ACCOUNTANCY STUDENTS' AND LECTURERS' PERCEPTIONS OF THE EFFECT OF OPEN-BOOK ASSESSMENTS ON WRITING EXAMINATIONS

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ABSTRACT

Open-book assessment (OBA) can contribute to the development of competency in handling large amounts of information in the knowledge economy. This is one of the reasons why the South African Institute of Chartered Accountants (SAICA) implemented OBA for its Initial Test of Competence. This empirical study investigated final year accountancy students' and lecturers' perceptions of the effect on writing examinations after their method of assessment changed from a closed-book (CBA) to an open-book assessment format.

Students and lecturers perceived a change in writing behaviour, reduced anxiety, and improved performance. On some aspects the level of agreement between students and lecturers differed significantly. There is also evidence that black students perceived OBA to be less beneficial compared to the perceptions of white students. For subjects for which substantial texts were available, students perceived the least change happened for Auditing while lecturers perceived the least change for Financial Accounting. Both students and lecturers perceived the most change happened for Taxation. It is important that lecturers at departments of accountancy take cognisance of these perception gaps and to adjust their teaching to enable their students to utilise their texts as an additional resource optimally. This study is also of value to the regulatory bodies to evaluate their assessment practises.

Keywords: open-book assessment, examination, knowledge management, accounting education, auditing education

INTRODUCTION

Open-book assessment (OBA) can contribute to the development of competency in handling large amounts of information, also referred to as knowledge management (Rowlands and Forsyth 2006; Heijne-Penninga et al. 2008; Du Preez and Du Preez 2012). While many researchers emphasise that the greatest benefit of OBA is that it favours assessment at higher taxonomical levels, there is evidence that OBA can cause students to employ more of a surface approach when preparing for these assessments (Heijne-Penninga 2010) and that long-term

retention of information can be compromised (Agarwal and Roediger 2011). Allowing students to take their texts into the examination venue, might cause them to place too much reliance on their texts, causing them to be underprepared for assessment (Broyles, Cyr and Korsen 2005). This might indicate the need for a change in students' approach in preparing for and in writing OBA, compared to closed-book assessment (CBA).

Studies specifically comparing OBA to CBA in accounting education are limited. Kruger (2011) found that the learning behaviour of accountancy students changed when OBA was introduced, causing them to spend more time working through problems than memorising information (Kruger 2011). Similarly, Taxation students also recognised the importance of a change in approach in their preparation for OBA (Du Preez and Du Preez 2012; Du Preez 2015).

Having noted a perceived change in learning behaviour when students prepare for OBA, the impact on students' behaviour when writing OBA is also worth considering. Students have their memory, understanding and writing skills as resources when they are assessed. It is imperative that students utilise their texts as an additional resource optimally in an OBA context.

This study aims to gain understanding as to how the introduction of OBA has changed the examination-writing behaviour of accountancy students, with specific reference to the effect on anxiety levels, performance, extent of use and the effect of time constraints.

This article adds to the limited literature on the effect of OBA on the teaching-learning environment of accounting education. It is of value to accounting educators, professional bodies setting qualifying examinations and other educators who are interested in implementing OBA.

RESEARCH OBJECTIVES

The research objectives identified for this study were to determine for both students and lecturers the following:

- The perceived extent of change in technique and approach to answering questions and guidance received from lecturers in this regard.
- The perceived usefulness and extent of use of texts.
- The perceived effect on anxiety levels before examinations.
- The perceived effect of time constraints placed on examinations.
- The perceived effect on performance in examinations.

The study further aimed to compare the perceptions of students for the different subjects they

were enrolled for. Another objective was to determine whether there were significant differences in perceptions among a number of homogenous groups based on first language, language of tuition and ethnicity.

A study of existing literature informed an empirical study. The empirical study was performed, by means of a questionnaire, among a selected population of prospective chartered accountants at the departments of accountancy of a number of South African universities.

LITERATURE STUDY

The literature study is presented under the headings of time, anxiety, examination performance and differences among courses and subjects. Having performed an extensive systematic literature review on peer-reviewed articles published up to 2014, Durning et al. (2016) concluded that empirical literature comparing OBA to CBA in general is fairly limited. Therefore, some older landmark studies were included as part of the literature review of this article.

Time

When students are allowed to use texts during assessments, the question of how much time they should be allowed to complete the assessment is important and has been investigated by researchers on OBA.

Westerkamp, Heijne-Penninga, Kuks and Cohen-Schotanus (2013) found that students generally made full use of the extra time given for OBA but that there was no relationship between total time answering tests and marks achieved. Test answering time and the extent of the use of texts are related, and in this regard, certain studies found that better performing students used their textbooks less than poorer performing students (Koutselini 1997). Researchers also found that third-year students spent less time answering questions in an OBA, compared to second-year students, which might indicate that experience in the method of assessment might influence time spent in answering tests (Heijne-Penninga et al. 2011).

In the South African accountancy examinations, a "limited access limited time" model is used. This model is applied in both the SAICA Initial Test of Competence (ITC) and Assessment of Professional Competence (APC) which the Independent Regulatory Board for Auditors (IRBA) now uses. In explaining the time limitation on these open-book examinations, Rowlands and Forsyth (2006:706) state:

> "Allowing unlimited time would not enable the examination to assess the candidates' 'embedded' knowledge as sufficient time would be available to refer to texts in situations where knowledge is

> expected to be embedded. It follows that where knowledge is not expected to be embedded candidates should be given the time to refer to texts."

Time management is therefore a prerequisite for success for accountancy students. For example, Taxation students need to have interpreted the South African Income Tax Act before the examination as there is insufficient time to read and understand the contents during OBA (Du Preez 2015).

OBA has made it more challenging for accounting educators to determine the amount of time allowed for assessments. To assess embedded knowledge and the ability of students to work accurately under time constraints requires the setting of a challenging time limit on assessments. On the other hand if time constraints are too severe in OBA, students might not have time to consult texts and the development of the skill of identifying, locating and using applicable texts would be compromised. Being under time pressure to complete examinations might also have a significant impact on anxiety levels of students.

Anxiety

"Emotions and feelings are deeply interconnected with how individuals identify, perceive, and interpret information available in learning environments, as well as with how they act on the information available in learning and practice situations" (McConnell and Eva 2012, 1320). An anxiety-provoking assessment system is associated with a surface approach followed by students (Rust 2002) while positive emotions are are associated with better problem solving and a broader cognitive focus (McConnell and Eva 2012). As part of the good practice principles identified by Rust (2007), lecturers must therefore ensure that assessment is non-threatening and does not provoke anxiety. Researchers on accounting education are of the opinion that high levels of anxiety can have a negative effect on students' performance (Stout and Wygal 2010; Steenkamp 2012; Dull, Schleifer and McMillan 2015).

One of the primary motivations for implementing OBA is to reduce test anxiety (Durning et al. 2016) and certain studies found that students tend to experience less anxiety in an OBA setting compared to a CBA setting (Block 2012; Gharib and Phillips 2013; Karagiannopoulou and Milienos 2013). Students generally feel more positive towards OBA compared to CBA, which can lead to lower levels of anxiety (Du Preez and Du Preez 2012). Part of the explanation for the reduction in anxiety could be that OBA tends to lead to less cramming by students and subsequently to a more consistent learning environment (Green, Ferrante and Heppard 2016). Durning et al. (2016) are however of the opinion that students may overestimate the reduction in anxiety. An expectation that lecturers will choose more difficult questions can increase

anxiety in an OBA setting (Eilertsen and Valdermo 2000).

Anxiety before assessments can be caused by a number of factors. Students can be anxious because of the possibility of forgetting information needed to complete the assessment. It can also be due to not understanding concepts which will be assessed or it could be due to uncertainty as to how the work will be assessed. Reduction in anxiety due to OBA would most likely be due to reduced fear of forgetting information. On the other hand, it might increase anxiety due to increased uncertainty or knowing that they will not earn marks for regurgitating memorised information.

There is also the counter argument that examination performance of students can benefit from anxiety if it motivates them to study. Higher anxiety could motivate students to study harder for CBA compared to an unstressed student preparing for OBA. Comparing examination performance of students by means of OBA versus CBA has been a common theme in OBA research (Durning et al. 2016).

Examination performance

Certain studies have found that students performed better in OBA compared to CBA over a diverse range of disciplines. In medical courses (Broyles et al. 2005) and psychology courses (Agarwal and Roediger 2011; Mathew 2012; Gharib and Phillips 2013), students performed better when they had access to texts compared to students who did not have access to texts. Other studies concluded that when the tests were at an appropriate level of difficulty, there was no difference in achievement (Shine, Kiravu and Astley 2004; Rakes 2008). Koutselini (1997) found that in an examination requiring critical thinking and reasoning, students who did not have access to texts performed slightly better than those who did have access to texts. In an open-book-open-web online examination, researchers found that compared to closed-book invigilated examinations, the number of students who obtained high grades was more or less the same but the number of students who obtained low grades increased in the open-book examination (Amanullah et al. 2013). Larwin, Gorman and Larwin (2013) did a meta-analytical study in which they found that, overall, testing aids could produce a moderate improvement in student examination performance, with student-prepared testing aids associated with a greater effect relative to open-book examinations.

While OBA might have a positive effect on examination performance, it does not necessarily lead to better long-term retention of information (Agarwal and Roediger 2011; Westerkamp et al. 2013). This can be due to reduced study effort by students for OBA (Eilertsen and Valdermo 2000; Broyles et al. 2005; Heijne-Penninga et al. 2008).

The ultimate aim of accounting educators is to train accountants that will perform well in

practise. Their proficiency in using the tools to their disposal, including the applicable texts, is pivotal to their success in the workplace. Apart from guiding students on how to use their texts another challenge of OBA for accounting educators is to develop criteria to assess students' ability to utilise their texts. Assessment should also encourage students' learning to focus more on understanding than memorising. The benefit of OBA in this regard is that the role of memory becomes less important and students should be less anxious about losing marks because they forgot assessed content. The risk on the other hand of OBA is that students might prepare less compared to CBA, however this behaviour should only be temporary if assessments are at the right level and this risk could be mitigated by preparing students properly for OBA.

Differences among courses and subjects

Mathew (2012) argues that the inconsistency of findings on the effect of OBA on student learning and performance might be due to the differences in required method of study among courses. For some introductory courses, examination preparation might entail reviewing facts, while for subjects such as statistics and mathematics, practice is required in performing calculations and using formulas. It was found that the perceptions of final-year accounting students on the extent of the impact of the introduction of OBA on their learning behaviour (Kruger 2011) as well as teaching practises (Kruger 2018) differed among subjects. It is therefore also relevant to investigate the difference in perceptions on exam writing in relation to the four subjects professional accountancy students need to enrol for, namely Financial Accounting, Management Accounting, Auditing and Taxation.

STUDY SUBJECTS

The students in the study had already completed an accounting degree and were enrolled in a programme to obtain a Certificate in Theory of Accounting (CTA), which is required by the South African Institute of Chartered Accountants (SAICA) in order to gain access to the qualifying examination. SAICA accredits certain institutions, predominantly full-time universities, to award this qualification. These students had completed more than half of their CTA course but still had to write their final CTA examinations. If they passed these examinations, they would be allowed to write the Initial Test of Competence of SAICA the following year. The lecturers were all lecturers at the accountancy departments where these students were enrolled.

The response rate of students at the participating universities was 71 per cent, being 1 065 responses out of a population of 1 490 students. The total number of CTA students enrolled at accredited full-time universities was 2 185, which means that 49 per cent of all students enrolled

at full-time universities participated in the study. The lecturers employed at the participating universities numbered 252. The number who responded was 59, yielding a response rate of 23 per cent.

Forty-five percent of the student respondents were male, 42 per cent received tuition in Afrikaans and 58 per cent studied in English. All of the participating students had been exposed to OBA with 92 per cent having completed more than four open-book assessments while all of them had been assessed by way of CBA during their earlier years of study.

METHODOLOGY

This study has characteristics of a natural experiment where the decision by SAICA to change assessment to OBA led to the same group of students being exposed to CBA in previous years of study and to OBA in their final year of study. Students' and lecturers' perceptions were gauged by means of a questionnaire using a five point Likert scale.

The questions in the questionnaire applicable to this study are listed in Table 1. The aggregate mean score and the standard deviation for each of the questions were computed for both students and lecturers. Only significant statistical differences within homogenous groups were reported. An ANOVA was performed to determine any statistical differences between the perceptions of lecturers and students.

For the question on coaching on how to write open-book examinations, the average of all the responses of the students per subject was calculated and then compared to the response of lecturers as the lecturers did not respond to these statements per subject. Cronbach's alphas for these responses of students were calculated which were above 0.7 proving sufficient reliability.

When testing for significant differences where more than two groups were involved, such as for first language and ethnicity, a Kruskal-Wallis test was done.

Lecturers were given the opportunity to provide remarks in the questionnaire. Some of these remarks are included in the article as part of the discussion of results but cannot be used as a basis for general conclusions.

RESULTS

For all the questions students and lecturers ranked Management Accounting the lowest of all the subjects. This is not surprising as none of the allowed texts directly applied to Management Accounting and only to the extent where questions were integrated with other disciplines such as Taxation and the companies' act. For this reason Management Accounting is excluded from further discussion.

Table 1: Means, standard deviations (SD) and p-values of responses

	Student mean	(SD)	Lecturer mean	(SD)	P-value
Have students received any coaching regarding the approach or been taught the best technique to employ when writing an open-book examination, using a scale of 1 to 5 where 1 is "no coaching at all" and 5 is "extensive coaching"?*					
Taxation	2.92	(1.24)			
Financial Accounting	2.70	(1.19)			
Auditing	2.52	(1.19)			
Average	2.71	(1.01)	2.86	(1.22)	0.24
*The question posed to students was "Have you received any coaching…?"					
Does your approach or technique in answering questions (based on an open-book policy) differ from the approach you would previously have followed in a traditional examination or test for the following subjects, using a scale of 1 to 5 where 1 is "no change in approach" and 5 is "significant change in approach"?					
Taxation	2.99	(1.32)			
Auditing	2.88	(1.35)			
Financial Accounting	2.82	(1.28)			
To what extent do you currently use your permissible text during the examination, using a scale of 1 to 5 where 1 is "not at all" and 5 is "extensively"?					
Taxation	3.93	(1.03)			
Financial Accounting	3.43	(1.03)			
Auditing	3.26	(1.24)			
To what extent do you currently use the following permissible text during the examination, using a scale of 1 to 5 where 1 is "not at all" and 5 is "extensively"?					
Own notes made in permissible texts	4.45	(0.96)			
SAICA Legislation Handbook	4.44	(1.03)			
Vol. 1 (IFRS)	4.14	(1.48)			
Vol. 2 (Auditing)	3.18	(1.26)			
IRBA Manual of Information	2.41	(1.35)			
Vol. 3 (Ethics/Circulars); and Vol. 4 (Exposure Drafts)	2.10	(1.19)			
State whether you agree or disagree with the following statements, using a scale of 1 to 5 where 1 is "totally disagree" and 5 is "totally agree":					
I am less anxious before the examination than I would have been if it was a closed-book examination for					
Taxation	3.47	(1.43)	3.78	(1.11)	0.36
Financial Accounting	3.09	(1.44)	3.17	(1.20)	0.81
Auditing	3.06	(1.39)	3.48	(1.06)	0.11
To be beneficial, more time should be permitted during examinations for consulting permissible texts.	3.77	(1.31)	2.82	(1.33)	< 0.01
Open-book policy benefited performance for					
Taxation	4.05	(1.07)	3.56	(0.94)	< 0.01
Financial Accounting	3.60	(1.15)	2.79	(0.91)	< 0.01
Auditing	3.28	(1.28)	2.89	(0.99)	0.10

Some questions or statements were only posed to students as it was considered of such a nature that lecturers would have difficulty to form an opinion on it. For these questions there are no means or standard deviations in Table 1 for lecturers.

Table 2: Time used consulting texts and notes

Estimate the percentage of time that you spend per examination on consulting the permissible texts and notes.						
	0% 1	**2–5% 2**	**5–10% 3**	**10–20% 4**	**> 20% 5**	**Usage factor (out of 5)**
Taxation	1	13	27	31	28	3.71
Financial Accounting	1	30	35	21	13	3.15
Auditing	9	33	26	18	14	2.94

DISCUSSION

Approach to answering questions and use of texts during examinations

Students indicated that they received the most coaching on how to write OBA for Taxation (2.92 mean) and the least for Auditing (2.52 mean). The question posed to lecturers was "Have you given coaching regarding the approach or taught the best technique to students to employ when writing an open book exam?" The mean response of lecturers (2.86) was higher than the average response of students (2.71) although the difference was not statistically significant with p-value of 0.24.

The summary of responses on the extent to which coaching was given on how to write OBA is set out in Table 3.

Table 3: Summary of responses on the extent to which coaching was given on how to write OBA

		1	**2**	**3**	**4**	**5**
Students	Financial Accounting	19%	25%	29%	20%	7%
	Auditing	24%	27%	28%	15%	6%
	Taxation	16%	21%	28%	24%	11%
	Average	20%	24%	28%	19%	8%
		44%		**28%**	**27%**	
Lecturers		14%	28%	28%	21%	10%
		42%		**28%**	**31%**	

Note that the average of all the responses of the students per subject was calculated and then compared to the response of lecturers as the lecturers did not respond to these statements per subject.

Although all students in the study were assessed in an open-book setting, as much as 24 per cent of Auditing students indicated that they received no coaching on how to write OBA at all, with another 27 per cent indicating a two on the Likert-scale. It is important that lecturers prepare students for OBA, especially when they are exposed to this assessment method for the first time (Koutselini 1997). How to use texts to optimise exam performance should form part of this preparation.

Students' approach to answering questions changed the most for Taxation (2.99 mean)

and least for Financial Accounting (2.82 mean). The difference between the response for Financial Accounting and Auditing was small with the mean for Auditing determined as 2.88.

Students reported that they used their texts during examinations the most for Taxation (3.93 mean) and the least for Auditing (3.26 mean). Students also indicated that they used their own notes made in the permissible texts (4.45 mean) and the SAICA legislation handbook (4.44 mean) the most. The legislation handbook contains the South African Income Tax Act, which confirmed that students perceived that they benefited most for Taxation by having their texts available during examinations.

As presented in Table 2 students perceived that they spent the most time using their texts for Taxation with a usage factor of 3.71 compared to Auditing with the smallest factor of 2.94. Auditing also had the highest percentage (9%) of students that indicated that they did not use texts for Auditing at all compared to the 1 per cent of Taxation and Financial Accounting. One of the lecturers remarked as follows:

> "I get the impression that students in fact think they do not have to spend time studying and reading the theoretical work at all as they have their books with them when they write exams. Hence they spend too much time during a test paging through their books looking for answers. Ideally, your textbook is an emergency measure that you may use during a test. I certainly do not think the idea is that they should come to a test to start reading the theory for the first time, when they should already know it and use the time to apply it."

With the Audit-specific texts being used less than the Taxation- and Financial Accounting-specific texts by students, further research could potentially identify opportunities where Auditing students could have used their Auditing texts to answer questions but did not.

Anxiety

Students' level of agreement on whether they experienced less anxiety about OBA was highest for Taxation (3.47 mean) and lowest for Auditing (3.06 mean). There was however only a small difference between Auditing and Financial Accounting (3.09 mean). Lecturers estimated the reduction in anxiety higher compared to students for all subjects but also rated the reduction highest for Taxation (3.78 mean) but the lowest for Financial Accounting (3.17 mean). With all the p-values higher than 0.05, the differences were not statistically significant. The biggest difference in perception was on Auditing where the mean for students was 3.06 compared with lecturer mean of 3.48. The p-value was also lowest at 0.11. The following remark made by a lecturer sheds further light on the topic:

> "Students are still anxious about exams despite their open-book preparation. This is due to the fact that the exam is much more understanding-focused. I do however believe that students are starting to understand the work better and are learning to use the standard to get to the final answer."

This finding of a reduction in anxiety levels is in line with that found in other studies on OBA (Block 2012; Gharib and Phillips 2013; Karagiannopoulou and Milienos 2013).

Time allowed

There was a significant difference between the perceptions of students (3.77 mean) and lecturers (2.82 mean) on whether more time should be allowed for OBA. The p-value of less than 0.01 confirms that the difference is statistically significant. A lecturer commented as follows:

> "The Financial Accounting syllabus is overloaded; therefore, students will feel a bit less anxious in the exam knowing that the definitions etc. are available. However, the time constraints of the exam do not really allow them to use their 'open books'. As the SAICA exam needs to test accuracy under time constraints, this dilemma will always exist."

The "limited access limited time" model used for professional accountancy exams in South Africa to distinguish between embedded and non-embedded knowledge (Rowlands and Forsyth 2006) implies that students will usually be under time pressure in examinations. It remains a valid argument that testing students' ability to locate and use relevant non-embedded knowledge can be compromised by placing too severe a time constraint on OBA. Westerkamp et al. (2013) used the approach of using CBA to assess embedded knowledge and OBA, with more time allowed, to assess non-embedded knowledge (referred to by the authors as core and non-core knowledge).

Effect on performance

In general, students felt that OBA had improved their performance in the examination. Again, Taxation (4.05 mean) came out on top followed by Financial Accounting (3.60 mean) and Auditing (3.28 mean). Lecturers were again more sceptical than students with more choosing the lower end of the scale and fewer choosing the higher end of the scale. Lecturers, however, were of the opinion that performance in Auditing benefited more than that of Financial Accounting. In this study, students were not asked whether they thought that OBA examinations were easier because traditionally, the CTA tests and examinations are much more difficult than what they would have encountered earlier in their studies.

A meta-analysis showed that OBA had an overall positive effect on student performance in examinations. Student-prepared aids (e.g. own notes or "cheat sheets") had a more positive effect than other material (Larwin et al. 2013). The results of this study support these findings with students perceiving a positive effect on performance with own notes added to texts perceived as the most beneficial testing aid at their disposal.

First language and language of tuition

Studying in a language different from a student's first language can have a negative impact on learning (Watty, Jackson and Yu 2010). In a South African context, many students have different first languages than what they receive tuition in. Some South African studies have found that the first language of students can impact on their chances of success (Steenkamp, Baard and Frick 2009) and on their perception of the impact of a different way of assessment on their learning (Stainbank 2010). In South Africa, classes are presented in English and Afrikaans, depending on the particular university. As a result of most of the allowed texts only being available in English, many students with a different first language had to use texts that were written in their second or third language. The ethnic and language profile of the participating students were as follows:

Table 4: Ethnicity and Language of students

	Black (%)	Coloured (%)	White (%)	Indian (%)	Other (%)
% Of participants	21	4	67	6	2
1st Language Afr	3	53	64	2	17
1st Language Eng	33	45	33	98	25
1st Language Other	64	3	3	0	58
2nd Language Afr	21	41	28	51	0
2nd Language Eng	59	54	66	6	75
2nd Language Other	19	5	6	43	25
Course Language Afr	1	32	61	2	25
Course Language Eng	99	68	39	98	75
Writing Language Afr	1	27	58	2	18
Writing Language Eng	99	73	42	98	82
Course language different from 1st language	67	38	12	0	67
Writing language different from 1st language	67	36	10	0	75

The significant statistical differences based on languages of course presentation and first languages and are presented in Tables 5 and 6, respectively.

Table 5: Responses of students according to language of course presentation

	Afrikaans mean	(SD)	English mean	(SD)	P-value
Approach in answering questions changed					
Financial accounting	2.70	(1.21)	2.90	(1.33)	0.03
Auditing	2.62	(1.27)	3.08	(1.37)	< 0.01

	Afrikaans mean	(SD)	English mean	(SD)	P-value
Taxation	2.85	(1.25)	3.08	(1.36)	< 0.01
Extent of using permissible texts					
Auditing	3.03	(1.22)	3.43	(1.24)	< 0.01
Usefulness of the permissible texts					
Vol. 1 (IFRS)	4.00	(1.21)	4.24	(1.09)	< 0.01
Vol. 2 (Auditing)	3.08	(1.27)	3.26	(1.26)	0.03
SAICA Legislation Handbook	4.31	(1.14)	4.55	(0.92)	0.01
Being less anxious before the examination					
Financial accounting	3.25	(1.37)	2.86	(1.43)	< 0.01
Taxation	3.61	(1.32)	3.24	(1.45)	< 0.01
Percentage of time spent per examination on consulting the permissible texts and notes.					
Auditing	3.13	(1.30)	3.47	(1.22)	< 0.01

Apart from being less anxious before the examination for financial accounting and taxation, students receiving tuition in English showed stronger agreement for all the statements listed in Table 5. The fact that all the allowed texts, except the *SAICA Legislation Handbook*, were only available in English could have played a role in the generally more positive responses of students who received instruction in English. More research would, however, be required to reach a meaningful conclusion.

Table 6: Responses of students according to first language

	Afr mean	(SD)	Eng mean	(SD)	Other mean	(SD)
Approach in answering questions changed						
Auditing	2.67[a]	(1.27)	3.04[b]	(1.31)	3.09[b]	(1.55)
Extent of using permissible texts						
Auditing	3.06[a]	(1.22)	3.42[b]	(1.25)	3.44[b]	(1.23)
Being less anxious before the examination						
Financial accounting	3.25[a]	(1.38)	2.91[b]	(1.41)	2.65[b]	(1.45)
Auditing	3.18[a]	(1.35)	3.02[a]	(1.38)	2.83[b]	(1.46)
Taxation	3.63[a]	(1.32)	3.30[b]	(1.43)	2.95[c]	(1.48)
Open-book policy benefited performance for						
Financial accounting	3.65[a]	(1.08)	3.57[a]	(1.11)	3.23[b]	(1.31)
Taxation	4.06[a]	(0.98)	3.93[ab]	(1.11)	3.81[b]	(1.27)
Percentage of time spent per examination on consulting the permissible texts and notes.						
Auditing	3.16[a]	(1.30)	3.50[b]	(1.22)	3.45[ab]	(1.23)

Means containing the same superscript ([a] or [b]) are not significantly different.

Afrikaans students tend to agree less on change in approach to answering questions, extent of using texts and percentage of time spent on consulting texts for auditing compared to English and other language speakers. Seen in conjunction with the responses in Table 5, Auditing lecturers lecturing in Afrikaans should especially focus on guiding their students to make optimal use of their texts.

Afrikaans students perceived a higher reduction in their anxiety levels compared to other

students while students with first language other than Afrikaans or English indicated the least reduction in anxiety for all three subjects. Other first language speakers also seem to agree less on whether OBA benefited their performance compared to Afrikaans and English students. An analysis comparing the responses of students based on ethnicity is presented in Table 7.

Table 7: Perceptions of different ethnic groups

	Black mean	Coloured mean	White mean	Indian mean
Being less anxious before the examination				
Financial accounting	2.62[a]	2.63[ab]	3.19[b]	2.98[ab]
Taxation	2.95[a]	3.18[ab]	3.55[b]	3.34[ab]
Open-book policy benefited performance for				
Financial accounting	3.06[a]	3.58[ab]	3.67[b]	3.96[b]
Taxation	3.63[a]	3.89[ab]	4.09[b]	4.06[ab]
Estimate the percentage of time that you spend per examination on consulting the permissible texts and notes.				
Financial accounting	2.92[a]	3.63[b]	3.38[b]	3.45[b]
Auditing	3.64[a]	3.63[ab]	3.22[b]	3.48[ab]
Taxation	3.36[a]	3.76[ab]	3.77[b]	3.79[ab]

Means containing the same superscript ([a] or [b]) are not significantly different.

On whether they are less anxious before the examination, as well as for the perceived performance benefit of OBA, black students show significantly less agreement than white students for Financial Accounting and Taxation. Black students also estimated that they spend significantly less time than white students consulting texts for Financial Accounting and Taxation. This was however not the case for Auditing where black students indicated higher text usage than white students. The overall general trend was however that black students perceived a smaller benefit of OBA with respect to reduced anxiety and improved performance and seemed to have used their texts less than white students.

Black students are often unprepared for higher education due to the fragmented South African education system (Cross and Carpentier 2009). Mungal and Cloete (2017) are of the opinion that learning opportunities be created for these students to increase their chance of success.

Even though the black students in this study have reached an advanced stage in their academic careers it seems that there is a case to be made that they specifically be equipped to firstly deal better with test anxiety and secondly to use their texts more optimally to improve their performance in an OBA setting.

Significant differences in perceptions between students and lecturers

Given the importance of assessment lecturers cannot assume that students have the same

perceptions as themselves (Carless 2006). Apart from the statistically different perceptions of students and lecturers discussed above, when evaluating the results, the trend among students was that they perceived the most change/benefit of OBA for Taxation followed by Financial Accounting with Auditing the least. While lecturers concurred as far as Taxation is concerned, they however, perceived the least change/benefit for Financial Accounting with Auditing in second place. The results of this study suggest that there is a significant gap between the perceptions of students and lecturers on the impact of OBA on exam writing of students.

Researchers in other studies have also found differences between the assumptions of accounting lecturers and perceptions of students (Steenkamp et al. 2009). Fraser and Killen (2003) argue that a suboptimal learning environment is created when lecturers' and students' perceptions of what factors contribute to student success are incongruent.

Mulliner and Tucker (2017) and Carless (2006) also found a significant gap in the perceptions of students and lecturers with regards to assessment. They both propose dialogue between students and lecturers to close these gaps in perceptions.

CONCLUSION

The periodic teaching-learning process culminates in the writing of final examinations. Given the limited access limited time assessment model applied for professional accountancy exams, the exam writing skills of students are pivotal for success. This article investigated perceived changes in the examination writing behaviour of students under OBA compared to CBA by means of an empirical study. A literature study of a number of relevant issues that have to be considered when the method of assessment is changed from CBA to OBA was performed. The issues included time spent completing assessments and accessing texts; effect on anxiety levels of students and how students perform in OBA compared to CBA.

Students perceived that their approach to answering questions changed for open-book examinations compared to closed-book examinations. Certain texts were used more than others with own notes added by students being used the most. Accounting educators can take cognisance of the use of the material to possibly identify content which is not assessed properly or to encourage students to use texts that could improve their performance.

Students and lecturers perceived that the introduction of OBA led to reduced levels of anxiety. Lecturers however estimated that OBA reduced anxiety more compared to students. Based on these findings accounting academics can assist students with skills to manage exam anxiety in an OBA context.

There was also a perceived positive effect on the performance of students even though a significant difference on the level of agreement between lecturers and students was observed

for Taxation and Financial Accounting. This could also be indicative that lecturers can improve their understanding of how students use their texts and how it impacts the performance of students.

Deciding on how much time to allow for assessment tasks remains a challenge for examiners with students indicating that more time should be allowed for open-book examinations for these to be more beneficial. Lecturers showed a significantly lower level of agreement on the issue of time allowed for examinations. The regulatory bodies and accounting educators should take cognisance of this finding when evaluating their methods of assessment. Placing too much of a time constraint on the completion of open-book assessments can diminish the development and use of skills that the implementation of OBA aims to encourage.

With none of the allowed texts directly applying to Management Accounting, the perceptions of students were compared for Taxation, Financial Accounting and Auditing respectively. Consistent differences were observed among perceptions on the different subjects with the change in assessment method impacting on Taxation the most. From the students' point of view the introduction of OBA had the least effect on Auditing, compared to the perception of lecturers that the effect on Financial Accounting was the smallest.

Lecturers need to take cognisance of the significant differences in perceptions between students and themselves as it can lead to a sub-optimal teaching learning environment. Given the lower ranking of Auditing by students compared to the ranking of lecturers, Auditing lecturers should especially engage in dialogue with students how they use their texts in open-book examinations. Given the finding that students perceived the usage of texts the lowest for Auditing, there may also be opportunities for directing students to make better use of their texts.

Students with a first language other than Afrikaans or English perceived a lower reduction in anxiety levels and lower perceived improvement in performance due to the introduction of OBA compared to other students. There was a general trend that black students perceived a smaller benefit of OBA with respect to reduced anxiety and improved performance and also seemed to have used their texts less than white students. Lecturers should pay special attention to these groups of students to help them reduce their anxiety levels and improve their performance in an OBA setting.

This study contributes to the limited body of knowledge on OBA, specifically in accounting education and with a focus on how the introduction of OBA impacts writing examinations. It is of value to the regulatory bodies to evaluate their assessment practices as well as to accounting educators to better align their teaching with OBA. Other educators considering the implementation of OBA must take cognisance that their perceived use of texts and effect on anxiety might be significantly different from that of their students.

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