Determining the profile of the successful first year accounting student

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Abstract

A concern about the pass rate in first year accounting courses in higher education has resulted in a number of national and international research projects on the subject. Researchers have looked at the possible effect of factors such as the student’s proficiency in English, prior experience in accounting and mathematics, gender, motivation and personality type on the pass rate at first year accounting. The outcomes of the research have been varied and often contradictory. This may be attributed to the different research strategies in the different contexts. This article maps the journey towards establishing an appropriate analysis strategy to profile the successful Accounting101 student. The context of this journey is the teaching of first year accounting studies at the University of South Africa (Unisa), which is an open and distance learning (ODL) institution.

INTRODUCTION

Better to light a candle than to curse the darkness
— Chinese proverb

There is an extensive body of research on several factors that affect success in elementary accounting studies. These factors include proficiency in the language in which the studies are offered and previous experience in mathematics and accounting. More controversial issues like race and gender and their effect on success in accounting studies have also been researched.

What existing research has done, however, is to come up with a number of findings. Since these findings are often contradictory and derived from different contexts, the results are less than usable. A literature review has indicated that because several analysis strategies have been followed, this may play a significant role in the outcome of the research findings.

This article covers the search for an appropriate analysis strategy from an initial exploratory analysis of variance and regression approach. The rationale for the investigation is a concern over the fact that more than 77.65 per cent of Unisa
students who were registered for Accounting ACN101-M in the second semester of 2004 did not write the examination or, if they did write it, they failed. It is suspected that the following factors may have contributed to these statistics:¹

- **A pre-knowledge of accounting**: Students do not have to have matriculation-level accounting to register for ACN101-M.
- **A pre-knowledge of mathematics**: Students do not have to have matriculation-level mathematics to register for ACN101-M.
- **Prior learning and numerical skills**: Students who do not have degrees or four-year diplomas are required to register for the modules, Introduction to Economic and Management Sciences (INM101-3 and INM102-4) (Unisa Calender 2, 2004) either before or at the same time that they register for ACN101-M. It was envisaged that these two modules would give learners a basic grounding in the basic principles of business management, economics and accounting. However, although the examination tests the students’ competencies in these areas, they can pass INM101-M and INM102-N without passing the accounting section.
- **Reading and comprehension skills**: Students’ language comprehension and reading ability seriously affect the amount of reading they can do and the level of comprehension they can attain within 120 notional hours (New Academic Policy 2002). Investigating the factors that contribute to the success or failure of accounting students in an open distance learning (ODL) environment requires an appropriate statistical analysis strategy as part of the research methodology. The unique interface between the huge number of students registered for first-level accounting, the ODL environment and the amount of potentially influential variables to be investigated requires a planned and structured analysis. The strategy should not only investigate the validity of factors found in other research, but identify further factors or variables contributing to success.

This article will

- briefly discuss accounting, as offered by the University of South Africa (Unisa)
- give an overview of the literature review
- share the journey towards an appropriate analysis strategy
- discuss the findings.

**ACCOUNTING AS OFFERED BY UNISA FROM NOVEMBER 2004**

At Unisa, in 2004 first-level accounting studies were offered as two distinct modules, namely ACN101-M and ACN102-N. In ACN101-M, students were introduced to accounting concepts, principles and procedures and in ACN102-N they learnt about accounting reporting. These modules were offered as two semester modules based on the principle that the students needed 120 notional
hours (NAP2001) to work through the material for each module, to do the assignments and to prepare for the examination. At the time of this study, there were no compulsory assignments and learners gained automatic admission to the examination.

Students registering for the Bachelor of Accounting Science (B.Compt.) had to fulfil the following admission requirements:

- They had to have satisfied the provisions of Rule G13 in Part I of the Calendar.
- They had to have passed mathematics at matriculation level with at least 40 per cent on the higher grade or at least 50 per cent on the standard grade, or they had to have passed an equivalent examination in mathematics. Alternatively, they had to have passed at least QMG101 or one module in statistics or mathematics I (excluding MAT101) for a B.Com. or other degree, or for non-degree purposes, before they would be allowed to register for any modules on second-year level as part of the B.Compt. degree. (Calendar 2: 2004)

Accounting was also a compulsory module for all students registering for a general or specialist Bachelor of Commerce (B.Com.) degree. The general admission rule (as quoted above) applicable to students doing a Bachelor of Accounting Science did not apply to these students. Therefore, a student could register for first-level in accounting studies without having passed mathematics at matriculation level.2

Whether the student took accounting studies as part of a Bachelor of Commerce degree, or because it was prescribed for the Bachelor of Accounting Science degree did not matter the prescribed modules had the same content. In this article it is assumed that students who registered for B.Compt. in which they are required to take Accounting as a major, were intrinsically more motivated to pass ACN101 than students doing other commercial degrees in which they are compelled to take ACN101. Motivation is however a multifaceted concept linked to persistence in studies (Allen 1999); dependent on inter alia the source of financing of students’ studies (Zajkowski 1997); resulting in students taking control of their studies (Gracia and Jenkins 2002) and contributing to students transfer of learning in the workplace (Tessmer and Richey 1997).

Accounting studies on first-year level were also taken by students studying towards a number of other degrees and for other purposes.

LITERATURE REVIEW

The literature review was undertaken specifically to investigate the present assumptions about factors influencing success in elementary accounting studies. However, research on this issue often yields contradictory evidence (Gracia and Jenkins 2002, 95). The use of demographic data in investigating factors affecting success is influenced by cultural, language and curriculum issues.3 ‘It seems likely that there are more active and subjective forces at work in determining performance that are not captured by statistical studies’ (Gracia and Jenkins
The published research on factors influencing success in elementary accounting focuses on various demographic and biographic factors using a variety of research methodologies. There is also a body of research focusing on the factors influencing success in ODL.

This article explores the interface between demographic and biographic factors in an ODL environment and how they impact on the student’s success or failure in elementary accounting.

The impact of a prior knowledge of accounting in elementary accounting studies has been widely researched. ‘Despite its frequency of study no consensus exists on its influence or otherwise on academic performance’ (p. 94). In one of the first studies done in South Africa on this question, Rowlands (1988) used the Mann-Whitney test and found that although students who had some understanding of accounting initially scored higher, there was no difference in the scores at the final examination. These findings were confirmed by Samkin (1996) using the Academic Aptitude Test (AAT) designed by the Human Sciences Research Council (HSRC). However, Samkin did warn that the influence of race and the quality of high school education did result in variables that should be taken into account.

Research done by van Rensburg, Penn and Haiden (1998) explored these findings further. They applied the analysis of variance (ANOVA) methodology and found that students who had no accounting studies experience but who continued up to second-level accounting, actually outperformed students who had prior experience in accounting studies at school level. A variable neglected by their research, and that this article highlights, is the fact that it did not take into account 155 students (of a total of 1,372) who did not actually write the examination or who did not even gain admission to write it.

De Lange, Waldmann and Wyatt (1997) investigated the role that personal characteristics and academic achievement play in elementary accounting in open learning institutions in Australia. They used questionnaires and analysed them using SPSS for Windows 6.2. They (1997, 303–304) found the following:

- Males were more likely than female students to achieve distinction grades, whereas females were more likely to receive high distinction and credit grades compared to males. In addition, females were more likely to fail the unit than males.
- There is no significant differences in the grades achieved were observed among respondents classified as those who completed prior tertiary education and those who had no prior tertiary education.
- Respondents who have made a second attempt in ACC11 are more likely to fail compared with those who have attempted the unit for the first time.
- There is no significant differences between achievement and ethnic background.
Nourayi and Cherry (1993) also investigated the effect of gender and personality on accounting grades. Using ANOVA they found that gender was an insignificant variable. Contrary to popular belief and other research (Gul and Fong 1993; Keirsey 1978), Nourav and Cherry (1993, 115) found no `significant differences in any of the measures comparing extroverts and introverts. This is contrary to the commonly stereotype that introverts make the best accountants’ (Keirsey 1978, 115). Their findings are supported by a study done in 1998 by Oswick and Barber, who used selection ratio tables, and who found no significant relationship between personality types and success in accounting studies.4

In an expanded study undertaken by Gul and Fong (1993, 35–36) on learners in Hong Kong, they researched the interrelationship between a variety of factors and their influence on success in elementary education. They used step-wise and multiple regression to investigate the following variables: personality, English secondary school education, grade for certificate-level English, grade for certificate-level mathematics, any previous accounting courses, intention to obtain a business degree and self-expectation of examination grade (p. 35).

They raised a very important point that (at that stage) no research ‘ha[d] been conducted in the less developed and recently developed countries, such as Hong Kong, which are culturally different from western societies’ (p. 34). The influence of culture specific factors on the success of students in accounting is indeed a neglected area of research. They found that

- self-expectation had the largest marginal contribution followed by personality and English secondary school education (p. 36)
- a previous knowledge of accounting and an aptitude for mathematics have a positive and significant effect on student success in introductory or elementary accounting courses (p. 38)
- extroverted students perform better than introverted students. (p. 39)
- students who intend to complete a business degree are more motivation (p. 39)
- students with English as first language do better than students who did not (p. 38).

In an Australian study, Auyeung and Sands (1994) used multiple regression analysis to investigate the effect of school accounting, mathematics and tertiary entrance score ‘on the deep learning and surface learning components of the first-year university accounting examination’. It is interesting that, because they held that educational environments differ in each country, they questioned the results of other international studies on the factors influencing success in accounting studies (Auyeung and Sands 1994, 261).

They pointed out that although some studies indicate that females outperform males in accounting studies (p. 261), there are just as many studies showing the
opposite to be true. They ascribed the different results to the ‘educational independent variables’ in each specific discipline and cultural context (p. 262). Their results show the following:

- Secondary school accounting ‘is relevant in explaining success in first level accounting.’
- ‘Mathematical ability benefits accounting performance probably because of the commonality in logic and analytical skills associated with performance in both subjects.’
- None of the variables that were investigated have an influence on deep learning requirements. The fact that schools perpetuated surface learning approaches levelled the playing field with respect to the role the possible variables could play in deep learning approaches.
- The influence of gender on success may be influenced by the fact that ‘boys may be more prepared to pursue seriously careers in the male-dominated accounting profession.’
- The research also showed that ‘results indicate that the performance of males was best explained by school accounting.’

After their 1993 study, Wong and Chia (1995) researched the influence of proficiency in mathematics and English on students’ performance in first-year level financial accounting using regression analysis. They were specifically interested in the impact of proficiency in English in non-English-speaking countries. In a non-English-speaking environment such as Hong Kong where the first language is Chinese (Cantonese), they suspected that students who were not very proficient in English would not perform well in an accounting course which was taught and examinationed in the English. These students may have been very proficient in mathematics but their performance in accounting could have been negated by their poor command of English (Wong and Chia 1995, 184).

Their research provided empirical evidence ‘to support the interaction relationship between the degree of proficiency in mathematics and English language on the level of students’ performance in the accounting course’ (p. 188). This study seems to indicate that where accounting is taught to students who have English as second language, their proficiency in mathematics and their performance in accounting studies may be negatively affected by proficiency in English.

The correlation between the English reading skills of English second or third-language users and success in an introductory course in mathematics was investigated by Bohlmann and Pretorius (2002). It was shown that particularly in this case, the students’ reading ability directly affected their success because of the print-based distance education model of study. They indicated that ‘(r)eading is more than fluency in articulating what is written; it is also more than understanding the sum of the meanings of individual words’ (Bohlmann and Pretorius 2002, 196).
Their research shows that the stronger a student’s reading ability, the better his or her chance of performing well in the mathematics examination will be. A further implication of these results was that ‘(w)eak readers are only achieving comprehension levels of 50 per cent or less, which effectively means that half of what they read they don’t properly understand, with dire consequences for their academic performance’ (Bohlmann and Pretorius 2002, 204). Weak readers often miss vital clues that ‘aid in constructing and keeping track of meaning in a text’ (Bohlmann and Pretorius 2002, 205).

In follow-up research, Pretorius and Bohlmann (2003) explored a reading intervention programme to boost students’ eventual success in mathematics. They also found that some students ‘were reading at approximately five years below their maturation level, and had reading skills equivalent to students at a Grade 6 or 7 level.’

Other factors like access criteria to degree studies, semesterisation and geographical distribution may also influence success in accounting studies. In research done by Fraser and van Staden (1996), they investigated the impact of three factors on the success of students in ODL. These were the influence of general study factors (e.g. how the learner organised his or her studies), feedback from lecturers and the effect of success on the self-perception of learners. They found that successful learners were committed to a study programme, studied on the basis of a pre-planned study schedule, established achievable and realistic learning objectives, had self-confidence and completed tasks within the allotted time-frame. Regular and constructive feedback increased the students’ ability to self-evaluate and led to increased success.

It is clear therefore that the literature review provides contradictory evidence and indicates that various methodologies can be used. Not all of the methodologies take into account the influence of different variables. The following factors may therefore be considered in the Unisa context:

- The impact of biographic factors such as home language and the influence of the language of instruction may play a significant role.
- Prior experience in or knowledge of mathematics and accounting does not play a role in the final examinations.
- Age, gender and race do not seem to influence success in elementary accounting studies.
- Motivation seems to play a major role in students’ success in accounting studies. In face-to-face teaching the educator plays a major role in motivating students. The educator can react to external stimuli and intervene immediately. In an ODL context the ‘immediacy’ of extrinsic motivation is not always an option. In this article the focus will be on the possible influence of intrinsic motivation.
RESEARCH METHODOLOGY

The ACN101 research study followed the research methodology principles outlined by Oppenheim (1979) and Maindonald (2002). A literature review was carried out and an understanding of the (often contradictory) existing assumptions emerged. From the literature review it was concluded that depending on the context and the methodology used, the success predictors in the Unisa context may differ from the findings of other research projects. A list of potential ACN101 success predictors was determined and hypotheses regarding the significance of these prospective profile variables and how they affect pass-rate were formulated. Table 1 lists the following variables: gender, home language, occupation, age, ACN101 results, ACN101 repeats, and the degree for which the student was registered.

Table 1: Biographical variables included as potential ACN101 success predictors

<table>
<thead>
<tr>
<th>Biographical variables</th>
<th>Categories</th>
<th>No. of responses</th>
<th>No. of missing responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>male; female</td>
<td>3 046</td>
<td>7 148</td>
</tr>
<tr>
<td>Home language</td>
<td>Afr, Eng, other</td>
<td>3 046</td>
<td>7 148</td>
</tr>
<tr>
<td>Occupation</td>
<td>full-time; part-time</td>
<td>10 194</td>
<td>1</td>
</tr>
<tr>
<td>Age</td>
<td>&lt; 30; 30+</td>
<td>10 194</td>
<td>1</td>
</tr>
<tr>
<td>ACN101 results</td>
<td>pass; fail</td>
<td>10 194</td>
<td>1</td>
</tr>
<tr>
<td>ACN101 repeats</td>
<td>0; &gt;0</td>
<td>10 194</td>
<td>1</td>
</tr>
<tr>
<td>Degree</td>
<td>BCom, BCompt, Other</td>
<td>10 194</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 explored the Grade 12 subjects as potential success predictors in ACN101-M.

With regard to the list of potential ACN101 success predictors, it should be mentioned that a motivational and time-management indicator were defined in terms of the degree and occupation variables. The literature review pointed to the probable importance of motivation and time management on success in accounting studies. The obvious choice and measure of success proved to be ACN101 examination results.

It was decided to select first-year students registered for accounting for the second semester of 2004, as the target population. In line with the focus area of the study which was to establish an ACN101 success profile – it was decided that attention should focus on the pass/fail ratio of students who wrote examinations. This restricted the target population and excluded students who did not write examinations or were not admitted. Table 3 illustrates the percentages of the students who passed, failed or who were absent from the examination.
Table 2: Grade 12 subjects included as potential ACN101 success predictors

<table>
<thead>
<tr>
<th>Matriculation subjects</th>
<th>No. of responses</th>
<th>No of missing responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountancy</td>
<td>1 181</td>
<td>9 013</td>
</tr>
<tr>
<td>Business Economics</td>
<td>994</td>
<td>9 250</td>
</tr>
<tr>
<td>Computer Studies</td>
<td>194</td>
<td>1 000</td>
</tr>
<tr>
<td>Economics</td>
<td>662</td>
<td>9 532</td>
</tr>
<tr>
<td>English</td>
<td>33</td>
<td>10 161</td>
</tr>
<tr>
<td>English (first language)</td>
<td>1 283</td>
<td>8 911</td>
</tr>
<tr>
<td>English (second language)</td>
<td>1 600</td>
<td>8 594</td>
</tr>
<tr>
<td>Mathematics</td>
<td>1 790</td>
<td>8 404</td>
</tr>
<tr>
<td>Physical Science</td>
<td>1 101</td>
<td>9 093</td>
</tr>
<tr>
<td>Physics</td>
<td>62</td>
<td>10 132</td>
</tr>
</tbody>
</table>

True examination marks are a requirement for regression analysis. Since none of the subjects is compulsory, information tends to be sparse, accounting for missing values.

Table 3: Classification of examination results for ACN101 November 2004 examination

<table>
<thead>
<tr>
<th>Outcome</th>
<th>No. of students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passed</td>
<td>2 278</td>
<td>22.35</td>
</tr>
<tr>
<td>Failed</td>
<td>5 312</td>
<td>52.11</td>
</tr>
<tr>
<td>Absent</td>
<td>2 604</td>
<td>25.54</td>
</tr>
</tbody>
</table>

Redefined target population, included ‘pass’ and ‘fail’ categories with $n = 7580$.

The required dependent and independent variable information was extracted from the Unisa Student System at the Institute for Computer Technology.

A survey design type accommodated this research approach and data-capturing methodology. The statistical analyses performed on the captured information were determined by various issues and constraints. The analysis strategy, issues determining strategy and analysis results are discussed in the ensuing sections.

**ANALYSIS STRATEGY AND ISSUES IMPACTING ON THE STRATEGY**

The underlying hypothesis tested throughout the ACN101 study evolved around the identification of ACN101 success predictor variables from a list of potentially influential variables. The primary aim of the statistical analyses undertaken was therefore to identify these variables. At the same time, the analyses also aimed to describe the way in which the identified predictors affected the ACN101 pass rate.
The statistical techniques decided upon were, largely determined and influenced by issues such as the constraints imposed by the various techniques,\(^8\) the hypotheses to be tested, the unavailability of information on each student (missing data), the data type associated with each potential predictor variable, and whether potential predictor variables should be investigated one at a time (a univariate approach) or holistically (a multi-variate approach). Against this background, the analysis strategy which evolved to identify significant predictor variables included a factorial analysis of variance on the biographical variables (Table 1) and multi-variate linear regression on grade 12 examination results (Table 2).

Frequency tables with associated chi-square tests were then conducted on the identified predictor variables to describe their joint contribution in predicting ANC101 outcome. The results which emerged were presented as an ACN101-success profile.

**STATISTICAL ANALYSES**

**Analysis of variance**

Given the important role that biographical detail seems to play in determining ACN101 success – as illustrated in the literature review and practical experience – a factorial ANOVA was conducted on the list of biographical variables illustrated in Table 1.\(^9\) The aim was to identify variables that significantly influence or predict ACN101 examination marks.

**Linear regression**

Since the literature review suggested that prior subject knowledge and proficiency in English predict ACN101 success, the final examination marks of selected Grade 12 subjects, listed in Table 2, were jointly regressed against ACN101 examination marks. The aim was to identify pre-knowledge that significantly predicts ACN101 outcome.\(^10\) It should be noted that Grade 12 English examination marks was used as an indicator of English proficiency.

The sparse information\(^11\) on certain variables affected analysis results. In both the ANOVA and regression approaches, influential predictor variables were identified, but the power and reliability of the analyses were poor owing to missing data – especially regression analysis. Results of these analyses are therefore not included, but the predictor variables identified as significant have been included in further analyses. This is discussed in section 6.3.
Two-way frequency tables and the chi-square test

As stated earlier, the primary aim of the research was to identify ACN101 success predictors. The preceding analyses identified age, gender, language, motivation (as captured in degree), time management (captured in occupation), and the number of times ACN101 had been repeated as success predictors.

The way in which these predictors affect the pass rate and interact with one another was investigated by means of two-way frequency tables. Once the behaviour pattern had been established, it was possible to derive a profile of a successful first-year accounting student.

Since motivation emerged as a highly significant predictor in the analysis of variance results, the effect of motivation (as captured in degree) on ACN101 success, in turn, was analysed in conjunction with each of the other identified variables. The frequency tables were set up to evaluate the pass/fail ratio in each category. By doing so, categories with a high pass/fail ratio could be identified as success categories and those with a low ratio as high-risk categories. The associated chi-square tests attest to the significance of ratio differences between success and risk categories. A summary of the various two-way tables is supplied in Table 4. Table 4 presents ACN101 pass and fail frequencies, pass/fail ratios and associated chi-square values and their significance. Significant chi-square values (indicated by `*', or `**', or `***') indicate that motivation and the relevant predictor variable jointly predict ACN101 outcome.

Interpretation of analysis results

An interpretation of the results in Table 4 is very enlightening. When comparing the pass/fail ratios of the different categories for each predictor and, in particular, age, time management, ACN101 repeats and gender, the following general trends emerged:

- **ACN101 repeats.** More students passed ACN101 the first time they wrote the examination. The pass/fail ratio decreased in the case of repeaters. This held true for B.Com. and B.Compt. students alike: 0.40 vs. 0.31 for B.Com.; and 1.21 vs. 0.65 for B.Compt. students. Although not statistically significant for the Others ± group, the ratio trend also suggested a lower ratio for repeat students (0.41 vs 0.34). Note that B.Compt. non-repeaters were the most successful group.

- **Time management:** Time management likewise indicated a general trend across motivational or degree categories. Part-time students were more successful than full-time students: 0.25 vs. 0.37 (B.Com.); 0.60 vs. 1.03 (B.Compt.) and 0.28 vs. 0.4 (others). Although not statistically significant in the latter instance the ratios suggested a similar trend for the other group. Note that part-time students studying towards a B.Compt. were the most successful group.

- **Age:** Across the three motivational categories, younger (17–30) students revealed a substantially higher pass/fail ratio than older students. There was a ratio of 0.39 vs. 0.28 for B.Com. students; 1.00 vs. 0.69 for B.Compt. students
Table 4: Summary of two-way frequency tables of joint effect of motivation and each of the identified predictor variables in turn on the pass/fail rate in ACN101

<table>
<thead>
<tr>
<th>Other predictor variables</th>
<th>Motivation expressed in terms of degree</th>
<th>B.Com.</th>
<th>B.Compt.</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Repeat</td>
<td>pass</td>
<td>fail</td>
<td>ratio</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>846</td>
<td>2136</td>
<td>0.40</td>
</tr>
<tr>
<td></td>
<td>1+</td>
<td>587</td>
<td>1886</td>
<td>0.31</td>
</tr>
</tbody>
</table>

| Gender                    | Female | 199  | 823  | 0.24   | ns   | 73   | 156  | 0.47  | *    | 30   | 141  | 0.21  | ns   |
|                          | Male   | 169  | 765  | 0.22   | 10.6 | 85   | 110  | 0.77  | 16.2 | 33   | 118  | 0.27  | 10.9 |

| Lang.                    | Afr    | 51   | 192  | 0.27   | ns   | 29   | 30   | 0.97  | 6    | 40   | 0.15 |
|                        | Eng    | 159  | 600  | 0.27   | ns   | 58   | 90   | 0.64  | ns   | 34   | 84   | 0.40  | ***  |
|                        | Euro   | 4    | 20   | 0.20   | 0.1  | 2    | 2    | 1.00  | 6.2  | 4    | 4    | 1.00  | 16.9 |
|                        | Other  | 154  | 776  | 0.20   | 69   | 144  | 0.48 | 19    | 131  | 0.15 |

| Time                    | Full   | 148  | 586  | 0.25   | ***  | 75   | 124  | 0.60  | ***  | 25   | 90   | 0.28  | ns   |
|                       | Part   | 1285 | 3436 | 0.37   | 16.3 | 515  | 499  | 1.03  | 11.4 | 230  | 577  | 0.40  | 2.3  |

| Age                     | < 30   | 1122 | 2913 | 0.39   | ***  | 512  | 510  | 1.00  | *    | 185  | 427  | 0.43  | *    |
|                       | 30+    | 311  | 1109 | 0.28   | 18.9 | 78   | 113  | 0.69  | 5.5  | 70   | 239  | 0.29  | 5.9  |

Significance: Probability associated with chi-square test:

*** : <0.001
** : <0.01
* : < 0.05
ns: not significant

The pass/fail ratio for each category as well as chi-square values and associated significance are reported. (Significance is indicated in the ‘sign’-columns) N=7590
and 0.43 vs. 0.29 for other students. Younger B.Compt. students proved to be the most successful.

- **Gender**: In the case of B.Compt. students, male students were more successful than females. The difference in ratio between males and females was substantial: 0.77 vs. 0.47.

- **Language**: Although identified as a predictor, a clear-cut picture regarding language did not present itself. There was an indication that the other-group lagged behind, but significance could not be attached to this.

Although the aim of the various frequency tables was to establish the interaction between motivation and other predictors, insight into the importance of motivation as predictor is gained by examining the various pass/fail ratios for the predictors in the B.Compt.-category against the other two motivational categories. The overall pass/fail ratio for B.Compt. students was significantly higher than the corresponding ratios for either B.Com. or other students. In general, the B.Compt.-group pointed the successful group.

**THE PROFILE OF THE SUCCESSFUL ACN101 STUDENT**

In conclusion, it can be stated that the best achiever seems to emerge as the

- B.Compt. student
- studying part time
- passing ACN101 on the first attempt
- aged between 17 and 30.

Similarly, the profile of the risk student can be identified by studying the lower ratio values. Older full-time students repeating ACN101 and who had registered for a B.Com. or another degree indicated a risk group.

**CONCLUSION**

With the sound backing of the literature study, previous experience and numerous interviews, the analysis strategy proved to be effective and appropriate. It succeeded in identifying ACN101 success predictors, and more importantly, establishing an ACN101 success profile. The ACN101 success profile attributes can be easily monitored. On registration students can be identified as high or low risk cases. The high risk students can be advised to follow enrichment or bridging courses before registering for ACN101. Since motivation proved to be an important predictor of success, passing manageable, bridging courses could act as motivation in attaining success in ACN101.

The profile established in the study should be regarded as a preliminary profile. In the preceding analyses, the interrelationship between a selected few predictor variables and success in ACN101 were established by means of two-way dependencies. It is envisioned that a more holistic and reliable ACN101 success
profile could be obtained by incorporating the joint effect of all selected predictor variables simultaneously into an ACN101 success model. Analysis techniques to this end exist. In a follow-up study the existing profile can be validated and improved.

The darkness surrounding factors influencing the ACN101 success rate has been replaced by the flickering light of a candle.

NOTES

1 In numerous interviews with the educators responsible for teaching accounting at Unisa, these reasons were generally accepted as contributing the most to the failure rate of students. At present, there is no research to verify the perceptions held by educators.

2 In research undertaken for SAICA, Dempsey and Stegmann (2001, 9) found that there is a variety of registration requirements at South African universities. Most South African universities lay down certain requirements with respect to mathematics and expect students to be proficient in the language in which the tuition is being offered.

3 Samkin (1996, 117) highlighted the role race played and still plays in studies on the factors that influence success. Therefore, one can accept that race remains a tacit variable.

4 Interestingly enough, both studies allude to the fact that although the profession has indicated a need for a reassessment of the skills and personality preferences that the accounting of the future will need (Nouyari and Cherry 1993, 115), most learners who take accounting still fit into the traditional model. This model does not, however, exclude learners with other profiles and skills from success in accounting (Oswick and Barber 1998, 253).

5 ‘Potentially influential variables’ or ‘potential ACN101 success predictor variables’ imply independent variables being investigated to determine whether they influence the pass rate significantly and can be included in the model to predict ACN101 success rate.

6 Motivation reflected in the prospect of a future professional career and captured in the degree the student had registered for, namely B.Compt. could be incorporated by classifying the degree variables according to B.Compt., B.Com. and other degrees.

7 It was also argued that time management could be measured in terms of occupational categories. Students were classified as part time students (with an implied responsibility to manage their time if they were employed while studying), and full time if they were unemployed with more leisure time at hand.

8 Analysis constraints will be touched upon in the relevant analysis sections.

9 The underlying data type assumption for ANOVA is categorical data. Categorical data responses can be grouped according to categories such as ‘male’ and ‘female’ for the gender attribute.

10 The underlying data type assumption for multi variate linear regression is continuous data. Continuous data values may assume any value in a continuum of values.

11 None of the Grade 12 subjects are compulsory subjects, resulting in sparse variables.

12 Success in ACN101 was defined in terms of a pass or fail examination mark. This is also referred to as pass/fail rate.

REFERENCES


