely oblivious to ethics or whether they simply did not think it appropriate to raise, the students were pressed, in the follow up study, to consider ethics with the following question: *"Identify any other issues that the auditors are likely to be uncomfortable with. I would also be grateful for any suggestions that you may have that will assist me in preparing an appropriate response that would make the auditors comfortable."*
7. No assistance was provided before the presentations as Lindquist and Olsen (2007) found that homework assistance did not have an influence on knowledge gains. They did however find that homework assistance resulted in higher student satisfaction and lower levels of frustration. Lower levels of satisfaction and higher levels of frustration compared to the original study are anticipated. Other areas that are expected to be influenced by withholding assistance are students' perceived understanding of "real life" and their perceived ability to think for themselves.

Student feedback – Descriptive analysis

The feedback obtained after completing the assignment was in the form of a questionnaire (Van der Merwe, 2013). The only change that was made to the questionnaire was the addition of two aspects, resulting in a total of 27 questions. The two additions were: a question to assess the students' perceived development or enhancement of their ethical awareness since Van der Merwe (2013) reported that his students either did not pick up on the ethical/governance/fraud risks or they might have been uncomfortable asking these questions of their lecturer; and a question to assess the perceived development of interpersonal skills due to being assigned to a group as opposed to choosing their own team members. This was of interest as while previous studies have established that self-selected groups may increase the effectiveness of cooperative and individual learning (Van der Laan Smith & Spindle, 2007), there is no clear indication in the literature as to whether students'

soft skills (interpersonal skills in particular) are affected or enhanced in any way by how the group has been composed. The objective of this assignment was primarily to develop students' "soft" skills, including interpersonal skills, and not primarily to develop content knowledge or understanding by way of cooperative learning. The original study allowed students to select their own groups. An indication of how the change in group composition may have affected students' development in the area of teamwork and interpersonal skills is relevant to future assessments that have the purpose of developing interpersonal skills.

Table 2 provides descriptive statistics on the student feedback obtained after completing the assignment at University B. A 5-point Likert scale similar to the one used by Van der Merwe (2013) was used in this part of the questionnaire (1 = "strongly disagree"; 5 = "strongly agree"). The table has been sorted in order of descending means (i.e. positive to negative perceptions).

Table 2: Descriptive statistics on student feedback of this study

	University B			University A		
	Rank	Mean	Std. Dev.	Rank	Mean	Std. Dev.
1. I took the assignment seriously	1	4.41	.859	2	4.71	.494
2. The assignment demanded insight/application from me and not only knowledge replication	2	4.37	.823	13	4.45	.537
3. Participating in the assignment developed/enhanced my teamwork skills	3	4.37	.786	9	4.56	.660
4. The assignment increased my knowledge	4	4.32	.869	5	4.62	.558
5. Being assigned to a group for the assignment developed/enhanced my interpersonal skills	5	4.30	.880	N/a	-	-
6. The assignment increased my insight into the relationship between theory and practice	6	4.28	.896	6	4.61	.493
7. Participating in the assignment developed/enhanced my presentation skills	7	4.27	.863	18	4.24	.744
8. The assignment was an effective learning experience	8	4.26	.806	3	4.64	.616
9. Participating in the assignment enhanced my technical competencies	9	4.24	.802	10	4.56	.601
10. The assignment tested my ability to think for myself	10	4.23	.867	8	4.58	.629
11. Participating in the assignment developed/enhanced my communication skills	11	4.23	.834	16	4.36	.672
12. What I have learned during the assignment will stay with me in the long run	12	4.20	.918	1	4.73	.486
13. Participating in the assignment broadened my understanding of real-life practice	13	4.19	.903	7	4.59	.596
14. Participating in the assignment broadened my	14	4.18	.969	4	4.64	.554

view of the role of an accountant						
15. My interest in chartered accountancy has been enhanced by the assignment	15	4.08	.829	11	4.54	.687
16. Participating in the assignment developed/enhanced my research skills	16	4.06	.955	15	4.39	.652
17. Participating in the assignment developed/enhanced my soft skills in general	17	4.03	.862	23	4.02	.774
18. Participating in the assignment developed/enhanced my time management skills	18	3.98	.933	20	4.13	.810
19. I was motivated by the assignment	19	3.91	.996	12	4.50	.505
20. Participating in the assignment developed/enhanced my report writing skills	20	3.88	.933	19	4.18	.748
21. Participating in the assignment developed/enhanced my ethical awareness	21	3.83	.974	N/a	-	-
22. Participating in the assignment developed/enhanced my language skills	22	3.82	.937	21	4.07	.920
23. Participating in the assignment developed/enhanced my computer skills	23	3.81	1.08 5	17	4.34	.721
24. I am now more motivated to become a qualified accountant because of this assignment	24	3.75	1.15 2	14	4.42	.762
25. I enjoyed the social aspects of the assignment	25	3.69	1.21 0	22	4.04	.953
26. Participating in the assignment developed/enhanced my stress management skills	26	3.48	1.13 8	24	3.80	.999
27. I prefer such courses/assignments instead of lectures	27	2.94	1.31 7	25	3.38	1.31 5

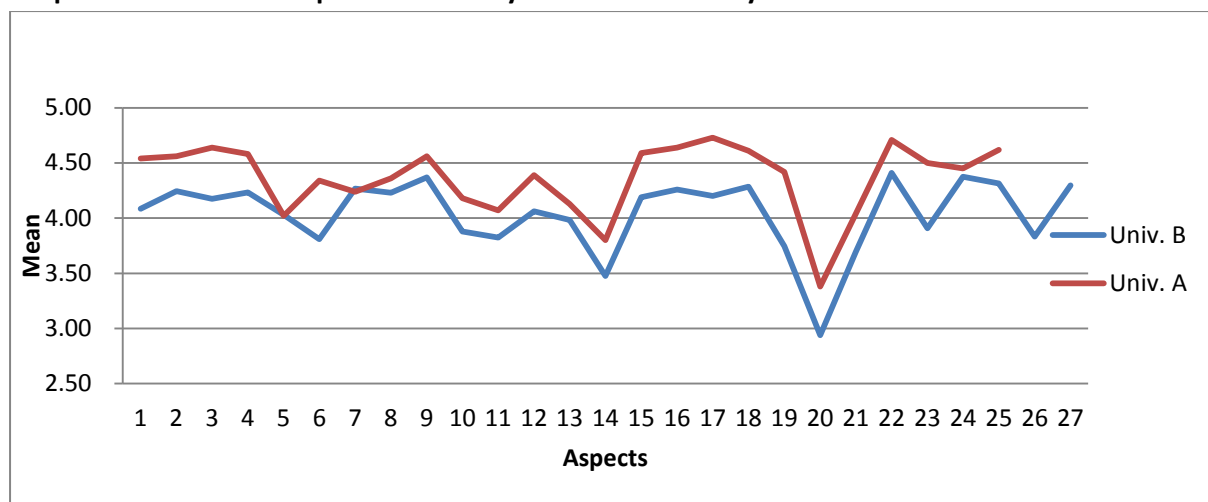
Table 2 shows that students generally experienced the assignment as an effective way of developing skills (only one aspect scored a mean below 3), which supports the finding of the original study (Van der Merwe, 2013). Apart from the claim that students took the assignment seriously ($M = 4.41$) the highest score, when comparing the means of the questions to each other, was the perception that the assignment demanded insight and application, and not only knowledge replication ($M = 4.37$). Equal to this was the perceived effect of enhancing teamwork skills ($M = 4.37$) which may be explained by the fact that teams were instructor imposed rather than self-selected as was the case in the original study where development of teamwork skills ranked 9th according to the means. This is corroborated by the high score (ranked 5th in this study at $M = 4.30$) of the additional aspect that was added which evaluated whether being assigned to a group for the assignment is perceived to develop or enhance interpersonal skills. Students also perceived that the assignment increased their knowledge ($M = 4.32$) which scored high in the original study as well.

Main differences between the studies – Statistical results

General overview

By comparing the relative means of the aspects from both studies (refer Graph 1), the results of this study largely mirror, so corroborate, the original study, providing increased certainty as to the effect of the case study on students' learning experience and perceived development of professional skills, regardless of differences in how the assignment was applied at the two institutions.

Graph 1: Means of the aspects: University A versus University B



However, there are also some notable differences in how students responded for certain aspects, which may be attributable to differences in how the case study was applied at the two institutions, suggesting that the impact of a group case study assignment can be affected by how it is applied and administered.

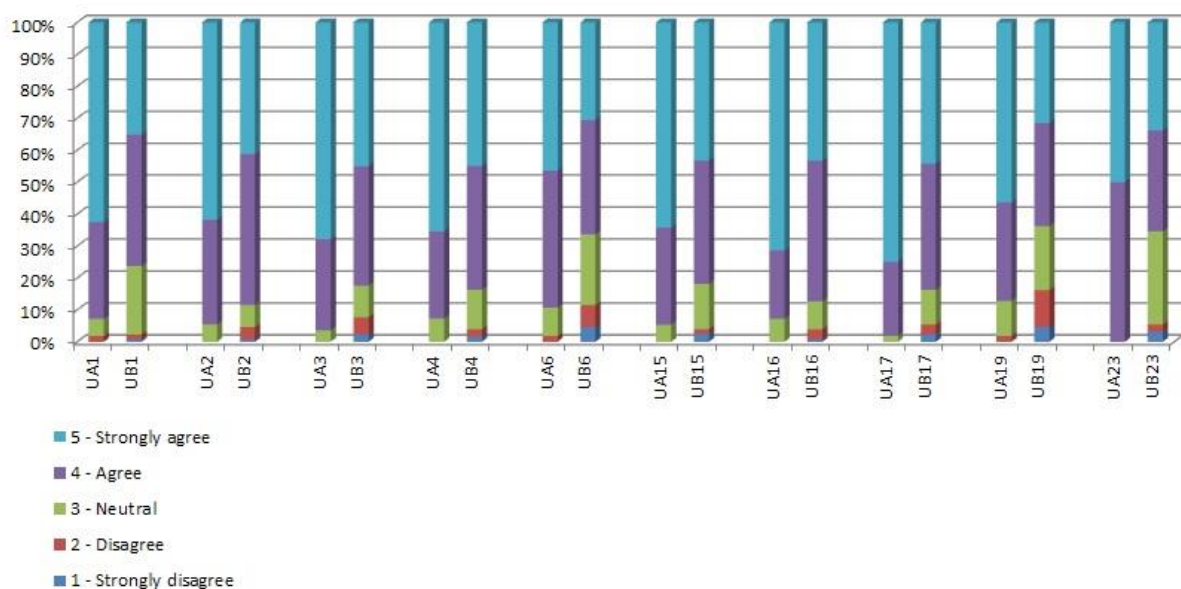
Generally, students in the original study answered slightly more positively than students participating in the follow-up study, with the means for the majority (all except two) of the 25 aspects being higher for University A respondents. This is reflected in Graph 1 where the line graph tracking the mean responses of University A students is higher than that of the line graph for University B students with two exceptions. These two exceptions relate to the development and enhancement of "*soft skills in general*" (aspect 5) and "*presentation skills*" (aspect 7).

While there may be various reasons for this general trend, it should be noted at this point that the sample of respondents differed in a certain respect which may have introduced a positive bias to University A's results, relative to University B's results: Participation in the assignment of the original assignment was voluntary, allowing participating students the opportunity to improve their continuous assessment mark (CAM). The assignment that was completed as part of this follow-up study not only formed a component of the students' CAM, but was compulsory for all third year

Chartered Accountancy students that were registered for Financial Management³. It is possible that the more negative, disinterested, poorly motivated students in University A's class chose not to participate, while such students in University B's class had no choice in the matter, and are thus included in the sample. This may have affected means and distributions, and consequently the relative rankings remain of importance in interpreting the similarity/differences in students' perceptions of their experience between the two studies.

However, differences in the distributions of student responses are statistically significant at the 2% level ($p < 0.02$) for only a few of the aspects included in the study (as reflected in Figure 1 below), and the null hypothesis (that the distributions for University A and B are the same) rejected for only these aspects. Each bar reflects the percentage of respondents that selected each option (1 to 5).

Figure 1: Distributions of responses for each aspect that reported significant differences between the independent samples



Appendix 1 outlines the main differences in the administering of the assignment at the two institutions, the aspects that would be expected to be influenced based on a review of the literature and the probability that a difference in the distribution of responses between the two independent sample populations occurred by chance. Each difference is discussed individually below.

Inclusion of a case analysis and presentation skills short course

One of the main additions to the follow-up study was a two-day case analysis and presentation skills short-course presented by training specialists from a professional services firm.

³ The course in which the assessment was graded as part of the continuous assessment mark.

The only instances where University B scored higher means than University A were the two aspects, development and enhancement of “*softs skills in general*” and “*presentation skills*”, that were directly addressed, and the focus of, the specialist short course. The rankings of these aspects improved from 23 and 18, to 17 and 7 respectively. This is a clear indication that the inclusion of the short course is likely to have increased students’ perceptions as to the enhancement of their skills in these aspects through participating in the case study assignment.

Group composition instructor imposed rather than self-selected and the development of teamwork skills

In the original study it was decided that participating students select their own groups since Van der Laan Smith and Spindle (2007) found that self-selected groups may increase the effectiveness of individual and cooperative learning, which according to Van der Merwe (2013) challenges the conventional wisdom of instructor-imposed heterogeneity. Chapman, Meuter, Toy and Wright (2006) likewise support self-selection as they reported higher ratings relating to teamwork, networking, group attitude and outcome measures, although they also found lower group efficiency and slightly higher degrees of conflict. The distinction needs to be made between perceived effective cooperative learning (and effective teamwork) and the effective development of teamwork skills.

In the present study instructor-imposed heterogeneous⁴ groups were chosen in order to assess whether there was a change in the perceived development of teamwork skills. By ranking the means of the aspects and analysing the results descriptively it was found that the “development of teamwork” scored 3rd at University B compared to 9th at University A. This suggests that instructor-imposed heterogeneity was perceived by students to better develop teamwork skills. The differences, however, in the distributions of the responses from the two independent samples were not significant ($p = .095$).

However, when analysing the effect on “effective learning”, which was cited as the reason for self-selected groups at University A, it shows that “effective learning experience” ranked 3rd at University A and 8th at University B. The difference in the distributions was significant ($p = .001$) and the null hypothesis rejected, supporting the suggestion that self-selection increases the effectiveness of cooperative learning and, importantly, the perceived effectiveness of individual learning.

An additional aspect was added to the survey at University B, asking whether being assigned to a group enhanced or developed the students’ interpersonal skills. The mean for this aspect was ranked highly (5th overall) relative to the other aspects in the University B study, which may suggest that instructor-imposed heterogeneity may augment students’ perceived development of interpersonal skills.

⁴ Heterogeneity in this context was based on the marks scored in the prerequisite course to the third-year Financial Management course, and each group comprised of students with strong, average and weak academic performance.

Other aspects that one would have expected to be affected by imposing team members heterogeneously as opposed to self-selection are the development of soft skills in general, communication skills, time management skills (since self-selected groups are more likely to be friends and thus more easily being able to meet for teamwork), stress management skills, and enjoyment of the social aspects of the assignment. Though the relative ranking of the means vary somewhat between these five aspects, none of the responses' distributions differ significantly (between $p = .082$ and $p = .680$).

Instructor assistance during the assignment

In the original study the author/instructor allowed groups to ask questions via an online blog in order to "give hints to the groups if they really got stuck" (Van der Merwe, 2013). The current study did not allow any consultation with any of the academic staff at University B. All research had to be from independent sources. Even though Lindquist and Olsen (2007) showed no difference in knowledge gains with or without homework assistance, it was decided to withhold assistance in order to simulate, and develop an understanding of, "real work-life" scenarios as well as develop the students' "ability to think" for themselves. However, quite the opposite is shown as the respondents perceived the development of these aspects more positively at University A where assistance was available; the difference is statistically significant ($p = .004$ and $p = .008$).

Moreover, Lindquist and Olsen (2007) reported that higher student satisfaction and lower frustration with the assignments were experienced where homework assistance was offered. One would therefore expect that no assistance would impact on motivation levels and the perceived effectiveness of the learning experience. This is supported by significant differences in the distributions to the aspects of "motivated by the assignment" ($p = .000$) and "effective learning experience" ($p = .001$), with University A showing more positive responses (this of course could also be the result of students' "effective learning experience" being affected by self-selection vs. imposition of composition of groups).

Ethical awareness

A high emphasis is placed on ethical behaviour and professionalism by SAICA, who allows for flexibility in the structure of an ethics course by each institution or university (SAICA, 2014). The original study incorporated deliberate ethical and corporate governance violations as well as potential fraud indicators in order to assess whether student can identify ethical concerns. The only prompt students received was to prepare some questions to ask the client (played by the instructor) after the presentation in order to confirm or refute any "concerns" they may have had. Van der Merwe (2013:1143) reports that some students "either did not pick up on the ethical/governance/fraud risks or they might have been uncomfortable asking these questions to their lecturer". Other groups did identify ethical issues, but were satisfied with any response from the "client". Only a few groups fared well on this issue (Van der Merwe, 2013).

To evaluate whether students are in fact "ethically unaware" or merely did not think it was an assessment requirement amidst all the other more explicit requirements, the University B assignment prompted a response by adding an explicit requirement reading "Identify any other issues that the auditors are likely to be uncomfortable with. I would also be grateful for any

suggestions that you may have that will assist me in preparing an appropriate response that would make the auditors comfortable". An additional aspect was added to the survey to gather information on students' perceived development of their ethical awareness. The mean response was ranked relatively low compared to the rest of the aspects (21st out of 27, $M = 3.86$), but from informal discussions with the evaluators it was noted that most students did address the ethical and corporate governance concerns. Some were however very untactful and others suggested ways the "client" may hide the issues to the auditors. Although no conclusion can be drawn on the effectiveness of business simulations and case studies as a tool to teach ethical behaviour and professionalism at universities, it is clear that a lot more must be done in order to address the development of this important skill.

Time constraints

Time management is one of the pervasive qualities that SAICA requires educators to address (SAICA, 2014). In the University A study students reported serious time constraints and 38 out of 56 respondents reported insufficient time as a negative aspect of the assignment (Van der Merwe, 2013).

The follow-up study allowed for less than half the time in order to test whether imposing even harsher time constraints had an impact on students' perceived development of time and stress management skills. By analysing the relative rankings of the means descriptively compared to other aspects of the survey it was found that both the development of time and stress management skills scored relatively low compared to the other aspects on both studies. Furthermore the distributions of the responses on both the development of time and stress management skills are not statistically different between the University A and University B samples, suggesting that constraining the time and severely constraining the time allocated to complete the assignment do not significantly influence the perceived development of time and stress management skills. This finding is reminiscent of the old adage "the task expands to the time available for it".

The original study concludes that "the time allowed for completion and additional support be carefully considered to prevent negative experiences which may impair the level of learning that takes place" (Van der Merwe, 2013:1143) which is supported by the statistically significant ($p = .001$) difference in the distribution of responses to the aspect addressing the perception of the effectiveness of the learning experience that was reported between the University A and University B studies (means ranked 3rd and 8th respectively). However, again two other major contributors to explaining the statistically different distribution for the effective learning experience have already been identified, and the shortening of the time allowed may in fact have had no impact on the student's learning experience, especially as time and stress management aspects show no change in distribution between the two studies.

Technical complexity and principle richness

The integrated case developed by Van der Merwe (2013) was used with his permission, but adapted to suit the third year level Chartered Accountancy course at the institution where the follow-up study was conducted. The changes included more principle rich assessment requirements that were

technically more complex as a result. By adding more technical complexity to the assignment, it was hoped that the following aspects would score relatively higher: enhancing technical competence; increase knowledge; increase insight into the relationship between theory and practice; and insight/application and not only knowledge replication.

The only aspect which had a distribution that differed significantly was that of enhancing technical competence. It is interesting to note though that it was the University A students that scored this aspect more positively ($M = 4.56$ vs. $M = 4.27$), even though they participated in a technically less complex assignment (although this competency was ranked slightly higher at University B: 9th vs. 10th). It should be remembered however, that in general University A students scored most aspects more positively. Another interesting observation is the fact that the mean of the aspect on “insight/application and not only knowledge replication” ranked 2nd amongst all the aspects in the University B study and 13th in the University A study, even though the distributions do not differ significantly ($p = .873$) and the null hypothesis is thus retained.

The preceding findings suggest that students perceive assignments of this nature to be effective in developing deeper levels of learning, and demanding insight and not simply a replication of knowledge.

Graded assessment and compulsory participation

As was discussed earlier, the results for University A, where the assignment was voluntary, are generally slightly more positive than for University B, where the assignment was compulsory. In particular, the results show a significant ($p = .000$) difference in the distributions of the responses to the question on “motivated by the assignment”, with University A scoring a more positive response. This could possibly be due to the original study being voluntary, therefore only students who wanted to participate entered, as well as the assistance that was given to groups which was discussed earlier.

In both studies the students indicated that they took the assignment seriously (the means to this aspect ranked 1st at University B and 2nd at University A relative to the other aspects) and the distributions did not differ significantly ($p = .027$). A likely reason for the high score in this question is that the assignment contributed towards the students’ mark for the course. The observation that students are driven by assessment is well documented in the literature (Biggs, 1996).

Conclusion

This study aimed to corroborate the results of the original study and to develop on certain areas by investigating the effects of, inter alia, the group selection method, instructor assistance, ethical awareness, greater time pressures and increased technical complexity.

The findings of this follow up case study generally corroborate those of the original study, strengthening the expectation that an academic may have of students’ learning experience when administering a business case study to a third year accounting class. It also shows that students’

learning experiences may be relatively resistant to changes that an academic may wish to make to how the case study is applied. However, there are indications that the manner in which the case study is applied can influence students' learning experiences. Some of the most important of these arising out of the study are as follows:

There is a clear indication that the inclusion of a short course on case analysis and presentation skills increased students' perceived development and enhancement of these skills through participating in the case study assignment. This suggests that students' presentation and communication skills will be better developed through participation in a case study requiring these skills where formal instruction on these aspects is provided.

The results of this study and comparison to the original study also support Van der Laan Smith and Spindle's (2007) and Chapman, Meuter, Toy and Wright's (2006) finding that effective learning is enhanced by self-selection of groups, a finding that is described as contentious (Van der Merwe, 2013). The current study offers further insight into this debate by suggesting that the purpose of the group work should be considered. There is an indication that instructor imposed groups with students ranging in strengths rather than self-selected groups might be more effective in developing teamwork and interpersonal skills. Further research is required to establish whether this is the case or not since the literature does not sufficiently address the issue. However it is cautioned from a teaching and learning perspective, that the objective of the assignment (pervasive skills vs. knowledge/other learning) should be taken into account in deciding on the method of group composition, as instructor imposed composition appears less conducive to more effective cooperative learning.

The demographics of University B are similar to the original study, being mainly from previously disadvantaged groups. Students from both universities come from home circumstances where parents are often far removed from commerce, and most students at these universities struggle with conceptualising the real business world. The fact that the students from University B rated the second most significant aspect of the case study as the development of the ability to integrate and apply suggests that case studies may be an effective means of reaching (or providing a simulated type of business experience to) students that are severely lacking real-life experience in this regard.

Students appear to be generally less concerned or aware of ethical issues in a situation requiring evaluation of a commercial business idea than expected given the fact that they have completed an ethics course and other courses incorporating auditing and corporate governance. The application of a single integrated case study cannot be shown to be effective in developing students' ethical awareness, although it does highlight students' slowness to identify and breach the topic in a (simulated) real life situation. This raises concerns regarding students' sensitivity to ethical issues embedded in commercial decision making and suggests that more needs to be done in this regard. Academic institutions may need to consider evaluating students' ethical awareness outside of ethics and governance courses in order to assess students' sensitivity to these issues in situations where they do not view these as assessment requirements.

The most notable limitation to the current study is the fact that actual learning and skills development may differ from student-reported perceptions of learning and skills development.

Nevertheless, the study contributes to the accounting education field by corroborating the results of a previous study at a different institution with a larger sample, and by providing more insight into the learning and skills development effects resulting from certain instructor interferences and the different ways of applying a case study assignment. Overall, the study undeniably confirms the value of case study assignments and the need to accelerate efforts to enhance ethical awareness of students.

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APPENDIX 1: Main differences – Statistical analysis

#	Differences in the assignments	Question no. in original survey	Questions (or areas) expected to be affected	Ranking		Mean		Sig.
				Univ. B	Univ. A	Univ. B	Univ. A	
1	Inclusion of presentation course	5	Soft skills in general	17	23	4.03	4.02	.680
		7	Presentation skills	7	18	4.27	4.24	.497
2	Selection of teams	5	Soft skills in general	17	23	4.03	4.02	.680
		8	Communication skills	11	16	4.23	4.36	.460
		9	Teamwork skills	3	9	4.37	4.56	.095
		13	Time management skills	18	20	3.98	4.13	.420
		14	Stress management skills	26	24	3.48	3.80	.082
		16	Effective learning experience	8	3	4.26	4.64	.001**
		21	Enjoy social aspects of the assignment	25	22	3.69	4.04	.089
		27	Being assigned to a group - Interpersonal skills	5	n/a	4.30	n/a	*
3	Homework assistance	14	Stress management skills	26	24	3.48	3.80	.082
		20	Prefer these type of assignments to lectures	27	25	2.94	3.38	.032
		23	<i>Motivated by the assignment</i>	19	12	3.91	4.50	.000**
		16	<i>Effective learning experience</i>	8	3	4.26	4.64	.001**
		15	Understanding of real life	13	7	4.19	4.59	.004**
		4	Ability to think for myself	10	8	4.23	4.58	.008**
4	Ethics (prompted)	26	Ethical awareness	21	n/a	3.83	n/a	*
5	Allowed time	13	Time management skills	18	20	3.98	4.13	.420
		14	Stress management skills	26	24	3.48	3.80	.082
6	Technical complexity (principles)	2	Technical competencies	9	10	4.24	4.56	.009**
		25	Increased my knowledge	4	5	4.32	4.62	.024
		18	Relationship between theory and practice	6	6	4.28	4.61	.043
		24	Insight/application not knowledge replication	2	13	4.37	4.45	.873
7	Compulsory component of continuous assessment mark	22	Took the assignment seriously	1	2	4.41	4.71	.027
		23	Motivated by the assignment	19	12	3.91	4.50	.000**

* Unable to compute due to the question not being part of the original study.

** Reject the null hypothesis at the $p < 0.02$ level.

Paper 2:

Author: **James Anthony** and **Michael Wormald**, College of Accounting, University of Cape Town

Assessing the Approaches to Learning of students studying a professionally accredited post-graduate accounting programme in South Africa – a pilot study

Abstract

Increased emphasis by professional accounting bodies on fostering life-long learning has resulted in increased interest in the literature of accounting education. Student approaches to learning – categorised as Deep, Surface and Strategic approaches to learning – were amongst the first established contextual learning constructs. Life-long learning and a Surface approach to learning are seen as mutually exclusive.

The aim of this paper is to provide a preliminary investigation into student approaches to learning in the context of accounting education in a South African university. This paper leverages off a published contextual validation of the Approaches to Study Skills Inventory for Students (ASSIST) – a self-reported inventory used to classify student approaches to learning – with the intention of providing a basis for further research within this context, as well as to provide insights for accounting educators into factors contributing to student approaches to learning.

The ASSIST was administered to a group of anonymous volunteer students studying the Post-Graduate Diploma in Accounting (PGDA) at the University of Cape Town (UCT). Analysis of the responses indicates that the students sampled favoured a Strategic approach to study, rather than a Surface approach. This could be partially attributed to intensive workloads as well as pressure to pass final examinations.

Keywords

Approaches to learning; ASSIST; accounting; accounting education.

Introduction

Life-long learning is a skill that the International Federation of Accountants (IFAC) has described as “critical to meet the needs of the users of professional service” (IFAC, 2009:42). The continuous change to International Financial Reporting Standards (IFRS), International Standards on Auditing (ISA) and legislation requires a professional accountant to be in command of an ever-changing body of knowledge. Furthermore, the global environment in which business takes place is becoming increasingly dynamic (Byrne, Finlayson, Flood, Lyons & Willis, 2010). These factors require a professional accountant to have the ability to assimilate, understand and critically reflect on information on an ongoing basis.

The South African Institute of Chartered Accountants (SAICA) Competency Framework (SAICA, 2010) makes specific mention of a member developing the fundamental competencies that foster life-long learning (SAICA, 2010). However, SAICA has delegated the role of educating prospective South African Chartered Accountants to academic institutions (SAICA, 2010). It therefore stands to reason that academic institutions in South Africa have a role to play in fostering a student’s ability to practice life-long learning.

However, a divergence between accounting education and the expectations of employers, specifically with regards the teaching of generic skills (Jackling & de Lange, 2009) has prompted universities to put in place policies to develop qualities serving the learner beyond graduation – including the skills of life-long learning (IFAC, 2009; Byrne *et al*, 2010), effective communication, organisational skills and ethical behaviour (Jackling & de Lange, 2009). However, accounting curricula are technically complex and high-volume by nature, resulting in little time to incorporate new interventions to develop generic skills. Such high volume has been seen as correlated with a ‘surface approach to learning’ (Diseth, 2007; Lizzio, Wilson and Simons, 2002). This paper sets out to establish student approaches to learning for a sample of post-graduate accounting students studying toward such an accredited accounting qualification.

Marton and Säljö (1976a, 1976b) were amongst the first published authors to identify the processes and strategies that students undertook to learn as well as describing how these processes may influence the outcome of understanding and recall of information. Marton and Säljö (1976a) defined deep-level processing as being “directed toward comprehending” (Marton & Säljö, 1976a:8) while surface-level processing as having “a reproductive ‘conception’ of learning” meaning to be “forced to keep to a rote-learning strategy” (Marton & Säljö, 1976a:7). These ‘processes’ have become more commonly known as approaches to learning in education literature. However, the work of Marton and Säljö (1976a, 1976b) focussed on attempting to induce specific approach to learning strategies and measuring these against desired learning outcomes for specified tasks.

Biggs (1987) and Entwistle & Ramsden (1983) extended the approaches to learning literature through the development of self-reported inventories – surveys used to measure student

approaches to learning. The assumptions underlying these inventories include the stability of student motive and strategies that influence the process by which a student chooses to learn (Biggs, 1979). This allowed Biggs (1987) and Entwistle & Ramsden (1983) to group students according to a predominant approach – the approach to which they will revert in the absence of influence. The development of self-reported inventories enabled researchers to capture a large number of responses in a time-effective manner. Such information could then be used to inform further research as well as assist in the design and evaluation of teaching and learning interventions – such as the use of different modes of teaching and assessment (Byrne *et al.* 2010).

Given the emphasis placed on fostering productive learning behaviours in professional accounting students, it stands to reason that investigating such behaviours serves as a constructive starting point in evaluating teaching and learning in a professionally-accredited learning environment. Accounting education literature reveals a mix of Surface (Ballantyne, Duff & Larres, 2008) and Deep/Strategic (Hall, Ramsay & Raven 2004; English, Lockett & Mladenovic, 2004; Byrne, Flood & Willis, 2009, Byrne *et al.*, 2010; Barac, 2012) approaches to learning developing over time. A perceived high-volume workload in South African accounting education raises the concern that South African accounting students may be adopting a surface approach to learning – especially if students' conception of accounting is one of reproductive in nature (Byrne & Flood, 2004). However, according to the literature, encouraging a deep approach to learning and discouraging a surface approach to learning is believed to give students the best chance of achieving academically (English *et al.* 2004; Davidson, 2002; Ramburuth & Mladenovic, 2004) as well as developing the skills of life-long learning (IFAC, 2009).

This research paper serves to determine the predominant approach to learning exhibited by a group of anonymous volunteer students in their final, post-graduate year of study prior to entering their training in the profession. The Approaches to Study Skills Inventory for Students (ASSIST) was used as the tool for determining the approaches to learning exhibited by the students sampled. The sections that follow include an investigation of the literature regarding approaches to learning and the measurement thereof using self-reported inventories, followed by a discussion of the data collection and analysis. The paper concludes with the implications of the findings and possible further research.

Student approaches to learning

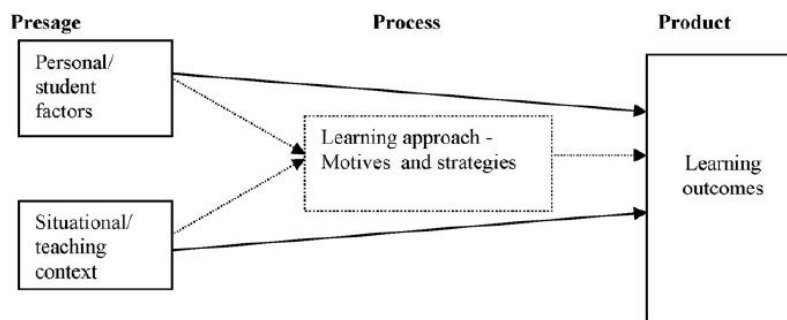
Marton and Säljö (1976a, 1976b) indicated that students adapt their approach to learning based on anticipated assessment requirements. Prior assessments designed to induce a recall of factual information with no express need for inherent understanding resulted in students adopting a surface approach thereafter. Conversely, assessments administered to induce expression of understanding resulted in students adopted a deep approach thereafter (Marton & Säljö, 1976a). This indicated that students can vary their approach to learning over time and in response to changing factors in the learning environment (Marton

& Säljö, 1976a; English *et al.* 2004; Ramburuth & Mladenovic, 2004; Davidson, 2002; Diseth *et al.* 2009).

After Marton and Säljö (1976a, 1976b) proved that students adopt differing approaches to learning based on their conceptions of learning at a task-specific level, self-reported inventories (Biggs, 1979, 1987; Entwistle & Ramsden 1983) were developed to measure the predisposed manner in which students approach learning. Biggs (1979, 1987) premised the development and use of self-reported inventories through the assumption that students in tertiary education should have developed fairly stable motives for learning and therefore stable strategies for going about learning. Biggs, Kember and Leung (2001) identify three key motives: keeping out of trouble with minimal effort (associated with a fear of failure); engaging with a task appropriately (associated with intrinsic interest); and to maximise grades (associated with achievement). These motives were each linked with a congruent strategy: selective memorising (or surface learning); seeking meaning (or deep learning); and optimal time and space management (or strategic learning) (Biggs, Kember & Leung, 2001). It is this third motive and congruent strategy that resulted in the description of a third dominant approach to become known as the “Strategic” (Entwistle & Ramsden, 1983) or “Achieving” (Biggs, 1979, 1987) approach. Biggs (1978 as cited in Biggs 1979) used these ideas of motive and strategy in the development of the Study Process Questionnaire (SPQ). Entwistle and Ramsden (1983) relied on similar student and educational psychology factors to develop the Approaches to Study Inventory (ASI).

Biggs’ (1979, 1987) theory of motivation and strategy was captured in his 3-P model (Presage-Process-Product – refer Figure 1 below). The Biggs 3-P model outlines a dynamic system in which an interaction exists between student factors and teaching context (Presage), on-task approaches to learning (Process) and learning outcomes (Product) (Biggs *et al.* 2001). Therefore student factors, such as motivation (Biggs, 1979, 1987, 1999; Biggs *et al.* 2001), prior learning and achievement (Davidson, 2002; Duff 2004; Diseth *et al.* 2009) interact with the teaching environment (Davidson, 2002) and student perceptions thereof (Diseth 2007), including assessment (Marton & Säljö, 1976a, 1976b) and teaching. This interaction influences the approach to learning adopted by the student in that context, which will influence the learning outcomes and achievement (English *et al.* 2004; Ramburuth & Mladenovic 2004; Davidson 2002; Diseth *et al.* 2009). However, the learning outcomes and the approaches to learning adopted will in turn influence both the way in which the teacher develops assessment and teaching material as well as the manner in which a student tends to approach learning (Biggs *et al.* 2001).

Figure 1: The Biggs Presage-Process-Product Model



The learning outcomes of tertiary education should adequately prepare a student to work in the field toward which they studied, and foster the ability to practice life-long learning (IFAC, 2009; Biggs *et al.* 2001, Byrne *et al.*, 2010). However, these learning outcomes will only be achieved if there is constructive alignment (Biggs, 1996) between educational objectives, the manner in which content is taught, the assessments that are used to measure those learning outcomes and the approach to learning that students tend to adopt. Such dynamic theory, and increased emphasis by professional bodies, has led to an increased focus on student approaches to learning by academic institutions (Entwistle & McCune 2004).

Approaches to learning inventories

Biggs (1987) and Entwistle and Ramsden (1983) both developed self-reported inventories based on the results of their own phenomenographic research – predominantly interviews. Each inventory consist of a number of statements designed to elicit a response linked to a quality attributable to either a Deep, Surface or Strategic approach to learning. Through the use of exploratory and confirmatory factor analysis, this list of statements is tested for reliability of response. Reliable statements are retained while statements providing inconsistent results are modified or removed altogether. Responses to the final inventories are captured and collated together to provide some indications as to the strength by which students tend to favour each of the three approaches to learning.

Both the SPQ (Biggs 1978, as sighted by Biggs 1979; Biggs 1987) and ASI (Entwistle & Ramsden 1983) have been revised on several occasions resulting in the Revised 2-Factor Study Process Questionnaire (Biggs *et al.* 2001), and the Approaches to Study Skills Inventory for Students (or ASSIST) (ASSIST 1997; Tait & Entwistle 1996; Entwitle, Tait & McCune 2000) respectively.

Conflict remains regarding the three-factor-structure of the SPQ and ASI/ASSIST (Kember, Wong & Leung 1999). Kember *et al.* (1999) suggested the use of a 2-factor SPQ model for use in basic investigations but also suggested the introduction of a more complex instrument to assess more complex strategy and motive elements. In contrast, reliability testing of the

ASSIST survey has repeatedly confirmed the appropriateness of the three-factor model (Diseth, 2001; Byrne, Flood and Willis, 2004; Gadelrab, 2011; Abedin, Jaafar, Husain, Abdullah, 2013).

Approaches to learning as a contextual response

The development of approaches to learning inventories has led to their application in a variety of contexts including psychology (Marton & Säljö, 1976a, 1976b; Diseth *et al.* 2009; Diseth 2001, 2007), science (Prosser & Trigwell, 1991; Trigwell, Prosser & Waterhouse, 1999), health science (Leung & Kember, 2003) and accounting (Booth, Luckett & Mladenovic, 1999; Byrne & Flood, 2004; Byrne *et al.* 2004; Hall Ramsay & Raven, 2004; Flood & Wilson, 2008; Byrne *et al.* 2009; Byrne *et al.* 2010; Barac, 2012 and others). The majority of studies into approaches to learning in an *accounting* context have confirmed the applicability of inventory-based research.

Much of the above literature argues in favour of context being as specific as at a course level. Meyer and Eley (1999 as cited by Lucas & Mladenovic, 2004) argue that that approaches to learning could be discipline or even subject specific. The key question remains: What is the definition of subject or discipline-specific? Is an accounting 'programme' a discipline? Or can each subject within a programme (e.g. Financial Reporting, Managerial Accounting & Finance, Taxation and Corporate Governance) be considered disciplines on their own? The answer to this question may lie in the differences or similarities of the learning environments for each subject.

Kember and Leung (2005) described a suitable teaching environment as "characterised by a focus on understanding, the active participation of students in learning activities, a coherent curriculum, and assessment which focused on analytical skills and self-learning capability" (Kember & Leung, 2005:245). Classes where teachers focus on knowledge transmission are associated with increased likelihood of students adopting a surface approach to learning (Trigwell, Prosser & Waterhouse, 1999). Conversely, although with a less strong relationship, students tend to practice a deeper approach where the teacher is student-focussed and actively involved in changing student conceptions of learning (Trigwell, Prosser & Waterhouse, 1999; Lord & Robertson 2005). This implies that, if factors within the learning environment, such as the approaches to teaching, differ between subjects, differing contextual response may be observed.

Such results were echoed in the studies of Lizzio, Wilson and Simons (2002), Davidson (2002) and Diseth (2007) in which heavy workload, bad teaching environment and inappropriate assessment methods were found to influence students toward the use of a surface approach to learning. The strongest predictors of students using a Deep approach to learning were found to be positive perceptions regarding the quality of teaching and appropriateness of assessment (Lizzio *et al.* 2002; Davidson, 2002; Lord & Robertson, 2005; Diseth, 2007). Such positive perceptions of the learning environment were seen to

positively influence academic achievement (Davidson, 2002) and perceived as best at developing generic academic and workplace skills (Lizzio *et al.* 2002). Furthermore, the use of questions requiring understanding as well as appeal to the achieving nature of students and downplaying or reducing workload are seen to be potential improvements to the learning environment (Diseth 2007). These conclusions are consistent with the ideas of John Biggs on the 3-P model and constructive alignment and indicate the possibility of contextuality as being as specific as at a course level.

The context of this study

Given the support in the literature for approaches to learning being a response to a context, understanding approaches to learning in an *accounting* context becomes an important consideration (Lucas & Mladenovic, 2004; Barac, 2012). A number of studies have been performed in the accounting field internationally and conflicting results exist (Ballantyne, Duff & Larres 2008; Hall, Ramsay & Raven 2004; English, Lockett & Mladenovic 2004). Barac (2012) studied the approaches to learning of students studying auditing in South Africa by using the ASSIST. Given the lack of published research in the area of approaches to learning of accounting students in a South African context, this study seeks to address this gap and provide a basis for comparison for future studies.

The SAICA-accredited Postgraduate Diploma in Accounting is considered to be the flagship programme of the College of Accounting, a department within the Commerce Faculty at the University of Cape Town. Approximately three hundred students graduate each year progressing to write the SAICA Initial Test of Competence (ITC) – the first of two professional examinations.

The student body studying the UCT PGDA is diverse in terms of gender, race, culture, nationality, quality of schooling and degree programme. Entwistle, Tait and McCune (2000) sampled a group of South African students from a ‘historically disadvantaged’ university when testing the initial pattern of responses for the Approaches to Study Skills Inventory for Students (ASSIST, 1997). They described the South African context as being “a totally different culture and educational context” (Entwistle *et al.* 2000:37). The University of Cape Town may be subject to similar ‘historically disadvantaged’ influences, however, the accounting-specific context (given the professionally-accredited nature of the programme) and the maturity of the students sampled in this study may negate such disparities. In fact, this study is focussed on examining learning behaviours of students studying a ‘first-world’ programme in a traditionally ‘developing’ country.

Research questions and methodology

In response to the international literature and the context of South African professional accounting education, the following research questions are addressed:

1. What is the dominant approach to learning employed by students in their final year of academic study, the UCT PGDA, prior to entering professional training and examination?
2. Do the approaches to learning tendencies differ between students based on self-reported prior academic achievement?
3. Do the approaches to learning of males and females differ?

The Approaches to Study Skills Inventory for Students (ASSIST) (Appendix 4) was used to gather data from a sample of 76 students out of a class of 330 UCT PGDA students representing a response rate of 22.7%. The sample consisted of 42.1% female respondents, 56.6% male respondents and 1.3% failed to specify – the gender demographic was tested as a specifically important variable given the possible differences in learning strategies as established by De Lange & Mavondo (2004). Student responses were anonymous and voluntary. The survey was completed one month prior to the writing of final examinations. The population generally represents fourth and fifth year students having completed either a Bachelor of Commerce degree majoring in accounting, or a Bachelor of Business Science degree majoring in finance and accounting. For the purposes of this study, no distinction has been made between Bachelor of Commerce and Bachelor of Business Science students as the main focus of this study is to investigate the approaches to learning of the cohort as a collective.

The ASSIST was selected for both the comparability of this study with that of Byrne, Flood and Willis (2004) (and others where the ASSIST has been applied) as well as the apparent relevance of the ASSIST survey questions to the experience of the students sampled in this study.

Due to the argument of different disciplines/courses shaping learning behaviours (Lucas & Mladenovic 2004), students were requested to respond to the survey specifically with regards to the subject of Financial Reporting. This subject is thought to be the main area of specialisation for the Chartered Accountant (South Africa) qualification and the subject for which students have attended the most courses. Financial Reporting accounts for 108 HEQF credits at an undergraduate level while the remaining three subjects of Managerial Accounting and Finance, Taxation and Corporate Governance (including advanced Auditing as well as ethical requirements and the King code for effective corporate governance) account for between 36 and 72 HEQF credits at undergraduate level.

The ASSIST survey measures responses to 52 statements (Appendix 4) serving to measure thirteen subscales (Table 1) which, in turn, serve as indicators for the three main scales of Deep, Surface and Strategic approaches to learning. Students indicate their strength of agreement or disagreement to each statement on a five-point Likert scale.

**Table 1: Three main scales (approaches) and their associated subscales
(ASSIST 1997; Entwistle, Tait & McCune 2000)**

<p>Deep Approach Subscales:</p> <p>Seeking Meaning (SM)</p> <p>Relating Ideas (RI)</p> <p>Use of Evidence (UE)</p> <p>Interest in Ideas (II)</p> <p>Strategic Approach Subscales:</p> <p>Organised Studying (OS)</p> <p>Time Management (TM)</p> <p>Alertness to Assessment Demands (AD)</p> <p>Achieving (AC)</p> <p>Monitoring Effectiveness (ME)</p> <p>Surface Approach Subscales:</p> <p>Lack of Purpose (LP)</p> <p>Unrelated Memorising (UM)</p> <p>Syllabus Boundness (SB)</p> <p>Fear of Failure (FF)</p>

Given that the ASSIST was developed in an environment that may be different to that of this study (Entwistle *et al.* 2000), it is essential to test that the statements contained in the ASSIST are interpreted consistently and in accordance with their initial design. To this end, the ASSIST survey (unmodified) was completed by the sample of students and the pattern of responses was analysed using confirmatory factor analysis (Anthony & Wormald 2013). This was done to test that the three main approaches – Deep, Surface and Strategic – were exhibited as a factor, and that each of the subscales correlated most with the approach that they were designed to measure. Confirmatory factor analysis utilising maximum likelihood extraction with oblique rotation and calculated Cronbach Alphas confirmed the appropriateness of the use of the ASSIST survey (Anthony & Wormald 2013). These results were consistent in many respects to results achieved internationally (Entwistle *et al.* 2000; Byrne *et al.* 2004; Flood & Wilson 2008; Diseth 2001; Gedalrab 2011; Abedin *et al.* 2012; Barac, 2012). Successful confirmatory factor analysis allows for subsequent interpretation of the responses to the ASSIST.

Data analysis

Survey data constituted the responses of individual students. The responses to each statement on the 5-point Likert scale “A - Agree” – “E - Disagree” were re-coded as 1 through 5. The re-coded numerical responses could then be added together. As is consistent with prior research, the survey is interpreted by adding together the numerical responses

for each of the four questions of the 13 subscales (ASSIST, 1997). This yields a sum total for each subscale varying between 4 and 20. Each of the subscales totals can in turn be added together to form a sum total for each of the main scales (Deep, Strategic and Surface). These totals for Deep and Surface vary between 16 and 80 while the total for Strategic can vary between 20 and 100 (as it consists of five subscales as opposed to four). As is consistent with the study by Flood and Wilson (2008), an adjustment is made to the Strategic approach main scale, multiplying it by four-fifths to make the total values directly comparable to the other two main scales. A value toward the lower end of each subscale/approach would indicate a strong tendency toward that subscale/approach whilst a higher score would indicate a weaker tendency toward that subscale/approach.

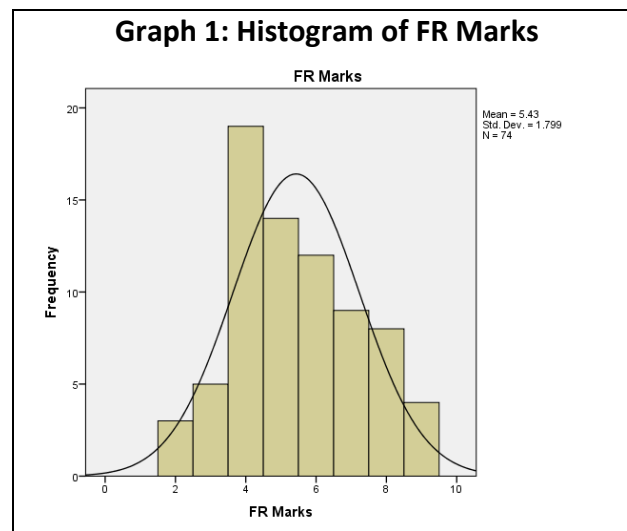
Once the totals for each of the subscales and each of the main scales have been calculated for each of the individual respondents, descriptive statistics and other statistical tests can be performed. The focus of this study is to analyse the approaches to learning of the cohort sampled rather than individual students. It is not the intention to classify individual students as being Deep, Surface or Strategic learners. In interpreting the results, only the strength of tendencies toward each approach to learning can be assessed and whether the distributions of responses are statistically significantly different from one another. Therefore, the basis for the analysis of the data shall be as simple as the medians and ranges of the sum totals for each of the subscales and main scales. Due to non-normality of the data, medians and ranges are used as measures of central tendency as opposed to means and standard deviations.

Statistical tests for significance were performed in order to assess any observed differences in responses. The data was first analysed for normality using the Kolmogorov-Smirnov and Shapiro-Wilkinson tests for normality. As anticipated, the sum totals for the subscales were indeed non-normal and hence non-parametric testing was used. Related-samples Friedman's Two-Way Analysis of Variance by Ranks using Pairwise Comparison was chosen to test for statistically significant differences in distributions for the population as a whole while Independent-Samples Kruskal Wallis tests were used to test differences between sub-populations (differences between mark categories and gender).

On the basis of the responses, 42.1% of the respondents were female, 56.6% were male and 1.3% failed to specify. Students were requested to indicate in which mark category (refer Table 2) their year mark average fell at the time of completing the survey. Given that this survey was completed in late August 2009, only the final examination was outstanding and therefore these mark categories, or at least the distribution thereof, should be representative of the final results. The anonymity of the survey also avoided students posting biased self-reported results. A histogram (refer Graph 1) presents the distributions of marks according to the categories contained in Table 2 below.

Table 2: Categories for average year mark per subject

<u>Category Code</u>	<u>Mark Range</u>
1	0 – 30%
2	30 – 40%
3	40 – 45%
4	45 – 50%
5	50 – 55%
6	55 – 60%
7	60 – 65%
8	65 – 70%
9	70 – 100%



Results

Research Question 1:

The results of the descriptive medians and interquartile ranges are presented in Table 3 below:

Table 3: Median and Interquartile range values for each main scale and subscale

	Median	Interquartile Range
Deep Approach	37	8
Strategic Approach	34	9
Surface Approach	52	13
Deep Approach Subscales		
Seeking Meaning	9	2
Relating Ideas	10	4
Use of Evidence	8	2
Interest in Ideas	10	5
Strategic Approach Subscales		
Organised Studying	9	4
Time Management	7	4
Alertness to Assessment Demands	10	5
Achieving	7	4
Monitoring Effectiveness	9	5
Surface Approach Subscales		
Lack of Purpose	17	4
Unrelated Memorising	15	5
Syllabus Boundness	10	5
Fear of Failure	9	7

Based on the results of the related-sample Friedman's Two-way ANOVA tests with pairwise comparison (refer Appendix 1), the following results are observed: The distribution of the Surface approach differs significantly from both Deep and Strategic, but Deep and Strategic are not significantly different from one another. Based on the results contained in Table 3 above, students predominantly favour a Strategic and Deep approach to learning, consistent with the findings of Barac (2012).

Investigation of the individual subscales within each of the three approaches confirms statistically significant differences between the distributions of the subscales across all three approaches.

‘Use of Evidence’ proves to be consistently the strongest of the four Deep subscales. This is unsurprising given the case-study style assessment questions requiring candidates to assimilate written information and answer an array of both technical and broad discursive questions. ‘Seeking Meaning’ is the second strongest subscale in the Deep approach which is encouraging given the emphasis placed by the teaching staff on the understanding of the underlying material and correlates with the strong responses to ‘Use of Evidence’.

‘Relating Ideas’ appears to be the weakest of the four Deep subscales. This could be due to a number of factors. Firstly, the nature of the statements for the ‘Relating Ideas’ subscale are somewhat non-specific – they are open to the interpretation of developing an ‘opinion’ about how the material fits together. The nature of the PGDA subjects is somewhat more structured than in other disciplines and therefore students may not agree as strongly with these statements. Alternatively, this may indicate a poor ability to integrate knowledge despite the best effort of academic staff – and possibly related to student conceptions of learning. This may also be as a result of topics being taught in a modular fashion. Therefore, whether there is indeed constructive alignment between the teaching of topic integration to promote Deep learning and the way in which it is assessed becomes an area for further investigation.

‘Interest in Ideas’ becomes the second weakest scale. Such weakness in response could be attributable to the nature of the statements for the ‘Interest in Ideas’ subscale given the volume of work and time pressure.

‘Time Management’ and ‘Alertness to Assessment Demands’ proved to be two subscales whose patterns of responses were statistically significantly different from other Strategic subscales. ‘Time Management’ focuses on making the best use of the time available and therefore strong agreement to this subscale is understood given the volume of work covered in PGDA as well as the time pressure imposed in the assessment process. By the time students reach the PGDA, they have completed a rigorous undergraduate degree in which effective time management is impressed on students.

‘Alertness to Assessment Demands’ attempts to capture student tendencies to be ‘cue-conscious’ (Miller & Parlett, 1974 as cited by Marton & Säljö, 1976a) – to determine the best answer to questions given the manner in which the topic was lectured and the perceived needs of the marker. This subscale received weak responses (or at least weaker than most of the other Strategic subscales). Given this tendency toward ‘right and wrong’ answers in accounting and this may be more prominent in accounting than may be typical of other disciplines, this lack of subjectivity does confirm (in part) the weaker tendencies towards cue-consciousness.

In examining the individual subscales of the Surface approach, an aversion to the ‘Lack of Purpose’ and ‘Unrelated Memorising’ subscales is exhibited. Given that this cohort of students is in their final year of study prior to entering the professional world, the aversion

to 'Lack of Purpose' – questioning whether the courses studied are relevant or worthwhile – appears a logical conclusion. This subscale is also somewhat of an opposite to 'Interest in Ideas' in the Deep approach. Therefore, while there was weakness of the responses to the 'Interest in Ideas' subscale, there is some belief that the content is relevant and not entirely uninteresting. 'Unrelated Memorising' could be seen as an opposite to 'Relating Ideas' and 'Use of Evidence'. Once again, results seem to indicate that the assessment process is not allowing students to practice unrelated memorising to cope with the volume and time pressure of PGDA, especially given their Strategic tendencies. On a related note, 'Fear of Failure' received strong responses and this is not unexpected given the workload and time pressure experienced by students in the PGDA and their assessments as well as the proximity to the exit point from tertiary education and entrance to the profession.

Research Question 2:

The Strategic approach and Surface approach exhibit statistically significant differences in distribution across the nine mark categories (refer Appendix 2). The subscales causing major differences include 'Time Management' and 'Achieving' for Strategic approach, and 'Fear of Failure' for Surface approach. Students achieving higher grades, according to the categories disclosed, were better able to manage their time, had stronger tendencies to achieve and also reported greater 'Monitoring Effectiveness'.

Based on these results, students underperforming academically had stronger tendencies toward 'Fear of Failure' and therefore exhibited more 'Syllabus Boundness' in their responses. These responses are understandable: Academically stronger students are expected to be more proficient at time management and are largely the students striving to achieve; weaker students fear failure (especially at the final hurdle before entering the professional environment) and therefore remain bound to the syllabus.

Research Question 3:

Statistical tests do yield statistically significant differences in responses for both the main scales and subscales (refer Appendix 3 & 4). Males did score stronger at 'Relating Ideas' but conversely also reported stronger tendencies to 'Unrelated Memorising' and 'Syllabus Boundness' (highlighted in blue in Appendices). Females perceived stronger 'Time Management' as well as a stronger 'Achieving' scale (highlighted in pink in Appendices). This could be due to females feeling the need to 'get ahead' in a male dominated environment, as alluded to by Flood and Wilson (2008). While females may have stronger tendencies toward achievement to overcome the historical oppression of women, consideration must also be given to the possibility of potential response bias based on gender (Willows, 2012; Willows & West, 2012; de Lange & Mavondo, 2004). Responses to the ASSIST inventory statements amount to perceptions, and gender bias may influence the strength to which respondents agree or disagree with these statements.

Conclusion

This research paper set out to establish the predominant approaches to learning exhibited by students studying the UCT PGDA. Results indicate that the students sampled did in fact have strong tendencies toward Deep learning and weak tendencies toward Surface learning with the Strategic approach proving to be the dominant approach. Such results are in line with the recommendations of the IFAC International Education Standards and the only similar local study of Barac (2012). Subscales receiving strong responses within the three approaches include 'Seeking Meaning', 'Use of Evidence', 'Syllabus Boundness' and 'Fear of Failure'. 'Interest in Ideas' received relatively weak responses and had the widest dispersion compared to the other Deep subscales. These results are consistent with the researcher's understanding of the PGDA learning environment: Students are exposed to a high volume of technically complex work, examined under time pressure by means of rigorous mini-case-studies and all at the exit point from tertiary education, immediately prior to entrance to professional training and assessment. At this stage in the students' careers, they fear failure that would prolong entry to the profession. The volume of work, level of complexity and time pressure add to this fear resulting in students focussing on the content to be examined. The aforementioned results are consistent with those of Flood and Wilson (2008) who also cited high volume and time pressure as contributing factors to their results.

Academic achievement exhibited a number of curious results. It was established that there was no difference in perceived tendencies toward a Deep Approach for academically stronger or weaker students. Major differences between students of varying academic achievement included academically stronger students feeling more comfortable managing their time (and want to achieve) (Barac, 2012) while weaker students felt a greater fear of failure and therefore the need to restrict themselves to learning within the confines of the syllabus. This consistency of perception toward the Deep approach is encouraging, although further research could include delving deeper into the different levels of understanding and critical reflection experienced by students. While the results of this study are limited to the sample of UCT students, this study serves as a basis for further research into the approaches to learning of students at the entry point to the profession on a national basis.

Finally, on the basis of conflicting results, there appears to be no concrete evidence that the different genders practice differing approaches to learning. In contrast to the research by Flood and Wilson (2008), females were not found to exhibit a greater fear of failure and males were in fact found to show stronger tendencies toward unrelated memorising and being bound to the confines of the syllabus. This is also contrary to the results of Barac (2012).

While the results of this study are mostly confirmatory, this study serves as a basis for extending such research beyond the scope of the limited, university-bound sample, to an inter-institutional, national and international level. Furthermore, this lays the foundation for further research into the possible links between factors present in the learning environment and student responses in terms of approaches to learning. Byrne *et al.* (2010) have posited

that educators of the accounting discipline could learn from other disciplines where differences in the learning environment have fostered a Deep approach to learning. Possibly the most relevant area of further interest posed by both Byrne *et al.* (2010) and Barac (2012) is the possible contribution of the current accounting assessment models to student approaches to learning.

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Appendices

Appendix 1: Related Samples Friedman's Two-Way Analysis of Variance by Ranks					Pairwise Comparison		
Null Hypothesis	N	Test Stat	Sig*.	Decision	Sample1- Sample2	Adj Sig**	Decision
The distributions for Deep, Surface and Strategic Approaches are the same	70	62.616	.000	Reject the Null Hypothesis	ST-DA	.156	Reject the Null Hypothesis for the Shaded Pairs - the distributions of these pairs differ significantly
					ST-SA	.000	
					DA-SA	.000	

The distributions for Seeking Meaning, Relating Ideas, Use of Evidence and Interest in Ideas are the same	72	28.477	.000	Reject the Null Hypothesis	SM-RI	.085	Reject the Null Hypothesis for the Shaded Pairs - the distributions of these pairs differ significantly
					SM-UE	.111	
					SM-II	1.000	
					RI-UE	.000	
					RI-II	1.000	
					UE-II	.001	
The distributions for Organised Studying, Time Management, Alertness to Assessment Demands, Achieving and Monitoring Effectiveness are the same	73	57.504	.000	Reject the Null Hypothesis	OS-TM	.000	Reject the Null Hypothesis for the Shaded Pairs - the distributions of these pairs differ significantly
					OS-AD	1.000	
					OS-AC	.000	
					OS-ME	1.000	
					TM-AD	.000	
					TM-AC	1.000	
					TM-ME	.000	
					AD-AC	.000	
					AD-ME	1.000	
					AC-ME	.001	
The distributions for Lack of Purpose, Unrelated Memorising, Syllabus Boundness and Fear of Failure are the same	73	121.438	.000	Reject the Null Hypothesis	LP-UM	.039	Reject the Null Hypothesis for the Shaded Pairs - the distributions of these pairs differ significantly
					LP-SB	.000	
					LP-FF	.000	
					UM-SB	.000	
					UM-FF	.000	
					SB-FF	1.000	

Appendix 2: Independent Sample Kruskal-Wallis Test		
Category	Null Hypothesis	Sig*.
Deep Approach	The distributions of Deep Approach is the same across all categories of marks	.481
Strategic Approach	The distributions of Strategic Approach is the same across all categories of marks	.026
Surface Apathetic Approach	The distributions of Surface Approach is the same across all categories of marks	.019
Seeking Meaning	The distributions of Seeking Meaning is the same across all categories of marks	.334
Relating Ideas	The distributions of Relating Ideas is the same across all categories of marks	.749
Use of Evidence	The distributions of Use of Evidence is the same across all categories of marks	.586
Interest in Ideas	The distributions of Interest in Ideas is the same across all categories of marks	.406
Organised Studying	The distributions of Organised Studying is the same across all categories of marks	.078
Time Management	The distributions of Time Management is the same across all categories of marks	.010
Alertness to Assessment Demands	The distributions of Alertness to Assessment Demands is the same across all categories of marks	.607
Achieving	The distributions of Achieving is the same across all categories of marks	.021
Monitoring Effectiveness	The distributions of Monitoring Effectiveness is the same across all categories of marks	.029
Lack of Purpose	The distributions of Lack of Purpose is the same across all categories of marks	.097
Unrelated Memorising	The distributions of Unrelated Memorising is the same across all categories of marks	.050
Syllabus Boundness	The distributions of Syllabus Boundness is the same across all categories of marks	.324
Fear of Failure	The distributions of Fear of Failure is the same across all categories of marks	.036

Appendix 3: Mean scores	Subscale	Mean Scores	
		Male	Female
Deep Approach	Seeking Meaning	9.119	9.531
	Relating Ideas	9.463	11.250
	Use of Evidence	8.286	8.419
	Interest in Ideas	10.381	9.800
Strategic Approach	Organised Studying	9.512	9.156
	Time Management	8.366	6.375
	Alertness to Assessment Demands	9.571	10.438
	Achieving	8.310	6.625
	Monitoring Effectiveness	9.561	8.594
Surface Approach	Lack of Purpose	15.929	17.281
	Unrelated Memorising	13.405	15.719
	Syllabus Boundness	9.357	11.645
	Fear of Failure	9.571	9.258

Appendix 4:	Independent Samples Kruskal-Wallis Test	
Category	Null Hypothesis	Sig*.
Deep Approach	The distribution of Deep Approach is the same across genders	.143
Strategic Approach	The distribution of Deep Approach is the same across genders	.293
Surface Approach	The distribution of Deep Approach is the same across genders	.019
Deep Approach	The distribution of Seeking Meaning is the same across genders	.578
	The distribution of Relating Ideas is the same across genders	.002
	The distribution of Use of Evidence is the same across genders	.883
	The distribution of Interest in Ideas is the same across genders	.449
Strategic Approach	The distribution of Organised Studying is the same across genders	.666
	The distribution of Time Management is the same across genders	.012
	The distribution of Alertness to Assessment Demands is the same across genders	.188
	The distribution of Achieving is the same across genders	.036
	The distribution of Monitoring Effectiveness is the same across genders	.207
Surface Approach	The distribution of Lack of Purpose is the same across genders	.145
	The distribution of Unrelated Memorising is the same across genders	.005
	The distribution of Syllabus Boundness is the same across genders	.004
	The distribution of Fear of Failure is the same across genders	.924

Appendix 4: ASSIST survey questions by subscale

Deep Approach

Seeking Meaning

4	I usually set out to understand for myself the meaning of what we have to learn.
17	When I read an article or book or course module, I try to find out for myself exactly what the author means.
30	When I am doing tuts or reading, I stop from time to time to reflect on what I am trying to learn from it.
43	When doing tutorials, before tackling a problem or question (i.e. "Required"), I first try to work out what lies behind it.

Relating Ideas

11	I try to relate ideas I come across to those in other topics or other courses whenever possible.
21	When I'm working on a new topic, I try to see in my own mind how all the ideas fit together.
33	Ideas in course notes or articles often set me off on long chains of thought of my own.
46	I like to play around with ideas of my own even if they don't get me very far.

Use of Evidence

9	I look at the evidence carefully and try to reach my own conclusion about what I'm studying.
23	Often I find myself questioning things I hear in lectures or tuts, or read in suggested solutions or textbooks.
36	When I do tutorials or read, I examine the details carefully to see how they fit in with what's being said.
49	It's important for me to be able to follow the argument, or to see the reason behind things.

Interest in Ideas

13	Regularly I find myself thinking about ideas from lectures when I'm doing other things.
26	I find that studying topics covered in this course can be quite exciting at times.
39	Some of the ideas I come across on the course I find really gripping.
52	I sometimes get 'hooked' on academic topics and feel I would like to continue studying them in the future.

Strategic Approach

Organised Studying

1	I manage to find conditions for studying which allow me to get on with my work for this course easily.
14	I think I'm quite systematic and organised when it comes to revising for exams.
27	I'm good at following up some of the reading suggested by lecturers or tutors.
40	I usually plan out my week's work in advance, either on paper or in my head.

Time Management

5	I organise my study time for this course carefully to make the best use of it.
18	I'm pretty good at getting down to work whenever I need to for this course.
31	I work steadily through the term or semester, rather than leave it all until the last minute.
44	I generally make good use of my time during the day, for this course.

Alertness to Assessment Demands

2	When answering a test or exam question, or assignment or essay, I'm keeping in mind how best to impress the marker.
15	I look carefully at markers' comments to tests and on my script to see how to get higher marks next time.
28	I keep in mind who is going to mark a test and what they're likely to be looking for.
41	I keep an eye open for what lecturers seem to think is important and concentrate on that.

Achieving

10	It's important for me to feel that I'm doing as well as I really can on the course.
24	I feel that I'm getting on well, and this helps me put more effort into the work.
37	I put a lot of effort into studying because I'm determined to do well in this course.
50	I don't find it at all difficult to motivate myself for this course.

Monitoring Effectiveness

7	I go over the work I've done carefully to check the reasoning and that it makes sense.
20	I think about what I want to get out of this course to keep my studying well focused.
34	Before starting work on a tutorial question, I think first how best to tackle it.
47	When I finish a piece of work, I check it through to see if it really meets the requirements.

Surface Apathetic Approach

Lack of Purpose

3	Often I find myself wondering whether the work I am doing in this course is really worthwhile.
16	There's not much of the work in this course that I find interesting or relevant.
29	When I look back, I sometimes wonder why I ever decided to come here.
42	I'm not really interested in this course, but I have to take it for other reasons.

Unrelated Memorising

6	I find I have to concentrate on just memorising a good deal of what I have to learn.
19	Much of what I'm studying makes little sense: it's like unrelated bits and pieces.
32	I'm not really sure what's important in lectures so I try to get down all I can.
45	I often have trouble in making sense of the things I have to remember.

Syllabus-Boundness

12	I tend to read very little beyond what is actually required to pass.
25	I concentrate on learning just those bits of information I have to know to pass.
38	I gear my studying closely to just what seems to be required for tests and exams.
51	I like to be told precisely what to do in answering questions.

Fear of Failure

8	Often I feel I'm drowning in the sheer amount of material we're having to cope with.
22	I often worry about whether I'll ever be able to cope with the work properly.
35	I often seem to panic if I get behind with my work for this course.
48	Often I lie awake worrying about work I think I won't be able to do for this course.

Paper 3:

Authors: **Belinda Breytenbach** and **Andres Merino**, University of the Witwatersrand

The perceived skills gap of accounting graduates when entering the accounting profession in South Africa: a preliminary investigation.

Abstract:

This study investigates the views of audit managers and accounting graduates with respect to the skills that graduates poses upon entering the profession in South Africa. A qualitative research method was used where eight semi-structured interviews were conducted with audit managers and accounting graduates. Employers who participated identified the ability to apply theoretical knowledge to a practical situation as the most important skill which an accounting graduate should have upon entering the profession. Technical skills and communication skills were also reported to be of utmost importance. From the point of view of accounting graduates, the most important skills to have when they enter the profession have been identified as technical skills, IT skills and communication skills. Some interventions are suggested to aid the development of generic skills in accounting programmes at universities. These include incorporating in the curriculum of accounting degrees more case-studies to give students context and providing students with opportunities to acquire IT and communication skills through team work and individual projects.

Keywords:

Skills expectation gap, soft skills, generic skills, accounting education.

Introduction

The role of the chartered accountant has traditionally been considered that of bookkeeper or auditor. This role has since changed to the role of business leader, business advisor and often being a member of top management of a company. The change in role necessitates the development of a more comprehensive range of skills by the professional accountant, as technical accounting skills alone are not sufficient to fulfil these roles (De Villiers, 2010; Jones, 2010; Coetzee and Schmulian, 2012; Tempone, Kavanagh, Segal, Hancock, Howieson and Kent, 2012).

In order to qualify as a chartered accountant in South Africa, the SAICA Initial Test of Competence (ITC) and Assessment of Professional Competence (APC) exams have to be passed. These exams can be written by students who have completed a SAICA accredited degree and a post-graduate year in Accountancy, commonly referred to as the Certificate in

the Theory of Accounting (CTA). The accreditation of the accounting degrees at universities by SAICA indicates to prospective employers of accounting graduates that certain skills will be developed during university studies (Hesketh, 2011; Venter and de Villiers, 2013; Lubbe, 2014). However, it has been found that a gap exists between the skills which employers of accounting graduates require and the skills which graduates acquire at university (Kavanagh and Drennan, 2008; Jackling and De Lange, 2009; Bui and Porter, 2010; De Villiers, 2010; CIMA, 2014b).

Although numerous studies have identified a gap between the skills required in the workplace and the skills developed at university, not many practical suggestions have been given with regards to bridging this gap (De Villiers, 2010). In addition, not much has been reported on with regards to the skills gap specifically in a South African context. The aim of this study is to identify the most important skills required of South African accounting graduates when entering the profession as well as any expectation gap experienced by employers and graduates with regards to these skills and to suggest interventions which could aid in developing generic skills at university. These issues will be addressed through the following research questions:

- What are the most important skills for accounting graduates to have when they enter the profession and are these skills being developed in accounting programmes at university, from the point of view of the employer?
- What are the most important skills for accounting graduates to have when they enter the profession and are these skills being developed in accounting programmes at university and/or by the employer, from the point of view of the accounting graduate?
- What interventions do graduates and employers view as aiding the development of generic skills at university?

This study is a preliminary study aimed at exploring the views of employers and accounting graduates on the existence of a perceived skills expectation gap in a South African context. The study will be expanded to include a wider range of respondents across South Africa. If a perceived skills expectation gap is identified, these findings will inform the development of a questionnaire measuring the skills expectation gap and will determine which skills are considered more important by both employers and employees.

A review of the literature is provided in the next section of the paper, followed by a description of the research methodology used. The findings of the study are then presented. This is followed by a discussion of the results and by a section detailing the conclusions of the paper.

Literature review

Employers of accounting graduates require not only technical accounting skills but also other general (or soft) skills such as communication skills, teamwork skills and inter-personal

skills (Kavanagh and Drennan, 2008; Jackling and De Lange, 2009; Wells, Gerbic, Kranenburg and Bygrave, 2009; De Villiers, 2010). Five groups of soft skills were identified in an exploratory study in New Zealand, namely leadership and teamwork skills; communication skills; thinking and problem-solving skills; self-management and ethical values (De Villiers, 2010). The top skills required for career success identified by accounting students in an Australian study are continuous learning, problem-solving, decision-making, communication skills, critical thinking and self-motivation. In the same study, the top skills required for career success as identified by employers are problem-solving, real life experience, basic accounting skills, communication skills, ethical conduct and team work skills (Kavanagh and Drennan, 2008). In another New Zealand study, interviews were conducted with partners and recruitment managers from accounting firms employing accounting graduates. Skills identified as being important to employers included communication skills (oral and written), team work skills and lifelong learning skills (Bui and Porter, 2010). Tempone et al. (2012) found that communication, self-management and teamwork skills were most important to employers of accounting graduates across different regions in Australia. Ethical conduct has been identified as another important generic skill for accounting graduates to possess (Jackling and De Lange, 2009).

The need for accounting graduates to possess skills, other than technical skills has also been identified in a South African study based on the perceptions of training officers regarding skills of entry-level trainee accountants. In this study, IT skills were found to be very important for entry-level trainee accountants (Barac, 2009). However, in the study by Jackling and De Lange (2009) it was found that some employers do not regard having IT skills as being as important for new entrants in the profession as these skills could be developed through specific training provided by the company. Similarly, Bui and Porter (2010) found that although IT skills are regarded as relatively important by employers, only a basic level of proficiency is expected of accounting graduates at the time of entering the accounting profession.

Some generic skills are more effectively developed in a practical work environment than at university (Kavanagh and Drennan, 2008; Barac, 2009). An understanding of business and real-world issues can only be fully understood by accounting graduates once they start working (Bui and Porter, 2010). Some universities therefore include practical work experience in their accounting programmes (Jackling and De Lange, 2009; Wells et al., 2009). It is important to determine which skills are more effectively developed at university level and which skills are more effectively developed in a work environment and universities should focus on developing the former in their accounting programmes, while the latter should be addressed by the firms (De Villiers, 2010).

The Chartered Institute of Management Accountants (CIMA) has recently conducted research into the competencies required of finance and accounting graduates by employers through interviews and questionnaires with employers from more than 200 organisations

worldwide. It emerged that technical skills alone are not sufficient, but that other skills are becoming increasingly important for an accountant to be effective in business. Based on the research findings, CIMA has identified four main categories of skills required by employers: core accounting and finance skills, business acumen (including project and process management skills), people skills (including decision-making and communication skills) and leadership skills. These findings have led to the development of a new competency framework by CIMA as well as a revised syllabus and process of assessment (CIMA, 2014b).

Professional accounting bodies are aware of the need for graduates to possess generic skills and are therefore requiring universities to incorporate generic skills in their accounting programmes. In South Africa, the SAICA Competency Framework has been developed in order to address the skills shortage which has been identified and universities are required to align their programmes in accounting to this Framework (De Villiers, 2010; SAICA, 2010). The accreditation body for professional accountants in Australia (CPA Australia) also requires universities to include generic skills in their accounting programmes (Jackling and De Lange, 2009).

A large gap between the expectation of employers and the demonstration of skills by graduate students has been identified with regards to accounting software skills, negotiation, self-motivation, customer service and leadership (Kavanagh and Drennan, 2008). Not only does a gap exist in terms of employer expectations and the skills which they perceive graduates to have, but also in terms of the skills which employers expect of accounting graduates and the skills which the graduates themselves perceive as being important (Wells et al., 2009). Accounting graduates feel that the skills required to progress in their careers are not adequately developed at university (Kavanagh and Drennan, 2008; Jackling and De Lange, 2009; Bui and Porter, 2010; De Villiers, 2010). In the study by Wells et al. (2009) suggestions were given by graduates to improve university courses in order to address the skills gap: more team work, presentations by students, real-life examples and greater use of professional judgment. This study therefore aims to identify some of the skills regarded as important by accounting graduates as well as their perceptions of the adequacy of the development of these skills at university in a South African context. Curriculum and degree structure changes could be proposed to universities based on the results of this study.

Research methodology

A qualitative research method was used in order to gain an understanding of the “perceptions and interpretations of the respondents” and of “the experiences and interpretations (conceptions and perceptions) of the respondents individually rather than collectively” (Lubbe, 2014, p.7).

A non-random sampling technique, purposive sampling (judgment sampling), was used where respondents are intentionally selected based on specific qualities which they possess

(Tongco, 2007; Lubbe, 2014). The specific qualities upon which the selection of respondents was based in this study was that they had to be qualified chartered accountants, involved in regular interactions with accounting graduates or they had to be accounting graduates in the process of completing their training contracts at an audit firm. The purposive sample therefore, consisted of four audit managers and four article clerks in either their second or third year of articles. This sample was selected in order to gain an understanding of the perceptions of employers of accounting graduates as well as the perceptions of the accounting graduates as employees at one of the big four audit firms in Johannesburg.

Semi-structured interviews were conducted with interviewees and they were assured of confidentiality and anonymity. Semi-structured interviews offer a flexible way of conducting interviews and provide the opportunity to further explore the interviewee's responses through follow-up questions (Bui and Porter, 2010; Tempone et al., 2012). Interviewees were asked to identify the most important skills for accounting graduates to have when they enter the profession and to give their opinion on whether or not these skills are being developed in accounting programmes at university. In addition, they were asked about the importance of the following skills as identified in the literature: technical skills, communication skills, business skills, IT skills and leadership skills. The interview recordings were transcribed in full and a thematic contents analysis was used to identify the key themes emerging from the data (Plano Clark and Creswell, 2011; Rowley, 2012).

Findings from the Analysis of the Interviews

The key skills identified by audit managers were technical skills, knowledge of how a business functions and communication skills. From the perspective of the audit clerks (graduates) the most important skills identified in order to progress in their careers were technical skills, IT skills and communication skills. Managers and audit clerks were also asked about the importance of leadership skills, as identified in the literature (De Villiers, 2010; CIMA, 2014b). Each of these skills is discussed in the following sections.

Technical skills

Three out of the four audit managers who were interviewed were of the opinion that graduates generally do have good technical skills such as knowledge of IFRS, Auditing standards, Companies Act, and Income tax Act when they enter the profession. However, graduates seem to lack confidence in voicing their opinions with regards to technical issues. In addition, the ability of graduates to apply their technical knowledge to a practical situation is lacking. Some of their comments were as follows:

"I think the biggest skill they are lacking is practicality. They do not know how to apply themselves and how to apply their knowledge to a situation."

“I think sometimes they’re so caught up in the book knowledge and the theoretical aspect of it... they need to think about what’s happening and apply the theoretical knowledge to it...”

One audit manager was of the opinion that graduates’ technical knowledge is not at the level expected when they enter the profession. Managers and graduates agreed that it is appropriate to develop technical skills at university level as opposed to firm level and that the technical updates at the firm are sufficient to keep people up to date on technical matters.

Communication skills

Respondents were asked about the importance of people skills, defined as communication, team work and decision-making skills. Communication skills were highlighted by respondents as the most important aspect of people skills, specifically in the audit environment where graduates are expected to work in teams, to coach fellow trainees, to communicate with the audit manager and partner and to address the client. This is in line with previous findings (Tempone et al., 2012). The perception of audit managers seems to be that graduates entering the profession do not have good verbal communication skills:

“...the guys tend to struggle to communicate. That often leads to a lack of confidence and time inefficiencies occur. They tend to start off on the wrong foot.”

“They do not know how to talk to a client, they do not know how to address a person more senior than them... because they walk into an office and say ‘I want to talk to you now’, instead of making an appointment.”

Written communication skills also seem to be lacking:

“Written communication is an issue... spelling and grammar is terrible in many cases... half the words aren’t spelled right and the sentences don’t make sense.”

“It’s horrible when it comes to e-mails. They’re not introducing themselves... especially if it’s the first time you mail a person, that’s important.”

Written communication seems to be particularly challenging from the graduates’ point of view. They identified having difficulties using appropriate business language when writing to a client and writing comprehensive reports or proposals in a succinct way. Communication skills are being developed at the audit firm through various training courses such as writing courses, a course in business English and a presentation skills workshop. Graduates suggested that it could be useful to run similar courses at university in order to address the skills gap, specifically for those students who struggle with communication. A business writing course, addressing business report writing and e-mail etiquette could be particularly useful. Further suggestions are for students to do role plays where they practice how to

interact appropriately with a client and colleagues; to do more presentations throughout their studies and to get students to lead discussions in their tutorials.

Business skills

When asked about the importance of having good business skills in order to progress in your career as a chartered accountant, graduates agreed that it is a very important skill. This confirms the findings of an Australian study (Kavanagh and Drennan, 2008) An awareness of the economic environment, markets and the impact of recent economic events on businesses is particularly useful in the identification of risks as auditors as well as in making judgments and advising clients. Even though graduates view it as more appropriate to develop business skills at the audit firms than at university, suggestions to address this skill at university included giving students case studies based on actual events or giving them a research project focused on a specific industry. Reference was made by one of the graduates to the APC exam where students are given a case study and have to do research as an effective way of developing business skills.

The development of business skills occurs at the audit firms. Even though there is no formal training to develop this skill, it is developed through on-the-job training; informal discussions between trainees, audit managers and partners; e-mails being sent out by the firm about significant events in the economy, industry and markets. It was suggested by one of the respondents that each audit department in the audit firm provide formal training to entry-level trainees, introducing them to the specific industry in which their clients operate.

Business skills are regarded as very important by employers. Graduates are not perceived to have this skill when entering the profession however it is recognised that this skill will be developed throughout their training contract at the audit firm. A suggestion given by audit managers to improve the business skills of graduates is for universities to ask individuals involved in business to talk to students about the different industries in the market and to give students updates on recent economic events and the impact of the economic environment on their industries. A project-based assessment was also suggested where students have to do a business plan, understand how the business processes function from start to finish, draw up budgets and at a later point compare budgeted amounts to actual amounts in order to improve students' understanding of business dynamics. The development of a board game which students could play with lecturers as assessors was another suggestion made by one of the managers. The game could have cards with economic events which students would have to take into account when making business decisions. The importance of students doing vacation work at audit firms during their university careers was highlighted as a way of exposing them to the skills required in the working environment.

IT skills

It is critical in the audit environment that graduates are proficient in the use of IT, especially Microsoft Excel as audit working papers are done electronically at the major audit firms and IT is used on a daily basis in the working environment. This is in line with previous research (Barac, 2009). Graduates emphasised the importance of IT and particularly Excel:

“Just every day you’re working on a computer. You’re working in Excel, Word. If you don’t know how it works you’re not going to be able to do anything.”

“I think the biggest skill is computer skills... especially Excel. I think there’s a huge gap there because when you get here... all our working papers are in Excel and obviously at university we used to write.”

Graduates entering the audit firms are perceived by audit managers not to possess this skill:

“Because scarily enough, they do not know how Word works, to write a report. But the critical thing is Excel. They don’t know how to write formulas. They don’t need to do pivot tables and vlookups, but they should at least know how to sum.”

“You can see it [the lack of skill] when a person is using his calculator to add up amounts in Excel...”

IT training, including Excel, Word, Outlook and PowerPoint is being provided to trainees at the audit firm but it was suggested that more training should be done at universities. More emphasis should be placed on the practical use of IT, as opposed to teaching students the theory of computers and Excel. Students could be given more assignments to do in Excel or Word instead of doing written assignments. It was also suggested that tests and exams at university should be typed, as the Chartered Institute of Management Accountants will be doing from 2015 (CIMA, 2014a), rather than written. Graduates suggested that IT should be incorporated in all four subjects at university and throughout first to fourth year. Including an IT course as a stand-alone course in first or second year does not help students as they tend to forget what they learned by the time they enter the profession.

Leadership skills

Leadership skills were identified as an important skill in the literature and were defined in the interviews as motivating people, team building and leading people (CIMA, 2014b). Audit managers indicated that graduates are not expected to possess leadership skills upon entering the accounting profession; however it is an important skill for them to develop in order to progress in their careers. The ability to delegate, to be assertive and to monitor the performance of others becomes important especially as a third year trainee leading an audit team.

The audit firm has training courses to develop leadership skills for trainees moving from first to second year and again when moving from second to third year and from third year to manager. The skill is also developed indirectly as trainees coach each other on-the-job and

are expected to lead an audit team by their third year of articles. Acknowledging that it would be challenging to develop leadership skills at university level, the following suggestions were given: group projects, where the group leader is appointed on a rotational basis and a different team member is the leader of the group in each teaching block or a workshop for students on communication and leadership facilitated by one of the audit firms.

Conclusions

This study is a preliminary study which reports on the views of 4 employers and 4 accounting graduates regarding their perceptions of a skills expectation gap in a South African context. A limitation of this study is that it considered the opinions of only four employers and four accounting graduates from only one of the Big Four audit firms in Johannesburg. The study will be further expanded to include other firms (Big Four and small-and medium sized firms) throughout South Africa.

Employers identified the ability to apply theoretical knowledge to a practical situation, technical skills and communication skills as the most important skills which an accounting graduate should have when entering the profession. From the point of view of accounting graduates, the most important skills to have when they enter the profession have been identified as technical skills, IT skills and communication skills. Technical skills are being sufficiently developed at universities, however IT and communication skills are only being sufficiently developed through training at the audit firm based on the perceptions of candidates interviewed. Less emphasis was placed on leadership skills by respondents compared to other skills. The development of leadership skills is viewed as important, but not necessarily upon entering into the accounting profession.

Interventions which could aid the development of generic skills in accounting programmes at universities were suggested by the managers and graduates. These included having business writing courses; research projects; incorporating the use of IT into university courses and group projects and presentations. Greater involvement of the audit firms in university courses in terms of assisting with providing soft skills training courses and sending guest speakers could also assist in bridging the skills expectation gap.

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Paper 4:

Author: **L Peta Myers**, Department of Accounting, Rhodes University, Grahamstown, South Africa

Introductory Financial accounting: The impact of knowledge structures on teaching and learning

ABSTRACT

Lecturers tasked with teaching in a discipline with a hierarchical knowledge structure would benefit from having an understanding of why the teaching and learning activities in the discipline need to be planned in a particular way. Financial accounting is a discipline with a hierarchical knowledge structure. This has implications for how the discipline should be taught and it determines some procedures students need to follow when constructing knowledge (learning) in the discipline. Accounting lecturers need to be aware of these procedures and of cognitive difficulties students may face when trying to construct knowledge in the discipline. Students should be made aware of these potential stumbling blocks, and need to ensure that they engage with the discipline in an appropriate manner.

Keywords: Introductory financial accounting, knowledge structures, constructing knowledge.

This is an early draft of portion of a paper submitted for publication.

1. Introduction

This article describes the critical pedagogical issues which I became aware through my master's research. This research has allowed me to interrogate and articulate the teaching and learning activities which take place in an Introductory Accounting semester. As a new lecturer I thought that teaching was simply that, teaching. I felt that I needed to work through the relevant theory in a given topic, to work through the examples provided in the textbook, and that once I have 'powered through' the relevant chapters, my students would miraculously understand the concepts and we would move on to the next topic to repeat the process.

What was miraculous was that some students actually passed this first semester course. Given that almost two thirds of the class had studied the discipline for three years at school, I assume that some of the cohort of students had already been equipped to cope with the tests and examinations.

In this article I review aspects of the research undertaken as part of my master's degree. This research explains why, given the hierarchical knowledge structure (Bernstein, 2000) found in financial accounting, teachers need to structure their teaching programme in a certain way, and with set activities to support the teaching and learning. Students on the other hand need to follow and obtain mastery over certain procedures to facilitate their construction of knowledge within the discipline. The research also revealed common pedagogical problems experienced by these accounting students in constructing knowledge. If these potential stumbling blocks can be made explicit to students, they will benefit from being aware of these problem areas before encountering them. Students will also benefit as a result of developing greater metacognitive awareness in their studies.

In conducting this research I was exposed to different educational theories and I gained access to a discourse that enabled me to describe more accurately the various aspects of teaching and learning that I encountered, both in my teaching practice and in the research that I conducted. Having a theoretical framework and having acquired a discourse to describe the pedagogical activities I encountered, permitted me to make 'tacit understandings explicit' (Young, 2008).

This research was undertaken at a small residential university. At this institution, approximately 60% of the students in an introductory accounting class have already completed up to three years of Accountancy at school level, while the remaining 40% of the class are engaging with the discipline for the first time. These first time accounting students are referred to as 'novice' accounting students in this article. Novice accounting students have no prior knowledge to refer to and the lecturer, in large classes of approximately 400 students, is entrusted with planning all the teaching and learning activities required to guide these students to success in this first year semester course.

The structure of knowledge in a given discipline can have a significant impact on how teachers teach and how students learn within the discipline. Having an understanding of the structure of knowledge is a valuable guide to knowing why teaching and learning activities should be planned in a certain sequence. This understanding is particularly relevant in disciplines with a hierarchical knowledge structure.

This article first examines the impact of knowledge structures (Bernstein, 2000) on teaching, particularly for those disciplines with a hierarchical knowledge structure. It will then move on to what

this means for the skills students need to acquire to construct knowledge (to learn) in these disciplines, with a particular focus on financial accounting.

2. What is a knowledge structure?

Before continuing, it is important to understand the two extremes in terms of knowledge structures. Bernstein (2000) speaks about disciplines having either a hierarchical knowledge structure, commonly found in the sciences, or a horizontal knowledge structure, commonly found in the humanities.

A hierarchical knowledge structure consists of a 'coherent, explicit and systematically principled structure' (Bernstein, 2000:157) where knowledge in the discipline is 'theory-integrating' (Muller, 2009). A horizontal knowledge structure consists of the 'specialised languages with specialised modes of interrogation' (Bernstein, 2000:157) of the specific discipline, where knowledge in the discipline is 'theory proliferating' (Muller, 2009).

A 'systematically principled structure' in disciplines with a hierarchical knowledge structure means that knowledge in the discipline takes the form of a chain. Each of the links in the chain is related to and builds on the previous link. These links or concepts are best studied in sequence and under the guidance of an expert with the necessary knowledge; not understanding one of the links could mean that, for that student, learning comes to a halt (Hoadley and Muller, 2009).

In a 'theory-integrating' discipline students construct new knowledge by building on previous knowledge, this is the concept of 'cumulative learning'. It is critical that the foundational concepts are thoroughly understood by students before moving on to the next concept, as these foundational concepts will become the basis for future learning. The future learning, while building on the foundational concepts, may be the next link in the chain and may become the basis for the next level of learning. It is therefore essential that previously taught knowledge or theory is thoroughly understood by students, before they move on to the next topic. In a hierarchical knowledge structure there may not be 'large numbers of concepts' but they are all 'hierarchically related' (Hoadley and Muller, 2009:75). Having a hierarchical knowledge structure has significant implications for how the discipline is taught and how students need to construct knowledge in the discipline.

On the other hand, new knowledge in a horizontal knowledge structure is likely to result in a new 'language' or an additional theory being added to the knowledge base of the discipline. Not understanding one 'language' does not mean that any other language will similarly not be understood as 'languages' do not necessarily build on each other.

New knowledge in a horizontal knowledge structure results in a new theory or a new language to explain a phenomenon. In a hierarchical knowledge structure, existing knowledge is subsumed and built upon in the process of developing new knowledge.

$L^1 L^2 L^3 L^4 L^5 L^6 L^7 \dots L^n$

Figure 1 - A horizontal knowledge structure (Bernstein, 1999:162)

Figure 1 illustrates how, as new areas are researched in a discipline with a horizontal knowledge structure, a new 'language' or theory is added to the discipline. This new language is not necessarily based on any previous knowledge or 'language'.

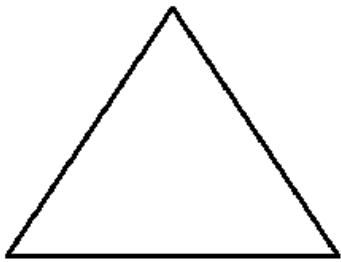


Figure 2 - A hierarchical knowledge structure (Bernstein, 1999:162)

Figure 2 is an illustration of a hierarchical knowledge structure. The apex of the triangle is where the more abstract, overarching concepts governing a discipline will be found, with an ever-increasing range of phenomena falling under these abstract concepts. In accounting, the abstract concepts would consist of the Conceptual Framework of the International Financial Reporting Standards (IFRS), that is:

- Objectives of Financial Reporting
- Qualitative Characteristics of useful Financial Information
- Underlying Assumption
- Elements of the Financial Statements and Recognition and Measurement of these elements (IFRS Foundation, 2012:A14)

The elements of the financial statements and their recognition and measurement, are founded on the concept of financial statements being drawn up on the basis of debits and credits. In this instance the term 'recognition' is understood in a purely accounting sense.

Knowledge structures are not simply either horizontal or hierarchical, but in most disciplines will be found on a continuum somewhere between the two extremes. The degree of 'integratedness' or 'subsumability' of a theory can also be described as the degree of 'verticality' of the discipline (Muller, 2006:21). A high degree of verticality means that the knowledge structure of the discipline is more hierarchical than horizontal, while a low degree of verticality means that the knowledge structure of the discipline is more horizontal than hierarchical.

In a discipline with a horizontal knowledge structure, or a low degree of verticality, not understanding the argument or the development of a 'language' has little impact on understanding other 'languages' or theories within the discipline. For example, not having a clear understanding of industrial psychology will not impact significantly on a student studying a module in social psychology.

In a discipline with a high degree of verticality, as is found in financial accounting, if students do not understand one concept or theory they will be unlikely to progress successfully through to the next concept until the first concept has been thoroughly understood. This inability to progress becomes problematic for the student when trying to make sense of the topic. This is a problem commonly encountered by novice accounting students, as the basic (but abstract) principle of debits and credits needs to be understood at the beginning of the semester as it forms the basis for all future discussions.

We move now from the structure of knowledge in a discipline, to skills required for the construction of knowledge in the discipline. We first need to understand how disciplines with different knowledge structures require students to have a different focus, or 'gaze', when looking at a question and providing a solution or the 'legitimate text' (Bernstein, 2000) required.

3. How knowledge structures determine the focus when constructing the 'legitimate text'

When constructing knowledge in a discipline, what students are working towards is to be able to produce the solution or 'legitimate text' that is required by the discipline. When producing this 'legitimate text' in a hierarchical knowledge structure, what students need to produce is the 'truth' (Bernstein, 1999): the one correct solution which is required. There is little room for negotiating what is correct in the solution, there is just one 'truth' or 'legitimate text'.

In producing this 'legitimate text' in a hierarchical knowledge structure, neither the experiences nor the characteristics nor the interpretation of the student are of much value: what is important is knowledge of the discipline and mastery over the rules and procedures that govern the discipline. Fields with these characteristics are known as knowledge code fields (Maton, 2011).

The one 'truth' in accounting is based on the requirements of the qualitative characteristics of financial statements: financial statements need to be comparable across years and from one organisation to another. For financial statements to be comparable and therefore useful to users, there cannot be significantly different interpretations on how these financial statements should be compiled and presented.

A knowledge code field can be contrasted with a field where there is greater room for interpretation as to what the 'truth' is and whose truth it is; a field where there is greater flexibility in deciding on the processes and procedures used to reach the truth; a field where the experiences and characteristics and interpretation of the student hold greater value. This field is called a knower code field (Maton, 2011), more commonly found in subjects located in the humanities.

In a knowledge code field, the procedures of investigation (Bernstein, 1999:165) generate the gaze. Stated differently, the rules of the discipline determine how a student will examine the information provided and approach solving the problem. This gaze, or approach, in a knowledge code field is called a 'trained gaze' (Maton, 2011). A 'trained gaze' is developed through 'knowledge of and experiences in the specialised procedures' while expertise in the 'specialized procedures generates the gaze' (Maton, 2011:77). What this means is that it is in doing the work, in accounting terms through 'practise, practise, practise', that students develop a 'trained gaze'. Developing a trained gaze is critical for success in the discipline.

In a knower code field, the gaze generates the procedures, and in this case it could be a 'cultivated', 'social' or 'born' gaze (Maton, 2011:77). In a knower code field, how students interpret the problem, will decide how they approach producing the 'legitimate text' required.

In a knowledge code field the gaze is acquired through training in the procedures of investigation. In learning the procedures of investigation, students should start developing a 'trained gaze'. What this means is that in a knowledge code field like accounting, students should be able to read what is 'required' in a question, and the 'trained gaze' which they would have developed would guide them in identifying what part of the information in the given scenario is important and how they should be constructing the 'legitimate text' that is the 'truth' that is being sought.

In a knowledge code field, with a high degree of verticality, the 'truth' is not contested very often, while in a knower code field, the truth is often contested.

We have looked at the difference between the two knowledge structures, and the implications these knowledge structures have for the 'gaze' required as students work towards providing 'legitimate text'. We now consider the impact of a hierarchical knowledge structure, as found in the discipline of accounting, on teaching and learning in the discipline.

4. What this means for teaching and learning in accounting

Introductory accounting has a hierarchical knowledge structure, with a high degree of verticality (Myers, 2014). This means that the discipline is strongly theory-integrating and that previous knowledge is subsumed in new knowledge.

In constructing knowledge in a discipline with a high degree of verticality, a discipline that requires a cumulative learning approach, new understandings build on and subsume old understandings. Students need to work towards 'mastering the procedures of investigation ...and understanding the theory ... the only and sole pathway to 'truth'' (Bernstein, 1999:165).

In financial accounting, particularly at an introductory level, there is one 'truth'. While working towards mastery over the 'procedures of investigation', the processes and principles that should be followed in a given scenario, students will be developing the 'trained gaze' (Maton, 2011) that is essential for success in the discipline.

For teaching and learning within the discipline, particularly in the first semester of the first year, how teachers teach, and how teachers plan their mediation of student learning, becomes extremely important. The research on which this paper is based, looked only at teaching and learning at an introductory financial accounting level. While the value of planning teaching and learning at other levels is likely to be as significant, it was not the focus of this research.

Teaching and learning activities should be planned to ensure that students have every opportunity to become familiar with the foundational concepts. Once the foundational concepts are understood, students should be provided with every opportunity to engage with the topics in a manner which will allow them to develop mastery over the procedures of investigation. These opportunities assist students in developing the trained gaze required.

When a student is able to identify which information is applicable in a given accounting scenario, it means that the student has acquired 'recognition rules' (Bernstein, 2000). In this instance the words 'acquired' and 'recognised' are used in the Bernsteinian sense. Recognition rules allow a student to identify what is important in a task, while 'realisation rules' (Bernstein, 2000) are necessary to allow the student to put the answer into the 'legitimate text' required for successful completion of the task. Having acquired both recognition and realisation rules, students would be starting to develop mastery over the procedures of investigation and therefore starting to develop the trained gaze necessary for success in the discipline.

4.1 Modelling how to construct a solution – acquiring recognition and realisation rules necessary to produce the 'legitimate text' required

To help students develop a trained gaze, when I teach I use 'think-aloud modelling' (Biggs, 1999:83). To explain what this means, when lecturing I first read through an example and next I actively demonstrate how students should approach constructing a solution – the legitimate text required - using the following steps:

- Having read the key aspects of the question, I identify the 'required' section, to establish what the question is looking for.
- Keeping the students' focus on the 'required', I read through the scenario provided in the example again, and look for all information that relates to the 'required'. By overtly identifying which information is relevant to the 'required' I am modelling for students how to develop recognition rules.
- Finally I move on to helping students develop realisation rules, by modelling how to present the required information in the legitimate text required, which is the correctly formatted solution.

In talking students through how I construct a solution, I am modelling my approach for them. Working through all examples in this manner should model for students the acquisition of recognition and realisation rules.

4.2 Planning teaching and learning activities to help cumulative learning

Teaching and learning activities are planned to allow for formative feedback, with the activities happening in four separate phases. Formative feedback is essential for students to be able to identify areas of strength and weakness and to guide students in how to improve on any future submission. While each phase of the planned activities is discrete, it builds on the preceding phase. This is the process of guiding cumulative learning for students.

The first activity is the teaching that takes place during a lecture. This is one of the first opportunities for students to start practising the skills that they need to acquire. They also need to be able to query how to approach a question (the procedures of investigation) to ensure that they are doing this correctly and so that they can construct their solutions (the legitimate text) in the required manner. While I try to ensure as much student participation as possible, students can choose whether or not to attend a lecture and, given the size of the class, can choose whether or not to be engaged in the lecture. Lectures on various topics are planned in a specific sequence, and within the topics are

planned in a certain sequence, to ensure that students learn and understand the foundational concepts in the topic first, before we move on to more complex issues.

The second activity, in the following week, takes place in the form of a tutorial session. While tutorials are compulsory and take place in smaller groups of about forty students under the guidance of two tutors, students can again choose their level of participation and may be able to attend a tutorial with little engagement. This is an additional opportunity for students to gain mastery over the procedures of investigation, this time under the guidance of a relatively 'expert' tutor. Here students will also obtain formative feedback on the tutorial work which they have completed.

In the next activity, the focus starts shifting to 'what the student does' (Biggs, 1999). During this stage there is enforced engagement from the student as compulsory assignments need to be submitted in the week following the tutorial. These assignments are based on the work covered in an earlier lecture and practised in the tutorial session. For many students this will be the first opportunity to ascertain whether they have the correct interpretation of the work that has been covered.

Students will often complete assignments working in groups. In itself this is not problematic, as long as every student is actively engaged in preparing and completing the assignment and participating in the group work and as long as every student understands how the solution, the 'legitimate text' was derived. Group work is a useful way for students to engage with the work, to challenge their own and other students' understanding of the work, and to ensure that they really do understand the concepts correctly. But, as a participant in my research said, 'in the end, it is only you and the [examination] paper'. Group work is a useful tool, but students eventually must be able to complete the given tasks on their own. In reality a small number of students will again not take advantage of this learning opportunity and will simply copy a friend's assignment. It is difficult to identify this plagiarism in accounting, as the solutions should all be very similar, by the nature of the discipline.

To clarify the extent of the problem of copying assignments, the 2013 cohort of accounting 101 students completed an on-line questionnaire. The responses indicated that 6% said they had copied an entire assignment, while 35% admitted having copied a portion of one or two assignments. Taking these responses at face value, while it confirms that the copying of assignments does take place, it does not seem to happen regularly.

The fourth and final stage of teaching and learning opportunities takes place with the writing of formal tests that are set once a term. For many students this will be the first time they have engaged with the work without the assistance of a peer or an expert. This could therefore be the first opportunity for some students to know whether they understand the work that has been covered. Students will obtain detailed feedback on these tests, both in written form and in the review of the test in a subsequent lecture or tutorial. This formative feedback will again allow them to identify areas of weakness and to improve on these areas in the final examination.

These teaching and learning activities are on-going and for some topics there may be a couple of weeks of lectures on a particular topic, followed by the tutorial and then assignments. Only once a term will students be able to gauge the true extent of their learning and understanding, and that will be when they write the formal test.

An aspect of cumulative learning, which takes place throughout all of these activities, is through cognitive dissonance. Here I am referring to cognitive dissonance in the Piagetian sense. Cognitive dissonance is when a student becomes aware of a difference in how he or she understands a topic or the procedures of investigation and how others understand the topic or procedures of investigation. Once aware of the dissonance, the student will take steps to reduce the dissonance by either convincing others of his or her understanding, or by shifting his or her understanding to match that of the others. When discussing or listening to discussions during lectures or tutorials; when reading discussions on the on-line forums; when completing assignments or when listening to or reviewing feedback received on assignments or tests; students could become aware of cognitive dissonance. They have the opportunity to then work towards identifying what the correct understanding or procedure is and again to produce an improved 'legitimate text' in a future submission.

4.3 Developing a 'trained gaze'

Once students start gaining mastery over the 'procedures of investigation' (Bernstein, 1999:165) while 'internalising the discipline's standards and notions of quality' (Gibbs, 1999:47), they are starting to develop the trained gaze necessary for success in their studies. The tasks set for tutorials and for assignments provide students with the opportunity to work toward gaining this mastery. The formative feedback received from tutors during the tutorials and on assignments will help to guide students in meeting the discipline's standards.

The 'procedures of investigation' are the steps that are followed in examining the information provided and in deciding which information is necessary and what the process is in constructing a solution or the 'legitimate text' that is required. In my research, one participant referred to this process as the 'recipe' he used to produce the accounting transaction required, while another explained how she put together a 'step-by-step process' that she used as a guide on how to construct a solution.

Students should not only be working towards simply understanding these procedures, but they should be working towards obtaining 'mastery' over these procedures. This mastery will only be developed after spending sufficient time practising the procedures. In some cases the basic procedures will eventually be relegated to low-road transfer (Salomon and Perkins, 1989). In low road transfer there is 'an automatic transfer of highly practised skills' (Salomon and Perkins, 1989:118). When low road transfer takes place, the student does not have to engage cognitively to any significant degree on that aspect of the question, and cognitive functioning is freed up to focus on more demanding aspects of the questions. 'Low-road transfer' or 'automatic processing' starts taking place as students develop mastery over the procedures of investigation and as they therefore no longer have to consciously contemplate which elements are involved in a transaction and whether an account needs to be debited or credit.

A trained gaze, which is developed from obtaining mastery over the procedures of investigation, is a skill that is developed and refined over time. It is not a skill that can be developed overnight. This is why both the completion of the cumulative learning tasks and practising through the completion of assignments are essential to develop a trained gaze.

5. Conclusion

Financial accounting is a hierarchical knowledge structure with a high degree of verticality. To succeed in a discipline with a high degree of verticality requires a student to acquire recognition and realisation rules and to develop mastery over the 'procedures of investigation', which will facilitate developing a 'trained gaze'. This trained gaze develops and expands as the student progresses through the stages of cumulative learning required in the discipline and becomes skilled in the required procedures.

A discipline with a high degree of verticality has a knowledge structure like a chain, with one concept building on the previous concept. These concepts are best taught in sequence and under the guidance of an expert. A conceptual block at any point in the chain of understanding may mean that the student is unable to progress any further with any degree of understanding. This process has important implications for the teaching and learning activities planned for a student who needs to develop mastery over the procedures of investigation required to gain an understanding in the discipline.

Engaging with this research has given me access to a new and different discourse that has permitted me to discuss, understand, explain and engage with my teaching in a far more informed manner and has exposed me to theories that have explained phenomena that I experience in my classroom, but could not previously place within a pedagogical framework. This article illustrates the value for teachers, and in particular those who teach introductory courses with a hierarchical knowledge structure, in understanding why their teaching is based on certain pedagogical frameworks and foundations. An improved understanding of these frameworks and foundations will help teachers to achieve the optimum outcome for their students and will help students in their construction of knowledge in the discipline.

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Paper 5:

Authors: **A. Merino** and **K. Vermeulen**, FNB 135, West Campus, University of the Witwatersrand, Braamfontein

Analysis of the impact of a tutor training intervention on the delivery of a tutorial program at a South African university

ABSTRACT

The paper reports on the impact of an intervention to equip tutors with the necessary skills to deliver effective tutorials within a formal tutorial program in a South African university. The intervention entailed exposing tutors to different learning styles, the principles of self-regulated learning, guided mastery and role-modelling in an effort to improve the effectiveness of the tutorials and thus enhance the learning experience for the students. The study found that the tutors adapted their tutoring practices in response to the training received to the benefit of the students. The results of the study can be used to inform teaching practices and to further develop formal tutor training programs.

Keywords

Tutor training, index of learning styles questionnaire, self-regulated learning, guided mastery, role-modelling

INTRODUCTION

This paper assesses the impact of an intervention aimed at providing tutors with the skills needed to conduct effective tutorials. The intervention involved tutors tutoring second year students studying Management Accounting at a university based in Johannesburg. The training provided to the tutors was structured around the principles of self-regulated learning (Zimmerman, 2008), guided mastery (Bandura, 2011) and role-modelling (Topping, 2005). Tutors were also made aware of their personal learning styles as well as that of their tutees in order to improve the learning experience of the students attending the tutorials (Soloman & Felder, 2004).

Increasingly students starting their university degrees in South Africa lack the necessary behavioural, emotional and cognitive skills needed to successfully complete their degrees (Cross & Carpentier, 2009; Jansen, 2011). This in turn has put pressure on tertiary institutions to determine effective ways to support these students (Scott, Yeld, & Hendry, 2007). Tutorial systems, if properly implemented, are one of the tools that can be used to foster academic success, especially for students who may be at risk of not completing their degrees (Dembo & Seli, 2013; Winfield & Luyt, 2013).

The paper starts by setting out the conceptual framework underpinning the study, followed by a description of the intervention. The next section explains the research methods used and how the data was collected and analysed. Finally the results are presented and a series of recommendations are made that could inform interventions as well as future research on the introduction of tutor training programs at university level.

CONCEPTUAL FRAMEWORK UNDERPINNING THE STUDY

The intervention made use of self-regulated learning (SRL) principles to provide tutors with a framework through which they could assess their effectiveness as tutors. SRL comprises a number of processes that assist students in managing their thoughts, behaviours and emotions in order to successfully navigate their learning experiences (Zumbrunn, Tadlock, & Roberts, 2011). Implicit in the self-regulation model is the idea that students must take responsibility for the acquisition of knowledge by learning how to monitor and exercise control over the learning process. In a process referred to as 'metacognition', students are required to be aware of and to have knowledge about their own thinking processes (Dembo & Seli, 2013; Zimmerman, 2002). This involves assessing one's current reality, setting mastery goals, exploring alternative strategies and determining those best applicable to meeting those goals, implementing the strategies, and then reflecting on whether the desired goals have been achieved (Rock, 2007). Throughout the intervention tutors were encouraged to make use of these principles of action followed by self-reflection in order to assess the quality and the effectiveness of their tutoring.

Tutors were also introduced to the principles of guided mastery and role-modelling. Bandura (2011) identified what he terms 'Guided Mastery', which is a process that can be used to support the acquisition of new skills. Guided mastery comprises three distinct stages: first, the appropriate skills are role-modelled, next, students receive guided practice under simulated conditions, and finally they

are provided with ongoing support by the role-model so that they persevere in their efforts to internalise new behaviours. For this intervention the lecturer in charge of the course role-modelled for the tutors the application of various teaching techniques that the tutors were to use during the tutorials. Tutors were then given the opportunity to practice those techniques in the tutor meetings prior to each tutorial. In these sessions the lecturer supported and guided each tutor on how to improve or refine a particular aspect of their teaching. This process was continued throughout the duration of the course as a way of supporting the tutors in the acquisition of new behaviours.

The final element of the intervention involved creating awareness of learning styles. In instances where the learning styles of students and tutors are very different, and tutors fail to adjust their teaching approach to take cognisance of these differences, learning outcomes for students may be compromised (Felder & Brent, 2005). In order to improve the learning outcomes for the students, both tutors and students were made aware of their personal leaning styles. This was done through the Index of Learning Styles (ILS) Questionnaire (Soloman & Felder, 2004). The questionnaire measures learning styles in terms of four dimensions: Active/Reflective, Sensing/Intuitive, Visual/Verbal and Sequential/Global. Active learners prefer to retain and understand information by doing something active with it, such as applying it or explaining it to others. Reflective learners prefer to think about new concepts quietly first. Sensing learners like to solve problems by well-established methods and are good at memorising facts. Intuitive learners on the other hand like innovation and discovering possibilities and relationships. These learners dislike repetition and courses that involve a lot of memorisation and routine calculations. Visual leaners remember best what they see: pictures, diagrams, time lines and videos; whereas verbal learners get more out of words: written and spoken explanations. Finally sequential learners tend to gain understanding in linear steps, with each step following logically from the previous one. Conversely, global learners tend to learn in large jumps, absorbing material almost randomly without seeing connections and then suddenly making sense of it (Felder & Brent, 2003).

DESCRIPTION OF THE INTERVENTION

The intervention took place in 2013 and involved sixteen student-tutors who were studying towards their Certificate in the Theory of Accounting (CTA). This is a post-graduate course for students aiming to become chartered accountants. The tutors were selected from a group of CTA students who had volunteered to be tutors for a second year Management Accounting course. The main selection criterion was their prior year final marks. Out of the sixteen tutors only two of them had had prior tutoring experience. The Management Accounting course is a semester course that runs in the second semester, with students attending this course being required to attend ten tutorials.

Before their first tutorial the tutors attended two training sessions facilitated by the course coordinator and a Teaching & Learning Specialist. During these sessions the tutors were introduced to the principles of SRL and guided mastery. The tutors also completed the ILS questionnaire so as to become aware of their personal learning styles. In order to foster self-reflection, the tutors were asked to keep a dairy in which they were to write down the reflections of their experiences as tutors. The diaries also provided the tutors with the basis on which to plan their tutorials so as to improve in a particular aspect of their teaching. In addition to the two training sessions there was a planning

session prior to each tutorial. In these sessions two of the tutors were required to present the following week's tutorial to the group of tutors in the way in which they were planning to conduct the tutorial. The focus of these sessions were to make sure that the tutors prepared their tutorials to address the learning needs of as many students as possible by using a combination of learning styles in their teaching. The sessions were very interactive and all the tutors used them to complement the planning of their own tutorials. The course coordinator and the Teaching & Learning Specialist offered guidance and advice to the tutors in order to help them improve their teaching approach.

RESEARCH METHODOLOGY

In order to understand the challenges faced by the tutors as they embarked on the process of learning how to tutor, and to assess whether they were successful in doing so, a mixed methods methodology was employed (Creswell & Plano-Clark, 2011). Qualitative data was collected from the dairies kept by the tutors and from tutor evaluation forms completed by students at the end of the course. At the end of the intervention the tutors also participated in a semi-structured group interview in which they reflected on their experiences. This interview was audio recorded and transcribed. Once collected all the data was content analysed to determine the key themes that arose as a result of the intervention. According to Hakim (1987) this approach is particularly suitable as "it offers richly descriptive reports of individuals' perceptions, attitudes, beliefs, views and feelings, the meanings and interpretations given to events and things, as well as [individuals'] behaviour".

As part of the intervention the students enrolled in the course, as well as their tutors, completed the ILS Questionnaires (Soloman & Felder, 2004). Summary statistics of each of the learning styles of the students were compiled to provide the tutors with a better understanding of the characteristics of the student body in terms of their learning preferences.

RESULTS AND DISCUSSION

Out of the 444 registered students for the course 339 students (76%) completed the questionnaires. The completion of the questionnaires was done on a voluntary basis. The questionnaires were handed out during the first tutorial of the year by the tutors to their respective tutorial groups. Prior to the tutorial the course coordinator had explained to the students how awareness of their learning styles could benefit them in their quest of becoming better students.

The range of scores that each student could obtain for each dimension was from (-11 to 11). A student score of between (-3 and 3) means that the student is well-balanced on the two dimensions for that scale. Scores in the range (-7 to -5 or 5 to 7) indicate a moderate preference for that dimension. Scores in the range (-11 to -9 or 9 to 11) means a strong preference for that particular dimension. Histograms with the students' results for each of the dimensions are presented in Figure 1.

With regard to the Active/Reflective dimension it can be seen that the students in the course were well-balanced. In terms of the Sensing/Intuitive dimension the tendency was towards the moderate

intuitive dimension. The Visual/Verbal dimension is more spread in terms of student preferences. The majority of the students tend towards the moderate verbal dimension but there is also a significant number of students who fall in the moderate visual dimension. Finally a large number of the students are well-balanced in terms of the Sequential/Global dimension, but the tendency is more towards being global. In three of the dimensions it can be seen that there are students with strong preferences for those dimensions. The one exception is the Sequential dimension.

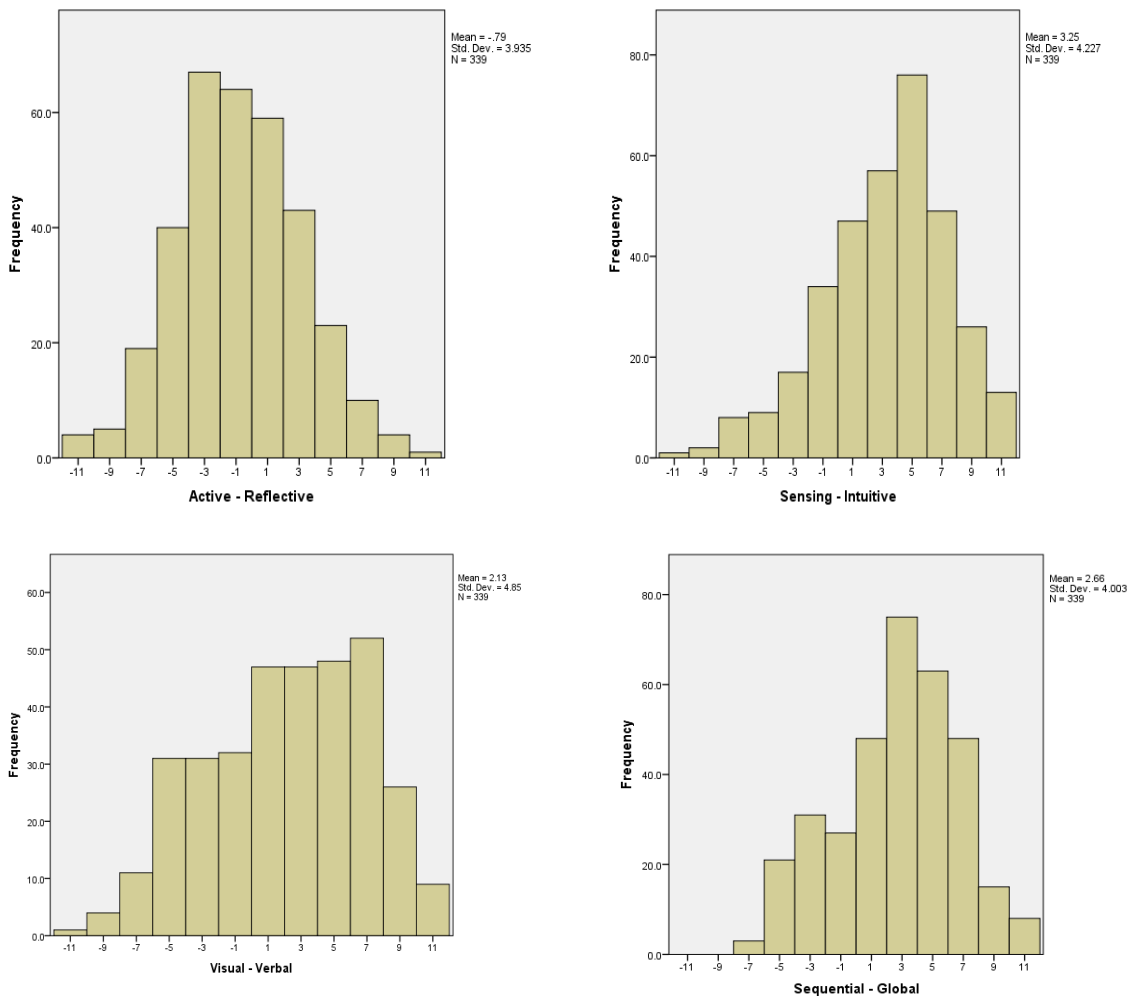


Figure 1: Index of Learning Styles scores for the class

The tutors also completed the ILS questionnaires. A summary of the results from the tutors' and students' scores is presented in Table 1.

ILS learning style category	Majority of the tutors	Majority of the students
<i>Active/Reflective</i>	Moderate	Moderate
<i>Sensing/Intuitive</i>	Sensing	Intuitive
<i>Visual/Verbal</i>	Visual	Verbal
<i>Sequential/Global</i>	Sequential	Global

Table 1: Summary of learning styles of students and tutors

It was found that when comparing the scores of the tutors to that of the class the only dimension in which the two groups had the same learning style preference was in the Active/Reflective dimension. With respect to all the other dimensions it was found that generally the students and the tutors had opposite preferences for each dimension. Given the clear contrast between the learning styles of the tutors and of the students it became clear that for the intervention to be successful the tutors would have to make a conscious effort to adapt their tutoring style to compensate for the mismatch between the learning styles.

The analysis of the qualitative data with regard to each of the learning styles is discussed separately for each dimension in the following sections. It must be stressed however that each dimension cannot be considered in isolation from the others as there are interactions between them. For example, a tutor who works through an example on the board with the class will be displaying elements of active, visual and sequential learning.

Active - Reflective

Given that many of the students were active learners, this posed challenges for the reflective tutors who needed to adapt their preferred teaching style. One reflective tutor admitted that she found it difficult to tutor given that students expected a fast reaction to questions, whereas her inclination was to think about an answer thoroughly before responding. To give herself time to reflect she would take time to write the problem in the board. In her feedback she said:

"I use the board to help me. As I am working through a problem I am also still giving myself time to think about what I am going to say."

Despite the fact that a lot of the students were classified as active, it was highlighted that tutors should not presume that passive students were disengaged, as many of the students were reflective and needed time during the tutorial to process information. The tutors took cognisance of this fact and some encouraged the students to reflect on the content after the tutorial and to bring their questions to the next week's tutorial. Students appreciated their tutors giving them a chance to come to grips with concepts before moving on.

Sensing - Intuitive

The nature of a tutorial class is often more geared towards the sensing learners, with a focus on the facts at hand. The tutors adapted their teaching to accommodate the majority of the class as they knew that many of the students were more intuitive in their approach to learning. However, they raised the concern that the students did not understand the work as they seem to be studying the topics in isolation and struggled to see the connections between topics. The tutors stated they had to explicitly explain the relationship between topics and how the principles could be applied in different contexts in order to appeal to the intuitive learners who were unable to make those links without guidance. One tutor explained:

"The students see things in silos and we need to tell them how to connect everything."

The students appreciated the effort made by the tutors, commending the tutors for their ability to relate the theory to the “real world” and to teach conceptually with reference to possibilities, relationships and the application of the principles in new contexts. However the tutors also realised that they needed to strike a balance so as not to spoon-feed students. One tutor changed her teaching approach from explaining the content to the class to asking questions so as to assess their understanding. This change in focus was reflected in the feedback from the students:

“The tutor should continue to ask questions to assess if we understand the concepts.”

Visual - Verbal

With most of the students being verbal learners, the tutors were challenged to adapt their teaching to include more emphasis on spoken words. One of the tutors facilitated group discussions in her tutorial where students were required to discuss the content amongst them, which in turn greatly assisted in getting the students to verbalise their thoughts. Several tutors noted the fact that they had to think of different ways to explain difficult concepts during the tutorial.

The tutors also exposed the class to different learning styles; one visual tutor making explicit reference to using pictures and diagrams after gaining an awareness of the different learning styles:

“I have always known that I am a visual person, but I didn’t use that as a tutoring style...But now that I have tried to implement it as a tutoring style I explain using pictures and diagrams. I now utilize that skill more...Students really like it.”

The students commented on how helpful the visual illustrations were with reference to the use of the board and other visual aids. Similarly, several (visual) tutors were commended for explaining concepts thoroughly using verbal explanations.

Sequential - Global

The sequential tutors had to consciously reflect on their teaching practices to include the bigger picture in their teaching so as to appeal to the global learners. A comment from a sequential tutor follows:

“With me, I like to think about things in steps...but now I have realized that if I explain the bigger picture first the class automatically gets it.”

The tutors adapted their teaching approach to accommodate the global learners, evidenced by the fact that specific tutors who showed a preference for a sequential learning approach were praised in their evaluations for explaining the big picture. In contrast, the global tutors had to ensure that they incorporated elements of sequential teaching to engage with all the students in their class, despite the sequential learners being the minority in the second year class:

“I realized I am not a sequential person. But now I realised that going through stuff step-by-step actually helped a lot: comparing the first tut to the most recent tut, there was a very, very big difference.”

Other common themes identified

The analysis of the qualitative data further revealed common themes such as the impact of the tutors' relationship with their students, the tutors' initial inability to process negative feedback and the characteristics that students expected to see in a good tutor. The tutors also offered suggestions for future interventions of this nature. The themes identified are discussed in the following paragraphs.

The majority of the tutors emphasised the importance of being approachable and developing a relationship of trust with their students in order to create an environment in which the students feel comfortable to discuss any issues with them. During one of the feedback sessions, one tutor highlighted the impact that his making an effort to listen to the students had on the atmosphere of his tutorial:

"In my first tut... I felt like it was important for them to trust me... I showed them I was listening and then students who are normally shy are more open to share their opinions 'cause they feel like I am listening."

Some tutors found it difficult to process negative feedback and took student comments during class, feedback on evaluation forms and the behaviour of the students very personally. In response to the feedback received some of the tutors changed their teaching approach to try and implement students' suggestions. However, upon reflection, the tutors soon realised that it was impossible to keep the entire class happy and that the teaching approach should be adapted only if it will benefit the majority of the students:

"I did not go through all the work as that is what they wanted and today was very bad as a result. In future I will only incorporate their views if I think their suggestions will help them in the long run."

The students' evaluation forms highlighted that students appreciated tutors who showed enthusiasm and passion, were helpful and motivated the students, had a good grasp of the content taught, shared exam technique tips and were punctual.

Advice to future tutors

Tutors encouraged future tutors to adapt their teaching practices to incorporate elements of all the learning styles, to plan exactly how each tutorial will be run, to learn students' names, to control the different personalities in their tutorial group and to manage their own time to ensure that their tutoring commitments do not interfere with their own study commitments. Overall, the majority of the tutors commented that they enjoyed tutoring and had greatly benefited from being exposed to different learning styles as evidenced by the following comment:

"I was surprised about the (questionnaire) findings. What an educational experience! I now understand students' learning styles."

Conclusion

The study found that the tutors adapted their teaching practices as a result of an intervention aimed at providing them with the necessary training and tools to equip them to tutor effectively. Regarding

the Active/Reflective dimension, the tutors created a balance between working through examples and giving the students, and themselves, a chance to reflect on the content. With the second categorisation, being Sensing/Intuitive, it was noted that the intuitive learners needed assistance to make the links between topics and to relate theory to real world scenarios. Students seemed to demand both learning styles in terms of the Visual/Verbal dimension, and as a result the tutors combined in their teaching verbal as well as visual components. The Sequential/Global dimension was addressed by the tutors who emphasised both the big picture and the step-by-step approach to solving a tutorial problem. The analysis of the qualitative data also highlighted the importance of a tutor's relationship with the students, the tutors' response to negative feedback and characteristics that good tutors should display.

The intervention benefited a large amount of students as evidenced by the feedback obtained. By the end of the intervention the tutors felt that they had acquired the necessary skills to conduct effective tutorials. The findings of this study can serve to inform the design and implementation of future tutorial programs as well as teaching and learning intervention to determine effective ways to support university students.

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