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Factors associated with success in first-year accounting after the implementation of the National Senior Certificate

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Questions have been raised as to whether the National Senior Certificate curriculum, awarded for the first time in 2008, adequately equips learners to achieve academic success at university. This article aims to identify factors associated with success in accounting at university after the implementation of the National Senior Certificate. Differences between students who failed and those who passed Accounting 1 in 2009 are explored in terms of their exposure to, and performance in accounting and mathematics at school level as well as differences in their perceptions of critical skills acquired in the National Senior Certificate. The findings of this study create a platform for continued debate on admission requirements and the importance of specific skills required for success in accounting studies at university.

Faktore geassosieer met sukses in eerstejaarsrekeningkunde na die implementering van die Nasionale Senior Sertifikaat

Vrae is gestel of die Nasionale Senior Sertifikaat-kurrikulum, wat vir die eerste keer in 2008 toegeken is, leerders voldoende toerus om akademiese sukses op universiteit te behaal. Die doel met hierdie artikel is om faktore geassosieer met sukses in rekeningkunde, na die implementering van die Nasionale Senior Sertifikaat, te identifiseer. Verskille tussen studente wat Rekeningkunde 1 in 2009 gedruip het en diegene wat dit geslaag het word ondersoek in terme van hul blootstelling aan en prestasie in rekeningkunde en wiskunde op skoolvlak sowel as verskille in hul persepsies omtrent die verwerwing van kritiese vaardighede in die Nasionale Senior Sertifikaat. Die bevindinge van hierdie studie skep ’n platform vir volgehoude debat oor toelatingsvereistes en die belangrikheid van spesifieke vaardighede wat benodig word vir sukses in rekeningkunde-studie aan ’n universiteit.

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In South Africa the replacement of the Senior Certificate (NATED 550) by the National Senior Certificate (NSC), awarded for the first time in 2008, has raised the following question: does the NSC curriculum adequately equip learners to achieve success in university studies? This article aims to identify factors associated with success in accounting at university after the introduction of the NSC. Eiselen et al (2007: 40) state that the investigation of factors associated with both success and failure at university is of particular importance to South African higher education institutions (HEIs) due to the fact that, at school level, an outcomes-based education (OBE) system has been introduced and the curricula of each of the compulsory and elective subjects have changed. The first students schooled under the OBE system, implemented in all schools in 1998 (Malan 1997: 1 & 2001: 82) and which culminated in the awarding of an NSC, entered South African HEIs in 2009.

Kantanis (2006: 31) is of the opinion that HEIs are bound not only to investigate the reasons for voluntary student departure pertinent to their individual local context but also to accept the responsibility of addressing the identified issues. Initiatives to improve institutional retention need to be predicated on a sound understanding of the causal relationship between students’ university experience and student departure. Killen et al (2003: 147) recommend that HEIs should be proactive in attempting to improve the success rates of their students while they are striving to maintain or improve their academic standards. Indeed, both students and lecturers have a joint responsibility for student success, and the first stage in accepting this responsibility is for both students and lecturers to gain a thorough understanding of the complex processes that influence student success and failure (Killen et al 2003: 157).

This article explores differences between students who failed and those who passed the first-year accounting course in 2009. Differences are explored in terms of their exposure to, and performance in NSC accounting, their performance in NSC mathematics, as well as differences in their perceptions of critical skills acquired at school level. A quantitative survey of the students in the target group was conducted to ascertain their perceptions of the skills they acquired at school. Their perceptions were then compared to the institutional
data, namely actual results in the NSC in accounting and mathematics as well as first-year accounting results.

1. Context of the research
At the University of Johannesburg (UJ), first-year Accounting (ACC1) is a year course comprising two couplet semester modules, namely Accounting 1A (ACC101) and Accounting 1B (ACC102). Couplet modules are defined as “two modules in a specified year, whereby the second module builds upon the first module” (UJ 2011: 21). The pass mark for each module is 50%, but a student who did not obtain the required 50% in the first module but obtained a minimum final mark of 40%, is granted entry to the second module. To obtain credit for both modules (ACC1), an average of 50% for both modules must be obtained. Accounting at first year level is a key component for the BCom degrees in Accounting and Finance at the UJ. The NSC, where students are schooled under the OBE system, was awarded for the first time in 2008. As a result, previous university admission requirements were revised for the 2009 enrolment. A new seven-point Admission Points Score (APS) was implemented at the UJ for NSC results based on the achievement rating for each subject. A prospective student’s APS is the sum of his/her achievement ratings for the seven school subjects, bearing in mind that the performance rating achieved for life orientation is divided by two. A minimum APS of 28 is required in order for a student to be considered for admission into the three-year BCom (Finance) degree at the UJ. Four compulsory NSC subjects, namely mathematics (and not mathematical literacy), life orientation as well as a home language and a first additional language (where one of the NSC languages is the same as the student’s tuition language at university, i.e. English or Afrikaans) are required. In addition, a minimum of three electives from the designated 20-credit NSC subject list (for example, accounting, economics, business studies, physical science, geography, history) should be included (UJ 2011: 30).

The admission requirements of the UJ are similar to those of other HEIs in South Africa and are in line with the recommendations made by Killen et al (2003: 147-8), who stated that when universities admit students they need to be reasonably confident that those students will be capable of successfully completing the course in which they
are permitted to enrol. Koh & Koh (1999: 13) mention that it seems obvious that the more that is known about what can affect student performance, or what can predict academic success, the better educators and policymakers will be able to make informed decisions on curriculum, selection criteria and admission qualifications.

2. Literature review

Before the introduction of the NSC, various studies have focused on the success of students entering the HE system in general\(^1\) and on the first-year success of accounting students, particularly at various South African universities.\(^2\) In the following paragraphs, factors found to be associated with university success, in general, will firstly be discussed, and secondly, factors specifically associated with success in accounting-related courses will be explored.

Factors found to be associated with university success, in general, include:

- Cognitive factors: for example, academic background, cognitive ability, communication skills, language proficiency, performance in mathematics, reading ability and comprehension skills.\(^3\)
- Personal or behavioural characteristics of students: for example, approaches to learning (deep and surface learning, for instance), class attendance, learning styles, study habits, time management.\(^4\)
- Bio- and demographic factors: for example, age, gender, race and part-time work by students.\(^5\)

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• Affective factors: for example, students’ motivation to complete the degree programmes, self-concept, self-confidence and success expectations.\(^6\)

• Factors external to the students: for example, instructional efficiency and the type of learning institution (residential or distance learning institution, for instance).\(^7\)

2.1 Success in accounting-related courses at university

In terms of skills required, Oosthuizen & Eiselen (2011: 34-5) found that decision-making skills, the ability to practically implement learning content, critical thinking skills, the ability to reflect on a variety of strategies to learn more effectively, self-confidence and a positive self-concept contribute to the success of students studying towards a BCom (Finance) degree. Focusing on skills required for success in accounting, in particular, Booth et al (1999: 277) are of the opinion that the educational process in accounting aims to achieve high-quality learning outcomes. It has been argued that the outcomes include not only strong technical competencies, but also a broad understanding of the discipline, the ability to think critically and to apply ideas and concepts to problems, and the possession of good communication and related skills.

Jones & Fields (2001: 532) stated that the technical demands of accounting have often led to discouragement, failure and poor overall student perceptions of the accounting profession and curriculum. According to Steenkamp et al (2009: 127) some factors hampering success in first-year accounting include

... a lack of motivation; lack of self-discipline, concentration and interest in the subject; not asking for help; not perceiving the subject to be important; having a mental block or negative attitude; transport issues, and making unnecessary errors.

As far as cognitive skills are concerned, the results of the study by Eiselen & Geyser (2003: 128) indicate that achievers in accounting


have, on average, better cognitive skills and obtained higher school marks than students who are at risk of failing. Similarly, Eskew & Faley (1988), Koh & Koh (1999), and Mitchell et al (1997) found that prior academic performance is a determinant of future academic performance. However, Bartlett et al (1993) and Gist et al (1996) found no significant association between academic aptitude (measured by pre-university performance) and performance in university accountancy examinations.

In addition, various researchers have concluded that the skill to perform well in mathematics is logically associated with success in accounting. The following examples are reported. Eskew & Faley (1988), Gul & Fong (1993) and Koh & Koh (1999) found evidence that prior performance in mathematics significantly explained the variance in student performance in accounting degree programmes; Wong & Chia (1996: 188) found a significant interaction effect of mathematics and English (language) on financial accounting performance among Hong Kong students.

Previous studies produced mixed results concerning the effects of accounting study at secondary school on performance in the first-year university accounting course. Koh & Koh (1999: 15) stated that, intuitively, those with prior accounting knowledge should perform better than those without such knowledge. However, results of studies in various HEIs and countries to date have not conclusively supported this presumption. There are reports of significantly better performance by students with an accounting background, particularly in the first or introductory accounting course. Doran et al (1991) support Baldwin & Howe (1982) and Bergin (1983), arguing that students with prior accounting knowledge did better early in the course, but worse subsequently. Thus the role of prior accounting knowledge is not as unequivocal as one would have expected.

3. Aim
This article aims to identify factors associated with success in Accounting 1 at university after the introduction of the NSC as exit-level certification at school. To this end, it explores differences between students who failed and those who passed Accounting 1 in 2009. Based on the previous discussion, differences between students
who passed and those who failed are explored in terms of exposure to, and performance in accounting at school level, performance in mathematics at school level as well as differences in perceptions of critical skills acquired at school level. The scope of the study is limited to a single HEI in South Africa, namely the UJ, where Accounting 1 has consistently been shown to be the course with the lowest pass rate in the first year of the BCom (Finance) degree.

4. Methodology

A quantitative survey, utilising a paper-based questionnaire, was conducted among all first-year students who obtained an NSC certificate in 2008 and who enrolled for the BCom (Finance) degree at the UJ in 2009. All of these students satisfied the minimum entry requirements for admission. After the relevant faculty granted permission, the questionnaire was administered to students at the beginning of the second semester of 2009 during a scheduled lecture. Students participated voluntarily in the survey and were requested to provide their student numbers in order to link their responses to the survey to information regarding performance at school and during the first year of study at university. It is important to note that all participating students proceeded to the second semester of study.

5. Research instruments

The questionnaire consisted of several sections, including a biographic section and a section on skills acquired during the NSC. All questions in these sections were closed-ended. The latter section requested the students to indicate, on a 4-point Likert-type scale, the extent to which they required each of 35 skills, identified from the National Curriculum Statement and policy document (DoE 2008, 2004 & 2000). For the purpose of data analysis, these 35 skills were categorised into six main categories, namely intellectual and cognitive skills; skills in working with others; skills to organise and manage themselves and their activities; research and information gathering skills; communication skills, as well as local, national and global citizenship skills.
Information regarding the participating students’ performance during their first year of study (2009), in particular during the first semester, the second semester and the first year of accounting as well as their performance in NSC accounting and NSC mathematics, was obtained from the student data-base.

6. Results
A total of 149 (48.1%) students in the target population participated in the survey. Of these, 44.6% are male, 55.7% classified themselves as African and 30.2% as White. The majority (66.4%) were 18 years of age at the time of the survey. Although it is not an admission requirement, accounting was a school subject for the majority of the responding students, namely 119 (79.8%). In other words, the majority of students had exposure to accounting as a subject prior to enrolling for the BCom (Finance) degree.

The survey results of all responding students (n=149) on perceptions of skills acquired in the NSC revealed that calculation skills, the skill to read with understanding, mathematical communication skills, self-confidence, the ability to work under pressure, the ability to complete projects, oral communication skills, and teamwork ability were most frequently indicated to have been acquired well or very well during the NSC. By contrast, economic reasoning ability, the ability to find information in the library, the ability to practically implement learning content, and the ability to understand global issues and their impact on the local community were most frequently considered to have been acquired poorly or to a moderate extent only.

As far as the outcome variables (success in accounting at university during the first year of study) is concerned, 53.7% of the responding students passed ACC101 (that is, obtained a mark of 50% or above), and 49.7% passed ACC102, while only 47.7% passed ACC1. The pass rate was thus less than 50%.

Chi-squared tests of independence were performed to explore whether students’ passing or failing each of ACC101, ACC102 and ACC1 had any relation to their exposure to NSC accounting and perceptions of skills acquired during the NSC. Independent samples t-tests were used to ascertain whether the average performance in accounting and mathematics, respectively, during the NSC of those
who passed and those who failed ACC101, ACC102 or ACC1 is the same. A minimum level of significance of 5% (0.05) was assumed throughout. Finally, step-wise logistic regression was used to predict the probability of a student passing ACC1.

As far as exposure to accounting as a subject at school level is concerned, no statistically significant differences emerged between those who passed and those who failed ACC101, ACC102 or ACC1 ($p$-values > 0.05 in all cases). Passing ACC101, ACC102 and ACC1 is thus independent of the student’s exposure to accounting at school. This result should, however, be viewed in light of the fact that few students (approximately 20%) did not take accounting as a school subject.

In terms of performance in NSC accounting, statistically significant differences exist between students who passed and those who failed ACC101, ACC102 and ACC1 ($p$-values < 0.005 <0.05 in all cases). Specifically, those who failed ACC101, ACC102 or ACC1 on average obtained a lower percentage (less than 60% on average) for NSC accounting than those who passed it (above 65% on average) (cf Table 1).

Table 1: Mean (M) and standard deviation (SD) of school performance in NSC accounting

<table>
<thead>
<tr>
<th>Passed ACC101?</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>57.98</td>
<td>6.977</td>
</tr>
<tr>
<td>Yes</td>
<td>67.74</td>
<td>9.227</td>
</tr>
<tr>
<td>Passed ACC102?</td>
<td>No</td>
<td>59.16</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>67.74</td>
</tr>
<tr>
<td>Passed ACC1?</td>
<td>No</td>
<td>59.04</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>67.85</td>
</tr>
</tbody>
</table>

Similar to the results in NSC accounting, there are statistically significant differences between students who passed and those who failed ACC101, ACC102 or ACC1 in terms of their performance in NSC mathematics ($p$-values < 0.005 <0.05 in all cases). Specifically, those who failed ACC101, ACC102 or ACC1 on average obtained a lower percentage (less than 60% on average) in NSC mathematics than
Oosthuizen & Eiselen/Factors associated with success in first-year accounting

those who passed (average percentage approximately 70%) (cf Table 2). Note that a minimum of 50% achievement in NSC mathematics is an admission requirement for students entering into the BCom (Finance) programme at the UJ.

Table 2: Mean (M) and standard deviation (SD) of school performance in NSC mathematics

<table>
<thead>
<tr>
<th>Passed ACC101?</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>59.28</td>
<td>9.152</td>
</tr>
<tr>
<td>Yes</td>
<td>69.60</td>
<td>11.748</td>
</tr>
<tr>
<td>Passed ACC102?</td>
<td>No</td>
<td>59.67</td>
</tr>
<tr>
<td>Yes</td>
<td>70.07</td>
<td>11.487</td>
</tr>
<tr>
<td>Passed ACC1?</td>
<td>No</td>
<td>59.55</td>
</tr>
<tr>
<td>Yes</td>
<td>70.48</td>
<td>11.563</td>
</tr>
</tbody>
</table>

No statistically significant differences were observed between those who passed ACC101, ACC102 or ACC1 in terms of performance in English at school level, irrespective of whether English was taken as home language or as first additional language.

As far as skills acquired during the NSC are concerned, those who failed accounting during the first semester (ACC101) were more inclined to believe that they had acquired the following skills either poorly or to a moderate extent only (cf Table 3).

Table 3: Percentages of students perceiving skills to have been acquired poorly or to a moderate extent only: ACC101

<table>
<thead>
<tr>
<th></th>
<th>Fail ACC101</th>
<th>Pass ACC101</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision-making skills</td>
<td>39%</td>
<td>28.8%</td>
<td>0.023</td>
</tr>
<tr>
<td>Prioritise activities</td>
<td>38.9%</td>
<td>22.6%</td>
<td>0.003</td>
</tr>
<tr>
<td>Work independently</td>
<td>43.2%</td>
<td>20.8%</td>
<td>0.008</td>
</tr>
<tr>
<td>Interpret financial information</td>
<td>36.8%</td>
<td>30.2%</td>
<td>0.036</td>
</tr>
</tbody>
</table>
Similarly, those who failed accounting during the second semester (ACC102) were more inclined to believe that they had acquired the following skills either poorly or to a moderate extent only (cf Table 4).

Table 4: Percentages of students perceiving skills to have been acquired poorly or to a moderate extent only: ACC102

<table>
<thead>
<tr>
<th></th>
<th>Fail ACC102</th>
<th>Pass ACC102</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision-making skills</td>
<td>37.5%</td>
<td>27.5%</td>
<td>0.055</td>
</tr>
<tr>
<td>Prioritise activities</td>
<td>34.9%</td>
<td>22.2%</td>
<td>0.004</td>
</tr>
<tr>
<td>Interpret financial information</td>
<td>37.8%</td>
<td>26.7%</td>
<td>0.03</td>
</tr>
<tr>
<td>Mathematic communication skills</td>
<td>30.4%</td>
<td>10.9%</td>
<td>0.046</td>
</tr>
<tr>
<td>Adapt to new situations</td>
<td>41.3%</td>
<td>20.0%</td>
<td>0.021</td>
</tr>
</tbody>
</table>

Finally, in order to ascertain which of the variables, namely performance in mathematics at school level and perceptions of skills acquired during the NSC, are the best predictors of success in Accounting 1 (ACC1), a step-wise logistic regression model (using the Forward: Wald method) was fitted to the data. The model revealed that performance in mathematics at school level is the best predictor of success in ACC1. Based on a student’s NSC mark in mathematics alone, 70% of the students could be correctly classified as either having failed or passed ACC1. Figure 1 illustrates the model and shows that the better the student’s performance in NSC mathematics, the greater the probability of him/her passing ACC1. It is interesting to note that
the probability of success is greater than 50% if the student’s mark for NSC mathematics is above 67% (approximately).

Figure 1: Model for the probability of success in Accounting 1 in terms of performance in NSC mathematics

7. Discussion

Exposure to accounting at school level has been reported to be either beneficial, have no influence (Koh & Koh 1999, Moses 1987), or have a detrimental effect on later performance (Baldwin & Howe 1982, Bergin 1983, Doran et al 1991) in accounting at university level. In this study, the majority of students had been exposed to accounting at school level, and it was established that passing ACC101, ACC102 and ACC1 is independent of exposure to accounting at school. However, this study included only students who had proceeded to the second semester of study, namely those students who obtained a minimum of 40% in the first semester module of accounting (ACC101). Those who did not proceed may indeed have been those who did not have any exposure to accounting at school level.

It was established, however, that the average performance of students in NSC accounting was higher for students who passed ACC101,
ACC102 and ACC1 than for those who failed these modules. This implies that students who perform well in NSC accounting are more inclined to pass accounting at university. The findings thus support other results. The HEI may recommend, although not require, that students who wish to enter the BCom (Finance) degree programme take accounting as an elective subject at school.

This study also found strong support for the research findings reporting that students who perform better in mathematics at school level have a higher probability of success in accounting at university level. It was established that those who pass ACC101, ACC102 and ACC1 on average performed better in NSC mathematics than those who failed. The logistic regression model fitted to the data revealed that a student with an NSC mathematics mark of approximately 67% or higher has a probability of more than 0.5 of passing ACC1. Based on these findings, the HEI may consider increasing the minimum requirement in terms of performance in NSC mathematics to 60% for admission to the BCom (Finance) degree.

Students who failed ACC101, ACC012 or ACC1 were found to be more inclined to believe that they had not acquired decision-making skills during the NSC or had acquired these to a moderate extent only. This lends support to previous findings by Mji (2002: 173) and Oosthuizen & Eiselen (2011: 34), where academic success has been linked to decision-making skills. The same holds true for the ability to interpret financial information, which has also been identified as a skill associated with success in commerce studies, in particular (Oosthuizen & Eiselen 2011: 35).

Prioritising of activities is closely associated with time management skills. The fact that students who failed ACC101, ACC012 or ACC1 were more inclined to believe that they did not acquire this skill or acquired it to a moderate extent only lends support to the notion that time management is important for success at university and in accounting studies, in particular.

The finding that mathematical communication skills were considered to have been acquired poorly or moderately only by those students who failed an accounting module may be associated with the fact that many of the students are second-language English students who may find it difficult to verbalise mathematical results
and interpret these findings in context. However, this finding could merely reflect the fact that communication of mathematical results in written sentences or paragraphs was not required at school, and hence poses a challenge for students entering the programme (Oosthuizen & Eiselen 2011: 45-6). As noted earlier, no statistically significant differences were observed between those who passed ACC101, ACC102 or ACC1 in terms of performance in English at school level when English was taken as home language or as first additional language.

The finding that students who failed an accounting module were more inclined to believe that they had not acquired the ability to adapt to new situations or had acquired it to a moderate extent confirms the very early studies related to success in higher education, where academic and social integration were shown to be critical success factors at university (Kantanis 2006, Lourens & Smit 2003, Tinto 1993). It should be noted that many of the students entering the UJ are first-generation students at university or come from previously disadvantaged communities. The university experience thus poses an entirely new situation to these students.

8. Implications and recommendations

The importance of using measures of school performance as primary criteria for university admission has been confirmed as a valid and reliable predictor of university success. However, it is recommended that the current admission requirements in mathematics should increase from 50% to 60% for entry into BCom (Finance). It is also recommended that learners who are considering to enter for BCom (Finance) studies at university should be encouraged to include NSC accounting at secondary school level. It was found that there are advantages to prior knowledge of this school subject in terms of university success in this particular university programme.

It is recommended that the university should implement particular support systems and activities aimed at those students entering this degree programme with NSC mathematics results of less than 65%, as the findings of this study indicate that these students are at risk of failing the BCom (Finance) programme. The high levels of attrition in first-year accounting have huge resource implications for the university, in particular after the implementation of the NSC. It is
recommended that tailor-made support systems and activities to the students, who are at risk to fail, should become an integral part of the university offerings.

9. Conclusion
The more that is known about factors associated with student performance, or factors that can predict academic success at university, the better educators and policymakers will be able to make informed decisions regarding the admission criteria and the university curriculum. This article identified factors associated with success in accounting at university after the introduction of the NSC (in the 2009 academic year when the first students schooled under the OBE system entered South African HEIs). The researchers explored differences between students who failed and those who passed the first-year accounting course in terms of exposure to, and performance in NSC accounting, performance in NSC mathematics, and differences in perceptions of critical skills acquired at school level. Perceptions of students in the target group population were compared to institutional data, namely actual results in the NSC and first-year accounting. The research findings revealed that NSC mathematics results are strongly associated with success in first-year accounting. In addition, students who failed first-year accounting were more inclined to have obtained lower marks in NSC accounting and were also of the opinion that they failed to acquire particular critical skills at school. The significant impact of performance in mathematics at school level, irrespective of the system of education, in this study as well as in prior research, further bedrocks it as a universally important determinant of success in finance and accounting degree programmes. These findings re-emphasise the importance of a result of a minimum of 60% in NSC mathematics to be implemented as an admission requirement for students into finance and accounting programmes.
Bibliography

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BAARD R S, L P STEENKAMP, B L FRICK & M KIDD

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BARTLETT S, M J PEEL & M PENDLEBURY

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