

Psychological Test Results as Predictors of Academic Performance of CCE First-Year Students

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DOI: <https://doi.org/10.56293/IJMSSSR.2025.5622>

IJMSSSR 2025

VOLUME 7

ISSUE 3 MAY – JUNE

ISSN: 2582 – 0265

**Abstract:** Mental capacity, depression, and low self-esteem can affect young adults' learning and cognitive capacities, which may affect their academic performance. This study examined the connection between students' academic success and mental and emotional health. The data samples come from several degree programs offered by the College of Computing Education at the University of Mindanao, including the Bachelor of Science in Education and Multimedia Computing, the Bachelor of Science in Computer Science, the Bachelor of Science in Information Technology, and the Bachelor of Science in Library and Information Science. The data were statistically analyzed using frequency, Mean, Standard Deviation, Pearson correlation, Multiple Linear Regression. Mental capacity, depression, and self-esteem are associated with participants' academic performance and are identified as psychological functioning factors used in the test. Academic performance was measured using Raven's Standard Progressive Matrices (SPM), while the indicated indicators were calculated using the College Adjustment Scale (CAS).

SPSS (version 26-2018) was applied to analyze the collected data. **RESULTS:** Studies show that mental capacity and academic achievement are significantly positively correlated ( $r = 0.32$ ;  $p = 0.00$ ), and a strong mental ability translates into higher academic success. The relationship between depression and academic achievement is inverse ( $r = -0.34$ ,  $p = 0.00$ ). Depressive symptoms have a detrimental effect on student performance and hinder academic achievement. Furthermore, academic achievement and self-esteem have a negative association ( $r = -0.26$ ,  $p = 0.00$ ), indicating that poor self-esteem tends to lower academic success. The findings imply that pupils are likely to do better academically when they receive emotional support to increase their self-confidence. Students who experience low rates of depression perform well academically and make informed decisions about their degree programs, taking aptitude and ability into account.

**Keywords:** descriptive-correlational, standard progressive matrices, college adjustment scale, College of Computing Education, University of Mindanao

**Introduction**

Schools already widely used standardized examinations to assess new first-year students' preparedness. Most colleges and institutions demand this standardized test as a prerequisite for entrance. The admission test is a credible and trustworthy tool that assesses students' fundamental abilities to meet the demands of postsecondary education. Nonetheless, consider proper calibration of each items content to accurately reflect the skills and aptitudes of the actual pupils. A comprehensive study conducted in the Philippines established the psychometric properties of the College Admission Test for K–12 graduates. The outcome of item analysis, however, showed that each test item used in the admission exam is typically complex. A comprehensive study conducted in the Philippines established the psychometric properties of the College Admission Test for K–12 graduates. The outcome of item analysis, however, showed that each test item used in the admission exam is typically complex. As a result, the admission test results indicate that students did poorly on the reading comprehension and math subtests. As a result, the admission test results indicate that students did poorly on the reading comprehension and math subtests. Therefore, every item on the admission exam be examined and updated to enhance its psychometric properties, ensuring objectivity and avoiding prejudices (Alvarado, 2023).

Admission exam requirements are no longer rigidly enforced at several postsecondary institutions, which have recently made them optional (C. T. B schools, 2021). As evidenced before and after the COVID-19 pandemic, many higher education institutions (HEIs) do not require these school-specific entrance requirements. Since the pandemic, there has been a significant rise in educational institutions providing open entry (Schultz, 2021). Nevertheless, many schools continue to use standardized exams as a prerequisite for admission, raising contentious questions about their validity as a predictor of academic achievement. According to research, standardized English competency test scores by themselves are insufficient as a foundation for college admission. When students apply to institutions, their English language competency exam results do not offer a comprehensive application review (Ihlenfeldt, 2022). Research has shown that candidates accepted into universities based on their academic performance or demonstrated non-academic attributes fare similarly (Kamis, 2023). A student's academic achievement, particularly in obtaining a bachelor's degree, cannot be reliably predicted or indicated by the entrance exam results. However, the nation's elementary and secondary schools, provide an educational framework that lessens the possibility of children failing at a young age (Alhazmi, 2023).

Certain universities and colleges in the Philippines have optional admissions criteria. With assistance from the Department of Education, the University of Mindanao offers open admission to incoming first-year students. Students in secondary school have more options when it comes to choosing a course of study than just how well they do on national admission exams that evaluate their aptitude in a range of topics. According to CMO No. 32 Series of 2015, students can choose from a variety of strands, including the Humanities and Social Sciences (HUMSS), Business Administration, Accountancy, and Management (BAAM), General Education (GE), and Science, Technology, Engineering, and Mathematics (STEM). According to CMO No. 105, Series of 2017, regardless of the secondary education track or strand they selected, all senior high school Grade 12 graduates starting in the academic year 2017–2018 are encouraged to seek college degrees.

In the local context, the University of Mindanao's open entrance policy maintains that students from various academic backgrounds, including private and public secondary schools, can be trained and discover their skills because some students are considered late bloomers. According to the study, late bloomers are most successful when their skills align with the organization's capacity to recognize, develop, and promote each worker for career progression. Late bloomers made more progress in their careers, as seen in the pay scales they targeted for promotions (Omar et al., 2011). Most late bloomers were content with their positions and believed that employers sought after them for work. Furthermore, the school adopted the philanthropic educational concept of "transformative education through polishing diamonds in the rough," which includes a variety of intervention initiatives aimed at helping students succeed academically. In addition to using effective teaching strategies, these programs offer training, seminars, one-on-one tutoring, and motivational events. After enrolling in their respective colleges, first-year students underwent psychological testing at the Guidance Services and Testing Center (GSCTC). These psychological assessments include the College Adjustment Scale (CAS), which assesses each first-year student's psychological and interpersonal functioning, and Raven's Standard Progressive Matrices (SPM), which measures mental capacity. The CAS covers topics like coping with the demands of college life and numerous related outside variables that impact on students' success and degree program completion.

This study will help assess the readiness of first-year students regardless of the degree program they took at the university. Students are welcome to enroll in any degree program despite the varied academic strands in their secondary education. Even though the Philippine Department of Education determines the academic strands of its pupils based on the results of the National Assessment exam. First-year students' academic difficulties are addressed by determining each student's unique intelligence and emotional state, utilizing intervention programs, and employing efficient teaching methods. The findings of this correlation study will also assist the majority of HEIs nationwide in reconsidering their admissions standards and allowing entrance exams to be optional. Instead of relying exclusively on the results of the National Assessment exam to determine a student's degree program, HEIs can concentrate more on each student's potential based on high school grades, extracurricular activities, recommendation letters, written essays, interviews, alternative learning systems (ALS), which raise students' grade level, and prior learning experiences (CMO No. 28 Series of 2013). CHED issued a policy encouraging students' freedom of choice with regard to ALS and A&T graduates. It states that the Department of Education secondary level graduates are eligible to be admitted to any degree program of their choosing. The 2009 CMO No. 30 Series and the DepEd Memo No. 027, Series of 2018, specify that high school graduates under the alternative learning system are eligible to enroll in HEIs. Further, this memorandum order helps ensure the college readiness of

incoming first-year students by encouraging HEIs to provide bridging programs for general education components equivalent to Grade XI and Grade XII in the senior high school.

As a criterion for admission, Philippine higher education institutions (HEIs) require incoming first-year students to take entrance exams. When deciding whether to accept a student into the specified degree program, the institution considers the exam results and the student's high school GPA. Current admissions requirements at most HEIs in the country were problematic since they mostly depended on entrance exam results to determine acceptance. Higher education institutions have used the assessment for many years to gauge students' academic performance in college. Students who perform better on the entrance exam will eventually become successful in college (Abdelfattah, 2022). Most minority pupils and children from low-income homes had limited access to test-prep sessions and resources before taking the admission exam. It is a challenge because most schools require entrance tests in order to admit students. Although there are numerous resources, grants, and scholarships accessible to students from all backgrounds, many students do not have the money to purchase study materials prior to admission examinations, which reduces their chances of being accepted into prestigious universities.

Studies have shown that achieving a desired college GPA is not solely determined by the administering standardized tests (Bai, 2014). Standardized tests such as the Scholastic Aptitude Test (SAT), American College Test (ACT), and College Entrance Exam (CEE) did not adequately reflect students' abilities. Most college candidates spend substantial time and money preparing for the college entrance exam. One of the controversial issues that HEIs are concerned about is standardized testing, especially when it comes to rural, underprivileged pupils. It is necessary to provide equitable possibilities for students from remote areas to take this test. Standardized tests can predict the GPA for four years of college. Additionally, the study confirmed that a student's high school academic performance is a reliable predictor of their college academic performance.

Additionally, a substantial correlation exists between ACT scores in math and English and first-year college GPAs. They also examined the relationship between ACT scores in math and English. It demonstrates that ACT scores and high school GPA were highly correlated. The GPAs for both math and English classes in high school and college are also strongly correlated. A recent study conducted in Malaysia found that students' past success on the English language proficiency test and their previous results on the mathematics portion of the Malaysian Certificate Examination (MCE) predict their future performance on the MCE. There is a correlation between students' English and math skills (Roslan, 2022). Studies found that admission entrance exam scores are less significant performance indicators than first-year course requirements and students' total academic attainment (GPA) for consideration while restructuring the program's admissions requirements (Golding, 2006). The contextualized test results obtained during the admissions process have a weaker and less reliable correlation with college performance than contextualized grades; these associations may be especially helpful for test-optional, test-free, and wider-access colleges that have not yet implemented the holistic admissions procedures (Bastedo, 2023). The high school GPA, math and high school English exams, and the college admission exams project the freshman grade point average (FGPA) in a different study. The college or admission exam results have very little bearing on the FGPA's overall prediction. It barely affects the FGPA's overall forecast across all test options. According to the results, the test selection may be beneficial or detrimental to an individual. Still, it had no appreciable effect on the over- and under-prediction of FGPA for students who were classified as poor or members of a racial or ethnic minority (Kretz, 2016).

Many schools and universities have decided to implement a test-optional admissions policy in order to encourage diversity and equity. Students who receive in-person or online live training from an expert teacher on test-taking tactics are more confident in scoring well on any standardized test ensuring improved performance on tests (Dodeen, 2015; Yee, 2019). Therefore, rather than preparing students for success in college, standardized examinations typically focus only on honing their test-taking skills. Furthermore, admission tests can accurately predict the future academic success of college applicants. A student's secondary education GPA, extracurricular activities, community service, recommendation letters, essays, and interviews are some of the many variables that come into play when assessing whether or not a student is prepared for college (Robinson, 2005). This study has identified three limitations. The primary study restriction was the considerable variation in first-year course completion times among students due to repeaters, dropouts, failures, and transfers. The study's second limitation is the unequal distribution of sampling data throughout the degree programs (BSCS, BSIT, BSIS, BSEMC, and BLIS). The study's data set primarily comprises BSIT students (71.31%), with the remaining programs accounting

for 28.69%. This distribution of students is the outcome of their nonattendance at the CAS and SPM tests. 259 first-year freshman students for the 2018–2019 academic year provided the data. The second study limitation is about the data from only five distinct degree programs offered by the College of Computing Education: a Bachelor of Science in Computer Science, a Bachelor of Science in Information Technology, a Bachelor of Science in Information Systems, a Bachelor of Science in Entertainment and Multimedia Computing, and a Bachelor of Library and Information Science. Third, the study did not cover the gender, students' age, ethnicity, socio-economic status, and income were not covered in this study.

Research has already observed the strong correlation between students' first-year college GPAs and their standardized test results. However, there is insufficient information or research to determine whether students' first-year college GPAs are impacted by their intellectual functioning and various emotional states, such as psychological distress, relationship conflict, low self-esteem, and difficulties making academic and career choices. Thus, this study examines the relationship between the grade point average (GPA) and the results of the intellectual and emotional functioning tests that CCE first-year University of Mindanao students in the 2018–2019 school year.

## **LITERATURE REVIEW**

This study's framework comes from Elger's Theory of Academic Performance in 2007. The theory strongly emphasizes six fundamental ideas to create a framework for explaining performance as well as gains in performance. Performing means achieving worthwhile outcomes. An individual or group working on a project together is called a performer. Performance level indicates the destination of a journey, which is performance development.

The present performance level comprises the following six elements: identity, knowledge, skills, context, fixed variables, and personal factors. There are three axioms recommended to improve performance in the actual world: (1) developing a performer's mindset, (2) immersing oneself in an engaging environment, and (3) engaging in reflective practice.

Accepting performance results challenges teachers because it allows them to see and perform better so they can assist also students under their care in learning and development. Harvard's Project Zero lends evidence of a close relationship between performance and comprehension learning (Wike, 1998). People are empowered and motivated to create outcomes that matter as long as they keep learning and growing. Higher education's primary goal has always been to foster collaboration and mutual learning among students to improve the world.

Humans can achieve amazing things. Daily practice in higher education also yields amazing successes. Teacher-advisors should continuously encourage student to follow their dreams. A wonderful bond in a relationship is established between a teacher and a student when teachers are always at the side of the student. Researchers consistently posed a fundamental query that sparked revolutionary breakthroughs in thought. A dean encourages cooperation among all college students to achieve significant results. The theory of performance is helpful in many learning contexts admirable achievements come from high-level performance. A Theory of Plan directs learning in classrooms, workshops, and other spaces often connected to learning in conventional contexts. The Theory of Plan guides learning in situations not often considered as learning settings based on unconventional contexts. A Theory of Planned Behavior guides organizational learning by looking at the organization's level of performance. A department's members can generate more successful research, more effective student learning, and a more effective culture as the department performs at a higher level.

As an instructor improves his performance, he may provide larger students with more in-depth instruction, improved skill development, and a closer connection to the subject. The following categories describe the outcomes of operating at a higher level: quality increases—products or results are more successful in meeting or beyond stakeholder expectations; capacity grows—the ability to generate more throughout; cost lowers—the amount of work or money needed to get a product decreases; knowledge improves—the depth and breadth of knowledge increases; identity and motivation rise as people acquire a better understanding of who they are as professionals and organizations identify their basic principles. Skills expand in breadth of application and ineffectiveness—the capacity to establish goals, persevere, maintain a positive perspective, etc.

Even while the performer or others can affect certain aspects that affect performance improvement, other factors are unchangeable. Three categories comprise the variables: the mindset of the performer. Activities that elicit happy feelings are part of the performer's thinking. A few examples are creating situations where the performer feels sufficient safety, letting failure be a normal part of achieving great performance, and setting tough goals. Engagement with a physical, social, and intellectual milieu can improve output and foster individual and expert growth.

Social connections, subject-matter knowledge, experiential learning, feelings (both positive and negative), and spiritual alignment are a few of the elements. Implementing reflective practices involves helping people recognize and learn from their experiences. Examples include rating one's performance right now, emphasizing accomplishments, identifying areas of strength and potential for improvement, evaluating and developing one's identity, and developing intellectual capacities.

The Theory of Plan provided here is comparable to other structures in the literature. The Parallel Curriculum proposes four parallel curriculums to emphasize the four modifiable components. The primary focus of links and the core curriculum is knowledge construction. The curriculum of practices emphasizes a focus on context and skill development. The identity curriculum focus on helping students grow as members of the professional community (Tomlinson, 2002).

The work of Bransford (Bransford, 2000) provides more evidence in favor of the axioms. Their paradigm incorporates assessment-centered, learner-centered, knowledge-centered, and community-centered teaching and learning. One aspect of the learner-centered component is the performer's mindset. Assessment-centered components integrate elements of reflective practice, whereas knowledge-centered and community-centered components advocate for immersion in an engaging environment. The established work (Pellegrino, 2001) on the importance of having a solid conceptual model, appropriate methods for gathering data, and a robust and trustworthy framework for concluding observations forms the foundation for reflective practice in organizational contexts.

### **Walberg's theory of educational productivity**

The idea of educational productivity (Walberg, 1982), one of the few theories of school learning that has undergone empirical testing, was also the foundation for this investigation. More than 3,000 papers thoroughly reviewed and integrated to create it (DiPerna, 2019). Studies analyzed 179 handbook chapters and reviews, 91 research syntheses, 91 research studies, and a survey of educational academics were analyzed to identify the most significant learning aspects (Greenberg, 2003). Survey shown 28 kinds of learning influences using a variety of methods. Social and emotional impacts link to eight of the eleven most important areas of variables: classroom management, peer group, school culture, student-teacher interactions, parental support, social-behavioral features, and motivational-effective attributes (Greenberg, 2003). Although the most viable avenues for reform are direct interventions in the psychological drivers of learning, organizational characteristics, laws, curriculum, and instruction considered indirect factors that may also impact learning. The targeted student learning characteristics—behavioral, social, motivational, emotional, cognitive, and metacognitive—are by far the most changeable factors that could significantly and favorably alter student results, according to a review of the research (DiPerna, 2022).

More recent research has confirmed that self-regulated learning techniques, social and interpersonal skills, and motivational orientations support academic performance (Zinz, 2004). Students who developed greater self-awareness and confidence in their ability to learn, who were more motivated, who set learning objectives, and who organized in their approach to work (self-regulated learning) performed better in the classroom, according to the widespread application of social-emotional learning (SEL) (Zinz, 2004). Furthermore, found enough evidence to bolster the concept of intellectual, social, and emotional learning (SEAL) (Weissberg, 2003).

Creating a stronger link through well-coordinated multiyear programming is a major task for researchers, educators, and legislators.

The conclusions of Walberg et al. align with research outcomes from several disciplines. For instance, confident youngsters overcome and achieve high levels of effort, motivation, and performance despite living in challenging and dangerous situations; the discovery inspired the "resilience" literature (Garmezy, 1993; Gutman, 2002). No single reason could explain "how" or "why" these resilient children are immune to the negative effects of their everyday environment based on a thorough examination of biological, social, and psychosocial factors (Wach, 2000). Along with cognitive skills, study habits, social skills, and the lack of behavioral issues were also proposed as promotive (direct) and protective (interactive) variables (Gutman et al., 2002). There are now eight main models of school learning (Haertel, G. et al., 1983). These models are grounded in psychological learning theory (Glaser, 1976) or time-based learning models (Bennett, 1978). Despite variations in the names of the constructs, majority of the eight theories identified variables such as aptitude, motivation, teaching quality, and amount of training (Haertel G. et. Al, 1983).

The social context of the classroom, the home environment, peer pressure, and the media were among the constructs underrepresented in the models. The discussion of Reynolds and Walberg in 1992 on the review of theories, multiple quantitative syntheses of classroom research, and secondary data analyses of large-scale national surveys, as cited by Haertel et al. in 1983, all generally support Walberg's worldwide model of educational production.

The classroom's social psychological environment, circumstances that promote learning in the home and peer group, and exposure to mass media are the four primary factors—student ability and motivation, quality and quantity of instruction, and possibly four additional or supportive factors—that multiply and diminish returns. Each of the four key variables seems to be required, if not necessary, at least in some minimal way for classroom learning (Haertel et al., 1983). One of the main conclusions of a large scale causal modeling study was that nine different educational productivity determinants would interact with one another in a complex way to explain school learning (Walberg et. al., 1986). Furthermore, variables such as motivation, prior achievement, and attitudes are some student characteristics that influence their academic performances.

One of the few theories of school learning that has undergone empirical testing is Walberg's theory of educational productivity, which was published in 1981 based on the analysis and integration of over 3,000 studies (DiPerna et al., 2002). Also, a study was conducted and has identified that are several critical variables as factors that contribute to student outcomes. These factors include classroom atmosphere, family environment, peer group, motivation, age/developmental stage, student ability/prior achievement, and exposure to mass media outside of school (Walberg, Fraser, and Welch, 1986). The first three criteria in the current context—ability, motivation, and age—reflect the learner's characteristics. While the fifth and fourth variables represent instruction (quantity and quality), the final four factors—classroom climate, home environment, peer group, and media exposure—reflect the psychological environment (DiPerna et al., 2002). In a more recent study, researchers in the same field categorized the pertinent body of knowledge about school learning into major construct domains, which included "Culture, Climate, Policies & Practices, School Demographics, Home & Community Contexts, Governance & Organization of State & District, Classroom Practices, Learner Characteristics". They tried to determine how important 228 variables were in predicting academic domains (Wang, Haertel & Walberg, 1993). Employing several techniques, the writers deduced that aspects like family environment, education, and psychology ("proximal" variables) exert a greater influence on academic performance than factors like school district and state policies and demographics ("distal" variables). More crucially, in this work's context, the set of proximal variables that had the biggest impact on learner outcomes were the attributes of the students such as social, behavioral, motivational, emotional, cognitive, and metacognitive (DiPerna, et. al., 2002).

## METHODOLOGY

### Research Design

This study applied descriptive correlational methodology. Researchers were able to characterize a population's characteristics and enable the identification of correlations or links between particular variables. A correlation analysis conducted to ascertain the link between the study's variables. A descriptive design is also necessary when using the correlational research approach, which assesses variables under observation by examining their degree of relationship (Seeram, 2019).

In the previous description of descriptive design, associations or relationships between variables are significant; thus, researchers applied correlational design to determine which domain of psychological and interpersonal functioning test and mentality correlates to what extent with their GPAs and further evaluated whether these associations considered either negative or positive relationships.

### Participants

The study group for this research consists of 122 students randomly selected from five (5) programs of the college enrolled as freshmen during the school year 2018-2019 at the College of Computing Education of the University of Mindanao. These students selected from two hundred fifty-nine (259) students enrolled during the school year 2019-2020 as sophomores who either finished their first-year level in various terms or did not finish their first-year degree from the university.

The research employed a basic sampling strategy. The data samples taken from a variety of undergraduate courses, including BS. B.S. in Information Technology (BSIT), BLIS (Bachelor of Library and Information Systems), BS in Computer Science (BSCS), Information System (BSIS) and Entertainment and Multimedia Computing (BS EMC–GD/DA), focus on digital animation and game development, respectively. This technique is appropriate since the grade point average (GPA) results from the Records and Admission Center (RAC) and Guidance Services and Testing Center (GSTC) psychological tests of first-year students matched. At the same time, the rest of the sample data of students discarded due to the unavailability of data from either psychological tests or GPA results. The matching of data represents 47% (122) of students from 259. The sample of 122 described in the study.

### Research Instruments

The researcher collected the data from the office of the university's Guidance Services and Testing Center (GSTC) as the result of previously conducted tests for first-year students' intellectual functioning and psychological and interpersonal functioning. A written notice before data collection asking for consent to use sensitive students' personal information conducted in compliance with the Data Privacy Act of 2012 and the guidelines accompanying it. The collection and use of students' personal information were deemed non-detrimental to the subject under study. This helped determine any possible intervention needed to strengthen their learning processes and correct behavioral conditions. The research instruments used in the study that obtained students' information as to their responses, namely: (1) Standard Progressive Matrices of Raven (SPM), which is a purely non-verbal estimate of fluid intelligence for measuring human intelligence and abstract reasoning commonly referred to as intellectual functioning of mental ability (MA), and (2) the academic problem (AP), anxiety (AN), interpersonal problem (IP), depression (DP), career problem (CP), suicidal ideation (SI), substance abuse (SA), self-esteem problem (SE), and family problem (FP) on the College Adjustment Scale (CAS) measure each student's psychological and interpersonal functioning.

To attain the study's primary objective, the researcher collected the final first-year students' GPAs from the Records and Admission Center (RAC), which conducted the correlation tests between GPAs and psychological and interpersonal functioning.

### Research Procedure

The students completed psychological test questionnaires that included the College Adjustment Scale (CAS) for psychological and interpersonal functioning, which was developed by Anton, W., and Raven's Standard Progressive Matrices (SPM) for intellectual functioning, which measures observation skills, clear thinking, intellectual capacity, and efficiency (Raven, 1994). J. & Reed, in 1991. Several techniques were used in the data analysis, including SPSS descriptive statistics, to determine the central tendency and variability of the grade point average (GPA) of first-year students and psychological tests. The Pearson correlation statistical test used to determine which domains of psychological tests in psychological and interpersonal functioning and intellectual functioning correlate with the respondents' grade point average (GPA). The multiple regression used to determine which domains of psychological tests predict academic performance.

RESULTS AND DISCUSSION

Central Tendency and Variability of GPA and Psychological Test Results

The considerations for evaluating the data gathered to fulfill the study's objectives given in this section. Three statistical methods employed in the study: Descriptive Statistics, Pearson Correlation, and Multiple Regression. Out of the 259 first-year students in the population, 122 samples used in the study. The College Adjustment Scale (CAS) and Raven's Standard Progressive Matrices (SPM) Likert scale questionnaires were given to first-year students, yielding the data set.

Table. 1.1 The Central Tendency and the Variability of the Data Set

	GPA	Mental	AP	AN	IP	DP
Mean	83.40	71.60	55.80	59.70	59.80	47.60
Median	83.00	75.00	56.00	60.00	60.00	46.50
Std. Dev.	4.21	21.50	8.31	9.00	9.60	9.06
Min.	71.00	5.00	34.00	27.00	44.00	39.00
Max.	95.00	95.00	74.00	78.00	77.00	76.00

Table 1.2 The Central Tendency and the Variability of the Data Set

	CP	SI	SA	SE	FP
Mean	59.50	56.20	56.20	52.70	56.40
Median	60.00	56.00	56.50	52.00	57.00
Std. Dev.	7.30	8.04	6.80	8.60	8.20
Min.	40.00	37.00	42.00	34.00	36.00
Max.	76.00	74.00	77.00	78.00	80.00

Tables 1.1 and 1.2 show the College of Computing Education (CCE) first-year students' mean academic achievement, or grade point average (GPA), as the dependent variable for the 2018–2019 academic year is 83.40, and the standard deviation (SD) is 4.21, ranging from 79.19 to 87.61. Raven's Standard Progressive Matrices (SPM) results help assess the mental ability of first-year students in terms of abstract reasoning. The SPM test is a nonverbal exam measures general cognitive capacity is easy to administer and is utilized in developmental studies to identify relationships (Langener, 2022).

The average mental capacity of first-year students, as determined by the Raven's Standard Progressive Matrices (SPM) exam, is 71.60, and the standard deviation of the samples  $SD = 21.50$ , ranging from 50.10 to 93.10. One other exam used to assess students' psychological and social performance was the College Adjustment Scale (CAS). It identifies psychological problems experienced by college students. Using this tool, first-year college students with adjustment issues could have their needs evaluated to create an intervention program (Wagas, R. et al., 2021). The examination includes the following scales: self-esteem problems (SP), interpersonal problems (IP), family problems (FP), academic problems (AP), career problems (CP), depression (DP), suicidal thoughts (SI), substance abuse (SA), anxiety (AN), and depression (DP).

The first-year student grade point averages (GPAs) range from achieving the required norm (average) to substantially exceeding expectations (exemplary). Students possess varied performance outcomes, which results in providing responsible education and fostering students' desires to learn as eminent in providing transparent learning outcomes. The result of the SPM test indicates that the intellectual functioning of students on average ranges from average to above average. The data, however, showed extremes, ranging from a minimum score of 5 to a high score of 95. This indicates that students enter college with advanced or less observation and thinking skills in handling the complexity and ambiguity of the modern workplace, most especially the challenges of academic life in college.

The CAS test shows that the average values of these areas fall below 60, requiring less intervention. However, considering the maximum value of extremities for all areas, some students possessed these problems where scores amounted to above 60 points, which requires further evaluation and possible intervention by professionals regarding counseling services and providing an immediate remedy to students' concerns.

**Pearson Correlation as Relationships of GPA and Psychological Domains**

Table 2 shows the degree of association between academic performance or GPA and mental ability due to the SPM test, which is 32.00%. The degree of linearity or association between student academic performance (GPA) and the following problems also measured: academic problems (AP), anxiety (AN), interpersonal problems (IP), depression (DP), career problems (CP), suicidal ideation (SI), substance abuse (SA), self-esteem problems (SP), and family problems (FP). The results were 12.00%, 7.00%, 18.00%, 34.00%, 5.00%, 10.00%, 11.00%, 26.00%, and 11.00%, respectively. The correlation analysis shows that cognitive (mental ability), which is the strongest predictor, is positively correlated with GPA. Students who possess high mental ability perform better in school, attaining higher GPAs. Meanwhile, emotional stability and self-worth (depression and self-esteem) show a negative correlation. Students who struggle with depression find it difficult to function in daily life and under the demands of the workplace (Banihani, 2022). Student academic success and workforce performance are directly correlated (Hysenbegasi A, Hass SL, & Rowland CR, 2005). The academic achievement of students is strongly and significantly influenced by their level of self-esteem. A higher academic accomplishment is seen if a student has strong self-esteem (Arshad, Zaidi & Mahmood, 2015). The other independent variables show weak or non-significant relationships with GPA.

**Table 2. The Relationships Between GPA and Psychological Domains**

Psychological Domains	Pearson (r-value) Sig. (2-tailed) value)	Grade Point Average (GPA.)	Interpretation
<b>Mental Ability (MA.)</b>	<b>r- value</b>	<b>0.32**</b>	<b>Moderate positive, significant</b>
	<b>p-value</b>	<b>0.00</b>	
Academic Problem (AP.)	r- value	-0.12	Very weak negative, not significant
	p-value	0.17	
Anxiety (AN)	r- value	-0.07	Very weak negative, not significant
	p-value	0.42	
Interpersonal Problem (IP.)	r- value	-0.18*	Very weak negative, not significant
	p-value	0.47	
<b>Depression (DP.)</b>	<b>r- value</b>	<b>-0.34**</b>	<b>Moderate negative, significant</b>
	<b>p-value</b>	<b>0.00</b>	
Career Problem (CP.)	r- value	0.05	Very weak positive, not significant
	p-value	0.56	
Suicidal Ideation (SI.)	r- value	-0.10	Very weak negative, not significant
	p-value	0.29	
Substance Abuse (SA.)	r- value	-0.11	Very weak negative, not significant
	p-value	0.25	
<b>Self-Esteem (SE.)</b>	<b>r- value</b>	<b>-0.26**</b>	<b>Weak, Significant</b>
	<b>p-value</b>	<b>0.00</b>	
Family Problem (FP)	r- value	-0.11	Very weak negative, not significant
	p-value	0.22	

\*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

**Regression Model Summary as Correlation Between Predicted and Actual GPA**

Table 3 shows that R has a value of 0.55, representing the correlation between the predicted GPA and the actual GPA. The R<sup>2</sup> with a value of 0.30 is the proportion of variance in the GPA as explained by the model. The

adjusted R<sup>2</sup> with a value of 0.24 resulted from adjusting the number of predictors in the model, providing a more realistic estimate of the explained variance (Dagdagui, R. T., 2022). There is a moderate relationship between the predictors and the GPA, with R = 0.55. The regression model demonstrates a good fit, as indicated by the R<sup>2</sup> value of 0.30, suggesting that approximately 30% of the variance in GPA as a dependent variable is explained by the independent variables. The adjusted R<sup>2</sup> of 0.24 accounts for the number of predictors in the model; this adjusts the number of predictors and still shows a good model fit. The model explains 24% of the variance in academic performance, and therefore, the predictors are statistically significant as a group. The model shows that psychological test results are meaningful predictors of academic success.

**Table 3. The Correlation Between Predicted GPA and Actual GPA**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.55 <sup>a</sup>	0.30	0.24	3.67

a. Predictors: (Constant), FP, Mental, DP, SA, IP, AP, SE, CP, AN

**Regression Model Significance as Tests the Overall Significance of the Model**

The F-statistic of 4.77 is greater than 2.50 as the rule of thumb suggests that the regression model is statistically significant as shown in Table 4 (Dagdagui, R.T., 2022). The ten (10) predictors or the independent variables used to estimate a model's parameters as the degrees of freedom which describes the precision of the model's prediction and the reliability of parameter estimates with a chosen significance level ( $p < 0.001$ ). The F-statistic of 4.77 is statistically significant at the 1% level ( $p < 0.001$ ), indicating that the overall regression model is a good predictor of GPA as a dependent variable. The predictors, collectively, explained GPA meaningfully.

**Table 4. The Tests the Overall Significance of the Model**

Model <sup>b</sup>	Sum of Squares	Df	Mean Square	F	Sig.
Regression	643.49	10.00	64.35	4.77	0.00 <sup>a</sup>
Residual	1482.76	110.00	13.48		
Total	2126.26	120.00			

a. Predictors: (Constant), FP, Mental, DP, SA, IP, AP, SE, SI, CP, AN

b. Dependent Variable: GPA

**Regression Coefficient as Significance of Predictors**

The independent variables as shown in Table 5 represents the relationships of the dependent variable (GPA) and independent variables. Mental ability (MA) is the strongest positive predictor among others. A higher mental ability leads to a higher GPA (Shi & Qu, 2021). Depression (DP) is a negative predictor. The magnitude of a student's psychological state is affected by their emotional well-being. The level of severity of depression also tends to decrease the level of academic performance of students. Likewise, self-esteem (SE) is another negative predictor. The academic performance of a student is affected by one's self-confidence (Kurshid & Kurshid, 2022; Ibcces, 2020; Acosta-Gonzaga, 2023).

Academic problems (AP), anxiety (AN), interpersonal problems (IP), career problems (CA), substance abuse (SA), suicidal ideation (SI), and family problems (FP) did not show significant unique effects on GPA within the model. It seems that they might be unimportant; they may interact with other factors or affect GPA indirectly.

**Table 5. The Significance of Predictors**

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.
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		B	Std. Error	Beta		
1	(Constant)	83.68	3.56		23.53	0.00
	Mental	0.05	0.02	0.26	3.07	0.00
	AP	-0.06	0.07	-0.13	-0.95	0.34
	AN	0.03	0.07	0.06	0.41	0.68
	IP	-0.06	0.05	-0.14	-1.21	0.23
	DP	-0.11	0.04	-0.23	-2.43	0.02
	CP	0.19	0.07	0.33	2.62	0.01
	SI	0.07	0.07	0.14	1.05	0.30
	SA	-0.00	0.07	-0.00	-0.02	0.98
	SE	-0.20	0.06	-0.41	-3.33	0.00
	FP	0.03	0.07	0.06	0.47	0.64

a. Dependent Variable: GPA.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

The present study provides a clear view of the relationship between academic performance and the psychological state of each student. The results verify that psychological state can significantly affect the individual's academic performance. It demonstrates that to perform better in school, kids with psychological issues—such as interpersonal conflicts, psychological distress, low self-esteem, and challenges in their academic and professional choices—need social assistance, which negatively impacts their daily lives.

### Recommendations

This study primarily argues that a student's major source of knowledge and moral support should be their family members. To improve students' mental health awareness and academic performance, educators in academic institutions, government health agencies, and the general public should create a supportive social network for them and advise them to seek out social support from others.

This study project presents a cooperative effort of all the following parties involved:

1. Teachers should, first and foremost, keep a close eye on their pupils by observing and learning about their outward actions. The teacher's involvement is essential in helping students achieve the appropriate balance between their inner psychological and interpersonal functioning levels while working under their supervision. This is done through counseling, support groups, and encouragement to help students build their confidence.
2. The second tool is a peer support group, which encourages concerned students to actively participate in project development, work assignments, and organizational activities.
3. Qualified medical professionals correctly determine which pupils are most likely to experience psychological issues and offer therapeutic help.
4. The administrators should properly design a program of continuous improvement for students' skill development, exposure to the industry, and personality development.

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