



## INSTRUCTIONAL QUALITY AND ACADEMIC SATISFACTION OF UNIVERSITY STUDENTS

**Eduardo Edu C. Cornillez, Jr.<sup>1</sup>**

Eastern Visayas State University,  
Tanauan Campus, Tanauan, Leyte,  
Philippines

### **Abstract:**

This study investigated the correlation between student's perceptions about university instructional quality and students' academic satisfaction. Emphasis was put on establishing the importance of instructional quality variables on influencing students' academic satisfaction. The study employed a correlational research design with the use of canonical correlation analysis technique. The study made use of a researcher made survey questionnaire to generate the needed data with prior pilot testing to standardize the survey instrument. A random of 1,303 university students were obtained using stratified random sampling technique. Findings revealed that instructional quality and academic satisfaction variables were correlated. Two canonical functions were computed which indicating both a statistically significant. The canonical loadings indicate that instructional quality was greatly influenced by students' perception on teachers' subject matter knowledge and rapport with students and the results for canonical cross loadings denote a stronger relationship of students' perception on teachers subjects matter knowledge and rapport with students among instructional quality variables to their academic satisfaction. Students' perception on learning motivation and classroom management, on the other hand, yielded to have the least influenced among instructional quality variables to student's academic satisfaction. The results suggest that the university will continue to improve its instructional quality. In conclusion, instructional quality has a direct bearing on the academic satisfaction of University students, the higher the instructional quality the better are students' academic satisfaction. Both attributes go hand in hand. Future similar research may be conducted which should include other instructional quality indicators not considered in this study like learning facilities.

**Keywords:** instructional quality, academic satisfaction, canonical correlation analysis, canonical variate, canonical loadings

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<sup>1</sup> Correspondence: email [eduardoedu.cornillez@evsu.edu.ph](mailto:eduardoedu.cornillez@evsu.edu.ph)

## 1. Introduction

Today's competitive academic environment raises the demand of producing high quality graduates among higher education institutions. The quality of university level education is regarded as one of the core qualifications for high standard learning-seeking students. As such, in any higher educational institution (HEI), student's satisfaction becomes a crucial indicator of measuring quality instructions. Kotova and Hasanova (as cited in Razinkina et al., 2018) stated that customers (students) level of satisfaction is considered as major factor in measuring instructional quality in any HEIs.

For a rapidly expanding university bound students' who want to pursue studies in the HEIs, their main concerned include ensuring that enabling factors are present and secured. University students are the primary customers whose assessment and perceptions towards HEIs quality of instruction and reputation are given serious consideration (Abocejo and Padua, 2010). Student selection will become unlikely favourable if they think the reputation and instructional quality of the University is poor, with higher tendency is to look for a better option. Likewise, if students feel dissatisfied, their loyalty and retention are affected and make them to choose other HEIs with better offers in term of instruction.

In order for certain HEI to cope with the continuous increase of students' population and be competitive, it is essential to address students' needs and satisfaction judiciously as they are major recipients of the services offered by the HEI. Doing a continuous monitoring and evaluation of the institution services whether they meet the needs of the students, making immediate interventions and improvements for those instructional services that students may thought to be insufficient. This will benefit both the students and the HEI.

Further, the Association of Southeast Asian Nation (ASEAN) integration increased and strengthen the competitiveness among HEIs in the ASEAN (Albia and Chan, 2017). That is why, the Commission of Higher Education (CHED) of the Philippines takes all possible efforts in pursuing the development of HEIs and colleges as productive member of the international academic community as one of its objectives stipulated to CHED Memorandum Order No. 55 Series of 2016, titled "Policy Framework and Strategies on the Internationalization of Philippine Higher Education" as answered to the ASEAN integration (CHED, 2016). Strengthening the quality of instruction of the HEI under study is one of the main thrusts of the university in which the primary results of this will directly give a long-term impact to the students. With tight competition among its neighbouring universities, locally and globally in terms of enrolees and producing high quality graduates becomes one of the current focused of the institution.

This paper argues that instructional quality directly associates with university students' academic satisfaction. In essence, academic satisfaction strengthens students' proactive participation, adherence to university policies and strives towards improved academic performance. The study outcomes may provide insights whether the

university is certainly fulfilling their plans most especially their duties and responsibilities for students' benefits.

### **1.1 Study Objectives**

This study investigated the relationships between instructional quality and academic satisfaction among university students. It endeavoured how university students assessed the quality of academic instructions which influence their overall academic satisfaction. Specifically, the study determined the quality of study load, examination, learning motivation, learning strategies, classroom management, subject matter knowledge and rapport with their mentors and co-students.

## **2. Literature Review**

Student satisfaction is considered as one of the major factors of determining the quality of instruction and services which can be offered by any higher education institution [HEI] (Duque, 2014; Griffioen, Doppenberg and Oostdam, 2018). The level of students' satisfaction differs in perspectives and orientations toward certain HEI (James and Casidy, 2018).

Elliot and Shin (as cited in Celik et al., 2018) stated that the ability of any university to attract and ensure students retention greatly depend on the demands, needs and expectation of students. That is why, expectations and needs which cannot be met and provided for by the HEI become major considerations for students' withdrawal (Aldridge and Rowley, 2001). Students distinguish universities in terms of their teaching excellence (Mathooko and Ogutu, 2015; Milian, Davies and Zarifa, 2016) which are push factors to consider for enrolment. Since students are the direct recipients of what quality of education and services the HEIs offer, identifying students' satisfaction plays important role in ensuring that universities fulfill their duties (Rodriguez and Abocejo, 2018). Determining what key factors that enable students choose a certain university to enrol in or to ensure students retention are critical aspects for an HEI especially in the present competitive academic learning environment (Rizkallah and Seitz, 2017).

This study assumed that students' perceptions towards instructional quality variables are key factors of influencing student's academic satisfaction. Several factors have been identified that can be found in various literature that influence or affect the satisfaction of the students in higher education (Douglas, Douglas, McClelland and Davies, 2015; Donlogic and Fazlic, 2015; Griffieon et al., 2018; Onditi and Wechuli, 2017; Ada, 2017; Senior, Moores and Burges, 2017; Sears et al., 2017; Cuñado and Abocejo, 2018). These factors are classified in different dimensions. According to Douglas, Douglas and Barnes (2006) these factors which can be called service-product bundle to refer to the physical or facilitating goods covering the used instructional materials, students' immediate environment where the service is delivered, the explicit service that includes the competence of the service provider (Trazo and Abocejo, 2019), the

degree of loads that student received; and the implicit service includes the way students are treated (Fernand and Abocejo, 2014).

Goh (as cited in Hernard and Leprince-Ringuet, 2008), emphasized that assessment of teaching in any HEIs can be constituted into three components such as educational technology and facilities (hardware); teachers' attributes (peopleware); curriculum and management; and assessment techniques, academic course development system (software). Similarly, Encabo (2011) classified these instructional quality indicators into three: competence of the service providers; provision of the services; and the environment where the services are delivered. The level of quality of higher education services depend on students' satisfaction (Petruzzellis, D'Uggento and Romanazzi, 2006; Celik et al., 2018; Almira et al., 2018; Jolejole-Caube, Dumlao and Abocejo, 2019).

The notion of significant effects of quality services with students' satisfaction were also affirmed by Ko and Chung (2015). Students are greatly satisfied with quality of teaching that particular academic institution has provided may directly influenced their intention and decision to continue with HEI (Amos and Hassan, 2017). Encabo (2011) determined a direct relationship between university student's perception on instructional quality and satisfaction. The findings revealed that four out of eight instructional quality indicators for learning facilities such as perceptions on accessibility, adequacy, usefulness, safety and convenience of the learning facilities were observed to be significantly correlated and consistent in influencing student satisfaction. Among teaching related variables, student's perception on the faculty teaching strategies (Rodriguez and Abocejo, 2018) and subject matter knowledge of their teachers (Trazo and Abocejo, 2019) were the most influential factors to their satisfaction. Similarly, Navarro, Iglesias and Torre (2005) emphasized that academic staff and teaching strategies were significantly related with students' satisfaction.

The identified factors or variables that thought to influence student academic satisfaction which are referred as instructional quality variables were aligned with or similar to those found in the literature (Amos and Hassan, 2017; Encabo, 2011; Petruzzellis, D'Uggento and Romanazzi, 2006; Celik et al., 2018; Almira et al., 2018; Jolejole-Caube, Dumlao and Abocejo, 2019). Like examination, learning strategies (Rodriguez and Abocejo, 2018) and study load which could be linked to the provided explicit services, to the competence of service providers and software together with subject matter knowledge of faculty. Whereas classroom management, student learning motivation and rapport with students (Trazo and Abocejo, 2019) were linked as the provisions of implicit services as peopleware. The factors that thought to influence student academic satisfaction are referred to as instructional quality variables.

Learning facility or the environment where the services are immediately offered was not included in the study as one of the factors of assessing instructional quality since the HEI under study was still in the process of its rehabilitation program of its facilities after the devastation of the typhoon Haiyan (Yolanda) prior the conduct of the study.

## 2.1 Theoretical and Conceptual Framework

This study anchored the Theory of Student Involvement advocated by Astin (1984) which was later on called as student's engagement. This theory explains the quality and quantity of students' physical and psychological energy exhibited to university studies in terms of academic and non-academic experienced (Astin, 1984). This involvement or engagement took place in any forms such as student's absorption in academic works, engagement in extracurricular works, interaction with faculty and other school personnel, and interaction with peers (Astin, 1984; Kuh, 2009). The theory suggests that student's with frequent interaction with faculty compare to other forms or type of engagement that students delved was more strongly related to university students' satisfaction (Astin, 1984).

In addition, the success of any school programs, policies and practices related to academic and non-academic matters were directly related to the level of increase and decrease of student's involvement as a result by that policy and practice implementation and performance (Astin, 1984).

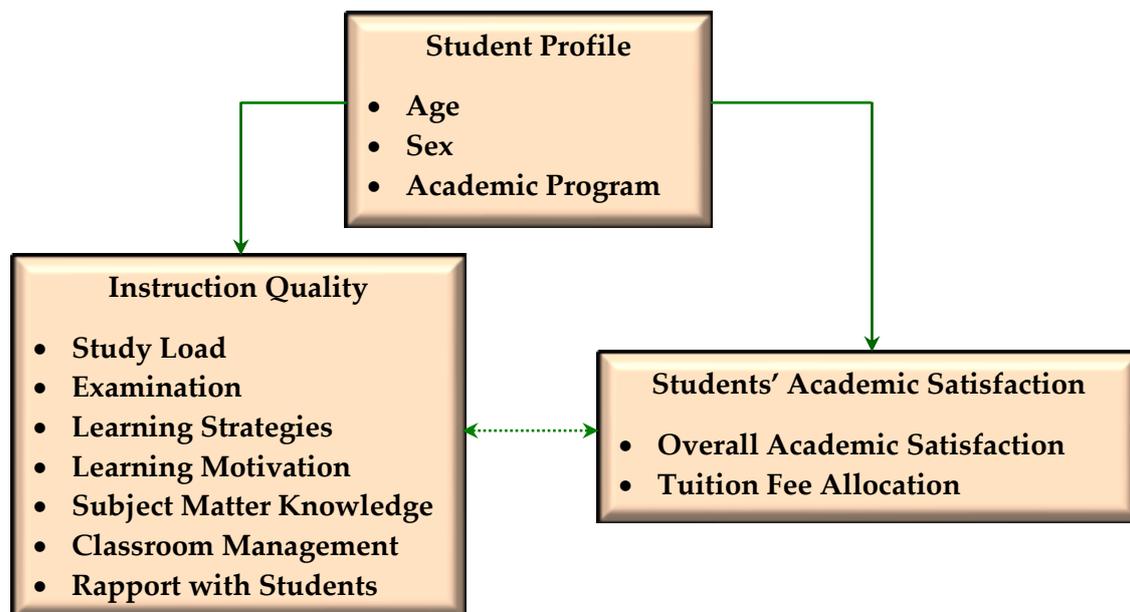


Figure 1: Conceptual Framework of the Study

In this study, the independent variables were collectively called as instructional quality variables that include: university student perceptions on their study load, student's examination, learning strategies, learning motivation; instructor's subject matter knowledge, classroom management and rapport of students with their instructors. Whereas, the dependent variables include the university student's perception towards their overall academic satisfaction and tuition fee allocation. In figure 1, canonical correlation was done between instructional quality and academic satisfaction variates.

Moreover, the degree of importance of the variables under instructional quality in deriving its own canonical variate was determined similar with the degree of importance with the variables of academic satisfaction to derive its own canonical

variate. It is followed by deriving the degree of influence of the instructional quality variables to students' academic satisfaction.

### **3. Research Methodology**

#### **3.1 Research Design**

The researcher utilized a correlational research design involving multivariate technique. The design was suited in the study since the focused was to investigate the correlation between instructional quality and student's academic satisfaction variables. Canonical correlation analysis was considered to be appropriate test in the study to measure the relationships existing between groups of related variables (Hair, Black, Babin and Anderson, 2010). In essence, the canonical variates were instructional quality and academic satisfaction.

#### **3.2 Research Respondents**

The study respondents were the undergraduate students of the Main Campus of HEI under study enrolled at different programs during first semester of school year 2016-2017. The first-year students were excluded since some questions in the research survey questionnaire were not applicable to them. The sample size of the study was identified through the use of the sample size estimation formula for finite population size introduced by Cochran (as cited in Israel, 1992) using 2.5 percent level of precision, 95 percent confidence level, and a proportion of 50 percent variability of data, then utilizing stratified random sampling technique in the selection process. Through the electronic student's management system (eSMS) of HEI under study, the researcher identified the population of the university students at 8,555. There were 1,303 students computed as the representative sample distributed proportionately as follow: 94 students were taken from the college of architecture and allied discipline, 186 for the College of Arts and Sciences (CAS), 179 for the College of Business and Entrepreneurship (COBE), 222 for the College of Education (COED), 215 for the College of Technology (COT) and 407 students for the College of Engineering (COE).

The highest percent of students at 61.60 percent are in the age bracket 19 to 21 years old, while 9 percent were aged above 22 years old. Out of 1303 students, female students obtained the highest representation at 57.50 percent and 42.50 percent of male students. Most of the students at 31.20 percent are enrolled in engineering courses and the least number of students with 7.20 percent were from College of Architecture and Allied Discipline (CAAD).

#### **3.3 Ethical Considerations**

Prior to the conduct of the study, written permissions were sought from the head of the HEI where the study was conducted. Likewise, written permissions were sent to all the Deans of the various Colleges of the University. Voluntary participation of identified students' respondents were ensured. The study objectives were clearly explained to all respondents. Measures were undertaken to ensure that all respondents were, in any

way not harmed along the conduct of the study. All derived information were dealt with utmost confidentiality and were solely used for the purpose of the study.

### **3.4 Research Instruments**

The study utilized a researcher's made survey questionnaire. Only one set of questionnaires was used where the questions were close-ended and composed of the following salient parts: Section I deals with the profile of the respondents as to age, sex, and university program of their study. Section II covers the seven constructs on instructional quality that sought information on the respondent's perception on the quality of their study load, examination, learning strategies, learning motivation, instructor's subject matter knowledge, instructor's classroom management, and instructor's rapport with students. Section III delved student academic satisfaction which was measured through the respondents' perception on their overall academic satisfaction and tuition fee allocation.

The respondents were asked to rate the given research instrument with the use of a 5-point scale rating, ranging from strongly disagree (1) to strongly Agree (5). Similarly, university students' overall academic satisfaction and tuition fee allocation were assigned to rate each given 5-point scale, ranging from very dissatisfied (1) to very satisfied (5).

The survey questionnaire was composed of 135 questions with respective constructs of 15 questions for instructional quality and academic satisfaction. The reliability and validity of the questionnaire before it was used for actual data gathering procedure was obtained by conducting first a dry-run. The dry-run procedure was conducted in the external campus of the HEI under study comprised of 130 student respondents. The generated data were subjected to item analysis. The validity of the constructs was measured using the methods of convergent and discriminant validity. All the tests for reliability and validity were conducted using WarpPLS 6.0 software and the results are presented in Tables 1 and 2.

### **3.5 Data Gathering Procedure**

The study ensured appropriate protocols were followed prior to the data collection. The actual data gathering process commenced on 08 August 2016 until end of 23 August 2016. During the survey, the researcher administered the survey questionnaire to the identified respondents by first explaining the purpose and importance of the study, its ethical considerations, assuring them that all divulged information would be dealt with utmost confidentiality and would be used solely for the purpose of the study. The responses of the respondents were electronically coded and saved for analysis.

### **3.6 Treatment of Data**

This study employed canonical correlation analysis as a multivariate statistical test that simultaneously correlates several independent variables and several dependent variables (Richarme, 2002). This test was used to analyse the relationships between set of independent and dependent variables. Statistical program IBM SPSS version 20 was

used to find the canonical correlation through identifying the canonical correlation coefficient between instructional quality and student academic satisfaction; determining the canonical loadings in instructional quality variate and student academic satisfaction variate for the computed canonical functions; and finding the cross loadings of instructional quality variate only for the computed canonical functions for the purpose of showing the importance of instructional quality variables in influencing students' academic satisfaction. The canonical-loadings and canonical cross-loadings were interpreted the same with the interpretation of factor loadings in factor analysis in which the larger the loadings are more correlated or more important in deriving its canonical variate and to its opposite canonical variate (Hair et al., 2010). The maximum numbers of canonical functions that can be derived was equal to the number of variables that the smallest canonical variate comprised. To determine the significance of the identified canonical functions multivariate test statistics Wilks' Lambda, Pillai's Trace and Hotelling-Lawlay Trace were computed. The level of significance was set at 0.05 for rejecting the null hypothesis.

#### **4. Results and Discussions**

The study utilized canonical correlation analysis to explore the relationships between the sets of instructional quality variables and academic satisfaction variables. Specifically, to assess the importance of the seven identified instructional quality variables - study load, examination, learning strategies, learning motivation, instructor's subject matter knowledge, instructor's classroom management, and instructors' rapport with students to influence students' academic satisfaction that was measured by two variables: overall academic satisfaction and tuition fee allocation. In the first stage of the analysis, the reliability and validity of the variables are carried out. This is followed by evaluating the canonical model of the study.

##### **4.1 Collinearity, Reliability and Validity Measurements**

Collinearity occurs when there is a high intercorrelations among variables. To check the existence of collinearity, the variance inflation factor (VIF) coefficients are calculated. Through the values of VIF, it measured the lateral and vertical collinearity within construct (Kock and Lynn, 2012). The values of VIF must be equal to or less than 3.3 in order to verify that collinearity exists in the model (Kock, 2015; Kock and Lynn, 2012). As shown in Table 1, all the VIF coefficients among variables are below 3.3. Hence, the presence of collinearity among the variables was controlled.

In order for the results of the study to be reliable and valid, the test of reliability and validity measures of each construct were calculated. According to Straub, Boudreau and Gefen (2004); and Henseler, Ringle and Sarstedt (2015) test of reliability or internal consistency of the research instrument was computed to check the consistency of the items or questions of what they mean to measure. Two measures of reliability are widely used and these are Cronbach's alpha and composite reliability measures (Peterson and Kim, 2013). The computed coefficients of reliability must be equal to 0.70

and above to obtain acceptable reliability of the items (Vaske, Beaman and Sponarski, 2017; Kock and Lynn, 2012). In Table 1, the Cronbach's alpha coefficients for the entire construct were ranging from 0.816 to 0.908, while composite reliability measures are ranged from 0.854 to 0.921, respectively. This means that all the constructs show high reliability or internal consistency.

**Table 1:** Collinearity, convergent validity and reliability measures

| Construct                     | Item Loadings | VIF   | AVE   | CR    | CA    |
|-------------------------------|---------------|-------|-------|-------|-------|
| Study Load                    | 0.523-0.887   | 1.371 | 0.889 | 0.854 | 0.816 |
| Examination                   | 0.665-0.828   | 1.408 | 0.689 | 0.904 | 0.885 |
| Learning Strategies           | 0.551-0.711   | 1.757 | 0.561 | 0.893 | 0.871 |
| Learning Motivation           | 0.519-0.685   | 2.300 | 0.565 | 0.896 | 0.875 |
| Subject Matter Knowledge      | 0.520-0.607   | 2.853 | 0.539 | 0.920 | 0.906 |
| Classroom Management          | 0.535-0.661   | 2.980 | 0.639 | 0.921 | 0.908 |
| Rapport with Students         | 0.508-0.724   | 2.451 | 0.511 | 0.911 | 0.895 |
| Overall Academic Satisfaction | 0.503-0.696   | 1.919 | 0.553 | 0.890 | 0.868 |
| Tuition Fee Allocation        | 0.613-0.777   | 1.517 | 0.670 | 0.897 | 0.877 |

**Notes:** All item Loadings are significant at 0.001 ( $p < 0.001$ ). VIF = variance inflation factor; AVE = average variance extracted; CR = composite reliability; CA = Cronbach's alpha

Further, tests of convergent and discriminant validity measures are conducted to ensure the validity of the constructs. Kock (as cited in Lacap, Mulyaningsih and Ramadani, 2018) states that convergent validity is used to measure the quality of item question or statement of a construct whether the respondents and the designer of the items or questions of the instrument have a common comprehension on what the construct is supposed to measure. The construct is said to be convergent if the loadings of the construct item questions are greater than or equal to 0.50 and with corresponding  $p$ -values lower than or equal to 0.05 (Hair et al., 2010; Lacap et al., 2018).

**Table 2:** Square Roots of AVE coefficients and Correlations

|     | SL           | E            | LS           | LM           | SMK          | CM           | RS           | OAS          | TFA          |
|-----|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| SL  | <b>0.507</b> |              |              |              |              |              |              |              |              |
| E   | 0.204        | <b>0.624</b> |              |              |              |              |              |              |              |
| LS  | 0.352        | 0.367        | <b>0.611</b> |              |              |              |              |              |              |
| LM  | 0.477        | 0.464        | 0.601        | <b>0.604</b> |              |              |              |              |              |
| SMK | 0.347        | 0.365        | 0.485        | 0.490        | <b>0.686</b> |              |              |              |              |
| CM  | 0.366        | 0.175        | 0.397        | 0.441        | 0.663        | <b>0.711</b> |              |              |              |
| RS  | 0.334        | 0.281        | 0.395        | 0.490        | 0.642        | 0.630        | <b>0.641</b> |              |              |
| OAS | 0.313        | 0.277        | 0.391        | 0.511        | 0.553        | 0.469        | 0.503        | <b>0.594</b> |              |
| TFA | 0.276        | 0.239        | 0.199        | 0.296        | 0.454        | 0.369        | 0.298        | 0.521        | <b>0.608</b> |

**Notes:** The diagonal coefficients are the square root of AVE of construct, while the off-diagonal coefficients are the correlation between constructs. SL = study load, E = examination; LS = learning strategies; LM = learning motivation; SMK = subject matter knowledge; CM = classroom management; RS = rapport with students; OAS = overall academic satisfaction; TFA = tuition fee allocation.

In this case, item loadings are referring to the correlation between the construct and item or questions being measured (Amora, Ochoco and Anicete, 2016). To verify further

the validity of the construct, the amount of variance of the constructs being measured relative to its items or indicators overall variance are computed through average variance extracted or AVE (Henseler et al., 2015; Alarcon, Sanchez and Olavide, 2015). The acceptable requirement value of AVE must be equal to 0.50 and above (Alarcon et al., 2015). Hence, the item loadings were higher than 0.50 and the AVE coefficients met the acceptable validity.

Whereas, Kock (as cited in Lacap et al., 2018) discriminant validity tests the construct whether the item or questions that are related with each construct are not vague to respondents when answering other item or questions related with the other construct in a given research questionnaire. The recommended criterion for discriminant validity assessment is that the square root of AVE coefficients must be greater than any correlation values containing the said construct (Zait and Berteza, 2011). Thus, the results indicate that the constructs utilized in the study were obtaining a discriminant validity.

#### 4.2 Instructional Quality and Academic Satisfaction Constructs Mean Scores

Students' perception on the quality of their classroom management (WM = 3.71, SD = 0.93) obtained the highest weighted mean (WM) among the instructional quality variables and interpreted as Good. The overall university students' perception on instructional quality is interpreted as Good (WM = 3.49, SD = 0.65). On the other hand, students' academic satisfaction is interpreted as average (WM = 3.25, SD= 0.80).

**Table 3:** Instructional quality and student academic satisfaction variables

| Variable  | Weighted Mean     | SD                                  | Interpretation       |
|---|-------------------|-------------------------------------|----------------------|
| <b>Instructional Quality</b>                                |                   |                                     |                      |
| Classroom Management  | 3.71              | 0.93                                | Good                 |
| Learning Motivation   | 3.66              | 0.93                                | Good                 |
| Subject Matter Knowledge                                    | 3.59              | 0.61                                | Good                 |
| Learning Strategies   | 3.47              | 0.57                                | Good                 |
| Rapport with Students                                       | 3.52              | 0.64                                | Good                 |
| Study Load  | 3.26              | 0.45                                | Average              |
| Examination   | 3.23              | 0.45                                | Average              |
| <b>Academic Satisfaction</b>                                |                   |                                     |                      |
| Overall Academic Satisfaction                               | 3.42              | 0.95                                | Satisfied            |
| Tuition Fee Allocation                                      | 3.08              | 0.66                                | Moderately Satisfied |
| <b>Ranges for the WM      Responses      Interpretation</b> |                   |                                     |                      |
| 4.21 – 5.00   | Strongly Agree    | Very Satisfied                      | Very Good            |
| 3.41 – 4.20   | Agree             | Satisfied                           | Good                 |
| 2.61 – 3.40   | Moderately Agree  | Moderately Satisfied                | Average              |
| 1.81 – 2.60   | Disagree          | Dissatisfied                        | Poor                 |
| 1.00 – 1.80   | Strongly Disagree | Very Dissatisfied                   | Very Poor            |
| Instructional Quality      Academic Satisfaction            |                   |                                     |                      |
| Grand WM = 3.49   |                   | Grand WM = 3.25 SD = 0.65 SD = 0.80 |                      |

### 4.3 Canonical Model, Canonical Loadings, and Canonical Cross-Loadings

Two statistically significant canonical functions with  $p$  values,  $p < 0.001$  and  $p = 0.033$  were computed. Both canonical functions show a positive value that indicates a direct relationship between instructional quality and student's academic satisfaction variate. However, the strength of relationship of the canonical correlation of the first canonical function (0.55) is stronger than that of the second function (0.12). Table 1 shows the summary of multivariate test statistics for two canonical functions, and below the Table a note that present the multivariate test statistics and computed F approximation of the models.

Wilks' Lambda, Pillai's Trace and Hotelling-Lawlay Trace showed statistically significant. The squared canonical correlation ( $R^2 = 0.30$ ) indicates a 30 percent of variance in the academic satisfaction variate was explained or accounted for by the students' perception on instructional quality variables in comparison with the second function that has only 1 percent. This means that although the second canonical function shows to be statistically significant, its importance in showing the degree of influence between instructional quality variables and academic satisfaction variables is lesser in comparison to the first canonical function. Further treatment for the result of statistics of the second function is still presented for the purpose of verifying the consistency of the models.

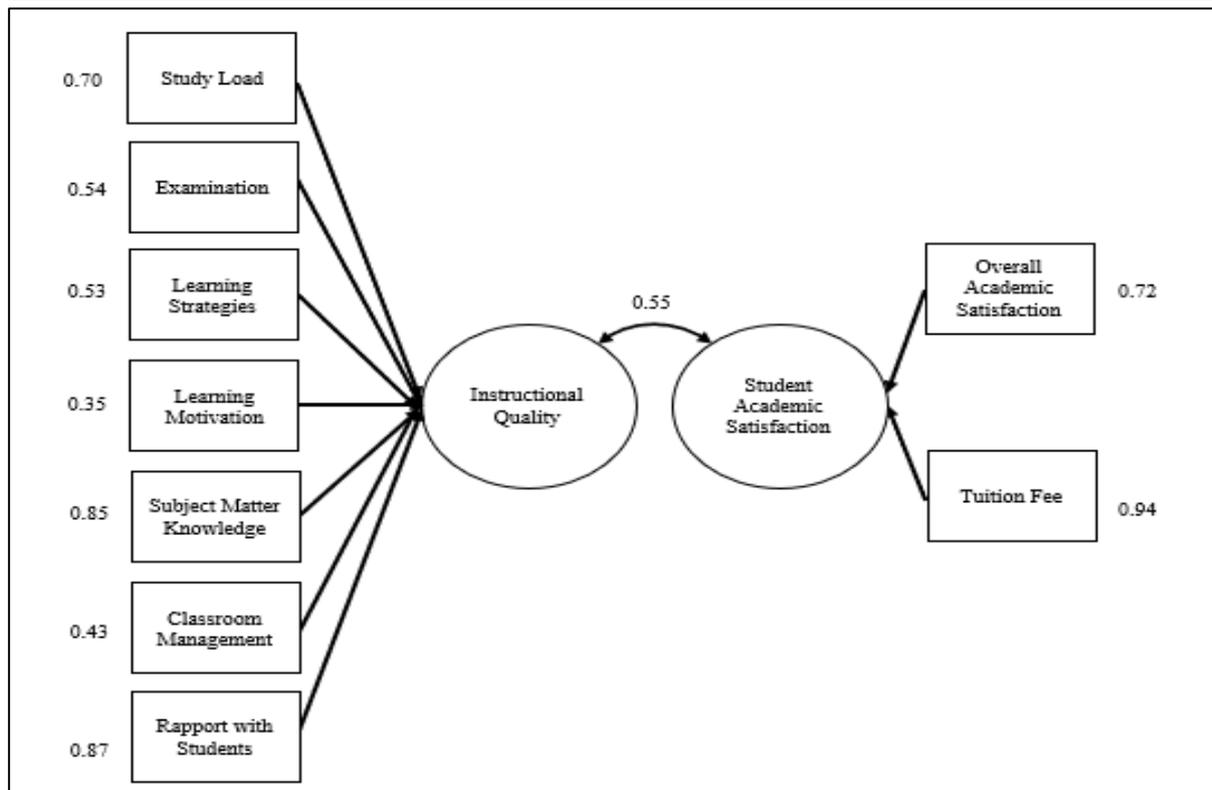
**Table 4:** Canonical correlation between instructional quality and academic satisfaction

| Canonical Function | Canonical Correlation | Canonical R <sup>2</sup> | Approx F | df | p-Value |
|--------------------|-----------------------|--------------------------|----------|----|---------|
| 1                  | 0.55                  | 0.30                     | 27.75    | 14 | 0.001   |
| 2                  | 0.12                  | 0.01                     | 2.29     | 6  | 0.033   |

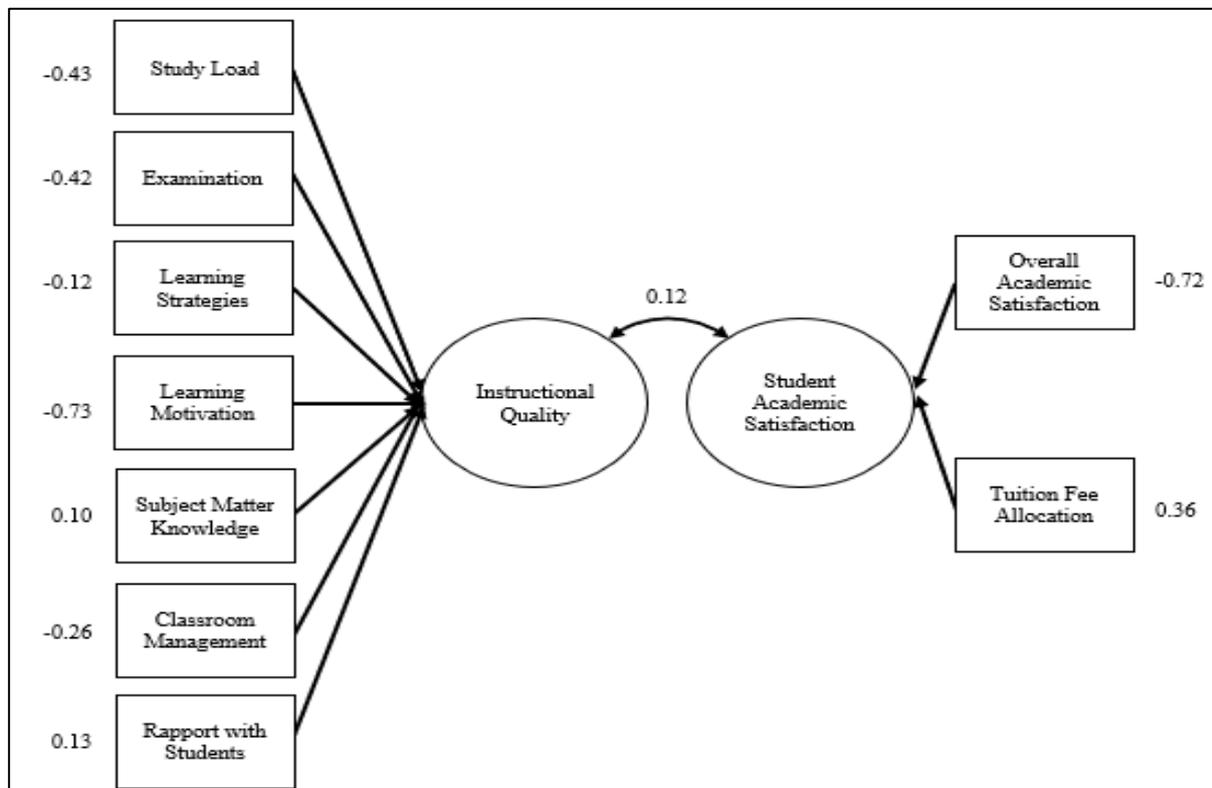
Notes: Wilks' Lambda = 0.76, F (14, 2588) = 27.75,  $p < 0.01$ ; Pillais Trace = 0.25, F (14, 2590) = 26.01,  $p < 0.01$ ; Hotelling-Lawley Trace = 0.32, F (14, 2586) = 29.51,  $p < 0.01$

Figures 2 and 3 present the models of the two canonical functions showing their respective canonical loadings and canonical correlations of the variables for instructional quality and academic satisfaction variates.

In the first canonical function, all instructional quality variables showed positive canonical loadings which indicate a direct relationship with their own canonical variate. The instructional quality variate is mostly influenced by the student's perception on instructor's rapport with students (0.87) and instructor's subject matter knowledge (0.85). Among the student related variables, student's perception on the quality of their study load (0.70) was found to be the most influential variables followed with the quality of their examination (0.54) and learning strategies (0.53). Student's perception on their learning motivation tends to have the least influence (0.35) among instructional quality variables. On the other hand, students' perception on their overall academic satisfaction (0.72) and tuition fee allocation (0.94) showed a strong influence to its academic satisfaction variate.



**Figure 2:** Model of the first canonical function showing the canonical loadings and canonical correlations



**Figure 3:** Model of the second canonical function showing the canonical loading and canonical correlation

In the second canonical function, dissimilar findings from the first function are yielded. The variable learning motivation (-0.73) obtained the highest canonical loading. The variable learning motivation have better influence to the instructional quality variate in comparison with the degree of importance in the first function. The degree of correlation exhibited was an inverse relationship. Moreover, student's perception on the quality of their study load (-0.43) and examination (-0.42) remained to have a large influence to its respective canonical variate. However, students' perception on the quality of their instructor's subject matter knowledge (0.10) and rapport with students (0.13) are found to have lesser influence compared in the first function, but it is noticeable that the consistency in the degree of correlation for the two variables was positive implying a direct relationship to its respective variate. The canonical loadings for student academic satisfaction variate revealed an opposite result between the two variables overall academic satisfaction (-0.72) and tuition fee allocation (0.36). The first one showed a negative loading which implies an inverse relationship to student academic satisfaction variate and the second one illustrated a positive loading which indicates a direct relationship.

**Table 5:** Canonical cross loadings between instructional quality variables and students' academic satisfaction variate

| Variable                 | Canonical Function 1 | Canonical Function 2 |
|--------------------------|----------------------|----------------------|
| Study Load               | 0.52                 | -0.22                |
| Examination              | 0.45                 | -0.21                |
| Learning Strategies      | 0.45                 | -0.21                |
| Learning Motivation      | 0.36                 | -0.27                |
| Subject Matter Knowledge | 0.60                 | 0.23                 |
| Classroom Management     | 0.40                 | -0.20                |
| Rapport with Students    | 0.62                 | 0.25                 |

The canonical cross loadings indicate the importance and significance of instructional quality variables in influencing the academic satisfaction of the students. The result shows that student's academic satisfaction variate was highly influenced by the student's perception on their instructor's subject matter knowledge (0.60) and rapport with students (0.62) among instructional quality variables. Quality of student's study load (0.52) out of the four student related variables revealed to have the largest influenced to student academic satisfaction variate. Meanwhile, students' learning motivation (0.36) indicated to have the least influence to student academic satisfaction variate among instructional quality variables. The canonical cross loadings of the second function indicate opposite result where almost of the loadings were weak and manifested inverse correlation towards academic satisfaction variate. Students' perception on the quality of their learning motivation (-0.27) came out as highest correlation to student's academic satisfaction among instructional quality variables. Instructor's subject matter knowledge (0.23) and rapport with students (0.25) were consistent variables of having a positive-direct correlation to student academic satisfaction variate.

## 5. Conclusion and Recommendations

In the light of the study findings, it is concluded that instructional quality has bearing on academic satisfaction of university students. These highlight the importance of the influence of students' perception on the quality of their study load, examination, subject matter knowledge and rapport with students with academic satisfaction. Among these factors, students' perception on the quality of their instructor's knowledge on the subject matter and rapport (students with co-students and teachers) strongly associates with the emerging two canonical models. The Student's Involvement Theory is confirmed in this study where student's satisfaction is strongly and positively associated with student's interaction with faculty and other institutional personnel. Hence, students' participation and involvement in assessing and validating the level of instruction of certain HEI are deemed judicious. The researcher recommends that the University should continue improving its quality of instruction and provides serious attention to those factors which manifested weaker correlation to student's academic satisfaction. The result of the present study may also be validated through the conduct of related research which must include other instructional quality indicators not presently considered such as learning facilities.

### About the Author

**Eduardo Edu C. Cornillez Jr.** is a faculty member of the Education Department, Eastern Visayas State University Tanauan Campus, Tanauan Leyte, Philippines. He is teaching Mathematics and Statistics courses, at the same time designated as faculty Research Coordinator. He earned his bachelor's degree in Statistics at Eastern Visayas State University Tacloban Campus with a Latin Honour *Magna Cum Laude*. Currently, he is pursuing his Master's degree in Mathematics Education at Leyte Normal University (LNU), Tacloban City, Philippines. His research interests are in the fields of applied statistics and mathematics, social science, educational management and practices.

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