

Pathways to CPA Licensure Success: Correlation of Diagnostic, Academic Performance, Pre-Board and Board Examination Performance of Accounting Graduates in an HEI

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Abstract

Improving the educational system at a higher education institution is indispensable to enhancing students' educational experience in the accounting discipline. This goal can be achieved by determining which areas of accounting instruction are students' or graduates' strengths and which are opportunities for improvement to be academically successful. This study intends to ascertain the relationships among the applied dimensions in the accounting instruction such as diagnostic or psychometric examination results in terms of intelligence quotient (IQ), abstract reasoning, arithmetic, and language comprehension; general weighted average (GWA); pre-board examination results and Certified Public Accountant (CPA) Board Examination results of the Bachelor of Science in Accountancy (BSA) graduates in a higher education institution with the end view of devising an intervention schemes that can be translated into improved or maintained board examination results and the fulfillment of the program's outcomes and educational objectives.

This study applied a descriptive-correlational research design to determine the relationships among psychometric examination results, academic performance, pre-board, and the Certified Public Accountants' Board Examination results of the BSA graduates of the university. Utilizing simple random sampling, thirty-nine (39) graduates were chosen as research subjects whose records were obtained from the Guidance Center, Registrar's Office, and the Dean's Office. A

simple percentage was used to interpret the data on the profile of subjects' diagnostic examination results, general weighted average (GWA), pre-board, and Certified Public Accountant Board Examination results. Moreover, Pearson's r test was used to assess the relationship between diagnostic test results and academic performance, including GWA, GPA, and pre-board performance. Furthermore, the Chi-Square Test of Independence was used to determine the relationship between the pre-board and the CPA Board Examination results. Finally, Multiple Logistic Regression Analysis was used to determine which of the three dimensions of the accounting program mentioned above can predict success in the CPA Board Examination.

The results indicate that most research subjects had average IQs, abstract reasoning, arithmetic, and language comprehension. Moreover, most of them had an excellent academic performance. Also, intelligence quotient, abstract reasoning, and arithmetic ability contributed significantly to the academic success of the Bachelor of Science in Accountancy graduates, evidenced by their Grade Weighted Average. On the other hand, language comprehension contributed, but not significantly, to their subject academic success, while academic performance, as measured by the Grade Weighted Average (GAW), has a high correlation with the pre-board examination results. The pre-board examination has an insignificant relationship with the CPA Board Examination performance of the BSA graduates. Therefore, intelligence quotient, academic achievement, and pre-board examination results are not good predictors of success in the CPA Board Examination.

Keywords: *Accounting education, psychometric examination, grade weighted average (GWA), pre-board, CPA Board Examination, higher education institution, correlation, Cebu City, Philippines*

INTRODUCTION

The Philippine Higher education is mandated to build a quality nation capable of transcending the social, political, economic, cultural, and ethical issues that constrain the country's human development, productivity, and global competitiveness. The importance of quality and quality assurance is highlighted by the urgent need to move significant populations of Filipinos out of poverty and to address local, regional, and national development concerns by educating quality leaders, thinkers, planners, researchers, technological innovators, entrepreneurs, and the much-needed workforce to launch the national economy (CHED Memorandum Order No. 46, 2012).

Based on the Guidelines for the Implementation of CMO No. 46 s. In 2012, the policies, standards, and guidelines (PSG) implemented the shift to learning competency-based standards/outcomes-based education. It specifies the "core competencies expected of the Bachelor of Science in Accountancy graduates regardless of the type of HEI where they graduate. However, in recognition of the spirit of outcomes-based education and of the typology of HEIs, PSG also provides ample space for the HEIs to innovate in the curriculum in line with the assessment of how best to achieve learning outcomes in their particular contexts and their respective mission (CHED Memorandum Order No. 27, 2017).

CHED Memorandum Order No. 27 specifies the program outcomes that are specific to a graduate of BS Accountancy as follows: 1) resolve business issues and problems, with a global and strategic perspective using knowledge and technical proficiency in the areas of financial accounting and reporting, cost accounting and management, accounting and control, taxation, and accounting information systems; 2) conduct accountancy research through independent studies of relevant literature and appropriate use of accounting theory and methodologies; 3) employ technology as a business tool in capturing financial and non-financial information, generating reports and making decisions; 4) apply knowledge and skills to respond to various types of assessments successfully; and (including professional licensure and certifications); and 5) confidently maintain a commitment to good corporate citizenship, social responsibility and ethical practice in performing functions as an accountant.

The school administrators grapple with a daunting challenge: reform policies and practices that currently contribute to opportunity and achievement gaps. Despite the school leaders' best efforts, students of color, low-income students, English learners, students with disabilities, and those who are homeless or in foster care are more likely to fail math and reading and are less likely to graduate. To resolve the achievement gap, historical practices that focus on educational equality, treating all students the same, must be replaced with efforts that advance educational equity, ensuring all students have the resources they need so they graduate prepared for success after high school (Hanover Research, 2017).

As provided in Republic Act 9298, also known as the Philippine Accountancy Act of 2004, applicants may practice the accountancy profession only upon successfully passing the licensure examination. Hence, graduates need to pass the said exam to be academically successful (Gimena et al., 2015). Since working professionals need higher levels of educational attainment

and degrees to handle technologically demanding jobs, academic success is indispensable (Regier, 2011).

Philippine CPA Licensure Examination is one of the few difficult, demanding and enduring professional exams both in terms of scope and depth of testing one's knowledge of technical concepts and applications (Lianza, 2016). It is logical to believe that a new or recent graduate of an accredited school should be able to perform the basic procedures required for the practice of profession; however, in reality many recent graduates fail board examinations (Jessee, 2010).

To help students step into the business or real world after 4 to 5 years, they should be prepared academically and mentally to master the concepts and theories of accounting. To pass the Certified Public Accountant Licensure Examination (CPALE) is the first step. This is because their rating in licensure examinations serves as the measure of the graduate's competency and the effectiveness of the university's curriculum (Lianza, 2016).

Mock examinations can benefit a student in many ways. It can serve as a tool to improve mastery and recall, rather than viewing the exam as a threat or a judgment on their knowledge; some students see the mock examination as a way to improve their mastery and memory. A high score in a mock examination means a student is ready; a low score indicates that more work is needed, including revising strategies and building the skills necessary to perform under pressure. Passing the board examination was a common measure of the quality of learning (Lianza, 2016). It is the greatest goal of every accountancy student.

CPALE proves the graduates' skills and qualifications in a particular profession. A student needs a lot of time to study, as well as self-discipline, patience, and determination (Manalo, 2010).

According to the university registrar's data, roughly 10% to 15% of students who took the accountancy program graduated (Gimena et al., 2015), and approximately 22% of the participants in this study were graduates from 2009 to 2018. Due to the program's retention policy, the number of students who survive to graduation has decreased, and not all graduates are successful in the Certified Public Accountant (CPA) Board Examination despite a seeming increase in the percentage of graduates at the university. The situation is also suitable for other universities and colleges in Cebu and even throughout the country. With the ongoing challenge faced by universities that offer Bachelor of Science in Accountancy (BSA) program, there is a necessity to conduct a correlational study and predictor analysis on the various dimensions of instructions to identify possible areas that need to be enhanced or developed and to craft an intervention scheme that can help increase the percentage of successful accountancy students who can pass not only the rigorous academic training in the program but also the CPA Licensure Examinations.

FRAMEWORK

This study is anchored on the Three-stratum Model of Human Cognitive Abilities by John Carroll. He proposed the three levels as Stratum III-the general level; general intellectual ability,

similar to g; Stratum II-the broad level; that includes eight factors, namely; fluid intelligence, crystallized intelligence, available memory and learning, broad visual perception, broad auditory perception, immense retrieval ability, broad cognitive speediness, and processing speed, and Stratum I-the specific level; more specific factors grouped under the Stratum II factors (Plucker, 2018; Schneider & McGrew, 2012).

The first level, the general level, is strongly connected to Spearman's g factor of mental ability. In his Two-Factor Theory of Intelligence, Spearman posited that the relationships among intelligence variables could be best explained by assuming a single factor of mental ability that governs them, which he called g, standing for general intelligence (Caroll, 1997). The majority of the positive associations among specific measures of human cognitive abilities, such as scores from intelligence test batteries, can be parsimoniously represented by the general factor, also known as psychometric g (Floyd et al., 2009).

Spearman proposed that intellectual structure has two components: the general intelligence, g, influences performance on all mental tasks, while another element, specific ability, influences performance on a particular job. The latter ability explains differences in returns across tasks, since this other component is specific to certain aspects of intelligence. This suggests that individuals have varying levels of general knowledge, which differ from person to person on a given task (Beaujean, 2015).

This type of knowledge implies further that general intelligence can be subdivided into components or abilities (Keith & Reynolds, 2010). For the second stratum, the broad skills are crystallized intelligence or comprehension-knowledge (Gc), which involves the breadth, depth, and the ability to communicate a person has acquired knowledge and reasoning using formerly learned experiences or procedures. In addition, fluid intelligence, or fluid reasoning (Gf), includes the broad ability to reason, form concepts, and solve problems using specific information or novel procedures. At the same time, general memory and learning (Gy) relate to the ability to comprehend and grasp information in immediate awareness and then use it within a few seconds. Moreover, the broad retrieval (Gr) and broad cognitive speediness (Gs) refer to the capability to accumulate information and smoothly extract it later in the thinking process (McGrew, 2005).

Moreover, broad visual perception or visual processing (Gv) is the capacity to perceive, scrutinize, integrate, and discern visual patterns, including the ability to hold and remember visual representations. It also includes broad auditory perception or auditory processing (Gu), which involves analyzing, integrating, and distinguishing auditory stimuli. The aptitude to convert and discriminate speech sounds presented under distorted conditions, processing speed (GT), and the competence to demonstrate automatic cognitive tasks, specifically when pressured to sustain focused attention (McGrew, 2005).

There is a possibility that the broad abilities on the second stratum are not distinct entities applied to a wide range of tasks, but rather that certain combinations of them are used together in the same kinds of tasks. The specific-level factors could be abstractions in themselves, composed of a multitude of subcomponents (Schneider, 2014).

Moreover, Thurstone tested human subjects on various abilities and identified seven primary mental skills related to intelligence. This paved the way for the Theory of Primary Mental Abilities, in which seven independent factors of intelligence emerged: spatial ability, numerical ability, word fluency, memory, perceptual speed, verbal comprehension, and inductive reasoning. Thurstone's work revealed two groundbreaking results: the specific and unique profile of mental abilities surfaced when he tested students having similar Intelligence Quotients (IQ) scores, supporting the specific intelligence, and failure to find different and unique primary seven abilities when administering tests to intellectually heterogeneous students, promoting the general factor of intelligence. Other researchers interested in the study analyzed Thurstone's work and found that those who scored high in one category often did well in the other areas (Plucker, 2018; Myers, 2009).

Howard Gardner, in *Frames of Mind* (1983), proposed in his Theory of Multiple Intelligences that intelligence is composed of multiple abilities, or eight intelligences: linguistic, musical, spatial, intrapersonal, interpersonal, logical-mathematical, bodily-kinesthetic, and naturalist. He also considered the possibility of a ninth intelligent ability: existential intelligence. Gardner initially explained that a person who excelled in one ability would lack in another. Instead, his results showed that each of his eight intelligence factors correlates positively with the others. After subsequent analysis, he found that logic, spatial abilities, language, and mathematics are all interrelated in a certain way, giving justification for an underlying g factor that is generally prevalent in almost all intelligence (Lucas & Corpuz, 2014; Kalat, 2014; Myers, 2009; Visser et al., 2006).

Robert Sternberg acknowledged multiple intelligences but limited his scope to just three; hence, the Triarchic Theory of Intelligence: analytical, creative, and practical. He defined analytical intelligence as problem-solving skills in tests and academics. Creative intelligence is the ability to adapt to current conditions or generate novel ideas. Practical knowledge is the everyday logic used when multiple explanations or decisions are available. When he analyzed his data, the relationships among the three bits of intelligence surprised him. The results matched those of the other psychologists. All three mental abilities highly correlate with one another, and evidence indicates that a single essential factor, g, was the primary influence (Lucas & Corpuz, 2014; Kalat, 2014; Myers, 2009; Gottfredson, 2003).

This investigation requires determining the correlation between the psychometric examination results, grade-weighted average (GWA), and pre-board and Certified Public Accountants Board Examination results of the Bachelor of Science in Accountancy graduates at the higher education institution (HEI).

Psychometric tests are a standard and scientific method used to measure an individual's mental capabilities and behavioral style. Psychometric tests measure candidates' suitability for a role based on the required personality characteristics and aptitude (or cognitive abilities). They identify the extent to which candidates' personalities and cognitive abilities match the requirements of the role (Institute Psychometric Coaching, n.d.).

Before enrolment in the BSA program, students need to take and pass the psychometric examination in intelligence quotient (IQ), abstract reasoning, arithmetic ability, and language comprehension.

IQ, or intelligence quotient, is a measure of the ability to reason and solve problems. It essentially reflects how well a person did on a specific test compared to others in a specific age group. While test scores may vary, the average IQ on many tests is 100, and 68 percent of scores fall between 85 and 115. While IQ can predict academic success, experts caution that it is not necessarily a guarantee of life success. Sometimes people with very high IQs do not fare so well in life, while those with average IQs may thrive. To understand what an average IQ score is and what it means, it is essential to first understand how IQ is measured. While different test publishers use different scoring systems, many modern IQ tests set the average (or mean) score at 100 and the standard deviation at 15 so that scores conform to a normal distribution. On many tests, a score of 100 is considered the average IQ (Cherry, 2019).

Moreover, 68 percent of scores fall within one standard deviation of the mean (between 85 and 115). That means nearly 70 percent of people score within plus or minus 15 points of the average. 95 percent of scores fall within two standard deviations (between 70 and 130). Outliers beyond those points represent only a small portion of the population, which means that only a small percentage of people have a very low IQ (below 70) or a very high IQ (above 130). While scores below 70 may indicate a developmental or learning disability, scores above 130 may indicate giftedness (Cherry, 2019).

The Abstract Reasoning Test assesses students' ability to use non-verbal reasoning skills. Such reasoning is widely applicable across the curriculum and beyond the school and is related to educational outcomes. Such items are beneficial when assessments need to be done independently of language skills. Abstract items require the students to solve problems by hypothesizing, identifying, and applying patterns and relationships presented in diagrammatic form (Australian Council for Educational Research, 2011).

There is no 'passing' score for the abstract reasoning test, as in all other aptitude tests. A person's abstract test result is calculated relative to others in similar roles. This means that even if he or she correctly answered most of the questions on the abstract reasoning test, the result may still be lower than that of others in similar roles (Institute of Psychometric Coaching, n.d.).

Suppose a person possesses above-average abstract reasoning. In that case, he or she will be able to solve the Rubik's cube, read or create maps easily, good at chess, learn new skills quickly, be creative and good at designing fashion, interiors, engineering, designs, good at mentally manipulating objects [useful in science and engineering], excel in repairing machines, good at strategy (sound in business, battlefields, urban planning, a methodical planner, good in analyzing complex problems, excel in art (sound in careers such as photography, film making, sculpture, and others), visualize structures easily (useful in architecture) remember routes very quickly (useful for taxi and truck drivers, and able to see the big picture (Quora, n.d.).

Arithmetic Reasoning is the second subtest of the ASVAB. These questions are designed to test the ability to use mathematics to solve various problems that may be found in real life, in other words, math word problems (Powers, n.d.).

Language comprehension is an overarching term used to describe a student's ability to derive meaning from written and oral language. As indicated in the graphic, a student must be capable of both word attack (decoding and sight-word knowledge) and language comprehension to gain meaning from written text. As is true of any simple multiplication equation, if either of the factors (decoding or language comprehension) is zero, a student's ability to gain meaning will be zero. Three components of language comprehension include vocabulary knowledge, background knowledge, and knowledge of the text and its sentence structures (Informed Literacy, n.d.).

Another dimension in assessing the success factors of the BSA program is their performance in their academic subjects, pre-board examination, and Board Examination.

Academic performance is the extent to which a student, teacher, or institution has achieved their short or long-term educational goals. Cumulative GPA and the completion of educational benchmarks, such as secondary school diplomas and bachelor's degrees, represent academic achievement. Academic achievement is commonly measured through examinations or continuous assessments. However, there is no general agreement on how it is best evaluated or which aspects are most important—procedural knowledge, such as skills, or declarative knowledge, such as facts (Ward et al., 1996).

Furthermore, there are inconclusive results regarding which individual factors predict academic performance; factors such as test anxiety, environment, motivation, and emotions require consideration when developing models of school achievement. Now, schools are receiving money based on their students' academic achievements. A school with more academic achievements would receive more funding than one with fewer achievements (Ziedner, 1998).

A Mock Board Examination is an exam made to imitate the actual board examination. The Mock board examination is not made or influenced by the Professional Regulation Commission (PRC). The Professional Regulation Commission does not require or mandate that any school contact the PRC prior to administering any mock board examination. Because the Mock Board exam is similar to the actual Board examination, it gives students a sense of what the actual Board examination will be like. Mock examination results provide students with feedback to help them focus on areas where they should improve. For the past years, it has provided examiners with an opportunity to see the areas where they excel, the areas where they need to give more attention, and how an actual licensure examination would look and feel (Montemayor et al., 2009).

Also, Pre-board exams are another title of weapon used by the school teacher to create a mass awakening in the students before the board exams. In simple language, it means, "How much are you prepared to take in the storm with confidence?"

Board exams are quite important for a student. It is a gateway to a lot of career options to pursue further. Teachers in school often push students to do better in pre-board examination. The grilling session in pre-board exam makes the student feel confident to do best in their boards' exams (DPSG Palam Vihar, 2023).

Pre-board exams are conducted keeping the preparation level in mind of a student. It is basically a replica of board exam and to a great extent, it makes the student feel the pressure of being in board exam. It is quite important to pay proper attention to your pre-board exam preparations because it tells your best shots. As the month of board exams approaches, the tension of each student starts creeping in and they get wonky about the syllabus and their preparation level. Therefore, pre-boards are essential here to help the student know where they stand when it comes to each subject. It is like any other exam or best to put – a mock exam to your subject. If you are not super confident about your board examination, on the basis of your attempt in pre-boards, you will know your weak points that need extra attention and strong points that will need a revision glance (DPSG Palam Vihar, 2023).

Ballado-Tan (2014) found in his study about the relationships between academic performance, students' aspirations, attitudes, study habits, and the performance in the CPA licensure examination that the academic performance expressed as GPA, attitude towards accounting, and good study habits have a significant impact on the performance in the CPA board examination.

In another study of Ballado-Tan (2015) involving performance in the accountancy licensure examination of a particular university with a look on specific aspects of curriculum and instruction, it was revealed that with the set of predictors used, namely; curriculum and program of studies, teaching, admission and retention, administration support, physical setup and facilities, library collection and holdings, physical facilities and laboratory, computer typing and laboratory and function rooms, only the instruction and administration support have a significant relationship to the CPA board examination results.

Jalagat (2016) ascertained in his study that graduates' performance in Math, English, and Professional Accounting subjects, Quality Point Index (QPI) aspect of socio-demographic profile, school policies on admission and retention, teachers' rank in the teacher's profile, are reliable indicators or factors for successful performance in the CPA board examination.

Herrero (2015) found in her research that scholarships, grade-weighted averages, and attendance at review courses offered by prestigious review schools were positive contributors to passing the CPA board examinations.

Pascua and Novelita (2011) conducted a study on the correlation between personal and educational factors and the LET performance of Teacher Education graduates. The results showed that Degree Course, GPA, English Proficiency, and Admission Test Score were significantly related to LET performance. This result means that the higher the GPA and English Proficiency, the higher the expected LET performance, and that as the respondent's Admission Test Score increases, the tendency is for the LET score to be high.

Quiambo et al. (2015) studied predictors of Board Examination performance of the College of Education graduates. The findings revealed that teachers' educational attainment and length of service, the quality of library and laboratory facilities, and students' intelligence quotient and grade point average were highly significant determinants of passing the licensure examination for teachers.

Gimena et al. (2015) examined the psychometric results in the areas of intelligence quotient (IQ), abstract reasoning, arithmetic, and language of Bachelor of Science in Accountancy students, in relation to grade point average (GPA). It was revealed that abstract reasoning and arithmetic ability were significantly related to academic performance, as evidenced by GPA, indicating that these variables significantly contributed to academic success.

Moreover, Abella et al. (2018) found a correlation between Certified Public Accountant (CPA) Mock Examinations and the CPA Licensure Examination (CPALE) among Accountancy graduates at the University of Saint Louis in 2018 and 2019. The researchers used documentation to gather the data. The results of the 2018 and 2019 mock examinations and the CPA Licensure Examination for the study were obtained through a request letter sent to the Philippine Regulatory Commission and the Certified Public Accountant Reviewer of the Philippines. The data on CPA mock examination scores and CPALE scores were analyzed using frequency distributions, and the correlation between the two was assessed using Pearson's *r*. The study revealed that even when a graduate passed the mock examination with high remarks, it does not provide reasonable assurance of passing the CPALE, and vice versa.

Further, the paper by Mahinay (2024) proposed identifying the necessary interventions to enhance graduates' performance in the Certified Public Accountant Licensure Examination. It aimed to examine the relationship between identified student factors and the inconsistency in graduates' performance in the CPA board exams from 2016 to 2019. A descriptive research design was employed, with 28 Bachelor of Science in Accountancy graduates who took the CPA board exam surveyed using a standardized checklist. Qualitative data, serving as secondary data, were utilized through documentary analysis. Additionally, in-depth structured interviews were conducted to support the quantitative data. Results indicated that among student-related factors, only habits significantly impacted graduates' performance in the CPA board exam. Other factors, such as academic performance, aspiration, and attitude towards accounting, were found to be insignificant. The study advocates time management, comprehensive self-management, the development of analytical skills, and a consistent desire to pass the CPA board exam and become an accountant.

OBJECTIVES OF THE STUDY

This study aims to assess the relationships among the applied dimensions in the accounting program such as (1) psychometric examination results in terms of intelligence quotient (IQ), abstract reasoning, arithmetic, and language comprehension that were taken by the students prior to enrollment in the Bachelor of Science in Accountancy program; (2) general weighted average (GWA); (3) pre-board examination results and (4) Certified Public Accountant Licensure Examination (CPALE) results of the BSA graduates. The results will be utilized to formulate an

intervention scheme to develop the students' accounting educational experience that can be translated to improve or maintain board examination results and the Program Outcomes (PO) and Program Educational Objectives (PEO).

METHODOLOGY

This study utilized the descriptive-correlational research design to ascertain the relationships among the psychometric, general weighted average (GWA), pre-board, and Examination results of BSA graduates, and the prediction of CPA Board Examination results.

The research site for this investigation is a non-stock, non-profit educational institution. It is known for providing quality education at low tuition fees. It offers programs across various fields in Business and Accountancy, Information Technology and Computer Systems, Education, Engineering, Hospitality and Tourism Management, Criminology, Nursing, Medical Technology, and Juris Doctor. The student population of the higher educational institution was 5,302 in the first semester and 4,627 in the second semester when this study was conducted. The student population of the College of Business and Accountancy was 1,173 and 1,025 students in the first and second semesters, respectively, who were enrolled in various programs in Accountancy, Accounting Technology, or Accounting Information Systems and Business Administration in the four fields of specialization: human resource, financial, marketing management, and management accounting. For the accountancy program, there were one hundred seventy-four (174) students enrolled in the first semester of 2018-2019, while during the second semester, there were only one hundred eleven (111) students.

Utilizing a simple random sampling technique, the research subjects of this study were the thirty-nine (39) BSA graduates from school years 2015-2016, 2016-2017, 2017-2018 whose records at the Guidance Center, Registrar's Office, and Dean of the College of Business and Accountancy of the university were found available.

The researcher in this study gathered information on diagnostic or psychometric examination results from the Guidance Office, the general weighted average from the Registrar's Office, and pre-board examination results from the Dean of the College of Business and Accountancy.

The proponents sought approval to conduct the study from the Campus Academic Director of the University of Cebu-Banilad. Once permission was granted, the proponent personally collected data from the relevant university offices.

For data analysis, the simple percentage method was used to interpret the profile of subjects based on their diagnostic examination results, general weighted average (GWA), pre-board, and Certified Public Accountant Board examination results. In addition, the Pearson product-moment correlation coefficient (r) was used to determine significant relationships between diagnostic test results in intelligence quotient (IQ), abstract reasoning, arithmetic, and language proficiency, and the GWA and GWA with pre-board. Furthermore, the Chi-Square Test of Independence was applied to ascertain the relationship between the pre-board and the CPA Board Examination

results. Finally, Multiple Logistic Regression Analysis was used to analyze which of the three above dimensions of accounting instruction can predict success in the CPA Board Examination.

RESULTS AND DISCUSSIONS

This part displays the results on the psychometric or diagnostic examination results, academic performance based on the grade weighted average (GWA), pre-board, and Certified Public Accountant Licensure Examination (CPALE) performance of the Bachelor of Science in Accountancy graduates of the higher education institution.

Table 1. Diagnostic or psychometric test results (n = 39)

Components	Frequency	Percentage (%)
Intelligence Quotient		
Superior	3	7.69
Above Average	10	25.64
Average	24	61.54
Below Average	2	5.13
Abstract Reasoning		
Above Average	15	38.46
Average	21	53.85
Below Average	3	7.69
Arithmetic Ability		
Above Average	17	43.59
Average	21	53.85
Below Average	1	2.56
Language Comprehension		
Above Average	5	12.82
Average	28	71.80
Below Average	6	15.38

Legend: 128 and above-Superior; 112-127-Above Average; 88-111-Average; 78-87-Below Average; 71 and below-Low

As shown in Table 1, most of the research subjects, or 61.54%, had an average intelligence quotient (IQ), while only three (3), equivalent to 7.69%, had a superior intelligence quotient. However, only two (2) subjects, comprising the minor proportion of 5.13%, had a below-average intelligence quotient. This result indicates that the IQ of Bachelor of Science in Accountancy graduates at the university falls within the mediocre range.

An average IQ means that a person has average reasoning and problem-solving skills. The IQ score might be a good general indicator of one's reasoning and problem-solving abilities, but many psychologists suggest that these tests do not tell the whole story. An average IQ score might not tell the entire story about what a person can perform and achieve. A few things they do not measure are practical skills and talents. One might have an average IQ score but also be a great musician, a creative artist, an incredible singer, or a mechanical whiz (Cherry, 2017).

Likewise, the majority, or 53.85% of the research subjects, had an average level of abstract reasoning, while only 7.69% had a below-average level. This result indicates that Bachelor of Science in Accountancy graduates have greater competence in logical reasoning.

Abstract reasoning is a hallmark of human intelligence. A famous example is Einstein's elevator thought experiment, in which Einstein reasoned that an equivalence relation exists between an observer falling in uniform acceleration and an observer in a uniform gravitational field. The ability to relate these two abstract concepts allowed him to derive the surprising predictions of general relativity, such as the curvature of space-time. A human's capacity for abstract reasoning can be estimated (Barrett et al., 2018).

Moreover, the data revealed that 53.85% of the research subjects had an average arithmetic ability, 17 (43.59%) had an above-average arithmetic ability, and only 1 (2.56%) had a below-average arithmetic ability. Bachelor of Accountancy (BSA) students are more competent in performing numerical work, as the course involves computations in accounting, taxation, and auditing.

Lastly, regarding language comprehension, the majority, or 71.80% of the subjects, had an average ability; 6, or 15.38%, had below-average ability; and the smallest percentage, or 12.82%, had above-average ability, which means that most of the accountancy students were also competent in English subjects.

Table 2 shows the academic performance of the Bachelor of Science in Accountancy students for the school years 2015-2018

Table 2. Academic performance of the research subjects (n = 39)

Academic Performance	Frequency	Percentage (%)
Very Good	2	5.13
Good	37	94.87

Legend: 1.0- Excellent; 1.1-1.5- Very Good; 1.6-2.5-Good; 2.6-2.9-Fair; 3.0- Passing; 5.0- Failed

Out of thirty-nine (39) accountancy students of the university during the period mentioned above, only thirty-seven (37) of them had an excellent academic performance based on their grade weighted average (GWA). Further, the data showed that only a few had very good academic performance, comprising 5.13%. It can also be noted that none of the accountancy students showed either excellent or failing academic performance. This result suggests that the BSA struggled to achieve excellent academic performance while pursuing the Bachelor of Science in Accounting.

Further, one reason no research subjects failed academically was the retention policy in the BSA program, which required them to obtain at least a grade of 2.5 in the professional or significant subjects.

Table 3. Research subjects' pre-board & board examination performance (n = 39)

Indicators	Frequency	Percentage (%)
Pre-Board Examination		
Passed	1	2.56
Failed	38	97.44
CPA Licensure Examination		
Passed	24	61.54
Failed	15	38.46

As shown in Table 3, 97.44% of the respondents failed the pre-board examination, and only 1 or 2.56% passed. This result indicates that the Bachelor of Science in Accountancy graduates still need to study the subjects covered in the Certified Public Accountants (CPA) Board Examination. Aside from that, they also needed to strengthen their ability to withstand pressure so that when the day of the examination comes, they will not be blocked out or even break down, which might lead to their failure in the said board examination.

Moreover, of the thirty-nine (39) students who graduated with the Bachelor of Accountancy degree in the university, only 24, or 61.54%, passed. In contrast, 15 (38.46%) failed or did not hurdle the CPA licensure examination.

Table 4. Results of the test of significant relationship between diagnostic test results and general weighted average (GWA)

Variables	Pearson r Computed Value	df	Pearson r Critical Value	P-Value	Decision	Interpretation	Strength
Intelligence Quotient	0.659	60	0.250	0.030	Reject	Significant	High Correlation
Abstract Reasoning	0.646	19	0.433	0.043	Reject	Significant	High Correlation
Arithmetic Ability	0.656	15	0.482	0.033	Reject	Significant	High Correlation
Language Comprehension	0.518	12	0.532	0.055	Accept	Not Significant	Slight Correlation
Factor Average	0.620		0.424	0.040	Reject	Significant	High Correlation

Significant at $\alpha = 0.05$ level (2-tailed)

The data in Table 4 shows a significant relationship between the intelligence quotient of research subjects and their academic performance in terms of the grade weighted average (GWA) as indicated by the P-value of 0.03, which is less than the 0.05 level of significance. This result means that those with a high IQ are more likely to perform well in the major courses required in the Bachelor of Science in Accountancy (BSA) curriculum.

Further, there is a significant relationship between abstract reasoning ability and the research subjects' academic performance, as indicated by the GWA P-value of 0.043, which is lower than the 0.05 level of significance. This result indicates that students with high non-verbal ability also demonstrate high competence in the subjects they took in the BSA program.

Also, another significant relationship exists in the research subjects' arithmetic ability and their academic performance in terms of the grade weighted average (GWA) as indicated by the P-value of 0.033, which is also less than the 0.05 level of significance. This data shows that students who are very good at mathematics will also perform well in the significant subjects, especially accounting, taxation, auditing, finance, and financial management, in the BSA program, since it entails numerical computations.

However, there is no significant relationship between the language comprehension of the research subjects and their academic performance in terms of a general weighted average (GWA), as reflected in the computed Pearson r of 0.518, which was lower than the critical value of 0.532. Thus, the null hypothesis is accepted. This result signifies that those very good in English reading, language, literature, and oral communication may not perform well in primary subjects in the accountancy program.

Lastly, there is a significant relationship between the diagnostic test performance of the research subjects and their academic performance in terms of their general weighted average (GWA), as denoted by the p-value of 0.04. Hence, the null hypothesis is rejected. This result indicates a strong correlation between the diagnostic test and the general weighted average (GWA) at the 0.05 level of significance. So, those with a high rating in the psychometric examination have a higher probability of succeeding in meeting the academic rigors of the Bachelor of Science in Accountancy program.

Table 5. Results of the test of significant relationship between general weighted average (GWA) and pre-board examination

Variables	Pearson Computed Value	r df	Pearson r Critical Value	P-Value	Decision	Interpretation	Strength
General Weighted Average And Pre-Board Examination	0.648	21	0.413	0.00001	Reject	Significant	High Correlation

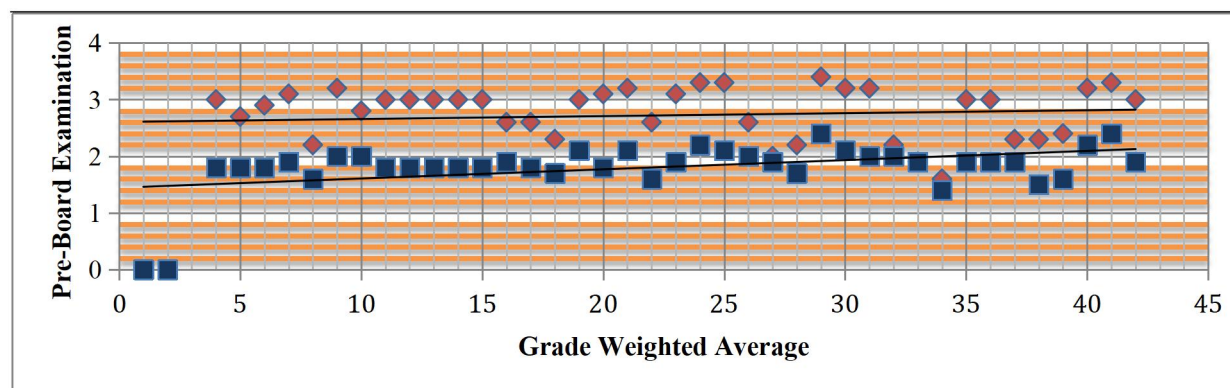


Figure 1. Scatter plot of Pre-Board Examination and Grade Weighted Average (GWA)

A scatter plot summarizes the results, as shown in Figure 5. A Pearson product-moment correlation coefficient was computed to assess the relationship between the research subjects' pre-board examination performance and their academic performance, as measured by grade-weighted average (GWA). The results indicate a positive correlation between the two variables, $r = 0.648$, $n = 39$, with a p-value of 0.00001.

Overall, there is a strong positive correlation between the academic performance, as measured by the grade-weighted average (GWA), and the pre-board examination performance of Bachelor of Science in Accountancy graduates. The increase in the grade-weighted average was correlated with higher pre-board examination results.

Table 6. Results of the test of significant relationship between the pre-board and CPA licensure examination performance

Variables	Computed Value of Chi-Square	df	Critical Value	P-Value	Decision	Interpretation
Pre-board and CPA Licensure Examination Performance	3.141	1	3.841	0.0520	Accept	Not Significant

Table 6 reflects the results on the test of a significant relationship between the pre-board performance of the University of Cebu-Banilad's BSA graduates and their Certified Public Accountant (CPA) licensure examination performance. The findings showed no significant relationship between the pre-board and CPA licensure examination performance as denoted in the computed value of chi-square of 3.141, which is lesser than the critical value of 3.841. Thus, the null hypothesis was accepted. This result means that the pre-board examination has no connection to the graduates' performance Bachelor of Science in Accountancy to their CPA licensure examination performance.

Mock boards can assist educators in facilitating experiences to enhance student preparation for board exams and developing a mock board experience philosophy that drives strategic planning and resource allocation. However, Mock Board Examination does not give areasonable assurance as a predictor in the performance of Accountancy graduates in the CPA Licensure Examination (Abella et al., 2020).

Table 7. Multiple regression analysis for diagnostic examination, grade weighted average and pre-board examination as predictors of CPA board examination results

Source	Sum of Squares	df	Mean Squares	F	P
Regression	36.875	2	18.4375	133.98	0.0001
Residual	15.6882	114	0.1376		
Total	52.5632	116			

P is significant (0.5 Level)

Table 7 presents the results of the multiple regression analysis for intelligence quotient (IQ), academic performance as measured by the grade-weighted average (GWA), and pre-board examination performance as predictors of success in the CPA board examination. The result above indicates that the regression effect is statistically significant because the computed F-value of 133.98 is greater than the tabular value of 3.08, and the p-value for the regression effect is less than the 0.05 level of significance.

Therefore, there are significant differences among the means at the 0.05 (5%) level of significance. This result implies that the grade-weighted average may not be a good predictor of CPA board examination results, as are the other predictors. So those Bachelor of Science in Accountancy (BSA) students who are performing well in their subjects have greater competence to pass the CPA Licensure Examination.

CONCLUSIONS

Intelligence quotient, abstract reasoning, and arithmetic ability contributed significantly to the academic success of the Bachelor of Science in Accountancy graduates of the University of Cebu. So those students who are competent in performing mathematical computations would also perform well in the courses in the BSA curriculum. Moreover, those students who are also performers in the academic courses pass the pre-board examination before the actual board exam. Lastly, the pre-board examination is a strong predictor of success in the Certified Public Accountants Licensure Examination (CPALE).

TRANSLATIONAL RESEARCH

The results will be used to create and implement program-level intervention schemes that can help increase the percentage of successful accountancy students who pass the rigorous academic training in the program and the CPA Licensure Examination, and who practice the profession professionally and ethically. There must be a focus on capitalizing on students' strengths as evidenced by their diagnostic test. So the teaching and learning approach adopted by the teachers in the Bachelor of Science in Accountancy program should harness students' arithmetic and abstract reasoning abilities, enabling them to become more competent in



analyzing and computing accounting, taxation, and auditing problems. So, the course syllabi should align with the academic strengths required for the BSA program.

Moreover, there should be alignment between the pre-board examination questions and the actual CPA Licensure Examination questions to prepare better and become more familiar with them. Lastly, this can also serve as the basis for further research exploring additional predictors of the success of BSA graduates in the board examination..

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