Prior knowledge and academic performance in first year accounting course

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Abstract: The study is motivated by the poor performance of students in their first year accounting course despite meeting up with the minimum entry requirement based on NUC BMAS and UTME. The paper examines the impact of prior knowledge from the conceptual and metacognitive dimensions on academic performance in the first year accounting course. Using filters, 408 students of the Federal University Dutsinma, Nigeria in the 2012/2013 to 2015/2016 academic sessions were adopted for the study. Ordinal regression adopting the ordered logit procedure in STATA was carried out. Prior knowledge was found to have significant impact on the performance in the first year accounting course. Findings showed that the joint impact of conceptual and metacognitive knowledge outweighs that of either conceptual or metacognitive. We therefore recommend among others that a composite scoring system incorporating conceptual and metacognitive knowledge variables be designed and used for admission placement in BSc in Accounting, BSc in Management and BSc in Economics.

Keywords: prior knowledge; conceptual knowledge; metacognitive knowledge; accounting course; ordinal regression; Nigerian Universities Commission; NUC; benchmark minimum academic standard; BMAS; Unified Tertiary Matriculation Examination; UTME; accounting education.

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1 Introduction

Academic performance of students in tertiary level education has over the years elicited the attention of students, academics, administrators and regulators. Students are interested in their performances as this will show them their strengths and weaknesses. For academics, the need to understand the factors responsible for the differences in student performance will determine teaching strategies for effective teaching and learning (Tan and Laswad, 2008). Factors determining academic performance will assist administrators and regulators in designing courses, adapting teaching techniques as well as improve curricula (Didia and Hasnat, 1998). It will also help in an efficient distribution of financial, human and infrastructural resources aimed at improving the quality of teaching and students' productivity (Ballester, 2012).

The Nigerian Universities Commission (NUC) Benchmark Minimum Academic Standard (BMAS) requires first year students enrolled in BSc Accounting, BSc Business Management and BSc Economics programs to take introduction to accounting as a core course. Introduction to accounting is believed to be significantly important to the curricula of these programs. In the same vein, the BMAS minimum admission requirement for BSc Accounting, BSc Business Management and BSc Economics is five credit passes in five ordinary level subjects including English Language, Mathematics and Economics (NUC, 2007). To further assess the students' readiness for a chosen course of study, the students are expected to sit and obtain cut-off mark in a Unified Tertiary Matriculation Examination (UTME) administered by Joint Admission and Matriculation Board (JAMB) which is a multiple choice question type across three subjects relevant to the chosen course of study while use of English is a compulsory subject for all.

Credit passes in English language, Mathematics and Economics implies that the student have obtained conceptual knowledge relevant for the study of accounting,

business management or economics. Conceptual knowledge obtained should serve as a background for the students; thus, is expected to enhance their understanding of the first year accounting course which can only be demonstrated by their performance in the course. The UTME is aimed at assessing the students' metacognitive knowledge through their efforts and cognitive ability. Thus, the question is to what extent has the students' conceptual and metacognitive knowledge contributed towards their performance in first year accounting course?

Numerous literatures on prior knowledge and academic performance are abound from developed countries to developing countries and across various fields of studies. For instance, Byrne and Flood (2008) studied the impact of prior knowledge on the academic performance of first year accounting students in Irish University. In New Zealand, van Rooyen et al. (2006) studied entry criteria and age as a predictor of academic performance of undergraduate in nursing program. Ballester (2012) studied the performance of students in financial accounting at the Universitat Autònoma de Barcelona in Spain. Ali Al-Twairjry (2010) conducted a similar study in Saudi Arabia; Awoniyi and Awoniyi (2014) studied business programs in Zimbabwe. In Nigeria, Adewale and Adhuze, (2014) studied entry qualification and performance in architectural studies, Abisuga et al. (2015) conducted similar studies in building technology program. While prior studies examining the impact of prior knowledge on academic performance have produced mixed results, to the best of our knowledge, no study has been undertaken examining the impact of prior knowledge and performance of first year accounting course in Nigeria.

The study is motivated by the poor performance of students in first year accounting course, despite meeting up with the minimum entry requirement based on NUC BMAS and UTME. To what extent have these minimum requirements prepared the students enough to undertake a first year accounting course in Nigerian universities? The main objective of this paper is to examine the impact of prior knowledge from the conceptual and metacognitive dimension on the academic performance of students in first year accounting course. The paper specifically will attempt to examine whether conceptual knowledge or metacognitive knowledge or both can be used a predictor of academic performance of students taking first year accounting course.

2 Literature review

Several studies have been conducted on the factors determining the academic performance of students, the majority of the studies has agreed that prior knowledge is the most influencing factor on learning outcomes (Rankin et al., 2003; Dolado and Morales, 2009; Jones-White et al., 2010; Nyikahadzoi et al., 2013; Awoniyi and Awoniyi, 2014; Abisuga et al., 2015). Prior knowledge can be understood from two dimensions, conceptual knowledge and metacognitive knowledge. While the conceptual deals with the pre university knowledge acquired metacognitive relates to students' efforts and cognitive ability (Ballester, 2012).

Conceptual knowledge represents facts, principles, rules, framework and basic skills acquired by students in the course of their secondary education. Conceptual knowledge is obtained by the students from the subjects taken during their secondary school education. Thus, the BMAS requires students aspiring for a BSc Accounting, BSc Business

Management or BSc Economics program to undertake Mathematics, English Language and Economics at the secondary level which will serve as the minimum entry qualification. Students who took these subjects are believed to have acquired the conceptual knowledge needed to undertake the above courses in the university. Studies have argued that students with conceptual knowledge relating to accounting perform better than students without such knowledge (Ballester, 2012). However, knowledge obtained at the secondary level is only conceptual to the extent that it closely corresponds to university curricula (Rankin et al., 2003).

Metacognitive knowledge relates to 'cognitive ability and students' effort to learn within the instructional situation' [Ballester, (2012), p.4]. According to Dochy and Alexander (1995) metacognitive knowledge is divided into three categories: self or person knowledge, task knowledge and strategy knowledge. Self knowledge refers to peculiar learning needs and plans of an individual influenced by an individual understanding of self (Flavell, 1987). Task knowledge 'involves knowledge of the goals individuals establish for themselves and the recognition that different types of tasks place different demands on learning or thinking' [Dochy and Alexander, (1995), p.233]. Strategy knowledge on the other hand, refers to strategies applied in carrying out of cognitive tasks like planning, summarising and self-questioning usually aimed at helping to assess one understanding (Dochy and Alexander, 1995).

3 Theoretical framework and hypothesis development

Theoretical models explaining the link between learning variables and student's academic performance have included characteristics of the student, the environment and the quality of instruction as predictors (Haertel et al., 1983). Theory of educational productivity propounded by Walberg (1981) is reputed to be one of the most used theory to explain academic achievement. The theory posits that individual student's psychological characteristics and environment impacts on their academic performance (Reynolds and Walberg, 1992). It identified nine key variables that impacts on students' academic performance, the variables include student ability/prior achievement, motivation, age, quantity and quality of instruction, morale or student perception of classroom social group, home environment, peer group outside school and leisure-time exposure to mass media (Walberg, 2003).

This study relies on Walberg's theory of educational productivity as the underlining theory linking prior knowledge and academic performance in first year accounting course. However, the study will be limited to variables such as the student's ability (metacognitive knowledge), prior achievement and age.

4 Conceptual knowledge and academic performance

Conceptual knowledge has a positive impact on the performance of first year accounting students as it serves as the compendium of a student's knowledge obtained before learning accounting in the university (Rankin et al 2003). A lot of studies have been conducted linking conceptual knowledge to the performance of students in tertiary institutions. Byrne and Flood (2008) in a study of Irish university found that prior knowledge contributes to the academic performance of first year accounting students.

Ballester (2012) studied the performance of students in financial accounting at the Universitat Autònoma de Barcelona in Spain and found that previous knowledge positively and significantly influence academic productivity. Awoniyi and Awoniyi (2014) studied entry criteria as a measure of conceptual knowledge on performance in Business programs in Zimbabwe and found that an entry criterion predicts academic performance.

Some studies have, however, reported contradictory results, such as a study conducted in Nigeria by Adewale and Adhuze, (2014) they found that entry qualification of students has an insignificant contribution to their performance in architectural studies. Abisuga et al., (2015) in their study found a weak relationship between entry qualification and performance of students in Building technology program. A study by Yusuf et al. (2016) also found that minimum entry requirement as specified by the NUC has an insignificant impact on the performance of students in first year accounting course. From the following, we hypothesise that;

Ho1 Conceptual knowledge has a significant effect on students' performance in first year accounting course.

Knowledge obtained at secondary level is only conceptual to the extent that it is closely related to the curriculum of first year accounting course (Rankin et al., 2003). Tho (1994) in a study at the University of Malaya showed that studying accounting, mathematics and economics predicts performance in introductory accounting courses. Studies conducted by Eskew and Faley (1988) and Hartnett et al. (2004) found that students who have prior knowledge of accounting have the tendency of outperforming those who do not have. We therefore hypothesise that,

Ho2 studying accounting at secondary school has a significant effect on students' performance in first year accounting course.

5 Metacognitive knowledge and academic performance

Metacognitive knowledge involves student's cognitive ability and effort towards learning in a given environment (Ballester, 2012). Academic ability as part of metacognitive knowledge is a reflection of students' cognitive abilities, motivations, personality and cognitive style (Snow, 1989). Studies by Rohde and Kavanagh (1996) and Rankin et al., (2003) showed that metacognitive knowledge measured by university entrance scores has significant impact on academic performance in accounting. Lydia and Richard (2009) using a survey method found that metacognitive attributes are related with accounting course achievement. We therefore hypothesise that,

Ho3 University entrance scores have a significant effect on performance in first year accounting course.

Ho4 Conceptual and metacognitive knowledge has a significant effect on performance in first year accounting course.

We also identified some extraneous variables, which has an impact on academic performance. These variables, if not, controlled may interfere with the results of the study. Class size is believed to have significant influence on educational performance,

studies have shown. McKeachie (1990) posits that larger classes reduce the likelihood of teachers adapting methods and style towards individual students. Smaller class allows for more personalised instruction enabling a clear understanding of the subject matter and how the learning objectives can be achieved (Scheck et al., 1994). Thus, the smaller the class the lesser the effort towards achieving academic performance. Large class size has been found to have a negative effect on students' performance (Arias and Walker, 2004). Students may feel lost in a crowd or the size of the class may diminish their interest in the class (Fenollar et al., 2007). We expect class size to have a negative impact on academic performance.

Another variable which might interfere with the results if not controlled is the age of the students. Researchers believed that older students are more motivated to achieve their objectives than younger students (McKenzie and Gow, 2004). Whether this translates into better academic performance have produced mixed results. Nyikahadzoi et al. (2013) in their study of University of Zimbabwe found that younger students performed better that older students in accounting courses. Naser and Peel (1998) found that age has no significant impact on the accounting students' performance. However, a study by Koh and Koh (1999) in Singapore found that age has significant performance on the academic performance of students in accountancy degree program. Consistent with a study conducted by Dockweiler and Willis (1984).

Prior studies have also looked at the influence of gender on academic performance producing mixed results. Conflicting results from these studies may have been as a result of student-instructor gender interaction (Byrne and Flood, 2008). Didia and Hasnat (1998) in a study in the USA, found that gender has no significant impact on academic performance. Similar results were reported by Duff (2004) and Byrne and Flood (2008). Contradictory results were reported by Mutchler et al. (1987), their study found that female accounting students performed better that male students. Studies conducted by Williams (1991) and Koh and Koh, (1999) also showed that gender has significant impact on academic performance of accounting students.

6 Research design

Ex-post research design was adopted to determine the relationship between prior knowledge and academic performance in first year accounting course. There are 510 students of BSc Accounting, BSc Business Management and BSc Economics of the Federal University Dutsin-Ma for the academic session, 2012/2013, 2013/2014, 2014/2015 and 2015/2016.

A total of 408 students was adopted for the study using a filter, we eliminated all students who are taking the course as a carry-over (retaking the course) and those taking it as an elective. Thus, using a census of the population for the study. This is so to ensure all students have similar characteristics as regard prior knowledge. Data relating to conceptual knowledge, metacognitive knowledge, class size, age and gender were obtained from the University's record.

The study used longitudinal data comprising of data relating to students in their first year in BSc Accounting, BSc Business Management and BSc Economics program of the Federal University Dutsin-Ma. Introduction to accounting I – first year accounting course, is a core course for first year students in any of these programs.

7 Variable description

7.1 Dependent variable

The dependent variable for the study is the performance in first year accounting course by BSc Accounting, Business Management and Economics students of the Federal University Dutsin-Ma. The variable is proxied by the grade obtained by first year accounting students in ACC 111 Introduction to accounting, consistent with (Didia and Hasnat, 1998; Rankin et al 2003; Byrne and Flood, 2008 and Ballester, 2012). The grades obtained are in line with the Nigerian University system grading for undergraduate programs ranging from 0 to 5. The lowest grade being 0 and the highest being 5.

7.2 Independent variables

7.2.1 Conceptual knowledge

Conceptual knowledge is measured by the grade obtained in ordinary level examinations in English language, Mathematics and Economics as minimum entry qualification of BSc Accounting, BSc Business Management and BSc Economics program. Grades obtained in ordinary level examinations in book-keeping and accounts/financial accounting is also included for students who took it, consistent with Byrne and Flood (2008) and Awoniyi and Awoniyi (2014).

Table 1 Variable measurement for performance in ACC 111

Scores (%)	*Grades*	*Points*
70 and above	A	5
60–69	B	4
50–59	C	3
45–49	D	2
40–44	E	1
39 and below	F	0

Source: NUC (2007)

Table 2 SSCE grading system

Scores	*Grades*	*Definition*
80%–100%	A1	Excellent
70%–79%	B2	Very Good
65%–69%	B3	Good
60%–64%	C4	Credit
55%–59%	C5	Credit
50%–54%	C6	Credit
45%–44%	D7	Pass
40%–44%	E8	Pass
0%–39%	F9	Fail

Source: West African Examination Council

The grading system adopted for senior secondary certificate examinations (SSCE) ranges from 1–9. The lowest grade being 9 while the height grade being 1, (see Table 2).

In order for consistency, the grading points are reversed and re-arranged to correspond with the NUS grading system.

Table 3 Variables measurement for conceptual knowledge

SSCE grades	*Points*	*Scores*
A1, B2	5	70-100%
B3, C4	4	60-69%
C5, C6	3	50-59%
D7	2	45-49%
E8	1	40-44%
F9	0	0-39%

Source: Authors' computation

7.2.2 Metacognitive knowledge

Metacognitive knowledge is measured by scores obtained in university entrance examinations (UTME) conducted by JAMB, in line with studies by Arquero et al. (2009) and Ballester 2012). UTME score is obtained from an examination consisting of four subjects including, English language, Mathematics, Economics and any other social science subject. The maximum obtainable score in each subject is 100%, thus, total score obtained by a candidate is over 400 marks. The UTME scores will be tested on academic performance to ascertain its impact.

7.3 Control variables

7.3.1 Class size

Class size is believed to impact on students' academic performance (Hill, 1998; Ehrenberg et al., 2001, Arias and Walker, 2004). Class size is measured by the number of students who are registered for the course ACC 111 and also took the exams. The number of students here includes students on BSc Accounting, BSc Business Management and BSc Economics who took the course as a core course, students from other departments who took it as an elective and also those who are taking the course as a carryover.

7.3.2 Age

This is measured by the age of the student as at the time of undertaking the course. The age is measured in years (Tan and Laswad, 2008; Uyar and Gungormus, 2011; Nyikahadzoi et al., 2013).

7.3.3 Gender

A dummy variable is adopted to account for gender, 1 is coded for male and 0 for female students undertaking first year accounting course (Williams, 1991; Tan and Laswad, 2008; Uyar and Gungormus, 2011).

8 Test of hypotheses

Hypothesis 1 stated as conceptual knowledge has no significant relationship with performance of first year accounting students, is tested using the specified regression model below,

$$PERF = \beta 0 + ENG\beta 1 + MAT\beta 2 + ECO\beta 3 + CSIZE\beta 4 + AGE\beta 5 + GENDER\beta 6 + \varepsilon \quad (1)$$

where

$\beta 0$ = Intercept

PERF = Performance in ACC 111

ENG = Grade point obtained in English language

MAT = Grade point obtained in Mathematics

ECO = Grade point obtained in Economics

CSIZE = Class size

AGE = Age of student at the time of the course (years)

GENDER = Dummy 1 for male and 0 for female

ε = error term

Hypothesis 2 is aimed at determining whether students who took book keeping and accounts/financial accounting performed better than those who did not. The hypothesis used regression in model 2. The R-square in model 1 compare with the R-square in model II will determine whether the addition of book-keeping/financial accounting will increase the variations from the independent variables.

$$PERF = \beta 0 + ENG\beta 1 + MAT\beta 2 + ECO\beta 3 + FAC\beta 4 + CSIZE\beta 5 + AGE\beta 6 + GENDER\beta 7 + \varepsilon \quad (2)$$

FAC = Grade point obtained in book-keeping and accounts/financial accounting

Hypothesis 3 is to test the impact of metacognitive knowledge on academic performance of first year accounting students. Regression model 3, was used to test the hypothesis

$$\text{PERF} = \beta 0 + \text{UTME}\beta 1 + \text{CSIZE}\beta 2 + \text{AGE}\beta 3 + \text{GENDER}\beta 4 + \varepsilon \quad (3)$$

UTME = Score obtained in the UTME conducted by JAMB

Hypothesis 4 test the joint power of all the independent variables, using regression model 4,

$$\begin{aligned} \text{PERF} = {} & \beta 0 + \text{ENG}\beta 1 + \text{MAT}\beta 2 + \text{ECO}\beta 3 + \text{FAC}\beta 4 + \text{UTME}\beta 5 \\ & + \text{CSIZE}\beta 6 + \text{AGE}\beta 7 + \text{GENDER}\beta 8 + \varepsilon \end{aligned} \tag{4}$$

9 Results

For a clear understanding of the variables and their relationship with one another, we present the descriptive statistics. Descriptive statistics are presented in Tables 4–6 To examine the influence of prior knowledge on students' academic performance in first year accounting course, we used the regression function modelled above. Since the dependent variable is a categorical variable with ordered categories between 0 and 5 an ordinary least square regression will be inappropriate (Greene, 2002). Using Stata, an ordinal regression adopting the *ordered logit* procedure was carried out. The regression results are presented in Table 7.

9.1 Descriptive statistics

The summary of the variables collected from data obtained from the university student records is presented in the tables.

Table 4 Points obtained in ACC111 and ordinary level subjects

Points	*PERF*	*MATHS*	*ENG*	*ECONS*	*FAC*
0	64	-	-	-	3
1	61	-	-	-	5
2	56	-	-	-	6
3	75	288	347	288	85
4	69	103	56	112	69
5	83	17	5	8	17
Total	408	408	408	408	408

Source: Authors' computation

Table 4 showed that, from a total of 408 students 64 representing 15.7% failed first year accounting course, 61 students representing 15% obtained the least pass grade while 83 students representing 20.3% obtained the maximum obtainable grade point. This indicates that students with the maximum obtainable grade point are in the majority.

The table also showed that, 288 students representing 70.6%, 347 students representing 85% and 288 students representing 70.6% obtained the minimum entry grade for ordinary level Mathematics, English language and Economics respectively. On the other hand, 17 students representing 4.2%, five students representing 1.2% and eight students representing 2% obtained the maximum obtainable grade point. This indicates that the majority of the student based on their grade point can be categorised as having average conceptual knowledge.

Considering financial accounting separately, as it is not part of the entry requirement; the table showed that, 85 students representing 45.9% obtained the minimum required grade point while 17 students representing 9.2% obtained the maximum obtainable grade

point. The table also showed that eight students representing 4.3% obtained grades in Financial Accounting below the minimum required grade.

Table 5 Cross tabulation of performance and conceptual knowledge

PERF (points)	*MATHS*			*ENG*			*ECONS*			*FAC*					
	3	*4*	*5*	*3*	*4*	*5*	*3*	*4*	*5*	*0*	*1*	*2*	*3*	*4*	*5*
0	50	14	0	55	8	1	48	15	1	1	0	0	6	6	2
1	45	16	0	56	5	0	45	16	0	1	0	3	6	7	2
2	47	5	4	49	5	2	38	15	3	1	1	0	13	9	1
3	44	28	3	62	13	0	55	18	2	0	1	2	15	15	4
4	47	18	4	55	12	2	46	23	0	0	2	1	22	12	3
5	55	22	6	70	13	0	56	25	2	0	1	0	23	20	5

Source: Authors' computation

Table 5 presents an idea of the interaction between performance and conceptual knowledge. The table showed that only six students, zero student, two students and five students who have obtained the maximum obtainable grade points in Mathematics, English language, Economics and Financial Accounting respectively passed ACC111 with the maximum obtainable grade point. However, zero student, one student, one student and two students who have obtained the maximum obtainable grade points in Mathematics, English language, Economics and Financial Accounting respectively failed ACC111.

On the other hand, 55 students, 70 students, 56 students and 23 students with the minimum required grade points in Mathematics, English language, Economics and Financial Accounting respectively passed with the maximum obtainable grade point. This shows that the majority of the students categorised as average students based on their ordinary level grade points performed better than other category of students in their first year accounting course.

Table 6 Tabulation of performance and gender

PERF (points)	*Gender*	
	Female	*Male*
0	19	45
1	17	44
2	16	40
3	28	47
4	25	44
5	37	46
Total	142	266

Source: Authors' computation

Table 6 presents the interaction between performance in ACC111 across gender. From the total of 408 students sampled, 142 of them are females while the remaining 266 are males. Statistics from the table showed that, 37 female students representing 26% of the females and 46 male students representing 17% of the males obtained the maximum

obtainable grade points. While 19 females representing 13% of the females and 45 males representing 17% of the males failed the course. This shows that female students recorded better performance than their male counterparts.

9.2 Regression results

Since our dependent variable is an ordered categorical variable, OLS regression is inappropriate in testing the predictive ability of the independent variables. Thus, ordinal regression using the ordered logit procedure in Stata was used. Table 7, presents results obtained from the four models specified.

Model 1 test the impact of conceptual knowledge based on the minimum entry requirement for ordinary level subjects of Mathematics, English language and Economics. The result of the ordinal regression showed that Mathematics, English Language and Economics significantly predict performance in first year accounting course. Value of pseudo R indicates that the variables contribute about 21% to the variation in performance in first year accounting course.

Results from model 2 showed that the addition of Financial accounting to model 1 slightly increase Pseodu R from 21% to 22%. Indicating that Mathematics, English language, Economics and Financial Accounting contributes about 22% of the variation in performance in first year accounting course.

Table 7 Regression results

Independent variables	*Model 1*	*Model 2*	*Model 3*	*Model 4*
MATHS	0.3407**	–0.0842		–0.1315
	(1.4059)	(0.9192)	-	(0.8768)
ENG	0.2154	0.2881	-	0.3088
	(1.2404)	(1.3339)		(1.3618)
ECONS	0.1269	0.0572	-	0.0899
	(1.1353)	(1.0589)		(1.0941)
FAC	-	0.1379		0.1344
		(1.1479)	-	(1.1439)
UTME	-	-	0.0122**	0.0165**
			(1.0123)	(1.0166)
AGE	–0.0899	–0.1116	–0.0798**	–0.1045**
	(0.9140)	(0.8944)	(0.9233)	(0.9008)
CSIZE	0.0006	–0.0132	–0.0009	–0.0199**
	(1.0006)	(0.9869)	(0.9991)	(0.9803)
GENDER	–0.2606	0.2469	–0.3273*	0.2504
	(0.7706)	(1.2801)	(0.7209)	(1.2845)
LR chi2	30.01	14.02	28.66	18.31
PSEUDO R	0.021	0.022	0.0197	0.029
p-value	0.0000	0.0509	0.0000	0.019

Notes: **Significance at 5%, *Significance at 10%, odd ratios are indicated in parenthesis.

Source: Stata output

UTME used as a proxy for metacognitive knowledge was regressed against performance in first year accounting course in model 3. The result from the model showed that UTME score has a positive significant impact on the performance in first year accounting course. However, the variation in performance of about 20% is slightly below that of conceptual knowledge.

Model 4, was used to test the predictive ability of both conceptual knowledge and metacognitive knowledge on performance in first accounting course. The model indicates that conceptual and metacognitive knowledge has significant impact on the performance in first year accounting course. The variation in performance as reported by pseudo R indicates that 29% variation in performance is a result of prior knowledge when controlled by age, class size and gender.

10 Discussions

The odd ratios in model 1 indicate that Mathematics makes the highest contribution to the model with performance, increasing by about 41% due to a 1 unit increase in the grade of Mathematics while Economics contributes the least of about 14%. The result in model 2 showed a significant change in the coefficients and odd ratios. For instance, the addition of Financial Accounting results in a decrease in the contribution of Economics, an increase in the contribution of English language whereas Mathematics showed a negative contribution. This indicates that Financial Accounting is more conceptually related to first year accounting course than Mathematics. This can also be seen from the coefficients and odd ratios of Financial Accounting, which indicates that performance increases by about 15% by a one unit increase in the grade obtained from ordinary level Financial Accounting compared to 14% of Mathematics. Overall the model also showed that Mathematics, English Language, Economics and Financial Accounting significantly predict performance in first year accounting course.

Metacognitive knowledge measured by UTME scores was found to have a positive and significant relationship with performance in first year accounting course. The joint impact of prior knowledge and metacognitive knowledge on performance in first year accounting course was found to be significant and positive. The results showed that prior and metacognitive knowledge jointly contribute more to the performance in first year accounting course than individually. This is indicated by the pseudo R of 29% as against 22% for prior knowledge and 20% for metacognitive knowledge.

11 Conclusions and recommendations

The findings from the study showed that conceptual knowledge measured by grades obtained in ordinary level subjects of Mathematics, English language, Economics and Financial Accounting significantly impact on the performance in first year accounting course. The finding is consistent with studies conducted by (Byrne and Flood, 2008; Ballester, 2012 and Awoniyi and Awoniyi, 2014). The results, however, contradict findings reported by Adewale and Adhuze (2014) and Abisugaet al. (2015). This indicates that students with higher grades in these ordinary subjects have acquired more conceptual knowledge than those with relatively lower grade. We therefore recommend

to university administration to consider incorporating grades obtained in admission requirement into BSc Accounting, BSc Business Management and BSc Economics. It is also important for students aspiring to undertake any of these courses should be encouraged to study financial accounting at ordinary level.

Metacognitive knowledge was also found to have significant impact on performance in first year accounting course. Our findings confirm results from previous studies, like Rankin et al. (2003) and Ballester (2012). This indicates that students effort significantly impact on their performance in first year accounting course. From this we conclude that the UTME is an effective measure of students' metacognitive ability and should be used in determining effort of students in their academic pursuit. This confirms the usefulness of the UTME for admission into tertiary institutions in the country and put to end the call for scrapping the examination.

In general, prior knowledge was found to have significant impact on the performance of first year accounting course. Findings show that the joint impact of conceptual and metacognitive knowledge outweighs that of either conceptual or metacognitive. This indicates that the two can be complementary rather that mutually exclusive. We therefore recommend that a composite scoring system incorporating conceptual and metacognitive knowledge variables be designed and used for admission placement in BSc Accounting, BSc Management and BSc Economics.

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