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Accounting ethics education and the ethical awareness of undergraduates: an experimental study

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ABSTRACT

This study examines whether an ethics intervention curriculum (EIC) influences the ethical awareness of undergraduate accounting students. The ethics intervention curriculum is designed to teach students about ethical behaviour in the workplace. An experiment using final year students at five faith-based private universities in Nigeria was conducted to identify changes in ethical awareness. A pre-test and post-test quasi-experimental design was conducted using ethical vignettes which were administered to both the treatment group and control group to observe for differences in their awareness. This study observed a significant difference in the ethical awareness of the students in the treatment group compared to those in the control group. The study concludes that the ethics intervention curriculum has a positive impact on the ethical awareness of the students. This study exemplifies how an ethics intervention can enhance undergraduate students' awareness of ethical issues that may arise in the workplace.

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Accounting ethics; teaching; ethical awareness; accounting students; corruption

Introduction

Can teaching ethics using an ethics intervention curriculum (EIC) enhance the ethical awareness of accounting undergraduates? This study attempts to answer the question and is significant because it provides evidence of the usefulness of an EIC in enhancing the ethical awareness of accounting students. This subject is important within the context of the Nigerian economy, labelled as highly corrupt and riddled with unethical business practices. The study is also significant because it has the potential to help the student accountant develop and build capacity in terms of professional ethical decision making to get them better prepared for their roles in the future. This study is relevant because it contributes to the existing literature on the possibilities of enhancing students' ethical awareness using an EIC to teach ethics to students. It demonstrates the possibility of using an experiment to investigate the implications of teaching accounting ethics using an EIC on the ethical awareness of accounting undergraduates in Nigeria.

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Accountants perform critical roles in identifying and addressing exclusive challenges as they relate to strategic management, corporate governance, risk management, and internal control, financial reporting and accounting and other areas (International Federation of Accountants, 2008). This suggests that the role of the accountant is pivotal to the sustainability and going concern status of organisations and invariably the society. The reports provided by accountants provide valuable accounting information to stakeholders who represent a broad spectrum of society for adequate decision-making. Corporate accounting scandals continue to crowd news headlines, creating the public perception that unethical and illegal behaviours are the professional norm in accountancy (Shtudiner & Klein, 2019). Misrepresentation of facts and figures by an accountant has a huge effect on the affected organisation and the economy in which the organisation exists. Therefore, there is a need for the appropriate education and training of accountants for the effective and efficient discharge of their responsibilities to organisations and to society at large.

The different needs of various financial statement readers for honest reports represents a battle for the accounting profession concerning the glitch of the reliability of accounting reports (Bayou et al., 2011). Likewise, the current outburst of scandals in the accounting profession globally and a call for enhanced understanding of ethical issues in accounting has demanded an analysis of higher education's commitment to accounting ethics education (Courtney, 2011). These situations have materialised into a clarion call for tertiary institutions to produce graduates of accounting with sound ethical values. Many academic institutions have been sluggish about remodelling and integrating ethics courses into their curriculum despite the growing need for ethics (Laughlin, 2009). It is prominent to find graduates of accounting largely equipped with technical knowledge, and insufficiently prepared to surmount the ethical issues of the profession (Dellaportas & Hassall, 2013).

Acknowledging that today's student accountants are tomorrow's professional accountants, it is pertinent that they acquire the appropriate education and skills to be better prepared for their future roles. In the same vein, rather than a code of ethics being forced on them while on their jobs, this sense of responsibility should come naturally to them through a system of value-added education (Suri, 2007).

Ethical dilemmas are those circumstances that encompass contradictory duties, values and often opposing interests (International Accounting Standards Board, 2006). A rationale for promoting increased efforts in teaching accounting ethics is to develop the ethical sensitivity of accounting students to prepare them to handle ethical dilemmas in the workplace. In corroboration, Low et al. (2008) find that there are potentials of influencing the 'thinking' of graduates of accounting before they enter the multifaceted business terrain.

The magnitude of corruption in Nigeria can be described as a scourge that is eroding the foundations of society. The members of the accounting profession are affected by the extent of corruption in Nigeria which has attained such distressing magnitudes (Okike, 2004). Incorporating ethics in the accounting curriculum for higher education in Nigeria is important because of the generality of corruption in the country. Moral values offer a basis for a civilised society and without this footing, the development will collapse (Smith, 2003). Accounting instructors must concentrate on the veracity and the consequent revolution in the curriculum that covers doing business in the society (Waddock, 2005).

In the background of mounting consensus on the need to balance social prosperity and business profits, the concern is increasing for introducing business (and particularly accounting) ethics in higher education curricula (Tormo-Carbó et al., 2016). Incorporating accounting ethics into the curriculum is relevant to help students anticipate the human faces behind their technical work (Sack, 1999). Success in teaching accounting ethics is validated ultimately through behavioural change.

There are few studies on the Nigerian environment (Usang et al., 2016; Uwuigbe & Ovia, 2011) that investigate whether accounting ethics should be taught to accounting undergraduates and whether it should be included as a standalone course or an integrated course in the curriculum. This paper, therefore, presents the results of an experiment which investigated the implications of teaching accounting ethics using an ethics intervention curriculum on the ethical awareness of accounting undergraduates in Nigeria. The study is beneficial to accounting educators, accounting education curriculum planners, accounting professional bodies, as well as researchers.

Contribution

This study contributes to the extant literature on teaching accounting ethics in Nigeria by using a quasi-experimental research design to investigate the effect of teaching accounting ethics using an ethics intervention curriculum on the ethical awareness of accounting undergraduates in Nigeria. Prior research on the Nigerian environment Usang et al. (2016), and Uwuigbe and Ovia (2011) have focussed on the survey of opinions of accounting educators and accounting students as regards the importance of teaching accounting ethics and whether accounting ethics should be incorporated into the curriculum as a stand-alone course or as a piecemeal.

This study is innovative because it demonstrates the significant effect of the use of an EIC which incorporates real-life ethical dilemmas as a useful aid in teaching accounting ethics in universities. It therefore pioneers the use of such an ethics intervention curriculum (EIC) in Nigerian universities to examine the effect of accounting ethics education on the awareness of accounting undergraduates in Nigeria. The EIC has the added advantage of not only making the classroom sessions more interactive but also introduces students to dilemmas they might face in real life.

The remainder of this paper is structured as follows: Section 2 presents insights from extant studies; Section 3 describes the methodology and empirical model; Section 4 explains the empirical results and findings, and Section 5 presents the recommendations and conclusions.

Insight from extant studies

In 1986, the Bedford Committee recommended that ethical standards be an integral part of accounting education (Haas, 2005). Loeb and Rockness (1992) explained that in October 1987, the Treadway Commission in its 'Report', noting that the inclusion of ethics in accounting programmes at colleges and universities, was at a minimum, recommended increased coverage of accounting ethics in such programmes and courses in higher education.

A plethora of accounting scandals in companies all around the world have placed a question mark on the credibility of accounting education. These accounting scandals which led to the collapse of companies some of which include Waste Management, Enron, WorldCom, and Tyco have resulted in a deficiency of assurance in accounting reports and figures. The resulting non-existence of confidence in financial information led the US Congress to ratify the Sarbanes-Oxley (SOX) Act in 2002, as well as the creation of the Public Company Accounting Oversight Board (PCAOB), both of which rekindled pressure for accountants to behave ethically (Kermis & Kermis, 2014). Despite these efforts in 2002, several accounting scandals still occurred in later years which suggests that there may be more to enforcing the ethical behaviour of the practising accountant other than adhering to integrity-based regulations.

Educators have contributed to the breakdown in ethics in the business world by not providing sufficient ethical training to the students, not teaching students about fraud and other unethical behaviours, including the way and manner the students have been taught over the years (Albrecht et al., 2006; Hummel et al., 2018). In 2004, the Association to Advance Collegiate Schools of Business (AACSB) Ethics Education task force developed a report on how business schools in the United States of America can teach students to be moral and effective managers and leaders. This report led to an increase in ethics education in higher education in the United States of America.

The desire to make accounting more scientific has resulted in the alteration in the accounting function from being a moral and legal one to a purely technical one which has no robust technical basics (Williams, 2004). Ever since the 1980s numerous commissions and other agitators have contended for an accounting curriculum that would give accounting students the historical knowledge, ethical awareness, and creativity necessary to address complex business problems (Levy & Mitschow, 2008). Accounting education has, therefore, largely focussed on developing the technical skills of the students whilst ignoring teaching what lies beneath which is developing good ethical behaviour. Ethics is very pivotal to the sustainability of the accounting profession because it represents the crux for the going concern existence of businesses.

McPhail (2001) argues that teaching accounting ethics is an avenue by which emotion can be initiated into accounting education with an emphasis on encouraging emotional obligation to other individuals. Accounting ethics education is therefore based on the principle that ethical development can be improved amid the educational process (Huss & Patterson, 1993). It is however pertinent that prospective accountants should be properly trained in ethics to maintain the propriety of the profession (Adeyemi & Fagbemi, 2011).

Accounting academics can impact the ethical thinking of the accounting profession by employing and retaining intelligent students, and by designing ethics instruction interventions that will be helpful to accounting students in integrating more than simply rules in making ethical decisions (Shaub, 1994). An experienced accounting ethics educator should have satisfactory knowledge of moral philosophy, accounting, and be able to conduct a demanding class discussion that will elicit a full deliberation of the issues without deterioration into a windy exchange of student views (Bok, 1976).

Whilst there is considerable support for integrating ethics education in the accounting curricula, there is conflicting evidence on how best to incorporate it (Christensen et al., 2018). Cooper et al. (2008) describe an ethics intervention as a cautious educational

attempt intended to endorse ethical responsiveness. The support for ethics interventions, which can take either the form of a discrete and compulsory course in ethics included in a compulsory course in accounting, is based on the premise that ethical awareness and judgement can be enhanced through the educational process (Cooper et al., 2008).

McCarthy (1997) scrutinised the extent of agreement to professional standards by accounting students and suggests that ethical consciousness is not meaningfully improved through exposure to the professional code of conduct in collegiate courses in accounting. Chan and Leung (2006) find that an accounting ethics intervention may have a positive impact on the moral awareness of accounting students. Martinov-Bennie and Mladenovic (2015) observe that the ethics framework influences students' ethical decisions, whereas an integrated ethics education course can improve the ethical sensitivity of the students. Saat et al. (2012) implement a programme comprising a separate ethics course and consequent hands-on training and find that the intervention programme elevates levels of ethical judgment making ability of the students. Hiltebietel and Jones (1991) after incorporating accounting ethics in the accounting curriculum at two universities report that accounting students do review how they solve professional ethical dilemmas after finalising ethics modules, but the effect does not result in ethical dilemmas of a personal nature. O'Leary (2009) observes that the collective outcome of three ethical instructional methods has a positive influence on the assumed ethical conduct of the students. Earley and Kelly (2004) find the educational intrusions introduced to be likewise effective pre-Enron and post- Enron semesters. The completion of an accounting ethics course at university has a positive effect on the ethical reasoning abilities of accountants indicating a need for mandatory education in ethics both at university and continuing professional training courses (Eynon et al., 1997). May et al. (2014) find that an ethics treatment course results in a positive effect on the ethical behaviour of students in the experimental group as compared to the control group. An ethics course fosters the students' abilities to constantly deliberate on ethics-related matters in their decision-making processes (Lagrone et al., 1996). Mladenovic et al. (2019) results indicate that students developed more sophisticated and contextualised views of ethical issues in business after been exposed to an ethics education programme.

Proponents of accounting ethics education have often been saddled with the decision of whether to have accounting ethics as a stand-alone course or as a piecemeal integrated into other courses. In support of an integrated model, McDonald (2004) opines that it not only aids student experience with the relevant ethical problem, but also involvements associated with precise applications of resolving issues in applicable discipline domains. McDonald adds that another advantage is that ethical concepts are being taught by many individuals and are therefore not the sole responsibility of one professor.

A stand-alone course on accounting ethics is advantageous because the relevance of ethics is emphasised, and it is treated as a subject identically as more traditional, technical areas such as management accounting, taxation, organisational behaviour, etc. (Jennings & Marriott, 2013). Uwuigbe and Ovia (2011) recommend that ethics should be taught as a stand-alone subject rather than integrating it into an auditing course. A standalone course in accounting ethics may, however, enable students to reflect on various situations dealing with ethics and gain knowledge of how to sharpen their ethical reasoning skills (Chawla et al., 2015, p. 111).

Teaching accounting ethics: the Nigerian situation

Investors in Nigeria have lost several billions of dollars because of unethical practices by accountants, which have led to the distress or occasionally the closure of companies (Bakre, 2007). This is exemplified in the corporate scandals in Nigeria involving African Petroleum Plc, Cadbury Nigeria Plc, and Lever Brothers Plc (Ezeani et al., 2012). Ethical dilemmas confront accountants while they are discharging their duties and these dilemmas demand veteran decisions and cautious deliberations on the long-term and short-term repercussions (Akenbor & Onuoha, 2013).

Inculcating ethics in accounting students alongside education and skills is important to meet the challenge of producing well-educated graduate accountants (Okafor, 2012). Akadapko and Izedonmi (2013) argue that there is a gap in practice between the ethical codes of conduct and the practice of professional accountants in Nigeria.

There are two recognised professional accounting bodies in Nigeria namely the Institute of Chartered Accountants of Nigeria (ICAN) established by the ICAN Act of 1965, and the Association National Accountants (ANAN) established by the ANAN Act of 1993. These professional bodies are saddled with the obligation to determine the standards of knowledge and dexterity to be achieved by persons desiring to become members of the accountancy profession and raising those ideals from time to time as circumstances may permit (Okike, 2007). The Institute of Chartered Accountants of Nigeria (ICAN) and the Association of National Accountants of Nigeria (ANAN) have embarked on producing chartered accountants with sound ethical behavioural standards and technical competence. The accounting professional institutions in Nigeria have also swung into action by ensuring that they examine their students on ethics and train their members on ethics. The Companies and Allied Matters Act 2004 recommends principles and practices that would safeguard the integrity of financial reporting (Idialu, 2014).

There has been pressure from various businesses and professional accounting bodies to place greater emphasis on ethics education (Waldmann, 2000). In response to this clarion call, the Institute of Chartered Accountants of Nigeria (ICAN) developed a professional code of conduct that was modified in 2009 to serve as a guide for certified accountants in their business and professional relationships. The ICAN curriculum at the professional examination stage incorporates a subject on ethics, which the students are examined on before they can be adjudged, professional accountants.

Though efforts have been made by the professional accounting bodies in Nigeria to educate the present and future practising accountants on ethics, there is little or no information about steps taken by the National Universities Commission (NUC). Idialu (2014) observes that an examination of the accounting curricula of most tertiary institutions in Nigeria revealed that the students are not exposed to courses in ethics throughout their programmes. Idialu suggests that the World Bank in collaboration with the Financial Reporting Council of Nigeria should organise sensitisation seminars in some selected tertiary institutions in Nigeria to emphasise the need to include accounting ethics in their curricula.

The National Universities Commission (NUC) (2007) in its Benchmark Minimum Academic Standards for an undergraduate programme in accounting does not include accounting ethics as a taught course for the undergraduate accounting programme. This may imply that the National Universities Commission does not deem it fit that

accounting ethics be taught in the classroom despite the raging storms of accounting scandals in the society. In corroboration, Akenbor and Tennyson (2014) found that there is low adoption of accounting ethics in professional practice in Nigeria. This further lends credence to investigate whether accounting ethics can be taught and learned.

The incidence of corruption in Nigeria has resulted in its socio-economic sluggishness (Ogbeidi, 2012; Okike, 2004, 2009). In the 2018 Transparency International global corruption perception index, Nigeria ranked 144 out of 180 countries, and emerged as the 27th most corrupt country in the world (Transparency International, 2018). There have also been efforts by the Nigerian government to curb corruption in the country (Barungi, 2014; Okike, 1994). Despite these efforts, it remains glaring that Nigeria still ranks top amongst the corrupt countries in the world and efforts that have been made to curb corruption have proven abortive.

Even though the accounting professional bodies in Nigeria (ICAN and ANAN) have declared that they defend the public interest, there have been reported cases in the media about numerous acts of professional misdemeanours effected by their members (The Guardian cited in Bakre, 2007). This alludes that corporate failures of commercial banks and other organisations in Nigeria are because of the negligence and fraudulent attitudes of accountants in Nigeria who have been certified as professionals by either ICAN or ANAN.

The classification of higher education institutions in Nigeria, may either be public or private. The publicly managed higher education institutions are owned by the federal or state government while the privately owned are managed by private individuals or organisations. Some privately owned institutions are established by religious organisations which may either be the Islamic or Christian faith. Based on accessibility, this study selects a group of faith-based universities to represent its sample.

This review of extant literature lends credence to the positive effect of an accounting ethics intervention curriculum on the ethical reasoning of accounting students. Such an intervention curriculum is even more pertinent for accounting students studying in Nigeria, an environment where corruption is endemic, and unethical practices are prevalent. This subject is taken up further in the next section.

Research method and empirical model

This a quantitative study that uses pre-test post-test non-equivalent control group design. This type of quasi-experimental research design includes the usage of both a control and treatment group and requires that a pre-test and post-test be administered to both the control and treatment group. The treatment group or experimental group is the group that was taught using the new ethics intervention curriculum (EIC) while the control group or comparison group is the group that was not taught using the EIC.

The experiment was conducted within two different periods: period 1 (2016) and period 2 (2017). In period 1, the experiment made use of the final year undergraduate students in the Department of Accounting at Covenant University (CVU). These students were divided into two groups. One group represented the treatment group while the second group of students represented the control group. The students in both the treatment group and the control group were given a pre-test and a post-test.

- (3) **Burden of Proof:** The Burden of Proof is an examination of factors that may lead to employee fraud and is designed to help students recognise types of fraud and behaviours that are common among employees that commit fraud.
- (4) **Code Challenge:** The Code Challenge focuses on the content of the ICAN Code of Professional Conduct. This topic is designed to cover the technical content of the code and to stimulate thinking about how the Code is and should be applied in the work environment.
- (5) **Role Plays:** The Ethics Role Plays is a series of ethical dilemmas in the form of improvisational role plays, are acted out by students. They are designed to help students recognise ethical issues and potential violations of the ICAN Code of Professional Conduct.
- (6) **Case Studies:** Ethics Case Studies are a series of ethical dilemmas in the form of short stories. They are designed to help students recognise ethical issues and aid in the development of an ethical decision-making process.

The research gathered data based on the responses of the experimental subjects to the ethical case scenarios. Ten ethical vignettes were used as instruments for the experiment. These ethical vignettes were adapted from the applied ethical cases of the KPMG university connection curriculum. Adopting the vignettes from the KPMG university connection ethics curriculum, a previously validated instrument increases the reliability of this study and the consistency of approach in line with teaching accounting ethics using an existing curriculum (Conroy & Emerson, 2004). Several studies have used ethical scenarios as instruments for data collection while observing ethical behaviour (Cohen et al., 2001; Emerson et al., 2007; O'Leary & Shafi, 2008).

The following are a list of the titles of the ten ethical cases

Case Study 1 – A Questionable Expense

Case Study 2 – The Shady Signature

Case Study 3 – A Lack of Expertise

Case Study 4 – Taking the Hit

Case Study 5 – Taking the Credit

Case Study 6 – The New Intern

Case Study 7 – Going Green

Case Study 8 – Two Weeks' Notice

Case Study 9 – The Birthday Party

Case Study 10 – The Roommates

At the end of each of the ten scenarios, the students were expected to select one response from five alternatives. The five alternative responses in each of the scenarios were placed on a Likert scale of 1–5 ranging from the highly unethical response to the most ethical response. The first response in all the scenarios represents the response to act highly unethically; the second response to act unethically; the third response to act

neutral; the fourth response to act ethically, and the fifth response to act highly ethically. The ethical vignettes (case study scenarios) contained possible ethical dilemmas that may be faced by an accountant in the workplace.

The study controls for three covariates, which can affect the extent of the treatment on the ethical awareness of the accounting students (May et al., 2014; McCarthy, 1997; Shu-Hui et al., 2010). These covariates represent socio-demographic variables, which include age, gender, and grade point average of the students.

Equation 1 represents the model for this study:

Where:

$$EAWARE = \beta_0 + \beta_1 D^{POST} + \beta_2 D^{TR} + \beta_3 AGE + \beta_4 GENDER + \beta_5 CGPA + e \quad (1)$$

Where:

- EBEHAV: this is the outcome variable used to measure the ethical awareness of the students. It is measured on a Likert scale of 1–5 ranging from the highly unethical response to the most ethical response.
- D^{POST} : the time dummy which equals 1 after the intervention (post) and 0 before (pre) intervention.
- D^{TR} : the treatment dummy which equals 1 for students in the treatment group and 0 for students in the control group.
- AGE: the age of the students in years.
- GENDER: gender of the students measured as a dichotomous variable with 1 representing male and 2 representing female
- CGPA: cumulative grade point average of the students rated on a scale of 1–4 with 1 representing 4.5–5.0, 2 for 3.5–4.49, 3 for 2.5–3.49, and 4 for 1.5–2.49.

Gender, age, and cumulative grade point averages were introduced as control variables because they represent socio-demographic factors that may differ amongst the students. Gender has often been identified as a crucial socio-demographic variable in ascertaining whether males are more ethical than females and vice versa. Dawson (1995) finds that men and women differ in their moral reasoning processes, irrespective of whatever decision they ultimately make in given circumstances. Wang and Calvano (2015) observe that women are usually more disposed to act ethically than men, but puzzlingly women who have had a business ethics training are less likely to respond ethically to business situations. Elias (2011) finds that ethical sensitivity increases with age. Shaub (1994) finds that age has a non-significant association with moral behaviour. Based on a non-linear relationship, Eweje and Brunton (2010) observed that it is not possible to conclude that older students are more ethically oriented than younger students. In relation to cumulative grade point average, Elias (2011) finds that students with higher grade point average are more ethically sensitive. Saat et al. (2012), observe that the students with the good and average cumulative grade point average respond more ethically than students with excellent and low cumulative grade point averages.

Discussion of results and findings

Descriptive overview of pre-test and post test scores of the participants

This section provides a description of the comparison among the pre-test scores and post-test scores of the accounting students at CVU comprising the treatment group

and the control group. The results of the mean ethical response of the students per case study are described using a table and a graph. The rationale for this was to establish whether there was a change in the response of the students after undergoing accounting ethics education training.

Table 2 presents the pre-test and post-test results of the students at CVU who comprised the treatment group and the control group to establish the efficacy of accounting ethics education. The result also shows the responses of the students to each of the case studies (which were used to measure their ethical response) before and after the experiment. The students' post-test scores were highest in 80% of the case studies (case study: 1, 2, 4, 5, 6, 8, 9, 10) and lesser in 10% of the case studies (case study 7) and unchanged in 10% of the case studies (case study 3). The overall highest score was 4.5 points which suggests a highly ethical response is presumed in the post-test. The lowest score was 2.8 points which was attained in the pre-test. This implies that the ethical awareness of the students was not affected in all the case studies. Cumulatively the students' ethical awareness was enhanced after undergoing accounting ethics education training.

In period 2 (see Table 3), the students' post-test scores were highest in 70 percent of the case studies (case study: 1, 2, 3, 4, 8, 9, 10) and lesser in 30 percent of the case studies (case study: 5, 6, and 7). The highest score of 4.9 points was obtained in the post-test while the lowest score of 2.9 points was obtained in both the pre-test and post-test. The total mean score in the pre-test was 37.2 and 39 points in the post-test.

Therefore, the students responded better to the case studies after the treatment. Deductively, the ethics intervention curriculum enhanced the ethical awareness of the students in the treatment group.

Regression analysis

In this section, the ordinary least square regression analysis was performed to ascertain the effect of the ethics intervention treatment on the ethical awareness of the accounting students. For a more robust analysis, the ordinal logistic regression was used to predict whether a unit increase in the number of students treated would result in higher or lower levels of ethical awareness.

Table 2. Pre-test and post-test scores (Period 1, 2016).

	Pre-test	Post-test
Case study 1	4.0	4.5
Case study 2	3.9	4.3
Case study 3	3.4	3.4
Case study 4	3.4	4.0
Case study 5	2.8	3.0
Case study 6	3.0	3.1
Case study 7	4.1	3.8
Case study 8	3.9	4.3
Case study 9	3.4	3.7
Case study 10	3.3	3.7
Total	35.2	37.8

Source: Authors'.

Table 3. Pre-test and post-test scores of the treatment group (Period 2–2017).

Case study	Pre-test	Post-test
Case study 1	4.2	4.9
Case study 2	4.1	4.2
Case study 3	2.9	3.7
Case study 4	3.8	3.9
Case study 5	3.3	3.0
Case study 6	3.3	2.9
Case study 7	4.1	4.0
Case study 8	3.8	4.1
Case study 9	3.7	3.9
Case study 10	4	4.4
Total	37.2	39

Source: Authors'.

Table 4 presents the relationship that exists between ethical awareness and the main explanatory variable (the ethics intervention programme) for period 1. The treatment, being the ethics intervention curriculum, has a positive significant relationship with the ethical awareness of the accounting students. This implies that teaching accounting ethics using the ethics intervention curriculum results in increasing levels of ethical awareness. The R squared of the model reveals that the model can explain slightly above 5% of the ethical awareness of the students. This explanatory power is perhaps low because other variables need to be considered in ascertaining the effect of an ethics intervention treatment on the ethical awareness of the students. The regression model is equally significant at 5% level of significance.

Table 5 presents the relationship that exists between ethical awareness and the main explanatory variable (the ethics intervention programme) for period 2. The treatment has a positive significant relationship ($p > 0.05$) with the ethical awareness of the accounting students. This implies that teaching accounting ethics using the ethics intervention curriculum results in increasing levels of ethical awareness in the accounting students in period 1. The R^2 of the model reveals that the model can explain slightly above 14 per cent of the ethical awareness of the students. This explanatory power is low because other variables need to be considered in ascertaining the effect of an ethics intervention treatment on the ethical awareness of the students. The p -value which is less than 0.05 suggests that the regression model is significant.

To derive a more robust regression result, covariates (gender, age, and CGPA) were included below:

Table 6 presents the results of an ordinal logistic regression relating to predicting the effect of the ethics intervention curriculum on the ethical awareness of accounting

Table 4. Regression analysis using the ordinary least square regression (Explained Variable – Ethical AWARENESS and Explanatory Variable – Treatment (Period 1)).

	Coefficient	Standard error	t	$P>t$	95% Conf.	Interval
Treatment	1.918824	.8816306	2.18	0.032**	1649793	3.672668
_cons	36.44118	.6801928	53.57	0.000	35.08806	37.7943
R-squared	0.0546					
Prob > F	0.0324 **					

Note: ***, **, * means significant at 1 per cent, 5 per cent and 10 per cent respectively.

Source: Authors'.

Table 5. Regression analysis (Explained Variable – Ethical AWARENESS and Explanatory Variable – Treatment (Period 2)).

	Coefficient	Standard error	<i>t</i>	<i>P</i> > <i>t</i>	95% Conf.	Interval
Treatment	4.408106	.6124496	7.20	0.000***	3.202135	5.614077
_cons	34.48663	.3816493	90.36	0.000	33.73513	35.23813
R-squared	0.1415					
Prob > F	0.0000 ***					

Note: ***, **, * means significant at 1 per cent, 5 per cent and 10 per cent respectively.

Source: Authors'.

students in Period 2. The model is statistically significant because the *p*-value is less than 0.05. The treatment, gender, and CGPA are significant while age is not significant. The treatment, being the EIC, has a positive significant relationship ($p < 0.05$) with ethical awareness which implies that a student taught using the ethics intervention curriculum is likely to have a 2.05 increase in ethical awareness, while other independent variables remain constant. Gender has a positive significant relationship ($p < 0.05$) with ethical awareness. This suggests that a one-unit increase in female accounting students is likely to result in a 0.65 increase in ethical awareness (as opposed to their male counterparts) while other independent variables remain constant. It was observed that age did not have a significant relationship with ethical awareness. This means that an increase in the age of the students has no likelihood of enhancing ethical awareness. This indicates that the age of the students did not influence their ethical awareness. On the other hand, the cumulative grade point average (CGPA) had a positive significant relationship ($p < 0.05$) with ethical awareness. This implies that higher cumulative grade point averages are likely to result in a 0.61 increase in ethical awareness while other independent variables remain constant.

In Period 1, it was observed that the ethics treatment module had a positive significant effect on the ethical awareness of the accounting students (see Table 4). This indicates that the students experienced increasing levels of ethical awareness as they continuously participated in the treatment. This suggests that accounting ethics treatment is beneficial in enhancing the ethical awareness of accounting students.

In Period 2, the treatment variable was tested alongside (i) gender, (ii) age, (iii) cumulative grade point average (CGPA) of subjects to determine its effect on ethical awareness (see Table 6). Gender was observed to equally have a positive significant relationship with

Table 6. Regression analysis using ordinal logistic regression (Explained Variable – Ethical AWARENESS and Explanatory Variable – Treatment, Gender, Age and CGPA).

Ethical awareness	Coefficient	Standard error	<i>t</i>	<i>P</i> > <i>t</i>	95% Conf.	Interval
Treatment	2.052863	0.2783548	7.37	0.000***	1.507297	2.598428
Gender	0.6539861	0.2489381	2.63	0.009***	0.1660764	1.141896
Age	0.0740025	0.0731902	1.01	0.312	-0.694477	0.2174526
CGPA	0.6129016	.1721697	3.56	0.000***	.2754551	0.9503481
R-squared	0.0551					
Prob > F	0.0000***					

Note: ***, **, * means significant at 1 per cent, 5 per cent and 10 per cent respectively.

Source: Authors'.

ethical awareness. This indicates that the presence of more female participants in the experiment will result in the effectiveness of the treatment culminating in higher levels of ethical awareness. The female students can, therefore, be adjudged to respond favourably to the treatment than the male students. This is contrary to the finding of Wang and Calvano (2015) who observed that females who have had business ethics instruction are less likely to respond ethically to business situations. However, the results align with Eweje and Brunton (2010) who found the female undergraduates showing significantly more favourable attitude than males. In this study, Age was found to have a positive but insignificant effect on the ethical awareness of the accounting undergraduates. This aligns with Shaub (1994) who found that age had a non-significant relationship with moral reasoning. Though the relationship between age and ethical awareness was found to be insignificant, a positive relationship between age and ethical awareness suggests that a student experiences higher levels of ethical awareness as he gets older. Cumulative grade point average (CGPA) has a positive significant effect on the ethical awareness of the students. This implies that the ethical awareness of a student increases as the CGPA increases. Grade point average is often used in higher education to determine the academic performance of a student. Students with higher grade point averages are viewed as intelligent and having the capacity to learn fast. Therefore, when these students with higher CGPA are taught accounting ethics using the treatment course, they find it easier to understand and respond ethically than the students with lower CGPA scores.

The treatment variable has a positive significant effect on the ethical awareness of the accounting students. This implies that the students experienced increasing levels of ethical awareness as they continuously participated in the treatment. Hence, accounting ethics treatment is useful in enhancing the ethical awareness of accounting students. This result is corroborated by May et al. (2014) who find that an ethics treatment course results in positive increases in the ethical awareness of students in the treatment group as compared to the control group. Lagrone et al. (1996) opine that an ethics intervention fosters the students' abilities to consistently consider ethical issues in their decision-making processes.

Conclusion and recommendations

This study largely borders on curriculum design and learning pedagogies of accounting ethics for accounting undergraduates at universities in Nigeria. The quasi-experiment was conducted using five faith-based universities in Nigeria (CVU, LMU, RUN, BABU, and BOWU). It was observed that it is not enough to just teach accounting ethics, the pedagogy for teaching the subject is equally important. This is because it is one thing to be knowledgeable about accounting ethics and another to act ethically when faced with a dilemma. The crux of being able to act ethically depends on how accounting ethics is being taught and understood. The emphasis on the learning pedagogies is to ensure that the students are taught in a way that the ethics education lectures have a lasting positive impact on their ethical awareness. An ethics intervention curriculum was introduced which was used to test for the treatment effects of teaching accounting ethics to accounting undergraduates. A treatment group was taught using the ethics intervention curriculum while the control group was taught using the traditional method.

The ethics intervention curriculum was found to have a positive significant effect on the ethical awareness of the accounting undergraduates. This implies that teaching ethics to accounting undergraduates can influence their ethical awareness. This finding aligns with our major research question which was to investigate whether teaching ethics using an ethics intervention curriculum can influence the awareness of accounting students represented by a group of selected students in higher education institutions in Nigeria. This study, therefore, demonstrates that accounting ethics taught using the ethics intervention curriculum can enhance the ethical awareness of accounting undergraduates.

Based on the findings in the study, it is therefore recommended that accounting ethics should be contained within the accounting curriculum as a taught course and not as a piecemeal. Based on the findings of the study, it is best to incorporate accounting ethics in the curriculum as a stand-alone course for final year accounting students since this category of students is closest to completing their accounting degree programme. For the first year, second year, and third-year accounting undergraduates, it is recommended that they are taught accounting ethics as an integrated course implying that accounting ethics should be incorporated into other accounting-based courses.

The accounting professional bodies in Nigeria can begin to investigate how to train professional accountants regularly on accounting ethics by including the subject matter in the mandatory continuing professional education. The trainers should as well be acquainted with teaching accounting ethics using active learning strategies. Also, after the student accountants have passed all the professional qualifying exams before they are inducted as professional members of the accounting body, they should be educated on accounting ethics.

The Nigerian Accounting Association (NAA), a member association for accounting academics in Nigeria can begin to engage accounting academics in training programmes, workshops, symposiums, seminars and conferences to train the academics on how to teach accounting ethics. Nigeria needs a home-grown curriculum on accounting ethics that can be adopted nationwide by all universities offering an accounting course. Therefore, the accounting academics, practitioners as well as the professional bodies have a role to play in executing this project.

This study focused on examining the treatment effect of an ethics intervention curriculum on the ethical awareness of accounting students at five faith-based universities in Nigeria. The justification for selecting faith-based universities is the fact that they are founded on moral principles with a strong emphasis on moral and ethical values. For further studies, the same experiment conducted using the accounting undergraduates at the faith-based universities can be replicated on the non-faith-based universities, including government-owned universities and polytechnics. This should be done to determine whether there is an equivalent effect of the ethics intervention curriculum on the ethical awareness of the students in the non-faith-based universities.

In future research on the relationship between accounting ethics education and ethical awareness of accounting undergraduates, a pre-test should be conducted for both the subjects in the treatment group as well as the control group. This will enable an adequate comparison between the pre-test scores of the subjects in the treatment group and the subjects in the control group to determine whether there is a difference in the ethical awareness of the subjects before undertaking an accounting ethics course.

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