Research article

Employability of accounting graduates: analysis of skills sets

Joseph Tufuor Kwarteng a,*, Enoch King Mensah b

a Department of Business and Social Sciences Education, College of Education Studies, University of Cape Coast, Ghana
b Department of Business Education, S. D. Dombo University of Business and Integrated Development Studies, Ghana

ARTICLE INFO

Keywords:
Accounting
Employability
Graduates
Skills
Employers

ABSTRACT

This study assessed the extent universities had equipped accounting graduates with employable skills. It employed descriptive cross-sectional survey with a random sample of 435 employees and accounting graduates. Separate questionnaires were administered first to the employees in soliciting essential skills needed in the accounting profession, and then to the accounting graduates in measuring the development of these skills in them. Data were analyzed with descriptive and inferential statistics. The findings showed that accounting graduates had developed two-thirds of the 18 skills employees considered essential to the accounting profession. IT skills, constituting remaining one-third of the essential skills, were not fully developed. Also, graduates’ technical competence development was found to be influenced by the type of institution attended. It was recommended that universities should modify their accounting curriculum to reflect the teaching of IT skills, as potential employers of accounting graduates consider entrenching IT skills in recruits’ orientation and development programs.

1. Introduction

The seemingly disturbing unemployment situation worldwide and Ghana, in particular (Baah-Boateng, 2015; Affum-Osei et al., 2019; Ampong, 2020), connotes the impression that either employment avenues are limited or graduates are not developed enough for the available job openings. Holding the assumption that job openings are available, researchers (Pitan and Adedeji, 2012; Bawakyillenuo et al., 2013; and Oppong and Sachs, 2015; Agwu, 2019; Aboagye and Puoza, 2021) attributed the problem of unemployment to academia’s inability to produce the right caliber of graduates to match employment avenues. This assertion suggested that graduates churned out by institutions of higher learning had failed to develop the required skills needed for employment. Could this underdevelopment of the right set of skills be that institutions of higher learning are ignorant of the needs of the workspace, or for some reason, higher education institutions are unable to meet the development of these skills in the students? Globally, numerous studies have been conducted with varying findings on how higher education meets employers’ demands. For instance, some studies (Awayigah et al., 2010; Cory and Pruske 2012; Afolabi, 2013; Teferi 2015; and Sithole, 2015; Ismail et al. 2020; Damoa et al., 2021) revealed that employers were discontented with products generated from academic institutions. However, Lowden et al. (2011), Catalunya (2015), and Tudy (2017) observed that employers were satisfied with the level of development and associated productivity of graduates produced by higher education institutions. This lack of consensus in research evidence leaves a gap in knowledge that needs further investigation.

Tertiary accounting education programs often produce account officers, account administrators, budget officers, among other accounting professionals, who are always in demand in the labor market. Accordingly, several higher education institutions have been given the authority to roll out accounting education programs. In Ghana, Technical Universities (TU) and Academic Universities (AU), typically known as traditional universities, have been established by statutes to award accounting degrees. Though these two types of institutions of higher learning with different mandates might appear to award similar degrees, the statutes have distinguished their operations based on the principles for which they are to operate. The University of Ghana Act 1961 (Act 79); University of Cape Coast Law, 1992 (PNDCL 278); and the University of Professional Studies Act, 2012 (Act 850) mandate such AU to provide higher education to train independent and critical thinkers. The AUs are responsible for the individual’s holistic development but not just the technical acquisition of skills designed to operate in a particular workspace. Technical Universities Act, 2016 (Act 922), section 3 subsection 1(c) stipulates that the TU aims to provide higher education in accordance with the principle of using a competency-based and practice-oriented approach in instructional delivery. This Act

* Corresponding author.
E-mail address: jtkwarteng@ucc.edu.gh (J.T. Kwarteng).

https://doi.org/10.1016/j.heliyon.2022.e09937
Received 7 December 2021; Received in revised form 29 April 2022; Accepted 7 July 2022
2405-8440/© 2022 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
establishes that TUs should focus on developing more technical skills (hard skills) befitting a particular workspace than interest in developing, holistically, the individual to fit into society. This position by the statutes governing the conduct of AUs and TUs is buttressed by the assertion of Colombari and Neirotti (2021) that TUs should be considered the response to producing skilled manpower in narrowing the gap created by digitization.

The curriculum of accounting education programs rolled out by higher education institutions is often structured according to the stipulations (IEES) of the International Accounting Education Standards (IEASB). For all IFAC member bodies, an individual would have been regarded to have gone through an accounting program if he had acquired initial professional development (IPDs) in technical competence, professional skills, professional ethics, values and attitudes. These IPDs in their summarized description relate to the hard and soft skills and the ethical maturity required of accounting professionals. Therefore, it is sound to suggest that in testing whether an institution has produced a labor force to satisfy the accounting workspace, the development of these three indicators be used as a measure. However, it must be guided that per the mandate established by law, AUs are more likely to emphasise professional skills as the TUs focus more attention on technical competence. Be it AUs or TUs, they are not absolved of the allegation leveled against academia by the researchers (Pitan and Adedije, 2012; Bawakyillenoo et al., 2013; Oppong and Sachs, 2015; Ismail et al. 2020; Damoah et al., 2021) that institutions of higher learning have failed to equip graduates with relevant skills to secure and execute jobs satisfactorily. Following from this, the relevant questions are: what skills are suitable for the accounting related employment opportunities available? Have these skills been developed by the graduates in their right proportions? Is there a difference in the development level of these skills among graduates based on the type of higher education institution? What are the associations between the acquisition of the skills?

1.1. Skills required in the execution of accounting work

In Malaysia, Ismail et al. (2020) examined employers’ perceptions of employability of accounting graduates. The study, using content analysis basis, relied on the dictates of the International Accounting Education Standards (IEEs) to group the skills into functional areas. The study revealed that information technology, interpersonal and personal skills were the most desired skills needed in the workspace of accounting graduates. Ebaid (2021) conducted a similar study in Saudi Arabia on the required employability skills of accounting graduates. It was revealed that both technical and generic skills were deemed important for the accounting job space. Communication, team work, emotional stability and analytical thinking skills were the top ranked skills needed for the accounting job space. Additionally, Ghan et al. (2018), in their study of employers’ perceived accounting graduates’ soft skills, found that teamwork skills were very vital to accounting graduates’ success in the workspace. Lim, Lee, Yap and Ling (2016) conducted a similar study among Asian employers, lecturers, auditors and students, to examine the important employable skills and personal qualities required for an entry-level job. Their findings also indicated that employers value communication skills, analytical skills, critical thinking skills, time management skills, computer (information technology) skills, ability to work in team skills and interpersonal skills the most.

Afosabi (2014) replicated the study on skills required by graduates in the Nigerian job market. Among 350 employers, it was revealed that employers rated appearance, written communication, computer knowledge, awareness of global issues, work-based experiences, interpersonal, problem solving, and leadership skills as the required skills needed in the execution of accounting tasks to complement understanding of the core accounting principles (technical skills). Also, knowledge is a spreadsheet, and word processing were the top important qualities needed for efficient functioning in accounting related works.

1.2. Graduates development of required accounting skills

On accounting graduates’ developing the required skills for the job market, Siti et al. (2018) made employers rate their fresh accounting graduates. Their study revealed that the actual performances of the accounting graduates were substantially low, signifying accounting graduates’ underdevelopment of most skills needed for the execution of the accounting tasks in the world of work. It was further revealed that the largest gaps occurred for communication skills, professional demeanour, and analytical skills. In contrast, the study showed that accounting graduates had developed their computer skills (information communication skills) and built up their integrity or ethical character. A comprehensive study conducted by Lim et al. (2016) investigated the challenges encountered by early accounting practitioners, which establishes their underdevelopment of such qualities as deemed necessary for the auditing work. It was found that fresh graduates into the auditing field of work had not fully developed their technical knowledge, communication skills, and mastery of dealing with real-world situations. In Ghana, Damoah et al. (2021) conducted a study to question the equipment of graduates with employable skills by higher education institutions. The study revealed that graduate students fall short in critical skills. The study concluded that there was a statistically significant gap between education offered students in higher education institutions and what industry demands.

The lack of consensus in research findings on the mismatch of skills developed by graduates and employers’ requirements, and the uniqueness of accounting discipline suggest that earlier findings may not reflect the suitability of accounting graduates to employment demands. The empirical studies reviewed was about the acceptability and employability of all graduates across all fields of study. The strict requirements, adherence to standards, theories, principles, and concepts that tolerate minimal, if any, deviations from the rule of thumb suggest that accounting is unique. For that matter, the skill set of other disciplines may not approximate what is demanded in accounting. Therefore, the findings obtained in fields other than accounting may not reflect those required for success in the accounting discipline. In order to generate more authentic knowledge to bridge the gaps identified, there is need to determine:

1. the skill-sets relevant in the execution of accounting related work;
2. accounting graduates’ level of development of the relevant accounting related work skills;
3. whether there is a statistically significant difference in the level of accounting graduates’ skills development based on the type of higher education institution attended; and
4. whether there is a statistically significant association among the development of the categories of skills set relevant to the accounting-related workspace.

2. Contributions of the study

The study intends to put to rest the growing debate on whether higher education institutions are serving the labour market with the required workforce. It aids in settling the arguments surrounding the topical issues that unemployment is a matter of unavailable opportunities or mismatched skills to available job openings. The study would guide employers and subscribers of university accounting education on which kind of institution to be on the lookout for when looking for workers or choosing a career in accounting. Further, it would alert universities providing accounting education to evaluate their effort in meeting the needs of the labour market. Detailing the interrelationship between the development of the categories of skill set informs training and development sections of employing institutions on the skill set to develop to aid the acquisition of some relevant skill sets easily. The rest of the study is structured to provide the theoretical framework underpinning the study, and outline the research process employed. It further provides a section
for the presentation of the results generated from the analysis run, and another section to discuss the results based on which the last section which concludes and provides relevant recommendations is presented.

3. Theoretical framework: signaling theory

The idea that one party credibly conveys information about him or herself to another party, in the broader sense, is termed as signaling. In the early stages of the development of the theory, Spence (1973a,b) considered hiring of employees as a type of investment under uncertainties and referred to the manipulable attributes an applicant possesses, which are observable by the employer, as signals. Thus, credentials such as education, training and development gained by the applicants are termed as signals observable by the employer. Spence (1973a,b) advanced that the employer, having observed the applicant's signals, is to make a conditional probability assessment of the productive capacity of the applicant.

The tenet of Michael Spence's job-market signaling model is that potential employees signal their ability level in the form of education credentials accumulated to the employer. The informational value of the credential comes from the fact that the employer believes the credential is positively correlated with having greater ability which is difficult for low ability employees to obtain. Thus, the credential enables the employer to distinguish low ability workers from high ability workers reliably. This puts higher education as the main contributor to the signals produced by the potential employee in the quest for employment.

Education credentials can signal to the firm, indicating a certain level of ability that the individual may possess, thereby narrowing the information gap. Given this premise, credentials obtained by potential employees should reflect their productivity capacity. In lieu of the theory, it could be prejudiced that a graduate of accounting education signals to the employer his or her capability of suit any accounting related work available in the job space. Thus, failure of the employee –having gained the opportunity to put the said credentials to use– in living up to the expectations of the employer based on the signals communicated at the initial hiring phase provides room to scrutinize the means of gaining the credential. The conclusion on the invention of Spence's (1973a,b) signaling theory rests because education should equip graduates with the specific credentials needed by employers. In other words, any graduate from any educational institution has obtained some credentials which signals to employers as a “good worker” with a relatively high productive ability. Hence, higher education should bridge information asymmetry, the core of signaling theory, and provide the real solution to the kind of workers employers' demand.

4. Research methodology

4.1. Research design

The study employed a descriptive cross-sectional survey. The design facilitated gathering opinions and views about accounting graduates' skills needed and developed from a large group of respondents (both accounting employees and graduates) in their natural occurrences without manipulating variables. The aim was to precisely describe the skills accounting task requires and how best graduates have developed those skills, obtain valuable insights without explaining why, and gather the data once and not over a time (Pinsonneault and Kraemer, 2003; Salant and Dillman, 2004; Leedy and Ormrod, 2005; Polit and Beck, 2010; Saunders et al., 2012; Harris, 2019).

Descriptive cross-sectional survey design has the advantages of producing good responses from 435 respondents, providing a meaningful picture of opinions gathered on skills required for executing accounting tasks and the development level of these skills among accounting graduates based on data collected at a point in time (Frankel and Wallen, 2003; Asenabah, 2019). Thus, the design provides an accurate and objective description of the suspected mismatch between job requirements and graduate development (Quartey and Awoyemi, 2002; Cohen et al., 2018). However, Marczyk et al. (2005) observe that survey designs, like all non-experimental designs, no matter how convincing the data may be, cannot rule out extraneous variables as the cause of what is being observed. This is because descriptive survey designs do not have control over the variables and the environment they study. For instance, in collecting the data from accounting employees and accounting students, their current conditions, either being too elated or depressed, in the time of providing the information could not be controlled. This could indirectly have an impact on the kind of information provided.

4.2. Population, sample and sampling procedures

The study population comprised accounting employees in educational institutions and final year accounting students in universities in the Cape Coast Metropolis. Accounting employees were considered because they could best provide inputs of what qualities the job they do require. Final year accounting students were used to proxy accounting graduates because they had completed the courses in accounting education and would be exiting as accounting graduates in a maximum of a month. Therefore, they were the prospective graduates whose immediate services would be needed.

The total population was 696 (145 employees and 551 students) respondents. The employees were accounting staff from tertiary institutions in Ghana and the students, drawn from three accounting programs of study in public universities in Ghana. Fresh accounting employees in the organizations could not have been used as accounting graduates because they might have undergone some training and development in their various institutions. As such, the rating of their development level could have been compromised. Hence nearly-exit students were seen as the best proxy for the accounting graduates.

The sample size for the study was 435 (90 accounting employees and 345 final year accounting students). Adam's (2020) recommended that a minimum of 75 and 235 is required for a population of 145 and 551, respectively. However, because the researcher wanted to increase external validity and approximate the sample characteristics to the population, the sample size was increased to 90 and 345 for employees and students, respectively. The proportionate stratified sampling technique was used in apportioning the sample size to each group of respondents. A simple random sampling technique was then used to select the respective respondents for the study. The sample distribution of the respondents from the population is shown in Table 1.

After the data collection, out of the 90 and 345 sampled employees and students, respectively, the returned questionnaires were 83 and 340 for employees and students. This represented a 92% and 99% return rate. The demographic characteristics of the respondents used for the study are shown in Table 2.

The demographic showed that accounting employees from whom opinions were gathered on the skills they require for their work were predominantly males (n = 60; 72.3%). These individuals were largely first-degree holders (n = 61; 73.49%) who worked in the offices of

| Table 1. Sample distribution of the population for the study. |
|---------------------------------------------------------------|
| Population sub-units | Source | N   | Proportion | n  |
|----------------------|--------|-----|------------|----|
| Employees            | UCC    | 120 | 17%        | 74 |
|                      | OLA CoE| 5   | 0.7%       | 3  |
|                      | SHS    | 20  | 2.9%       | 13 |
|                      | Total  | 145 | 20.8%      | 90 |
| Accounting graduates | BEd (Accounting) | 198 | 28.4%      | 123|
|                      | BCom (Accounting) | 220 | 31.6%      | 137|
|                      | B.Tech (Accountancy) | 133 | 19.2%      | 85 |
|                      | Total  | 551 | 79.2%      | 345|
| Total                |        | 696 | 100%       | 435|
accounts (n = 29; 34.93%), cash (n = 13; 15.66%), audit (n = 12; 14.46%), finance (n = 8; 9.64%), among others. The respondents were on average 33 years old (M = 33.51; SD = 9.33) and had been on their job for about 6 years (M = 6.01; SD = 3.43). This shows that responses gathered for the skills required for the accounting job are well-informed ones from individuals in varied fields of accounting with more than half a decade experience on the job. For the accounting graduates who indicated their development level of the required skills, majority of them were males (n = 234; 68.8%).

The result revealed the skills current accounting practitioners see to be very vital for the accounting profession, without which a fresh employee cannot function effectively. The respondents who completed the instruments were made up of accounting practitioners in the internal audit, accounts, bills payable, cash, offices, procurement, payroll, finance, and final accounts. The study looked further for accounting graduates based on the competency areas.

4.3. Data collection instruments and procedure

The BSI, a standardized questionnaire designed to measure the skills required by employers and how potential graduates exhibit those skills (Kolkar and Paranto, 2000), was adapted and used as the main instrument for the study. The instrument comprised 18 items measuring important skills needed for accounting-related jobs for which responses were solicited on a five-point Likert scale. The adapted BSI administered to employees solicited the demographic characteristics of the respondents and skills deemed important in the execution of their daily accounting-related activities. Eighteen skills, pooled in three categories of IPDs described by IES 2, 3 and 4, were presented to employees to rate the level of importance from 1-no importance to 5—denoting extreme importance. After analyzing the results gathered from the BSI administered to employees, the students’ BSI was made to reflect the skills outlined to be needed. The BSI was then administered to graduates to gather information on development level on the qualities required for the accounting profession on a Likert scale rating of 1–5 with 1, 2, 3, 4, and 5 showing no, insignificant, partial, acceptable and full developments respectively. A pilot test of the adapted BSI was conducted to ensure reliability using 15 accounting staff and 20 final year accounting students. The reliability of the instrument was estimated through the Cronbach alpha statistic. The sets of instruments were reliable in gathering responses since the overall reliability co-efficient of 0.86 and 0.92 were obtained for employee BSI and student BSI respectively. This showed that the instrument was reliable in providing the required data for the study. Ethical clearance to undertake the study was obtained from the Institutional Review Board (IRB), University of Cape Coast, Ghana.

4.4. Data analysis

Data gathered from respondents were assigned numerical codes. Ratings for important skills were assigned 1, 2, 3, 4, and 5, denoting low importance, somewhat important, important, very important and extremely important, respectively. For accounting graduates’ questionnaire coding, numerical values assigned were 1, 2, 3, 4, and 5, representing no, insignificant, partial, acceptable and full developments respectively. Descriptive (means and standard deviations) and inferential statistics (independent statistics and Pearson product moment correlation) were employed to analyze the data.

5. Research results

5.1. Qualities accounting employees deem important in the execution tasks

The result revealed the skills current accounting practitioners see to be very vital for the accounting profession, without which a fresh employee cannot function effectively. The respondents who completed the instruments were made up of accounting practitioners in the internal audit, accounts, bills payable, cash offices, payments, finance, and final accounting units.

Table 3 shows a rank order of the means depicting which skills were considered most important for the execution of the accounting task. Although all qualities were deemed important by practitioners in executing their tasks, they followed an order of importance. All eighteen specific qualities under the three main competencies needed for the accounting profession were rated very important. Accounting practitioners in the various fields in the educational sector saw all three broad core competencies to be important in accounting practice.

Table 4 shows the summarized findings on the core competencies accounting professionals viewed as most perennial to their ability in executing tasks assigned them.

5.2. Graduates’ development level of the required qualities needed for the accounting profession

The study looked further for accounting graduates’ development level of the important qualities required for the accounting field of work. This helped provide a picture of any mismatches in skills if any. Results were presented according to the development level of each skill analyzed. The results generated are presented in Table 5.

Table 6 shows the summarized findings on the development level of accounting graduates based on the competency areas.

### Table 2. Demographic characteristics of respondents.

| Group of Respondents | Scale | Sub Scale | N | % | Mean | SD |
|----------------------|-------|-----------|---|----|------|----|
| Employees (n = 83)    | Gender | Males     | 60 | 72.3 |      |    |
|                      |        | Females   | 23 | 27.7 |      |    |
|                      | Institution | University | 69 | 83.13 |      |    |
|                      |         | SHSs      | 12 | 14.46 |      |    |
|                      |         | CoE       | 2  | 2.41  |      |    |
|                      | Unit of Service | Accounts | 29 | 34.93 |      |    |
|                      |         | Cash office | 13 | 15.66 |      |    |
|                      |         | Final Accounts | 6 | 7.23 |      |    |
|                      |         | Audit     | 12 | 14.46 |      |    |
|                      |         | Payroll   | 6  | 7.23  |      |    |
|                      |         | Procurement | 4 | 4.82  |      |    |
|                      |         | Finance   | 8  | 9.64  |      |    |
|                      |         | Bills Payable | 5 | 6.02  |      |    |
|                      | Qualification Held | First Degree | 61 | 73.49 |      |    |
|                      |         | Professional | 8 | 9.64  |      |    |
|                      |         | Masters’ Degree | 12 | 14.46 |      |    |
|                      |         | Others (DBS and O’Level) | 2 | 2.41 |      |    |
|                      | Age |            |        | 33.51 | 9.33 |    |
|                      | Years in Profession |            |        | 6.01  | 6.43 |    |

| Students (Graduates) (n = 340) | Gender | Males | 234 | 68.8 |
|                               | Females | 106 | 31.2 |
|                               | Institution | UCC | 260 | 76.5 |
|                               | CCTU | 80 | 23.5 |
|                               | Programme of Study | B.Ed Accounting | 123 | 36.2 |
|                               |         | B.Com Accounting | 137 | 40.3 |
|                               |         | B.Tech Accounting | 80 | 23.5 |
|                               | Age |            |        | 23.33 | 3.18 |
The development level of a graduate, although communicated from the mean of means to be satisfactory (mean of means \( \bar{X} = 3.54 \); SD = .99), a detailed examination of the individual core competencies exposes technical skills (hardcore principles in accounting and IT skills) as being weak. Table 3 shows important qualities in the execution of accounting tasks.

### Table 3. Important qualities in the execution of accounting tasks.

| Core Competencies | Qualities                                      | Mean | SD  | Rank |
|-------------------|------------------------------------------------|------|-----|------|
| Professional Skills | Being able to work with others (interpersonal skills) | 4.40 | .92 | 1    |
|                   | Conducting myself in a professional way         | 4.40 | .83 | 1    |
|                   | Listening skills                                | 4.24 | .82 | 5    |
|                   | Self confidence                                 | 4.20 | .92 | 6    |
|                   | Being creative in developing new ideas          | 4.01 | .94 | 7    |
|                   | Speaking communication skills                    | 3.98 | .87 | 8    |
|                   | Leadership abilities                             | 3.87 | .95 | 11   |
|                   | Written communication skills                     | 3.71 | 1.00| 16   |
| Technical Skills  | Ability to work with figures conversantly        | 4.36 | .83 | 3    |
|                   | Knowledge of word processing software            | 3.98 | .83 | 8    |
|                   | Experience in dealing with practical accounting problems | 3.89       | .78 | 10   |
|                   | Application of accounting principles in computer usage | 3.87       | .88 | 11   |
|                   | Knowledge of spreadsheet software                | 3.86 | .89 | 13   |
|                   | Competencies in hardcore accounting principles  | 3.86 | .90 | 13   |
|                   | Ability to adapt rapidly to changing technologies (such as accounting software) | 3.76 | .82 | 15   |
|                   | Knowledge of database software                   | 3.64 | .86 | 17   |
| Professional Ethics, Values and Attitudes | Adhering to professional rules of right and wrong | 4.28 | .90 | 4    |
|                   | Evaluation of situations and generating appropriate solutions | 3.64 | .86 | 17   |

The development level of a graduate, although communicated from the mean of means to be satisfactory (mean of means = 3.54; SD = .99), a detailed examination of the individual core competencies exposes technical skills (hardcore principles in accounting and IT skills) as being weak. Table 4 shows core competencies desired.

### Table 4. Summary of core competencies desired.

| Core Competencies | Mean | SD  | Rank |
|-------------------|------|-----|------|
| Professional Skills | 4.09 | .91 | 1    |
| Technical Skills  | 3.90 | .85 | 3    |
| Professional Ethics, Values and Attitudes | 3.96 | .88 | 2    |

Table 5 shows accounting graduates’ development of important qualities for accounting profession.

### Table 5. Accounting graduates’ development of important qualities for accounting profession.

| Development Level | Qualities                                      | Mean | SD  | Comp. Base | Rank |
|-------------------|------------------------------------------------|------|-----|------------|------|
| Acceptable        | Conducting myself in professional way          | 4.01 | .85 | PS         | 1    |
|                   | Self confidence                                 | 4.00 | .95 | PS         | 2    |
|                   | Adhering to professional rules of right and wrong | 3.99 | .86 | PEV        | 3    |
|                   | Ability to work with figures easily             | 3.99 | .88 | TS         | 4    |
|                   | Being able to work with others (interpersonal skills) | 3.97 | .92 | PS         | 5    |
|                   | Listening skills                                | 3.91 | .86 | PS         | 6    |
|                   | Speaking communication skills                    | 3.81 | .88 | PS         | 7    |
|                   | Written communication skills                     | 3.80 | .88 | PS         | 8    |
|                   | Technical competencies in accounting (eg. Preparation of financial statement, BRS) | 3.77 | .96 | TS         | 9    |
|                   | Being creative in developing ideas              | 3.69 | .97 | PS         | 10   |
|                   | Leadership abilities                             | 3.66 | .99 | PS         | 11   |
|                   | Ability to evaluate situations and generate appropriate solutions to situations | 3.50 | .91 | PEV        | 12   |
| Partial           | Experience in dealing with practical accounting problems (auditing financial reports, determining the performance of a firm using ratios) | 3.26 | .99 | TS         | 13   |
|                   | Knowledge of word processing software            | 3.21 | 1.25| TS         | 14   |
|                   | Knowledge of spreadsheet software                | 3.07 | 1.15| TS         | 15   |
|                   | Knowledge of database software                   | 2.80 | 1.24| TS         | 16   |
|                   | Ability to adopt rapidly to changing technologies in accounting (eg. Accounting software) | 2.71 | 1.22| TS         | 17   |
|                   | Application of accounting principles in computer usage | 2.57 | 1.20| TS         | 18   |

Table 6 shows summary of accounting graduates’ development level of important qualities for accounting profession.

### Table 6. Summary of accounting graduates’ development level of important qualities for accounting profession.

| Core Competencies | Mean | SD  | Development Level |
|-------------------|------|-----|-------------------|
| Professional Skills | 3.86 | .91 | Acceptable        |
| Professional Ethics, Values and Attitudes | 3.75 | .86 | Acceptable        |
| Technical Skills  | 3.17 | 1.11| Partial           |

| Mean of Means/Average SD | 3.54 | .99 | Acceptable |

Key: Mean approximately 1-no development; 2-insignificant development; 3-partial development 4- acceptable development; 5-full development. PS-Professional Skills; TS- Technical Skills; PEV-Professional Ethics, Values and Attitudes.
somewhat developed (mean = 3.17; SD = 1.11). The professional skills (interpersonal, personal and communication skills) were most developed (mean = 3.86; SD = .91) amongst the three core competencies.

5.3. Difference in the development level of accounting graduates based on the type of higher education institution attended

The study further determined whether the type of tertiary institution attended by the graduate contributed to developing the skills set given their varying mandates as prescribed by the statutes that established them. To undertake the statistical test, the independent samples t-test was employed. The descriptive statistics and the Levene’s test of equality of variances were first presented in Tables 7 and 8 before the summarized results shown in Table 9.

The results showed a statistically significant difference in the development of the technical competencies between Technical University (TU) (M = 3.34; SD = .75) and Academic University (M = 3.13; SD = .75) graduates, t = -2.193, p = .029 (2-tailed). The development of technical competencies is not the same for TU and AU graduates, with TU graduates developing relatively more of the technical competencies than AU graduates.

5.4. Association among the categories of skills development

The study established whether the development of the skill-sets is interrelated. A Pearson product-moment correlation statistic was run to test whether there is an association between the developments of professional skills and technical competence; professional skills and professional ethics, values and attitudes; technical competence and professional ethics, values and attitudes. This was deemed vital as it could direct tuition towards developing a skill if found to be interrelated. The results generated are presented in Table 10 with the summarized test results shown in Table 11.

The results showed a statistically significant positive relationship between the developments of professional skills and technical competence (moderate relationship), r = .557, n = 340, sig = .000; professional skills and professional ethics, values and attitudes, r = .748, n = 340, sig = .000 (strong relationship); and technical competence and professional ethics, values and attitudes (strong relationship), r = .628, n = 340, sig = .000. The results further revealed that the development of professional skills accounts for 56% (r² = .560) of the development of professional ethics, values and attitudes. Development of technical competence was found to have influenced the development of professional skills by 31% (r² = .310) and the development of professional ethics, values and attitudes by 39.4% (r² = .394).

6. Discussion

Eighteen skills were found to be important in the accounting related employment avenues. Specifically, professional skills such as interpersonal skills, conducting oneself professionally, working with figures comfortably, being ethical, listening skills, and self-confidence were the top six prioritized essential skills. This means the routine line of the accounting profession prioritizes soft skills over technical skills. Thus, employees prioritize their ability to have good relations in and out of the organization most in their operation over any sound knowledge in the

Table 7. Group descriptive statistics.

| Development Level                  | Institution | N  | Mean | SD   | Std. Error Mean |
|------------------------------------|-------------|----|------|------|-----------------|
| Professional Skills                | AU          | 260| 3.88 | .71  | .04             |
|                                   | TU          | 80 | 3.77 | .67  | .07             |
| Technical Competencies             | AU          | 260| 3.13 | .75  | .05             |
|                                   | TU          | 80 | 3.34 | .75  | .08             |
| Professional Ethics                | AU          | 260| 3.66 | .74  | .05             |
| Values and Attitudes               | TU          | 80 | 3.64 | .74  | .08             |
| Overall                            | AU          | 260| 3.56 | .65  | .04             |
|                                   | TU          | 80 | 3.58 | .61  | .07             |

Table 8. Test of equality of variances and equality of means.

|                          | Levene’s Test for Equality of Variances | t-test for Equality of Means |
|--------------------------|----------------------------------------|-------------------------------|
|                          | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
| Professional Skills     | Equal variances assumed | .060 | .806 | 1.134 | 338 | .258 | .102 | .090 |
|                         | Equal variances not assumed |       |      | 1.175 | 139.103 | .242 | .102 | .086 |
| Technical Competencies  | Equal variances assumed | .039 | .843 | -2.193 | 338 | .029 | -4.21 | .096 |
|                         | Equal variances not assumed |       |      | -2.203 | 132.218 | .029 | -4.21 | .096 |
| Professional Ethics     | Equal variances assumed | .016 | .900 | .269 | 338 | .788 | .025 | .094 |
| Values and Attitudes    | Equal variances not assumed |       |      | .269 | 131.552 | .788 | .025 | .094 |
| Overall                 | Equal variances assumed | .009 | .926 | -3.342 | 338 | .733 | .028 | .082 |
|                         | Equal variances not assumed |       |      | -3.354 | 138.940 | .724 | .028 | .079 |

Table 9. Development of skills set based on type of tertiary education.

| Development Level                  | Institution | N  | M   | SD   | t    | df  | sig  |
|------------------------------------|-------------|----|-----|------|------|-----|------|
| Professional Skills                | AU          | 260| 3.88| .71  | 1.134| 338 | .258 |
|                                   | TU          | 80 | 3.77| .67  |     |     |      |
| Technical Competencies             | AU          | 260| 3.13| .75  | -2.193**| 338**| .029**|
|                                   | TU          | 80 | 3.34| .75  |     |     |      |
| Professional Ethics Values and Attitudes | AU     | 260| 3.66| .74  | .269 | 338 | .788 |
|                                   | TU          | 80 | 3.64| .74  |     |     |      |
| Overall                            | AU          | 260| 3.56| .65  | -3.342| 338 | .733 |
|                                   | TU          | 80 | 3.58| .61  |     |     |      |

Key: Mean approximately 1-no development; 2-insignificant development; 3-partial development 4- acceptable development; 5-full development. AU- Academic University; TU-Technical University.
accounting principles. Employees preferred to have cordial dealings with colleagues and others alike and not bring themselves to disrepute in any unethical manner by approaching their line of duty with the highest form of ethical standards and professionalism.

This finding is confirmed by Ismail et al. (2020) who found that technological skills comprising the ability to use spreadsheets and accounting software were seen to be the most desired skills needed in the field of accounting work. Also, the study added that interpersonal and personal skills such as communication skills, were also needed for the execution of accounting task. Similarly, Ebaid (2021) added that aside the ranking of some technical skills as vital for the accounting profession, the profession also places high importance on the acquisition of key generic skills which includes professionalism in conduct, interpersonal and personal skills. This view is also shared by Ghani et al. (2018) who revealed that employers perceive soft skills as vital to the accounting profession, choosing teamwork skill as the most vital skill of them all. Lim et al. (2016) heightened the corroborator to the findings of this study by further establishing empirically that technical knowledge, application of knowledge, and communication were vital skills for the business world of work. Nonetheless, the finding of the highest-ranked important skills contradicts earlier studies. For example, as the current study finds technical skills to be the least of concern in the field of work, Afolabi (2014) revealed that technical skills such as understanding and applying core accounting principles were deemed to be the topmost important qualities of the accounting profession. His research held that soft skills should rather not take center stage as the desired qualities expected to be manifested by accounting graduates but rather complement the technical skills.

It has been established from the study findings that accounting graduates who have passed through accounting education in higher educational institutions have developed twelve of the eighteen skills presented to them. This represents the development of two-thirds of the qualities deemed important for the accounting profession. This means that accounting graduates have developed approximately 67% of the skills needed for their functioning in the world of work. It is worth noting that a third of the qualities (six of the eighteen qualities) found not to be fully developed among accounting graduates were related to technical skills; therefore, the technical skills of accounting graduates are not developed satisfactorily. This implies that the total development of accounting graduates in suiting the accounting job market is seen in their adequate preparation in their professional skills and professional ethics, values and attitudes. Thus, the technical skills’ underdevelopment primarily in IT and experience in transitioning from the classroom to dealing with real-world accounting problems might be early challenges to be encountered by accounting graduates in the field of work.

Lim et al. (2016), who found that employers saw accounting graduates to be struggling in the technical skills (technical knowledge in accounting and application of the knowledge to practice). This finding is further supported by studies of both Siti et al. (2018), that accounting graduates have less mastery over information communication skills as that skill has been less emphasized in accounting education. The finding of the current study on the underdevelopment of technological skills among graduates is further confirmed in Georgiou (2018), who found that accounting graduates lack technological skills. However, Norman et al. (2018) revealed that there is an expectation gap in the skills possessed by accounting graduates vis-à-vis what the skills required on the job. This gap was heavily experienced in communication skills, professionalism and the analytical skills of the graduates, which are in sharp contrast to the current study. Also, Damoah et al. (2021) found that although execution of tasks by graduates in industry requires the possession of critical skills such as interpersonal and personal skills, graduates’ students fall short significantly. The study concluded that there were still gaps in the products from higher education institutions and requirement of industry at graduate entry-level.

Both the TUs and the AUs undertake the development of the accounting graduates. Each of these higher education institutions’ focus suggests the priority each institution type gives the category of skill. In the test of the contribution of the type of tertiary institution to the development of the relevant skills in the accounting graduate, it was evident that accounting graduates from the TUs had developed their technical competence more than their counterparts in the AUs. This suggests that TUs focus on highly skilled technical manpower development. AUs’ mandate was clearly seen when the mean difference suggested that their professional skills (which are deemed soft skills) in the accounting graduate was relatively better than those of the TUs. Given the mandate of the AUs to produce critical and independent individuals in their thinking (University of Cape Coast Law, 1992, PNDCL 278), their emphasis on the development of professional skills appears not to be misplaced. Also, with the provisions of the Technical Universities Act 2016, Act (Act 922), section 3 subsection 1(c) delineating the mandate of TUs to use the practice-oriented approach to instructional delivery, it stands to reason that their curricula have been structured to

| Categories of Skills Developed | Professional Skills | Technical Competencies | Professional Ethics Values and Attitudes |
|--------------------------------|---------------------|------------------------|----------------------------------------|
| Pearson Correlation            | .557**              | .748**                 |                                        |
| Sig. (2-tailed)                | .000                | .000                   |                                        |
| Sum of Squares and Cross-products | 166.586            | 100.009                | 130.749                                |
| Covariance                     | .491                | .295                   | .386                                   |
| R²                             | .310                | .560                   |                                        |
| N                              | 340                 | 340                    | 340                                    |
| Technical Competencies         | Pearson Correlation | .628**                 |                                        |
| Sig. (2-tailed)                | .000                | .000                   |                                        |
| Sum of Squares and Cross-products | 100.009            | 193.258                | 118.194                                |
| Covariance                     | .295                | .570                   | .349                                   |
| R²                             | .310                | .394                   |                                        |
| N                              | 340                 | 340                    | 340                                    |
| Professional Ethics Values and Attitudes | Pearson Correlation | .340                   |                                        |
| Sig. (2-tailed)                | .000                | .000                   |                                        |
| Sum of Squares and Cross-products | 130.749            | 118.194                | 183.412                                |
| Covariance                     | .386                | .349                   | .541                                   |
| R²                             | .560                | .394                   |                                        |
| N                              | 340                 | 340                    | 340                                    |

**. Correlation is significant at the 0.01 level (2-tailed).
accommodate how easily their products could translate what is taught in the classroom directly on the field of work (Colombo, 2021).

The development of the skills was found to be interrelated. This means the development of the skills of the accounting graduate is not disjointed. Thus, the instructional activities that are earmarked to develop the graduate's technical competence are built up with activities that develop the professional skills and the professional ethics, values, and attitudes of the graduate. Professional skills development was found to have explained more than half of the development of professional ethics, values, and attitudes. This stands to reason that with the curriculum ensuring that the interpersonal skills (such as communication, leadership, ability to work with others, among others) of the graduate are developed, it indirectly helps the graduate to develop his/her ethical and moral foundation in relation to the profession. In the training of the graduate to prepare accounts and report for the corporate world, issues of ethics, professionalism in conduct, among other soft skills, are found to be deliberately transmitted in the mode of instruction. Ethics embedded in the technical accounting courses will let students develop morality as they acquire technical competence. This implies that as the graduates are being trained to develop technical competence, their professional ethics, values, and attitudes are also taking place.

7. Conclusions and recommendations

Having found that all three core competencies were important in the execution of the accounting job implies that the success of an accounting graduate in the field of work rests on the acquisition of these competencies. Implicitly, without full development of these skills, accounting graduates will not function efficiently in the world of work. In effect, when these qualities, deemed necessary as employment demand, are not well developed in the accounting graduate, they will not be well suited to employment demands. Hence, there will be a mismatch in the demands of employers and the supply of accounting graduates by institutions of higher learning. Additionally, the priority given to the professional set of skills means that this domain of competence should be given critical attention in its development in accounting graduates. With technical skills being the least ranked important quality means employees are not emphasizing hardcore accounting skills. This implies that whereas it is easy for graduates to develop their technical competence on the job, it is expected that the school imbibes the professional skills before graduation. Even though accounting graduates can function in the world of accounting work, only two-thirds of the entire skills required of them are developed at an acceptable level. They cannot be fully integrated into the world of work if their technical competence is not acceptably developed. This implies that they will need further IT training and development by their future employers. There seems to be a match with the development of accounting graduates to the accounting employment demand in the educational institution. The implication is that accounting graduates' credentials match the skill they signal to employers as required of accounting staff in the field of work. This falls in line with the signaling theory, which explains that the credentials of accounting graduates match their abilities on the job. Also, the study had revealed that the job space prioritizes the development of professional skills over technical skills, although all were deemed relevant. The implication is that employing agencies will rely on the AUs to serve them more than they will look up to the TUs as their desired graduate is mostly developed from the AUs. This stands to reason that the TUs should create curriculum space to cater to the development of more professional skills as they might affect the employability of their graduates.

Recommendations were made from thorough discussions. In the light of the conclusions drawn, it is recommended that.

1. TUs should modify their accounting curriculum to reflect the acquisition of important skills.

2. Potential accounting employers should consider orientation in IT development programs.

3. Curriculum space should be made for IT training in the institutions of higher learning. Students are to enroll on self-developing programs to fill in the gaps created in their development from accounting education.

Declarations

Author contribution statement

Joseph Tufuor Kwarteng: Conceived and designed the analysis; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Enoch King Mensah: Performed the experiments; Analyzed and interpreted the data; Wrote the paper.

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability statement

Data will be made available on request.

Declaration of interest’s statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

References

Aboagye, B., Pooza, J.C., 2021. Employability of mechanical engineering graduates from Sunyani Technical University of Ghana. J. Teach. Learn. Graduate Employability 12 (2), 185–205.

Adam, M.A., 2020. Sample size determination in survey research. J. Sci. Res. Rep. 26 (5), 90–97.

Affum-Osei, E., Anante, E.A., Forkoh, S.K., Aboagye, M.O., Antwi, C.O., 2019. Unemployment trends and labour market entry in Ghana: job search methods perspective. Labor Hist. 60 (6), 716–733.

Afodabi, S.O., 2014. Quality of accounting graduates: a survey of employers in Nigeria. IOSR J. Bus. Manag. 16 (11), 29–42.

Agye, E., 2019. Government assisted programs and unemployment reduction in developing economies: a study of Nigeria and Ghana. Int. J. Manag. Econ. Soc. Sci. 8 (4), 280–298.

Amporg, E., 2020. Graduate unemployment in Ghana: challenges and workable strategies. Int. J. Res. Publ. 57 (1), 22.

Asonahabhi, B.M., 2019. Basics of research design: a guide to selecting appropriate research design. Int. J. Contempor. Appl. Researches 6 (5), 76–89.

Awuigya, J.Y., Onnumah, J.M., Tsamenyi, M., 2010. Knowledge and skills development of accounting graduates: the perceptions of graduates and employers in Ghana. Account. Educ.: Int. J. 19 (1-2), 139–156.

Bash-Boateng, W., 2015. Unemployment in Ghana: a cross sectional analysis from demand and supply perspectives. African J. Econ. Manag. Stud. 6 (4).

Bawakyillensu, S., Akoto, I.O., Ahiaide, C., Awweety, E.B.D., Agbe, E.K., 2013. Tertiary Education and Industrial Development in Ghana. Policy Brief, p. 38012.

Catalunya, A.Q.U., 2015. Universities and Employment in Catalonia 2014. Survey of the Employment Outcomes of the Graduate Population from Catalan Universities. Agencia per a la Qualitat del Sistema Universitari de Catalunya, Barcelona.

Cohen, L., Manion, L., Morrison, K., 2018. Research Methods in Education, eighth edition. Abingdon, Oxon.

Colombari, R., Neirotti, P., 2021. Closing the middle-skill gap widened by digitalization: how technical universities can contribute through Challenge-Based Learning. Stud. Education and Industrial Development in Ghana. Policy Brief, p. 38012.

Cory, S.N., Prude, K.A., 2012. A factor analysis of the skills necessary in accounting graduates. J. Bus. Accounting 5 (1), 121–128.

Damoh, O.B.O., Peprah, A.A., Brefo, K.O., 2021. Does higher education equip graduate students with the employability skills employers require? The perceptions of employers in Ghana. J. Furth. High. Educ. 45 (10), 1311–1324.
