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Editorial **Board**

Aim and Scope

The IASPER Journal of Interdisciplinary Research Journal welcomes articles on interdisciplinary research. Interdisciplinary research is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice.

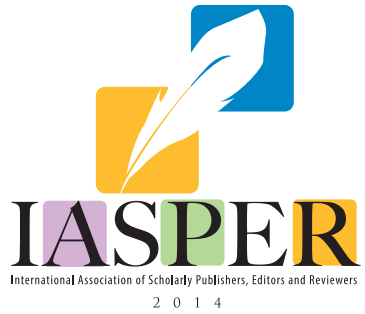

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Table of Contents

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Aims and Scope

The IASPER Journal of Interdisciplinary Research Journal welcomes articles on interdisciplinary research. Interdisciplinary research is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice.

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Definition. Peer review (also known as refereeing) is the process of subjecting an author's scholarly work, research or ideas to the scrutiny of others who are experts in the same field. Peer review requires a community of experts in a given (and often narrowly defined) field who are qualified and able to perform impartial review. Peer review refers to the work done during the screening of submitted manuscripts and funding applications. This normative process encourages authors to meet the accepted standards of their discipline and prevents the dissemination of unwarranted claims, unacceptable interpretations and personal views. Peer review increases the probability that weaknesses will be identified, and, with advice and encouragement, fixed. For both grant-funding and publication in a scholarly journal, it is also normally a requirement that the subject is both novel and substantial.

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Recruiting Peer Reviewers. The task of picking reviewers is the responsibility of the editorial board. When a manuscript arrives, an editor solicits reviews from scholars or other experts to referee the manuscript. In some cases, the authors may suggest the referees' names subject to the Editorial Board's approval. The referees must have an excellent track record as researchers in the field as evidenced by researches published in refereed journals, research-related awards, and an experience in peer review. Referees are not selected from among the author's close colleagues, students, or friends. Referees are to inform the editor of any conflict of interests that may arise. The Editorial Board often invites research author to name people whom they considered qualified to referee their work. The author's input in selecting referees is solicited because academic writing typically is very specialized.

The identities of the referees selected by the Editorial Board are kept unknown to research authors. However, the reviewer's identity can be disclosed under some special circumstances. Disclosure of Peer Review can be granted under the following grounds: as evidence to prove that

the published paper underwent peer review as required by the University for ranking and financial incentives, for regulatory bodies such as the Commission on Higher Education, Accreditation of Academic Programs among others. Request for peer review results shall be made in writing.

Peer Review Process. The Editorial Board sends advance copies of an author's work to experts in the field (known as "referees" or "reviewers") through e-mail or a Web-based manuscript processing system. There are two or three referees for a given article. One is an expert of the topic of research and one is an expert in research and statistics who shall review the technical components of the research. These referees return to the board the evaluation of the work that indicates the observed weaknesses or problems along with suggestions for improvement. The board then evaluates the referees' comments and notes opinion of the manuscript before passing the decision with the referees' comments back to the author(s).

Criteria for Acceptance and Rejection. A manuscript is accepted when it is (1) endorsed for publication by 2 or 3 referees, (2) the instructions of the reviewers are substantially complied; (3) ethical standards and protocols are complied for studies involving humans and animals; and (4) the manuscript passed the plagiarism detection test with a score of at least 80 for originality, otherwise the manuscript is rejected. The referees' evaluations include an explicit recommendation of what to do with the manuscript, chosen from options provided by the journal. Most recommendations are along the following lines:

- Unconditional acceptance
- Acceptance with revision based on the referee' recommendations
- Rejection with invitation to resubmit upon major revisions based on the referees' and editorial board's recommendations
- Outright rejection

In situations where the referees disagree substantially about the quality of a work, there are a number of strategies for reaching a decision. When the editor receives very positive and very negative reviews for the same manuscript, the board will solicit one or more additional reviews as a tie-breaker. In the case of ties, the board may invite authors to reply to a

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Score	Notes
90.0 – 100.00	Easily understandable by an average 11 year old student
60.0 – 70.0	Easily understandable by 13 to 15 year old students
0.0 – 30.0	Best understood by university graduates

Gunning Fog Index. Developed by Robert Gunning, an American Businessman in 1952, Gunning Fog Index measures the readability of English writing. The index estimates the years of formal education required to understand the text on a first reading. A fog index of 12 requires a reading level of a US high school senior (around 18 years old) or third year college / university in the Philippines. Readability tests (Flesch Reading Ease and Gunning Fog Index) are computed through http://online-utility.org.

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Students' Satisfaction on the Student Services of a Maritime Higher Education Institution

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ABSTRACT

Universities have to concentrate their efforts on the improvement of quality teaching and non-teaching services, in order to promptly respond to the target, and foster a stronger relationship with surrounding economic and productive systems. The study determined the level of satisfaction of 134 maritime students on the services provided by the library, mess, guidance and counseling, medical and dormitory units of the Philippine Merchant Marine Academy. Survey and key informant interviews were conducted to gather data on the problem at hand. The researcher used frequency, percentile and weighted mean to analyze data. The study revealed that the respondents are extremely satisfied with the library, medical and guidance and counseling services. Moreover, they are very satisfied with the services of the mess and dormitory services. Among the five services, ranked 1 is library services and ranked 5 is mess services. Based on the findings, the researcher concludes that the academy offers quality services to its students. It is recommended that the PMMA leadership should consider the suggestions of the students to achieve better quality of student services.

KEYWORDS

Maritime education, student services, satisfaction, descriptive-quantitative, Philippines, Asia

INTRODUCTION

Service quality and customer satisfaction for service organizations is important. Consideration of students as customers in developing and delivering quality services has been proven to increase student learning, motivation and persistence to graduation. Student satisfaction research, especially in the area of student services, has the potential to inform institutions about how to best address the needs and expectations of an increasingly diverse student population.

Satisfaction of employees and clients is an important element of success for any organization and any sector of the economy (Bay, An, & Laguador, 2014). Employees' service to customer has the strongest influence on relationship quality (Bencito, 2014). Educational institutions have to provide the best quality services to their students. Higher education needs to care about students' satisfaction because of its potential impact on student motivation, retention, recruitment. Satisfaction characterizes the quality of products and services that the organization delivers to its customers that serves as the basis for continuous improvement (Buted et al., 2014). Akbariyeh (2012) writes that customer satisfaction and service quality are crucial factors in the analysis of competitors. If students are seen as customers, then other colleges and universities are the competition. It seems important then that attention is paid service quality. Obtaining customer satisfaction should be a critical factor in an organization's goals. Similarly, Appleton-Knapp and Krentler (2006) suggest that students' satisfaction with their educational experience should be a desired outcome in addition to learning.

In higher education, student satisfaction occurs when perceived performance meets or exceeds the students expectations (Mark, 2013). Although higher education institutions are hesitant to use customer-driven language when considering the satisfaction and attitudes towards student services, consideration of students as customers in developing and delivering quality services has been proven over and over again to increase student learning, persistence to graduation, and increased alumni giving (Lee, 2007).

During their academic stay in the academy, different student services are developed and programmed for the students to foster a conducive, comfortable and encouraging environment as they are "in-housed" for three years inside the academy.

This study strives to determine the experience of students with Student Services at Philippine Merchant Marine Academy. The ultimate purpose of this study is to identify the level of students' satisfaction towards the service quality of the school's library, dormitory, guidance and counselling, mess/food and medical services; which among the student services are the students most satisfied with; and are the areas for improvement to improve quality of service.

METHODOLOGY

Research Design

The study utilized the quantitative-descriptive research design. Babbie (2010) describes that quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data using computational techniques. Quantitative research focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon. It suggests that descriptive studies can answer questions such as "what is" or "what was. Since this study was focused on the description and level of satisfaction of students on the library, dormitory mess, guidance and counseling and medical services offered by the Philippine Merchant Marine Academy, the described method was the most appropriate method to use.

Respondents

This study utilized convenience sampling. Respondents were selected based on having at least three visit and received any of the services of the library, medical, guidance and counselling, mess and dormitory units in the second semester of SY 2017-2018. Respondents were 134 currently enrolled BSMT and BSMarE students.

Instrument

Hampton and Viela (2014) suggest that a survey is used for collecting information that should be representative of the views of the whole community or group whom you are interested in. The student satisfaction survey-questionnaires were provided by the different service providers-the Librarian, Academy Physician, Guidance Coordinator, Mess officer and the Dormitory Manager. Further adjustments were made after a pilot application was conducted. The final version of the instrument was resolved after the approval of the PMMA Assistant Superintendent for Academics, Research and Extension.

The survey-questionnaire consists of Part I the profile of the respondents which includes name(optional), sex, course, year level and age; Part II describes the perception of the services: (a). Library-the students described their satisfaction on the library collection, physical facilities and service support; (b) dormitory- the students described their satisfaction on the office/personnel and the services offered like accomplishment of job orders and issuance of berthing gears ; (c) medical- the students described their satisfaction on the facility, staff and supplies; (d) guidance and counselling- the students described if the counsellor responded to the student request for guidance services in a timely manner, easy to relate to, knowledgeable about dealing with the request, handled the situation effectively and made the student fell positive about school and consultation services; (e) mess unit- the students described their satisfaction on the food's taste and appearance, personnel's' cleanliness, hygiene, and courtesy, and the facility, equipment and utensils' cleanliness, sanitation and appearance.

Procedures

After the approval of the questionnaire, it was distributed to one hundred thirty- four (134) respondents. The content of the questionnaire was explained first to the respondents before answering. Accomplished questionnaires were collected; answers to the questionnaire were tallied and interpreted. To verify the result of the survey, a focus group discussion was conducted to 10 student leaders with a semi-structured interview with the interview guide.

Data Analysis

The data gathered were presented in tabular form to interpret the results and descriptive statistics such as frequency distribution and weighted mean will be used. Frequency distribution and weighted mean were utilized to evaluate the Level of Satisfaction on the student services. The ranking was used to determine the order of the items. The given scale was used to interpret the result of the data gathered: 4.20-5.00 extremely satisfied; 3.40-4.19 very satisfied; 2.60-3.38 satisfied; 1.80-2.59 dissatisfied and 1.00-1.79 very dissatisfied.

RESULTS AND DISCUSSION

Student satisfaction on the services provided by the Dormitory Unit

The Dormitory Services is primarily responsible for the effective management of the academy dormitory (cadet quarters) to provide

residents a "home away from home" that is safe and conducive to learning. There are 4 dormitories (quarters) in the academy- cadettes' quarters, first battalion, second battalion and the Crossworld quarters.

The Office of the Dormitory Services provide activities that foster unity and harmony among residents/cadets so as to enable them to build a meaningful community life together. There are assigned quarter commanders in each battalion arranged in a regimental system. The Dormitory Manager is responsible for ensuring the maintenance and sanitation, and the observance of rules and regulations in the dormitory. She is also responsible for providing various administrative and housekeeping services to residents and visitors of the school.

Table 1. Students' satisfaction on the Dormitory Services

CRITERIA	MEAN	DESCRIPTIVE EQUIVALENT	RANK
How did you find the office in terms of:			
a. Courtesy and Attentiveness	3.64	Very Satisfied	1
b. Knowledge of Service and Policy	3.57	Very Satisfied	3
c. Responsiveness	3.52	Very Satisfied	5
d. Friendliness	3.56	Very Satisfied	4
Were the accomplished job order suit your satisfaction?	3.46	Very Satisfied	6
How did the issued berthing gears affect your needs?	3.62	Very Satisfied	2
Over-all Mean	3.56	Very Satisfied	

Table 1 shows that the respondents were very satisfied with the services of the dormitory unit with an over-all mean of 3.56. The items registered an adjacent range of 3.46 to 3.64 and interpreted as very satisfied. The table showed that the students were very satisfied with the courtesy and attentiveness, knowledge of service and policy, responsiveness and friendliness of the personnel, accomplishment of job orders and the berthing gears issued by the dormitory manager. In effect, the students ranked courtesy and attentiveness as #1 and accomplishment of job orders as #6. This implies that intangible aspects of service such as attentiveness and courtesy showed the greatest power to classify satisfaction of students on the dormitory services.

Student satisfaction on the services provided by the Guidance and Counseling Unit

The PMMA Guidance and Counseling Unit, as an integral part of the educational system, opens its avenues through services for individuals, families or groups who are referred and/ or voluntarily seeking for Guidance and Counseling and all other programs it is catering. The office provides: Guidance service by using an integrated approach to the development of well-functioning individuals primarily by helping them to utilize their potentials to the fullest; Counseling through individual and/or group intervention designated to facilitate positive change in student behavior, feelings, and attitudes. Appraisal by gathering information about students through the use of psychological tests and non-psychometric devices; Follow-up through systematic monitoring to determine the effectiveness of guidance activities; and Referral with multi-disciplinary team of specialists to ensure that special needs of students are met. The Guidance Unit is composed of a Guidance Coordinator/Head and a Guidance Counselor who are also in-charge of all religious activities of the academy. The area of focus of the evaluation in this study is only the consultation service.

Table 2. Students' satisfaction on the Guidance Services

CRITERIA	MEAN	DESCRIPTIVE EQUIVALENT	Rank
The guidance counselor Responded to my request for guidance services in a timely manner	4.19	Very Satisfied	5
Was easy to relate to	4.24	Extremely Satisfied	3
Was knowledgeable about dealing with my request	4.22	Extremely Satisfied	4
Handled my situation effectively	4.25	Extremely Satisfied	2
Made me feel positive about school consultation services	4.30	Extremely Satisfied	1
Over-all Mean	4.24	Extremely Satisfied	

Table 2 above shows that the students are extremely satisfied with the services of the Guidance and Counseling Unit, with an over-all mean of 4.24. The items range from 4.19 very satisfied to 4.30 extremely satisfied. This shows that the students are very satisfied with how the guidance counselor responded to their request for guidance services in a timely manner. Moreover, the respondents are extremely satisfied with

the guidance counselor's way of relating, knowledge about the request, effectively handling of situations and making respondents feel positive about school consultation service. Ranked #1 among the items is how the counselors made the students feel positive about the school's consultation services while how the counselors responded to the request of the students for guidance services in a timely manner ranked #5. This implies that the students are aware of the school's guidance services and students who have visited the guidance unit for specific service are extremely satisfied.

Student satisfaction on the services provided by the Mess Unit

The PMMA Mess Unit is responsible for providing sumptuous and healthy meals for all 600 cadets/students and tactical officers. They also cater food requirements during special occasions in PMMA. There are two (2) nutritionist who plans the breakfast (morning chow), lunch (noon chow) and dinner (evening chow) of the students. The food is served in a silver tray with spoon and fork, water glass and water pitcher for each table consisting of more or less 10 students.

Table 3. Students' satisfaction on the Mess Services

CRITERIA	MEAN	DESCRIPTIVE EQUIVALENT	RANK
A. FOOD			
1. Taste	3.47	Very Satisfied	2
2. Appearance	3.37	Satisfied	4
Mean	3.42	Very Satisfied	
B. PERSONNEL			
1. Cleanliness and Hygiene	3.36	Satisfied	5
2. Courtesy	3.57	Very Satisfied	1
Mean	3.46	Very Satisfied	
C. DINING AREA, EQUIPMENT AND UTENSILS			
1. Cleanliness and Sanitation	3.25	Satisfied	6
2. Appearance	3.38	Satisfied	3
Mean	3.31	Satisfied	
Over-all Mean	3.40	Very Satisfied	

Table 3 shows that the respondents are very satisfied with Mess services with an over-all mean of 3.40. The items range from 3.25 satisfied to 3.57 very satisfied. This shows that the students are satisfied with the taste

and appearance of food, and cleanliness, hygiene and courtesy of mess personnel but only satisfied with the cleanliness, sanitation and appearance of the dining area, equipment and utensils. This implies that the attitude of the mess personnel could bring about higher levels of customer satisfaction, while cleanliness, hygiene, sanitation and appearance are the most valued components of the student's experience and needs to be improved.

Student satisfaction on the services provided by the Library Unit

The library unit provides user assistance where they help and guide students find specific books, circulations of library materials. Librarian's function answers to their questions and include check-outs and check-ins of materials including renewal and collection of fines and other charges, re-shelving of library materials, and maintaining order in shelving areas. The Library is equipped with computer units with internet access. Students may use the facilities for free.

Table 4 shows that the respondents are extremely satisfied with the library services. The items range from 4.51 to 4.86 extremely satisfied. This shows that the students are extremely satisfied with the library collection, physical facilities, and service support of the Academy library. This implies that both tangible and non-tangible components of the library are well provided to the students.

Table 4. Students' Satisfaction on the Library Services

CRITERIA	MEAN	DESCRIPTIVE EQUIVALENT	Rank
LIBRARY COLLECTION			
Adequacy of Books	4.59	Extremely Satisfied	15
Quality of Books	4.55	Extremely Satisfied	17
Availability of recently published books	4.51	Extremely Satisfied	18
Availability of books in all subject areas	4.57	Extremely Satisfied	16
Relevant periodicals, journals, and magazines	4.61	Extremely Satisfied	14
Mean	4.57	Extremely Satisfied	
PHYSICAL FACILITIES			
Cleanliness and orderliness	4.83	Extremely Satisfied	4
Ventilation	4.86	Extremely Satisfied	1
Lighting	4.85	Extremely Satisfied	2
Furniture	4.84	Extremely Satisfied	3

Computer	4.77	Extremely Satisfied	11
Wi-Fi Connection	4.67	Extremely Satisfied	13
Mean	4.80	Extremely Satisfied	
SERVICE AND SUPPORT			
Appropriateness of library schedules	4.75	Extremely Satisfied	12
Assistance and support of the staff	4.78	Extremely Satisfied	9.5
Functionality of rules and regulations	4.78	Extremely Satisfied	9.5
Guidance of competent librarian and staff	4.81	Extremely Satisfied	6.5
Attitude of staff towards their work	4.79	Extremely Satisfied	8
Attitude of staff towards their clients	4.82	Extremely Satisfied	5
Mean	4.79	Extremely Satisfied	
OVERALL IMPRESSION			
General impression and appearance of library set-up	4.81	Extremely Satisfied	6.5
Mean	4.74	Extremely Satisfied	

Student satisfaction on the services provided by the Medical Unit

The Medical Unit offers both medical and Dental takes care of protecting, promoting and maintaining the health and well-being of the students and school personnel. Presently, the school clinic service (known in PMMA as sickbay) has two (2) academy physicians and a dentist. There are four (4) nurses operating in shift 0600H-1400H, 1400H- 2200H and 2200H-0600H. On weekends, only 1 nurse is on duty the from 0800H-0800H the following day.

The Medical Services provided by the medical unit are: Physical Examination (PE) Annual Physical Examination which is regularly conducted to all students especially varsity players and athletes who will join the games during the Intramurals as well as those who will join inter school competitions; medical consultation/counseling; first aid treatment (primary care); health awareness programs through lectures/seminars; referral system; symptomatic and supportive treatment; issuance of medical certificate; and pre-employment medical check-up and recommendations.

On the other hand, the Dental Services offered are: oral examination; simple single tooth extraction; temporary/permanent filling; oral prophylaxis in cases of gingivitis or periodontitis; dental check-up/consultation; referrals and recommendation; issuance of dental certificates; emergency treatment; and dental health awareness program.

Table 5. Respondents' Satisfaction on the Medical Services

CRITERIA	MEAN	DESCRIPTIVE EQUIVALENT	RANK
MEDICAL FACILITY			
1. Cleanliness	4.41	Extremely Satisfied	9
2. Illumination	4.34	Extremely Satisfied	12
3. Ventilation	4.32	Extremely Satisfied	13
Mean	4.36	Extremely Satisfied	
STAFF			
1. Attends to the needs of the patient.	4.59	Extremely Satisfied	1
2. Able to communicate with the patient & the family.	4.49	Extremely Satisfied	7
2.1 Explains instructions carefully.	4.57	Extremely Satisfied	3.5
2.2 Comforts the patient & the family	4.52	Extremely Satisfied	5
2.3 Entertains inquiries regarding the illness.	4.58	Extremely Satisfied	2
3. Encourages follow-up check-up.	4.57	Extremely Satisfied	3.5
Mean	4.56	Extremely Satisfied	
SUPPLIES			
1. Able to give initial dose of prescribed medicines.	4.51	Extremely Satisfied	6
2. Beddings & linen	4.36	Extremely Satisfied	11
3. Drinking water	4.43	Extremely Satisfied	8
4. Food & utensils	4.40	Extremely Satisfied	10
Mean	4.42	Extremely Satisfied	
Over-all Mean	4.45	Extremely Satisfied	

Table 5 shows that the respondents are extremely satisfied on all criteria of evaluation with an over-all WM of 4.4.5. The items ranged from WM of 4.32 to 4.59. This means that the medical facility and staff are all provided with quality to the students.

Summary of Satisfaction on the Student's Services

Among the student services provided by the Academy, according to the weighted mean computed, there are three services that respondents are extremely satisfied namely: library rank 1, medical rank 2 and guidance and counselling rank 3. On the other hand, respondents are very satisfied with dormitory rank 4 and mess ranked 5.

Table 6. Summary of Satisfaction on the Student's Services

SERVICE	OVER-ALL WEIGHTED MEAN	INTERPRETATION	RANK
Library	4.74	Extremely Satisfied	1
Dormitory	3.56	Very Satisfied	4
Guidance and Counseling	4.24	Extremely Satisfied	3
Mess	3.40	Very Satisfied	5
Medical	4.45	Extremely Satisfied	2

The data indicates that the students are extremely satisfied with the services the academy provides with library ranked #1, medical #2 and guidance and counseling #3. Consequently, the students are very satisfied with dormitory ranked #4 and Mess ranked #5. This implies that the quality services are provided to the students which yields an important impact on PMMA's standing in maritime education rakings.

Areas of Improvement

During the Focus Group Discussion (FGD) the respondents made the following comments and suggestions:

Library

- ✓ Extend the library hours during study call period
- ✓ Install printer/copier/scanner for students to print and reproduce projects etc.
- ✓ Produce more personal computer
- ✓ There must be other aides in education such as gadgets for practical use
- ✓ Additional wi-fi access

Dormitory

- ✓ Our laundry must be cleaned well-Some of the shirts have bad smell and still have stains on it
- ✓ all the shower heads should be fixed and usable
- ✓ Install new electric fans
- ✓ provide cleaner water supply
- ✓ change the mattress and repair the destroyed ones
- ✓ Change beddings every week.
- ✓ Allow us to decorate the quarters during special occasions
- ✓ Provide new lockers
- ✓ Provide more water jags

Medical

- ✓ Provide more ventilation
- ✓ install new air conditioning units
- ✓ Provide new bed, locker and beddings
- ✓ Have more rooms-don't mix patients who are suffering from different illness

Mess

- ✓ Personnel should wear hairnets
- ✓ Maintain cleanliness in the dining area
- ✓ Utensils should be well cleaned or buy new utensils
- ✓ Food should be properly prepared
- ✓ Provide chuckie chocolate drink or coffee in the morning

Guidance and Counseling

- ✓ Give more group counseling to strengthen camaraderie and unity
- ✓ Have a monthly counseling
- ✓ Minimize letters sending to parents about failing grades in the Midterm grading period

CONCLUSION AND RECOMMENDATION

The library, medical, guidance, dormitory and mess services in the Philippine Merchant Marine Academy provide quality services to the students. This means that the delivered services conform with the expectations of the students. The study provided insight on the selection and customization of the assessment approaches of the specific services that fit their purposes, circumstances and desired outcomes.

It is recommended that the PMMA administration conduct a regular assessment of the service quality of the different student service providers in order to improve their service, to quickly identify problems, and to better assess the students' satisfaction. The Academy Leadership should consider the procurement of the necessary equipment, utensils and materials for the different services in order to improve the quality of services provided to the students.

A similar study should be made to assess the students' satisfaction on the Registrar, Information Systems unit, and Sports and Recreation services of the academy.

IMPACT OF THE STUDY

The assessment efforts in this study has significant implications for the Academy's staff development, recruitment and promotion, leadership, resource allocation, communications and so on, to improve the effectiveness of the services.

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Compressive Strength Properties of Rice Straw Composite Board using Cementitious Materials

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ABSTRACT

As the world responds to solving climate change issues, the construction industry still looks for sound strategies, not just structures, to provide construction materials in which the utilization of agricultural wastes is one of the many techniques that promote green engineering through technological approaches. Rice straw fibers are among the common agricultural wastes burned in the fields for easy disposal that bring health hazards to the community. The utilization of this agricultural waste into a valuable construction material prompted the interest in investigating its properties. This experimental study focused on the compressive strength characterization of rice straw composite board as a result of variations of cementitious materials. Cementitious materials used were gypsum powder, cement, and tile grout in different design mixtures. Results show that the optimum design was attained at 70% gypsum powder, 15% cement and 15% tile grout mixture with 3.57 MPa tested at 28 days with water-cementitious ratio of 0.43 and fiber-cementitious ratio of 0.05. The results gathered from the study demonstrated the potential of rice straw composite board as a substitute for a decorative drywall panel.

KEYWORDS

Civil Engineering, rice straw, fiber-cementitious ratio, water-cementitious ratio, compressive strength, Philippines, Asia

INTRODUCTION

Agricultural waste, as defined from Article 3 of Republic Act 9003 or the Ecological Solid Waste Management, is a waste generated from planting or harvesting of crops, trimming or pruning of plants and wastes or run-off materials from farm or fields.

The Philippines is primarily 47% agricultural land, and rice straw is one of the most common agricultural wastes (Zapar, 2015). As mentioned in PhilStar (2006) in the article "Burning of Rice Straw: Agri waste threatens the environment,"200 kilograms of rice straw are burned per ton of rice produced.

Padin (2015) stated that the Philippines is the 8th largest rice producer in the world and according to Allam, Garas, and El Kady(2011), the easiest and less expensive way to reduce or eliminate volumes of rice straw wastes is burning. It is the quickest manner to eliminate wastes and clear the fields in preparation for the next planting season. However, agricultural residues burning is not environmentally acceptable because of health hazard reasons. It boosts air pollution and serious human health problems due to the emission of carbon monoxide (Allam, Garas, & El Kady, 2011). In addition, incomplete combustion processes like the burning of the fields produce dioxins which are highly toxic and carcinogenic pollutants. According to Irina Ize of the Commission for Environmental Cooperation, "Burning agricultural waste creates non-specific sources of pollutants for the atmosphere and takes place over vast areas. It is therefore difficult to measure and to regulate the resulting emissions" (CEC, 2014).

On the other hand, the continuous rise in the price of construction materials is very evident. The Philippine Statistics Authority, as mentioned by Valencia (2018), reported that there was a rise in the wholesale price index of construction materials from 8.4% to 8.8% in June 2018 which influences the cost of government projects. In the study conducted by the National Association of Home Builders inJanuary 2018, building material prices ranked number 2 among the problems faced in 2017 (Chaluvadi, 2018).

Bolden, Abu-Lebdeh, andFini (2013) mentioned that replacing raw materials with recycled materials reduces the dependency on raw materials in the construction industry. Recycling of wastes into more useful construction

materials is not a new concept to solve issues on environmental concerns of waste production and pollution.

In consideration to Republic Act 10068 (Organic Agriculture Act of 2010) which aimed "to promote, propagate, develop further, and implement the practice of organic agriculture that will cumulatively condition and enrich the fertility of the soil and increase farm productivity ("Status of Agricultural Waste and Utilization", 2018) ; reduce pollution and destruction of the environment; prevent the depletion of natural resources; and to protect the health of farmers, consumers and the general public" (Tacio, 2018) the need to use agricultural wastes is a challenging task to researchers.

Munshi, Dey, and Sharma (2013) stated that to decrease the cost of construction materials and raise environmental concerns, considerable efforts to improve the performance of construction is by the utilization of local waste and byproduct materials. Innovative technologies such as utilization of agricultural waste into a new building material are one of the best approaches to meet the growing demand of the construction industry for building materials (Patel, Salla and Pitroda, 2013). The application of agricultural waste as a sustainable construction material is a means to provide a solution to the current problems.

According to Coutts and Warden, as cited by Shawia, Jabber and Mamouri (2014), developing natural fibers as composite-based products is a trend to substitute traditional engineering materials. All over the globe, different researches were conducted on the possibilities of using natural fibers such as bagasse, cereal straw, corn stalk, cotton stalk, kenaf, rice husk and rice straw for the production ofhardboard and particle board (Domke&Mude, 2015). Furthermore, wood-cement boards were found to be heat-resistant, fire-resistant, lightweight, has sound-isolating capabilities, eco-friendly and cost-effective (Mohammadkazemi, & Doosthoseini, 2015).

Rice straw, like any other natural fibers used as a substitute for construction materials, can also be utilized into something useful and economical. Studies have shown that rice straw contains high silica content of about 74.67% which can be compatible with cement (Lim, Manan, Alwi& Hashim, 2012). It has also been discovered by Munder, Karaj, Gummert, Haefle, and Muller (2012), and Guillemot, Bruant, Pasquiou, and Boucher (2014) that rice straw contains a high value of ash that resembles silica fume in terms of high silica content (Morsy, 2011). Therefore, this agricultural waste has a very high potential in producing secondary raw materials mainly due to high silica content and relatively low cost. Hence, this study was carried out to determine the optimum design mix that can be used in the production of a rice straw composite board with cementitious materials as binders and to

evaluate the compressive strength properties of the rice straw composite board that will positively show the impact of utilizing agricultural wastes in Magalang, Pampanga as an advantageous construction material that deserves technological improvements.

FRAMEWORK OF THE STUDY

Many researchers believe that natural fibers reinforced composites are better replacement for conventional synthetic fibers reinforced polymers. The research idea was established from the issues involved which focused mainly on climate change issues which is one of the reasons why innovation of materials in the construction industry has been put into practice.

Figure 1 shows the block diagram used for the trial mix designs while Figure 2 shows the production process of the rice straw composite board.

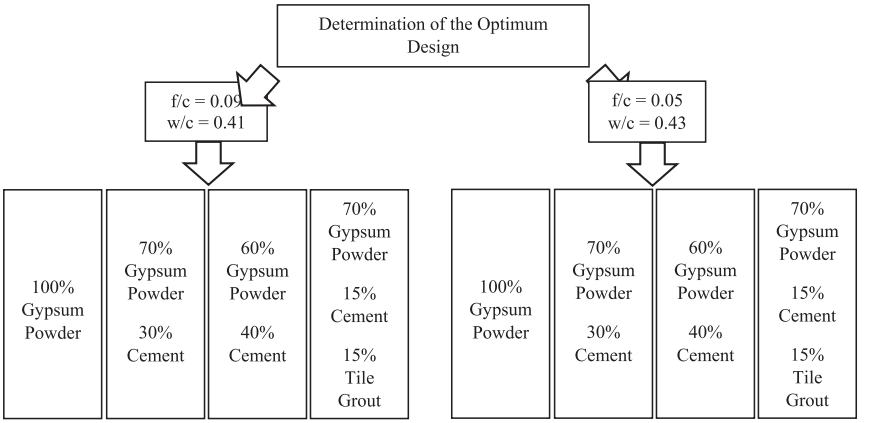

Figure 1. Block diagram for the trial mix designs

The figure describes the step by step procedure to materialize the conceptual framework. The gathering and selection of materials were conducted directly from the rice fields that are within the vicinity of Magalang, Pampanga and followed by the preparation of the rice straw. As shown in Figure 1, four variety of mixtures of the cementitious materials were applied to two variations of fiber-cement and water-cementitious material ratios. The samples were fabricated and cured and were subjected to compression test at 7, 14 and 28 days after which the optimum design was determined based on the results of the testing.

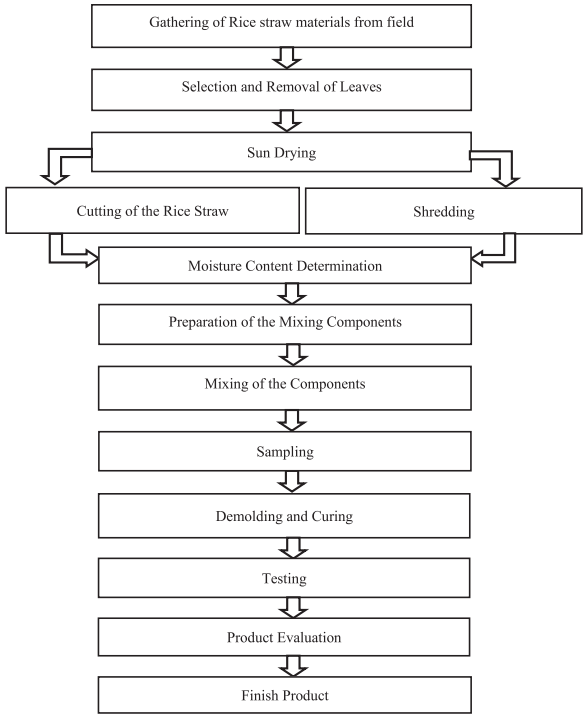

Figure 2.Production process of the rice straw composite board

METHODOLOGY

The materials used for the production of the rice straw-cementitious bonded composite board were composed of rice straws collected from barangays Sta. Cruz, and Mandani, Magalang, Pampanga, ordinary Type I Portland cement (OPC), gypsum powder, tile grout, acrylic polymer and acrylic latex. Rice straw was the main lignocellulose material used as filler. Gypsum powder, cement and tile grout served as the binding agents while acrylic polymer (mortar admixture) served as the admixture and the fresh water was used to dissolve the powder compositions. The acrylic latex was only used for the finishing touches to give a glossy effect to the product and to act as sealant or laminating agent of the board to avoid powdering.

Before the rice straw was mixed with other materials, the leaves of the rice straw were removed from the stem. Isolation of the damaged parts as well as removal of the leaves was done prior to sun drying. The rice stalks were then sun-dried to remove some water content such as dew and were

cut into the sizes of 10 mm. All rice straw materials have undergone sun drying to measure its moisture content, as adopted from Shawia et al. (2014). The advantage of sun drying for different wastes is the low operating cost and little expertise is required (Muruganandam et al., 2016). The rice straw materials were kept in a storage area, covered and intact in a sack to avoid wetting.

However, to determine the optimum moisture content, the "Bone Dry" procedure was conducted. The bonedry procedure, according to licensed Agricultural Engineers from Pampanga State Agricultural University, is determining the exact moisture content of the fibers. In the book "Quality Management of Cement Concrete Construction" (Gahlot and Gehlot, 2009), in the condition of bone dry, the moisture from all permeable pores is completely evaporated.

In the bone dry procedure, the fibers were weighed with an initial amount of 50 grams and placed inside an aluminum foil. The purpose of placing the fibers in the aluminum foil is to maintain the heat being absorbed by the fibers. The fibers were placed inside an oven with a consistent temperature of 105°C. Hourly, the weight of the fiberswas taken and recorded and it was done consistently for 24 hours, though the mass of the fibers became consistent in reading upon reaching the oven-drying for 12 hours beyond. The moisture content was measured after the conduct of the dry bone procedure.

In determining the optimum design mix, there were eight mixtures prepared in the variations of the percentage of the cementitious materials, fiber-cementitious(*f/c)* ratio, and water-cementitious(*w/c)* ratio.

From the first design mixture, a fiber-cementitious ratio of 0.09 and water-cementitious ratio of 0.41. There were four variations of compositions made. The variations were composed of 100% gypsum powder, 70% gypsum powder with 30% cement, 60% gypsum powder with 40% cement and 70% gypsum powder with 15% cement and 15% tile grout. Each variation was sampled on a 50 mm x 50 mm x 50 mm steel mold and there were 9 samples prepared per variation. A total of 36 samples were prepared for testing at 7 days, 14 days, and 28 days. The second design mix used was a fiber-cementitious ratio of 0.05 and water-cementitious ratio of 0.43. The same variations of mixture were made to be compared with the previous design. Similarly, there were also a total of 36 samples prepared for 7 days, 14 days, and 28 days testing. The conduct of both trial mixes was done at the Department of Public Works and Highways Regional Office in the City of San Fernando, Pampanga. Table 1 and Table 2 reflect the trial mix designs.

Table 1. Trial Mix Designs (Length of Rice Straw = 10 mm.)

Fiber-cementitious ratio (f/c) = 0.09 Water-cementitious material ratio (w/c) = 0.41	Gypsum Powder (%)	Cement (%)	Tile Grout (%)	Admixture (%)
Mix 1	100	-	-	3
Mix 2	70	30	-	3
Mix 3	60	40	-	3
Mix 4	70	15	15	3

Table 2. Trial Mix Designs (Length of Rice Straw = 10 mm.)

Fiber-cementitious ratio (f/c) = 0.05 Water-cementitious material ratio (w/c) = 0.43	Gypsum Powder (%)	Cement (%)	Tile Grout (%)	Admixture (%)
Mix 6	100	-	-	3
Mix 7	70	30	-	3
Mix 8	60	40	-	3
Mix 9	70	15	15	3

The exploratory research method was used to observe the performance of the specimens. This is used to obtain new ideas relating to the research problems. In determining the optimum design mix, the specimens were observed and tested on 7 days, 14 days and 28 days. The specimenswere sampled, cured, and tested according to American Society for Testing and Materials (ASTM) procedures. ASTM C109 (Standard Test Method for Compressive Strength of Hydraulic Cement Mortars Using 2-in. or [50 mm.] Cube Specimen) was followed. Since there were replications made and the test was conducted at 7, 14, and 28 days, the Analysis of Variance (ANOVA) was used to determine the significant difference between the samples tested from 7 days to 28 days.

RESULTS AND DISCUSSION

The final product of the rice straw composite board was fabricated with dimensions of 300 mm x 300 mm x 10 mm. It was made from a mixture of 70% gypsum powder, 15% cement, and 15% tile grout combined with 5% rice straw fiber and 3% acrylic polymer. The cementitious materials served as a binder, the rice straw fiber as filler, and the acrylic polymer as an admixture. It has a unit weight of 1.45 kg., and with a variety of colors, depending on

the color of the tile grout used. It has a rough texture due to the presence of rice straw fibers that served as a decorative design to the composite board and it is odorless.

Determination of the Optimum Design

The data presented in Figure 3 is the result of the compressive strength obtained at 7 days, 14 days, and 28 days using f/c = 0.09 and w/c = 0.41.

In the figure, the results of the mixture of 70% gypsum powder, 15% cement and 15% tile grout dominated the other mixtures with a compressive strength of 2.34 MPa at 14 days.

However, it decreases at the 28th day. According to Dai, Wood, and King(2004), the strength development in a structure is not uniform. The temperature of the specimen may vary due to the exothermic reaction of hydration while the concrete gain strength. The room temperature where the specimenswere placed during its hydration and curing may have affected the behavior. Therefore, the location of the specimens must have a uniform temperature though it could not be consistently maintained due to humidity. Room temperature can be considered.

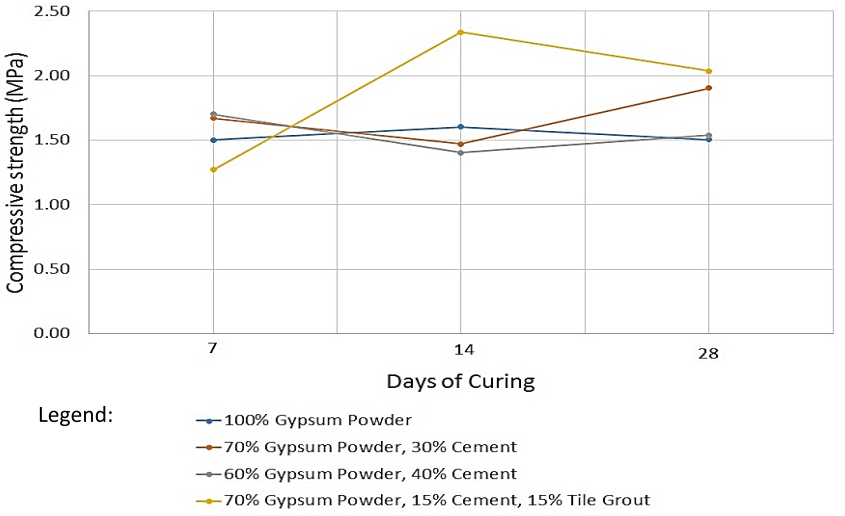

Figure 3. Results of Compression Test of the Specimen with f/c = 0.09 and w/c = 0.41

In consideration of the foregoing data, the results gathered from f/c = 0.05 and w/c = 0.43 was reflected in Figure 4.

It was observed that the same behavior was obtained by the mixture of 70% gypsum powder, 15% cement and 15% tile grout. The compressive strengths varied from 2.34 MPa to 3.5 MPa at 7 days to 28 days that means there is an increase in the strength by 33%.

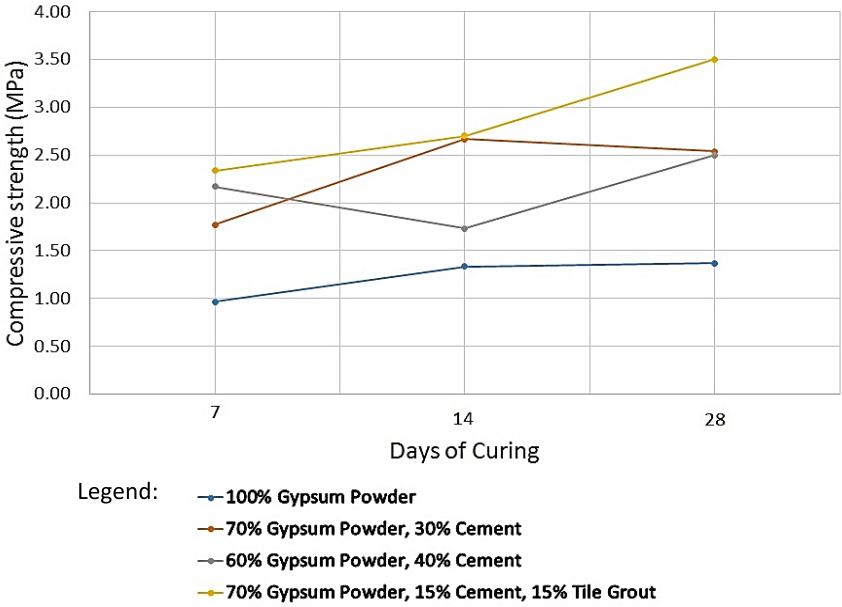

Figure 4. Results of Compression Test of the Specimen with f/c = 0.05 and w/c = 0.43

The other mixtures showed inconsistencies in their compressive strength except for the mixture of 100% gypsum powder. However, its obtained strength was not as high as the combination of 70% gypsum powder, 15% cement and 15% tile grout. Also, a slight increase in the strength occurred at 14 days and 28 days which means that the development in the optimum strength of the specimen was already obtained during the 14 days.

Table 3. Result of the ANOVA test on the compressive strengths of the specimens with f/c = 0.09 and w/c = 0.41.

		F	Significance
Day_7	Between Groups	22.585	**.003**
	Within Groups		
	Total		
Day_14	Between Groups	3.481	.113
	Within Groups		
	Total		
Day_28	Between Groups	3.408	.116
	Within Groups		
	Total		

Table 3 shows the result of the ANOVA test on the compressive strengths of the specimens with f/c = 0.09 and w/c = 0.41. It appears that a significant difference in the compressive strength of the samples exists during the 7th day curing. This can be attributed to the effect of hydration of cement since the w/c used was lower.

Thisis supported by the principles of cement-based materials that the rate of gain of strength with continued hydration is faster at the start and gets reduced with age (Abd&Metwally, 2014). Also, the least significant difference was found on the use of the 60% gypsum powder and 40% cement combination implying that the amount of cement used in the mixture affects the f/c and w/c ratios. However, even if there is a difference between the compressive strengths at 7 and 14 days of different variations, this means that it may happen 11% at a time that implies several factors may have affected the results of the compressive strength. It can be attributed to the room condition, the sampling procedures and the curing process.

The Analysis of Variance for f/c = 0.05 and w/c = 0.43 is shown in Table 4. As revealed, there is a significant difference in the compressive strength of the samples from 7 days to 28 days using the variations of the cementitious materials. This further implies that the reduction of the fibers in the volume has affected the compressive strength of the composite board as it has a greater bonding effect with cement.

Also, each of the variations of the cementitious materials affects the behavior of the specimen during its curing period that may be a result of careful sampling and proper curing.

Table 4. Result of the ANOVA test on the compressive strengths of the specimens with f/c = 0.05 and w/c = 0.43.

		F	Significance
Day_7	Between Groups	7.950	0.000
	Within Groups		
	Total		
Day_14	Between Groups	18.451	0.000
	Within Groups		
	Total		
Day_28	Between Groups	21.008	0.000
	Within Groups		
	Total		

The percentages of cementitious materials were greatly affected by the f/c and w/c ratios in its compatibility with the rice straw fibers.

Comparing the f/c ratios between the design mixtures, the study related to the concept that the volume of fibers affects the behavior of the rice straw composite board. Studies conducted by Bae, Choi, Lee, and Bang (2016) narrated that the compressive strength tends to increase linearly with the increasing proportions of fibers. In particular, the correlation between compressive strength increase and fiber content tends to decrease with increasing design compressive strength. However, in the case of using natural fibers such as rice straw, experts believe that rice straw can impair the workability of the mixture and its compaction condition. Pickering, Efendyand Le (2016) stated that interfacial bonding between fiber and matrix has an important role in the development of the mechanical strength of natural fiber composites. Since the rice straw composite board is a plant-based composite, it may have limited interaction between the fiber and the matrix that will lead to poor interfacial bonding limiting its compressive strength. On the other hand, the rice straw used in the study was untreated and according again to Pickering, Efendyand Le (2015), the strength and stiffness of natural fibers are generally low. Therefore, the attained compressive strength of the experimental board may not be significantly as high as those with treated natural fibers.

(a) (b) (c)

Figure 5. (a) Sample of rice straw fibers cut in 10-mm. size,
(b) The ASTM standardsize steel mold used to sample
specimens for compression test,
(c) a sample finished product in 300 mm. x 300 mm. x 10 mm. dimensions

The mixture that produced the highest compressive strength among the eight variations is the 70% gypsum powder with 15% cement and 15% tile grout, with f/c = 0.05 and w/c = 0.43, which was the basis for the design mix in determining the other properties of the experimental board.

CONCLUSIONS

The optimum design mix for the production of the rice straw composite board shall composed of 70% gypsum powder, 15% cement and 15% tile grout with fiber-cementitious material ratio of 0.05 and water-cementitious material ratio of 0.43. The highest compressive value acquired is 3.57 MPa at 28 days tested under ASTM C109.

RECOMMENDATIONS

It is further recommended to consider extending the curing age of the composite board to determine the deterioration age of the compressive strength. Also, it is recommended to explore on the use of treatments on the rice straw fibers and other binders to determine its effect on the compressive strength properties of the rice straw composite boards.

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Using Technology Tools in the Navigation Classroom

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ABSTRACT

Today's education system is faced with the challenge to bridge the gap between how students live and how they learn. This study was aimed to identify if the integration of technology tools (i.e., Electronic Chart Display and Information System or ECDIS) will increase the students' motivation and learning, and consequently, their academic performance. In this study, the pre-test and post-test non- equivalent control group quasi-experimental design was utilized. There were 139 BSMT fourth year student-participants grouped into the experimental group – those exposed to the ECDIS simulator, and the control group – those who were not exposed to the ECDIS simulator. Using pre-test and post-test, the academic performances of the two groups were compared. The study used frequency, percentile, weighted mean and independent sample t-test to analyze the academic performance of the two groups. Data shows that those exposed with the ECDIS simulators obtained a higher mean grade of 89.11 than those not exposed with the ECDIS simulator with mean grade of 84.23. Based on the findings, the researcher concludes that using technology in the navigation classroom increases the students' motivation and learning and consequently their academic performance. It is recommended that the PMMA administration may consider acquiring more up-to-date equipment that will be used during the practical sessions to enhance the academic performance of the students.

KEYWORDS

Maritime education, education technology, academic performance, quasi-experimental design, Philippines

INTRODUCTION

Today's education system is faced with the challenge to bridge the gap between how students live and how they learn. Students will spend their adult lives in a multi-tasking, technology-driven world-and the academe must guarantee that they are equipped to do so. Today's college students expect that technology will be central in their higher education. They have used technology for a variety of reasons (i.e. entertainement, academis, communication with friends and family) starting from a very early age and believe that technology enhances learning (McCabe &Meuter, 2011).

Education technology typically refers to the use of hardware, software and other digital technologies to advance learning, teaching and administration in K-12 and postsecondary education settings. The use of technology in education provides students with technology literacy, information literacy, capacity for life-long learning and other skills necessary for the 21st century workplace.

A growing body of evidence demonstrates that technology is an effective means for addressing educational needs, goals and requirements. Educators also have identified links between technology and intermediate goals that lead to high achievement, including improved student behavior, engagement and attendance; improved opportunities for educator professional development; and increased efficiency in classroom administrative tasks (Grinager, 2006).

Rideout, Foehr and Roberts (2010) states that as technology use continues to rise, especially among young people, , college and university administrators increasingly are feeling pressure to keep their institutions at the cutting edge in technology and urge faculty to utilize technology in their teaching to attract students and facilitate learning.

Honey, MicMillan- Culp, and Spielvoget(2005) revealed positive and consistent patterns when students were engaged in technology-rich environments, including significant academic gains and achievement in all subject areas, increased achievement in preschool through high school for both regular and special needs students, improved attitudes toward learning, and increased self-esteem.

Means, Blando, Olson, Middleton, Morocco, Remz, and Zorfass(1993) state that, "teachers can draw on technology applications to stimulate real-world environments for experimentation, so that students can carry out authentic tasks as real workers would, explore new terrains, meet people of different cultures, and use a variety of tools to gather information and solve problems." Technology has been called a neutral tool, which provides a variety of new ways to communicate and gain information, as well as new ways to match students learning styles (Loertscher & Achterman, 2002). Some studies suggest students who are provided technology are more motivated learners, such as in Halat's (2013) study.

Brand (1998)emphasized that there are many ways that technology can enhance teaching and learning. Examples include: more engagement, greater motivation by students, improved communication skills, assessable to students of all levels and abilities, good assessment tool, excellent research tool, better prepare students for post-secondary education and/or workplace, encourages independent learning, and fosters cooperative learning. Wardlow (2016) emphasized that Technology as a tool helps teachers create and present content and instruction that is interesting and relevant to students. When learning is relevant to students, then they become engaged, active learners. Educators report that increased intensity of student engagement occurs when technology is integrated in the classroom. Siderwicz, M. (2016) stressed that technology is exactly what teachers need to ensure the longevity of their teaching material and promote greater interest and interactivity with the students.

Young (2008) concluded that the impact of technology in schools is somewhere between the "only" way to make a positive change in schools and a new fad. Technology can be a strong tool for positive change if it is used in the right way. Andrews, R. (2003) stressed that information and communication technology had been found to produce positive effects, though often these are small and/or specific on literacy. Godzicki, L., Godzicki, N., Krofel, M., & Michaels, R. (2013)concluded that students were more motivated and engaged in learning when using technology. The technology-supported learning environment improved student motivation and engagement

Pearson (2018),Bragnon and Dowler (2016)reported that according to higher education experts, many educators are turning to technology to enhance the learning experience, deliver improved outcomes, and to manage increasing class sizes and varying learning styles. They are selecting course materials that are available in digital format, and they're using interactive tools to check students' progress and mastery on assignments

when completing course assignments. Many educators are redesigning coursework to blend online activities with classroom experiences. Walker, L., & Logan, A. (2009) found that it is becoming easier to learn in the workplace, home, classroom, community and even on the move, with access available in all these places to high quality digital resources.

The integration of technology into the curriculum and its use are major concerns in our nation's schools. In the field of maritime, the influence of technology is ever increasing as the Commission on Higher Education and even the Maritime Industry Authority mandate its use more and more each year. The Philippine Merchant Marine Academy, the educational institution where the researcher works, all 50 instructors were given the opportunity to apply for new technology tools for their classroom. They were offered open access internet and network connection, SMART Television or Liquid Crystal Display (LCD) projector, a projector that connects to a computer hard drive; and a desktop computer with a wireless keyboard, speaker and monitor. In the navigation room, an Electronic Chart Display and Information System (ECDIS) is also installed. PMMA Superintendent hoped, by offering these tools as well as training teachers to use the tools, student test scores and both teacher and student motivation would improve.

Specifically, the Navigation 6 classroom is newly installed with an Electronic Chart Display and Information System ECDIS Simulator and the researcher endeavours to prove that when teachers use technology tools in the classroom, students become more motivated to learn the material and are more involved in the lesson. The researcher is intrigued with the phenomena of how the attention spans of the students increase when a teacher uses technology tools and the effect of teachers understanding of the importance of integrating technology into their lessons and becoming accustomed to using technology tools to students' leaning and motivation and thus students using technology performs better than those who do not have the technology.

This study is important to the Navigation Professor because navigation is often said to be a very demanding class with respect to the competencies and skills that will prepare them to the seafaring profession once they complete their schooling. It is very important for teachers to understand how technology tools can improve their students' learning skills and motivation. Teachers who have an open mind are more likely to add technology tools to their curriculum and practice new skills, while those using technology tools already can reflect on their program of activities and expectations of and about using the technology.

Moreover, the students will have the greatest benefit since they will be

given the proper teaching style and activities with the use of technology tools that will increase their academic performance.

As educators, a high level of engagement should be a priority. The more students are engaged, the more they learn. Today's students grew up in the digital age. Technology in the classroom allows students to gain a deeper understanding of topics that interest them, collaborate with each other, and direct their learning.

The purpose of the study was to identify if the integration of technology tools will increase the students' motivation and learning and consequently their academic performance. Specifically, it seeks to answer the following questions:

1. What is the performance of the students in Navigation 6 in terms of:
    a) Pre-test grades
    b) Post-test grades
2. Is there a significant difference between the academic performance of students who use and do not use ECDIS Simulator in Navigation 6 in terms of:
    a) Pre-test grades
    b) Post-test grades
3. What proposed program of instruction may be utilized in lecture and practical sessions for technical subjects such as Navigation 6?

The study was limited to the navigation class 1CL midshipmen in the College of Marine Transportation during the first semester SY 2016-2017 and SY 2017-2018. The technology used in the study is the Electronic Chart Display and Information Systems (ECDIS) Simulator in Navigation 6 classroom.

METHODOLOGY

Research Design

In this study, the pre-test and post-test quasi- experimental design was utilized**.** Quasi-experimental research designs, like experimental designs, test causal hypotheses. In quasi-experimental designs, the programme or policy is viewed as an 'intervention' in which a treatment – comprising the elements of the programme/policy being evaluated – is tested for how well it achieves its objectives, as measured by a pre-specified set of indicators. A quasi-experimental design by definition lacks random assignment, howeverassignment to conditions (treatment versus no treatment or comparison) is by means of self-selection (by which participants choose treatment for themselves) or administrator selection (e.g., by officials,

teachers, policymakers and so on) or both of these routes (Angris&Pischke 2010).

In this study, participants of the quasi experiment involved the following groups: the experimental group who were exposed to the ECDIS Simulator, and the control group who were not exposed to the ECDIS Simulator, and then the performance of the two groups are compared.Each group consists of three (3) sections.

Participants

The study potentially observed six (6) navigation classes. The navigation classes consisted139 fourth-year (1CL) students. The students involved in the research come from mixed socioeconomic status, shipboard training assignments, and gender. Students also range in a wide variety of abilities. The school is on a block schedule with 3 hours laboratory and 2 hours lecture in a week for the navigation class. This sampling will yield reliable, valid results because the same teacher provides instruction for all the students in the sample population.

The research involved comparison groups of fourth year (1CL) students one class of 72 who used the ECDIS simulator and one with 67 cadets who did not have the ECDIS simulator in Navigation 6 class.The respondents of this study came from six (6) sections (3 sections per group). Group 1 the control group are sections: Jupiter, Mercury, Saturn enrolled in the SY 2016-2017 and the experimental group are Saturn Uranus, and Venus enrolled in the SY 2017-2018.

Instrumentation

An Electronic Chart Display and Information System (**ECDIS**) is a geographic information system used for nautical navigation that complies with International Maritime Organization (IMO) regulations as an alternative to paper nautical charts.

The International Maritime Organization (IMO) SOLAS V/19 1974 (as amended) Text from January 1st 2011 2.1 states that All ships irrespective of size shall have: 2.1.4 nautical charts and nautical publications to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage; an electronic chart display and information system (ECDIS) is also accepted as meeting the chart carriage requirements of this sub-paragraph. Ships to which paragraph [2.10] applies shall comply with the carriage requirements for ECDIS detailed therein Para 2.10 further identifies a requirement for ships engaged on international voyages to be fitted with an ECDIS system.

The ECDIS Simulator

Figure 1. Actual ElectronicDisplay& Information

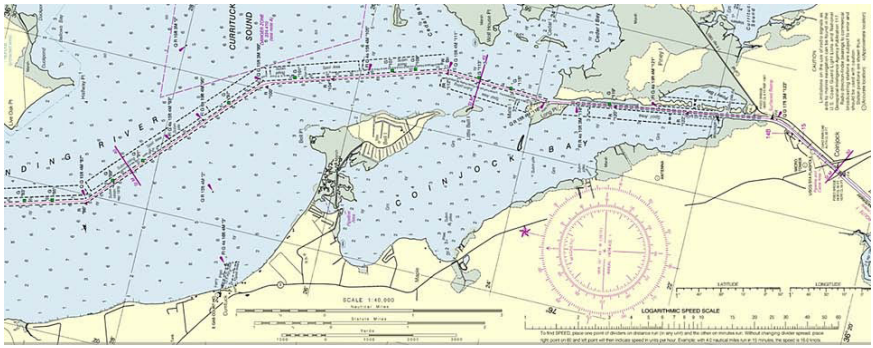
Figure 2. Raster Chart used on ECDIS

Figure 3 Feature of ECDIS simulator

Figure 4 Vector Chart used on ECDIS

Figure 5 Safety Parameters of ECDIS

On the other hand, those who were not exposed to ECDIS simulator used paper nautical charts instead (see example below):



Procedure

The experimental and controlled groups were given the same activity in Navigation 6 class. On the pre-test, both groups used the nautical charts for the activity. The instructor used the ECDIS simulator in teaching the lesson with the experimental group and with the control group he used the paper nautical charts. At the end of the lesson both groups were subjected to the post-test.

Data Collection

As a data collection tool, the study analyzed the pre-test and post-test grades inNavigation 6 submitted by the professor. The grading system is fifty percent (50%) for lecture and fifty percent (50%) for laboratory. The grades of the two groups of students were then compared if there are differences in their motivation, learning and academic performance.

Data Analysis

The data were analyzed using frequency, percentile and mean, and independent samples t-test using SPSS v. 20 in determining the difference between the performance between the groups. The grades were classified as: Excellent=92-100, Very Good=80-91, Good=68-79, Satisfactory=56-67, Pass=50-55 and Fail=0-49.

RESULTS AND DISCUSSION

Performance of Students in Navigation 6 (Operational Use of ECDIS)

Table 1. Pre-Test Performance of Respondents in Navigation 6

	Pre-test			
Numerical Value	Controlled Group		Experimental Group	
	f	%	f	%
92 – 100	1	1.49	30	41.67
80 – 91	58	86.57	27	37.50
68 – 79	8	11.94	10	13.99
56 – 67	0	0	3	4.17
50 – 55	0	0	2	2.78
0 – 49	0	0	0	0
TOTAL	67	100.00	72	100.00
Mean	83.70		84.82	

Table 1 above shows the performance of the respondents in Navigation 6 (Operational Use of ECDIS) in terms of their pre-test grades. For the controlled group (did not use simulator), it can be observed that majority of the respondents got pre-test grades of 80 – 91 (Very Good) with 58 respondents. The mean grades of the students in this group are 83.70 ± 3.14

On the other hand, the pre-test grades of those who used the simulator is slightly higher than those who did not. Most of the students in this group

got a pre-test grades of 92-100 (Excellent) with 30 respondents or 41.67%. The mean grades of the students in this group are 84.82 ± 10.92.

Table 2. Post-Test Performance of Respondents in Navigation 6

Numerical Value	Post-test			
	Controlled Group		Experimental Group	
	f	%	f	%
92 – 100	0	0	33	45.83
80 – 91	60	89.55	31	43.06
68 – 79	7	10.45	8	11.11
56 – 67	0	0	0	0
50 – 55	0	0	0	0
0 – 49	0	0	0	0
TOTAL	67	100.00	72	100.00
Mean	84.23		89.11	

Table 2 above shows the post-test performance of the respondents in Navigation 6. For the controlled group (did not use simulator), it can be observed that majority of the respondents obtained grades of 80 – 91 (Very Good) with 60 respondents or 89.55% The mean grades of the students in this group is 84.23 ± 2.75.

On the other hand, the post-test grade of those who used the simulator (experimental group) is slightly higher than those who did not. Most of the students in this group got a post-test grade of 92-100 (Excellent) 33 respondents or 45.83%. The mean grades of the students in this group is 89.11 ± 6.60.

Difference between the Performance of Controlled and Experimental Group

A. **Pre-Test Performance**

An independent sample t-test was conducted to compare the performance of the students in the pre-test. Table 3 shows that there is no significant difference in the mean for control group (M= 83.70, SD 3.14) and experimental group (M=84.92, SD 10.92), t (137) =57.092, p=.000. The result suggest that the two groups have performed on the same level in the pre-test. This implies that the two groups of students have the same navigation background or foundation.

Table 3. Significant Difference between the Pre-test Grades of Controlled and Experimental Group

			Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F		57.094	
	Sig.		.000	
t-test for Equality of Means	t		-.810	-.835
	df		137	83.426
	Sig. (2-tailed)		.419	.406
	Mean Difference		-1.12179	-1.12179
	Std. Error Difference		1.38494	1.34304
	95% Confidence Interval of the Difference	Lower	-3.86040	-3.79283
		Upper	1.61683	1.54926

B. **Post Test Performance**

Table 4. Significant Difference between the Post Test Grades of Controlled and Experimental Group

			Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F		40.047	
	Sig.		.000	
t-test for Equality of Means	t		-5.613	-5.758
	df		137	96.405
	Sig. (2-tailed)		.000	.000
	Mean Difference		-4.88083	-4.88083
	Std. Error Difference		.86950	.84762
	95% Confidence Interval of the Difference	Lower	-6.60021	-6.56324
		Upper	-3.16144	-3.19841

An independent sample t-test was conducted to compare the post- test performance of the controlled group and the experimental group. Table 4 shows that there is a significant difference in the mean for controlled

group (M= 84.23, SD 2.75) and experimental group (M=89.11. SD 6.60); t (137) = -40.047, p=.000. The results suggest that the controlled group and the experimental group have obtained significantly different performance in the post test. This implies that experimental group (those who used the ECDIS) performed significantly better than the controlled group (those who did not use the ECDIS). This implies that practical sessions using the ECDIS simulator have a positive effect to the students' performance in the subject. Thus, it may be encouraged that all of the students should undergo practical sessions using the simulator.

PROPOSED PROGRAM OF INSTRUCTION FOR NAVIGATION 6

Course Title: NAVIGATION 6(OPERATIONAL USE OF ECDIS) Credit Units: Lecture: 2 units (2 hours) Laboratory: 1 unit (3 hours)
GENERAL LEARNING OUTCOME The students shall be able to: Achieve an understanding of type-approved ECDIS in general, and proficiency specifically in the use of system in use in the profession.
Intended Learning Outcomes: Knowledge (Intellectual Competencies) 1. Understand Electronic Navigational Chart (ENC) data, data accuracy, presentation rules, display options and other chart data formats 2. Analyze the functions of ECDIS required by performance standards. 3. Identify the functions that are integrated with other navigation systems in various installations, including proper functioning and adjustment to desired settings 4. Categorize confirmation of vessel position by alternative means Values (Personal and Civic Responsibilities) 1. Assess the effect of the dangers of over-reliance of ECDIS 2. Generate innovative practices and solutions guided by maritime ethical standards 3. Reflect critically on safe navigational concerns Skills (Practical Skills) 1. Plansafe monitoring and adjustment of information, including own position, sea area display, mode and orientation, chart data displayed, route monitoring, user-created information layers, contacts (when interfaced with AIS and/or radar tracking) and radar overlay functions (when interfaced) 2. Demonstrate proficiency in operation, interpretation, and analysis of information obtained from ECDIS, 3. Schedule the use of settings to ensure conformance to operational procedures, including alarm parameters for anti-grounding, proximity to contacts and special areas, completeness of chart data and chart update status, and backup arrangements 4, Practice adjustment of settings and values to suit the route conditions using ECDIS

MAIN TOPIC	LEC	LAB	MAIN TOPIC	LEC	LAB
Purpose of ECDIS	1	3	Track limit	1	3
Value of ECDIS to navigation	1		Checking plan for safety	1	
Correct and Incorrect use of ECDIS	2	3	Additional chart information	1	3
Understanding chart data	1	3	Coastal and restricted waters (Navigation alarm and route scheduling)	1	
Chart quality and accuracy	1		Users charts in route planning	1	1.5
Chart selection, organization & information	1	3	ARPA/RADAR OVERLAY	2	3
Chart scaling	1		Ais FUNCTION	1	1.5
Information layers	2	3	Installing chart correction	2	3
System and position alarm	2	3	Archiving ECDIS data and data logging	2	3
Depth and contour alarm	1	3	Restricted waters (advanced integrated navigation with ECDIS)	2	3
Vessel's maneuvering characteristic	1		Responsibility	1	3
Route planning by chart	2	3	Effective navigation with ECDIS coastal and restricted waters	1	
TOTAL HOURS	16	24	TOTAL HOURS	16	24

CONCLUSION AND RECOMMENDATION

Students are fond of using technology. The simulator use is an effective learning material. In the traditional approach, students sit passively and wait for information and generally decreases their motivation. The alternative method of using technology provide a learning environment enriched by different senses thus, students more easily and effectively. The use of technology in the navigation classroom increased the academic performance of the students.

Since it was found out that the use of simulator has a positive effect in the students' performance, it is recommended that the PMMA craft a program of instruction for technical subjects and require its technical faculty members to include the use of simulator during their class' practical sessions. In addition, the following recommendations may be considered: allot a time for practical sessions with the use of ECDIS simulator for all technical

subject classes;PMMA administration may consider acquiring other up-to-date equipment that will be used during the practical sessions; and in line with the acquisition of latest equipment, PMMA technical faculty must be continuously given opportunities to enhance and upgrade their skills in using these equipment thru seminars, trainings, advanced studies, etc.

IMPACT OF THE STUDY

The result of the study gave a concrete justification on the procurement of a new 50 million pesos full mission bridge simulator. Moreover, technology tends to have a meaningful impact on student preparation for class, attentiveness, participation in class, and student learning. Finally, it enhanced the overall evaluation of the course and the instructor.

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Communicative Competency in Britton's Language Functions and Academic Performance of Faculty Teaching English Discipline

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ABSTRACT

This descriptive research designed to determine the influence of communicative competency in Britton's language functions on the academic performance of faculty teaching English discipline premised on out-come-based teaching frameworks and the K=12 enhanced basic education curriculum implementation as a measure of reform to enrich performances level could assist the school administration towards a best-fit for quality assurance. The socio-economic-educational profile of respondents reflected majority age 41-50 years, female, married, received monthly salary of Php3,000-6,000, mostly BSAgEd graduate, teaching based on specialization with appropriate training-seminars.Communicative competency in Britton's language functions particularly, expressive and transactional were described as very good, except poetic with only good competency. All language functions divulged homogeneous with closely similar competency.Teaching Performance of faculty in English discipline described moderately adequate. The perceptual difference of Communicative Competency and teaching performance between the male and female faculty members in Britton's

language functions, respectively, disclosed T-test for independence/ uncorrelated level, divulged significant did not exist. Hence, the probability of occurrence greater than Alpha level accepted the Null hypothesis. The relationship between communicative competency in Britton's and teaching performance capability in English, taken collectively among faculty members, disclosed highly significant. Individually, the former variable indicated a directly proportional relationship with the later. The extent of the relationship of Britton's communicative competency and teaching performance on the socio-economic-educational profile, collectively/ individually, which co-existed not-significant, accepted the Null hypothesis.

KEYWORDS

Communicative competency, teaching performance, academic capability, descriptive research, Philippines

INTRODUCTION

Communicative competency in Personske, (1987) John Britton's three major language functions designed by Halliday's (1976) are materials identifying discourse used for (a) Self maintaining physical and psychological needs and wants; (b) directing the action of the self-collaborating in action with others; (c) reporting on present and past expressive labeling the component of the scene referring to the sequence of events recognizing the central meaning is reflecting of experience including own feelings; (d) toward logical reasoning expanding a process and recognizing principles; (e) predicting or for casting events or consequences of the action; (f) projective into the feeling of other or into the reaction others; and (g) Imagining-developing an imaging situations based on fantasy developing an original sherry. Conclusively the study registered that a teacher using the functional approach can create a setting for ESL student that will involve them intimately in reading and writing tasks that are maturated individualized focus on important linguistic structures and vocabulary in discourse contexts where the linguistic forms are used naturally and effectively.

Britton's communicative competency in English second foreign language discipline used as a medium for a definite purpose of communication as an efficient instruction to generate desired productivity for qualityand excellence in educational development is for some objectivity is very vital instructional disciplines involving thinking, movement and interaction with creative efforts to achieve the desired end. Other people even use

some language words to produce tough context of meaning, the form of communication or written competencies, can take a varied structures, the personal choices, or whiling time away by engaging in the favorite activities can be one form it deserves.

Personske (1987) student speaks, read and write, and written letter only in communicative teaching performance exercises. It can also be communicative competency to generate better communication to effect productive teaching, or taking part of a social gathering, or eventing efforts for personal moral and intellectual growth or ever getting alone with other listeners in the processing of learning, while communicators are striving, concretizing their communicative purpose, their messages, their social and physical skills, include their own native tongues or dialects are also of utmost importance.

In the context of teachers at the Tawi-Tawi Regional Agricultural College, they are technically expected to possess minimum communicative competence using their non-native English second foreign language capabilities "to share their own world" (Britton, et. al. cited by Newfield 1978) in teaching all levels, such as; elementary grade levels, secondary, collegiate, master's degree, doctoral and post graduate education courses to attain their instructional objectives.

Tropically, based from empirical observation, the students of secondary or collegiate level are generally perceived to have insufficient skills in utilizing their inherent communicative competencies and teaching learning performance efficiency. This can be attributable to the teachers resource training in English discipline and the insufficiencies of instructional facilities the school has it used for their learning proficiency in both academic and vocational disciplines may deceive them in different ways the achievers provide them and the ways the learning has registered. The course discipline orientation of the institutions as a flagship agriculture institution in the service area, which Tawi-Tawi Regional Agricultural College (TRAC) is the focal one, counts as a distorting-focus-variables may have led to poor communicative competencies and teaching performances of the faculty teaching and the students of the institution a like.

Halliday's (N.D.) communicative competence posited a learner sharing his book with a classmates might make a forceful instrumental or transactional statement "I want that book that is next to that small glass!" without offering the classmates the gain deserved the process should be done differently to less familiar comparison if the solid encounter is to smoothly ("please pass me that book") while consequently, the desired result is achieved, manifests successful communicative competency and efficient teaching performance.

Further, to a great extent, the culture of the society where the school or college is located would also influence the language of the people - can be gleaned the language carried with in the social affairs of the certain society where Tawi-Tawi Regional Agricultural College (TRAC) is likewise located. It has its social significance that without it, a society could not exist from the point posited by SAPIR-WORF hypothesis, language and culture (in Britton, 1999) gradually "shape the view" of the reality of the speaker creating viable though habit among them and that no two cultures are the same in the collage, particularly the elementary and secondary levels which instructional practices are to provide opportunistic and strong foundation of learning failed to use their communicative competencies serving varied purposes in English language. Teacher as observed would provide customary English reading materials with the sole purpose of teaching the students only the course content of discipline, sentence structure of vocabulary which could facilitate work in the other fields, which occurrences are incidental to the "how to" goal desired in the "writing"or speaking course. On the other side of the board, students are taught only the "how to write" doesn't using letter writing choice words and sentence structure connected to other purpose of the students after they've mastered the essentials of writing discourse composition if they are not to write and accomplish a purpose but only to practice the forms the teacher designates, such as; the business letter, the paragraph of essay writing, analysis of the thesis of the passage they read, etc, the act do not make sense. The best is they know the theory, the thesis of the passage and then begin to write. Writing composition based on reading comprehension should begin from a thesis it deserves (Ahamad, 2002). Just like writing autobiography should not begin from my autobiography as title of the thesis, but on the contextual synthesis of the human life story, or the issue deserves to be written.

Sader (N.D.) believed in many classroom activities language learning not even connected to any of the teacher, that is student speaks, read write and written letter only in exercises (Personske, 1987). The given exercises do not open view where the students can practice different communicative functions, or use of language native or non-native English speaking competently (Panel, 1985).

Language functions of Britton's (1978) earlier mentioned and Language Communicative competencies in Lyle Bachman's (1990) Canale (1983, Hymes (1967) and Cumins (1967) schematizations are ideal theoretical frameworks this study deserves.

It is in this vein that the faculty teaching, much the student activities are necessary variables to determine the Britton's language functions for

improvement of their communicative competencies (in all the language functions)understudy. This means the teachers or students of all levels will develop the audience awareness (students-reader) and the language context successfully used in communication and teaching goal of language arts instruction. As their communicative competencies and teaching efficiency awareness increase the choices of learning, students become empowered to achieve passing purposes through teaching learning register done appropriately is an empiricism deemed necessary.

The Tawi-Tawi Regional Agricultural College which concerned is to promote and develop the human resources through faculty development program there by improving the delivery of its educational services and making it more responsive to the changing needs of time and required productivity being the only agricultural institution in the province, offering agricultural courses as its flagship, is presumed the same graduates' communicative competencies and teaching performance in English second foreign language used as a medium of instruction, have a weaker link of performance academically, to include vocational efficiency and productivity in the delivery of the services to attain its institutional mandates: objectives, visions and missions' quest for quality. Considering the consequences of the risks suffered by the institution and the whole constituencies and the clienteles, the researcher hypothesized that the situations incurred upon the institution transferring from one place to another have deeply traumatized losing its credibility.

In this context, the researcher postulated the idea, a need to determine if the perceived variables, viz; communicative competency influencesteaching performances of the same institution's faculty and the students' academic efficiency, hence this study.

OBJECTIVES OF THE STUDY

This study aimed to determine the Communicative Competencies and Teaching Performances among Faculty Members in Tawi-Tawi Regional Agricultural College (TRAC), Bongao, Tawi-Tawi. It specifically, answered the subsequent Problems:

1. What is the socio-economic-professional profile of the respondents?
2. What is the communicative competency of faculty teaching English subjects at the Tawi-Tawi Regional Agricultural College?
3. What is the level of teaching performance among the Faculty Members at the Tawi-TawiRegional Agricultural College?
4. Is there perceptual significant difference of the Communicative

Competency and teaching performance between the male and female faculty members at the Tawi-Tawi Regional Agricultural College?

5. Is there significant relationship between communicative competency and teaching performance among faculty members at the Tawi-Tawi Regional Agricultural College?
6. What is the extent of relationship between communicative competency and teaching performance among faculty members at the Tawi-Tawi Regional Agricultural College?

THEORETICAL FRAMEWORK

Communicative competencies (Bruner, 1977, Halliday, 1978) the interactions that surface within this situation are considered as the originating force, as well as, the condition for language learning (Reese,1979).

Mclean and Snyder-Mclean (1978) characterized language as a means of achieving already existing communicative functions directly related to the automatic aspect of the language and learned in dynamic social interaction involving the individual as the maturity of uses in his environment by nature of the form language carries within it, the complex product of all the input identified plus the effect of the nature and functions of the human physiological and ecological system as a result as individual arrow older their ways of manifesting intention would be gradually improve in using of the structure of the language would be clear and comprehensible.

Quoted, Tomskins and Hosikisson (1991), thus commented that using language via its function or discourse is easily learned in communication experiences rather than though practices activities that lack functions purpose (Roble, 1998) consequently language is rarely employed for the one function at a time rather utilized in two or more function either in talking and writing Pinnel (1975) support such claims that when learner use language discourse functionally they use it for real communication where interacting with other. Language and culture as a theoretical framework also play a vital roles in the development of language verbal competencies, (Ahamad, 2002) of the students.

Erds and Wells (1989) found also though talk student extended from the individual interpretation of their ready and better understanding of it for they talk about their understanding of their story and could change their opinions though prediction after listening the classmate alternative view.

Franly Sampson (1981) is study a functional approach to leading writing use the step (motivation attention use and development of language specific

abilities to learning a second language reading and writing composition a functional approach revealed that the students discoursed contain language forms in performing even their assigned talks.

Harlow, et. al., (1980), Lacasa and Lacasa (1983), Brynes and Camale cited in Baluma (1994) on the student perceived communicative needs of university level student should achieve in the following result: meeting, people, greeting people, expressing pleasure and displeasure, expressing satisfaction, complaining expressing want. Genegabaes (1989) examined English proficiency of the grade six pupils of the Sacred heart school for Boys of Cebu city, centered on the use of the writer assessment though a six-point scale pounded in the instrument a three man scores found out that heading comprehension skill as the most proficient and manner skills as the last performance which phenomena also disturbed researcher.

This research study is anchored on the reading comprehension and writing composition skills theory of Personske, (1987) related to Britton's composition based on Halliday's sociological theory of English second foreign language used as a subject offered at Bongao II district elementary schools in the department of education (DepEd).

It further assessed the capacity of an individual teacher of national elementary and secondary education department in Tawi-Tawi division based upon communicative discourses in reading comprehension and writing composition, to summarily comprehend and write what they read or comprehended and in conveying the message across to his/her readers, audience in attaining such communicative goals and purposes.

In this context, it is important that language user like secondary school teachers of Bongao II district in Tawi-Tawi division should do their best to discover the power of language reading and writing there environments, home and schools' campuses they need to learn a language composition (Ahamad, 2002) to comprehend reading, or compose meaning through written composed heading the meaning (Stewart, Hall, 1988).

Gleaned from the above theory of Britton, in Personske, (1987), individuals learn language composition in order to socialize and direct the behavior of other (pragmatist quested by Brunar, 1974) which further pragmatist states that beside learning the meaning and mechanical forms of composition unity individual are motivated to learn the reading and writing skills.

Muma (1978) as cited by Owens (1984) language communication composition skills structure is acquired as a more efficient means of communication intention the broad fiction of language called interpersonal and personal which are doubted by Halliday (1978) as internal language

used for memory, problem solving, and context development at one hand interpersonal function of language is communication skill function is called a speech act, an "interpersonal" verbally encoded social gesture by one person to another (Garvey, 1977).

Dore, (1974) defined speech act as "a unit of linguistic communication, which is expressed according to grammatically and pragmatic rules, while function to covey a speaking, conceptualized representation and intention".

Searle (cited in O'Grady, 1988) strengthened the point saying "it is not … the symbol or words or sentence… which is the unit of linguistic communication but rather it is the production… in the performance of the speech or writing act. That constitute the basis unit of linguistic communication".

Dore (1974), Mahoray and Seely (1976) Halliday commented that language is preceded by, and possibly involved form a well-integrated nonverbal communication system" the basic writing taxonomy is the Primitive Speech Act (PSA) which is an utterance consisting of labeling, repeating, answering, requesting action requesting answer, calling, greeting, protesting and practicing, therefore, language acquisition is a process of socialization, social interaction and social relationship provide the needs of framework that enable an individual to decode and encode language form and context rationalist theory pioneered by Chomsky, supported by Lenninberg and McNeill (cited in Brown, 1987, 1994 and Jones and Dixon 1989) promised that every individual has innate capacity to learn any language, thus human being possess a clock box known as the language acquisition device (LAD) which further the blue print of language that first heard language into its readymade pattern that vary express acquirer easily learn the target language.

Based on socio cultural theory of Wells (1979-1981) the social interaction theory of both (cited in Roble 1998 and in Ahamad 2002), on the other pole cogently indicated that the rule of social context in which exchanging of ideas take places plays a significant role among the students and the teachers involved in this study of performing there communication task –be they be out that language function always embedded in every activity in every situation and individual engage in Hall (1988), hence, stressed that language is acquired and learner to fulfill needs within the environment is modified and controlled not only the individual behaviors, but the behaviors of those around them. As a social educational or even technological tool language become a way of sharing ideas with people it facilitates fuller interaction with others Brown, (1987) (1994) state initial language learning in a process of cognitive socialization.

CONCEPTUAL FRAMEWORK

The conceptual framework of this study is anchored on the communicative discourse competence of teachers on the theory of Britton'sthree major language functions in Personske, (1987) related to Britton's composition based on Halliday's sociological theory in English second foreign language used as a medium to teach English disciplines offered at the Tawi-Tawi Regional Agricultural College Bongao, Tawi-Tawi.

Britton's (1978) three major language functions used in teaching discourse, such as; transactional, expressive and poetic language functions introduced through formal classroom instruction to determine their comparisons and relationship or influence with communicative competence theory of theorists earlier mentioned.

To assess the respondents levels of communicative competence and teaching performance, the researcher conducted a composition evaluation examination to sampled respondents who were conducted periodically (midterm and final examinations) at their respective departments using the teaching model to determine the progression of language communicative competence of teachers teaching English subjects in the classroom and the academic teaching performance among respondents' teachers test scores. The data of this study were the scores performance of teachersdiscourses adapted from the methodology and the scale rating performance of respondents-teacher teaching English second language functions statistically treated through a descriptive correlational and inferential statistics.

HYPOTHESES

Null:

Based from the postulated problems of the study, the statements of null hypotheses below were tested:

1. There is no significant difference between the levels of communicative competence and teaching performance in English second foreign language medium among teachers at Tawi-Tawi Regional Agricultural College.
2. There is no significant influence of communicative competency on the teaching performance in English second foreign language medium among teachers at Tawi-Tawi Regional Agricultural College.

METHODOLOGY

The study utilized descriptive correlational type of research to describe the Teachers communicative competency and teaching performance of respondents at Tawi-Tawi Regional Agricultural College based on Britton's three major language functions theory in (Personske, 1987) teaching discourses. Correlational and inferential statistics, on the other hand, were used to determine significant difference between the teachers' communicative competency and academic teaching performance among respondents in the institution understudy. The data were statistically treated based on the teachers' competency and teaching academic performance scaled at 5-Point scale of Baluma below. Only fifty (50) respondents were utilized by the researcher identified through simple random sampling design to obtain the desired number of respondents taken from the schools' total population.In determining the sample size,Gay (1976) offers some minimum acceptable sizes of samples depending on the type of research. For descriptive research and smaller populations, a minimum of 20% may be required. And for this study, 45% of the total population was considered as respondents. It was designed to compare which among the teachers performed better in the three language functions of Britton's in (Personske, Lyle Bachman, 1990) level of competency.

The researcher has computed the sample proportion (percent) employing the formula: where n refers to the size of the sample; N pertains to the size of the population; and 100 is constant as shown in Table 1 population distribution.The instrument werepresented to the three-panel of experts for content validity and reliability of rating tests' scores of teachers communicative competence discourse (Bachman,1990) and the teaching performance of the same rating scaled for significant comparison and influences between the variables understudy.

The Locale/Setting of the Study

The setting of the study was the Tawi-Tawi Regional Agricultural College where the respondents were sampled from respective departments. The respondents considered were Teachers of the same institution comprised of 30 teachers conducted to classroom demonstration teaching the sampled respondents based on the Britton's three major language functions; Transactional, expressive and poetic (Britton, 1987) in Personske's model of language communicative functions.

The Respondents

The respondents of this study were solely faculty of Tawi-TawiRegional Agricultural College teaching English discipline piloted to test communicative discoursecompetencyrating at 5-Point scale of Baluma below with only fifty (50) respondents identified through simple random sampling design to obtain the desired number of respondents considered from the total population of the institution understudy.In determining the sample size of respondents, Gay (1976) offers some minimum acceptable sizes of samples depending on the type of research. For descriptive research and smaller populations, a minimum of 20% may be required. And for this study, 45% of the total population was considered as respondents.

On the basis of the computation using 45% of the population, the sample size was 50; 24 were males and 26 were femaleswas also utilized to determine communicative competence of Britton's major language functions (Lyle Bachman, 1990) on the level of teacher-respondents competence. The researcher has computed the sample of respondentsproportion (%) employing the formula: where N refers to the size of the sample; N pertains to the size of the population; and 100 as constant shown below.

Table 1. Population Distribution of the Respondents

Faculty Members	Male			Female		
	N	%	n	N	%	n
Regular Faculty	21	60	10	50	65.79	22
Contractual Faculty	14	40	6	26	34.21	12
Total	35	100	16	76	100	34

As shown in Table 1, the total population of teachers for both regular and contractual faculty members is 111; 35 are males and 76 are females. The biggest number of population is from regular faculty members with total frequency of 71 teachers; 21 are males and 50 are females. And the smallest number of teachers is from contractual faculty with total frequency of 40 teachers; of which 14 are males and 26 females teachers. In determining the sample size, Gay (1976) offers some minimum acceptable sizes of samples depending on the type of research. For descriptive research and smaller populations, a minimum of 20% may be required. And for this study, 45% of the total population was consideredas respondents.

On the basis of the computation using 45% of the population, the sample size was 50; 16 are males and 34 are females. The regular faculty members

has the biggest number of respondents numbering 32 (10males and 22 females), followed by contractual faculty members with 18 respondents (6 males and 12 females).

Respondents of the Study

The target respondents were the Teachers of the institution understudy in Bongao, Tawi-Tawi school year 2016-2017. Considering the large number of the population of the college only fortyfive percent (45%) respondent teachers was taken.

Sampling Procedure

This study employed purposive sampling to identify the subject of this study and enumeration of the sample attained with45% samples drawn from the total population of the Tawi-Tawi Regional Agricultural College in Tawi-Tawi, ARMM region.

Research Design

The design of the study utilized descriptive type of research. The tool of statistical treatment of the study utilized frequency count and percentage distribution for the demographic profile of the respondents, T=Test statistics to test scores Mean and standard Deviation were utilized to test significant difference between teachers communicative teaching discourses competence and the academic teaching performance of respondents. Regression r^2 to test the significant influence between same variables under consideration was also employed.

Research Instruments

The desired data of the study were treated by the following instruments. The observation by Gay SuPinnel exemplifying the three (3) teaching major classroom discourses of Britton language functions (cited in Norton, 1993) was used to monitor the respondent's communicative competence and teaching performance in English second foreign language used as a medium. For scoring and interpreting the respondents level in same variables as well, the 5-point scale of Baluma (1992) was adopted.

Closed-ended questionnaire was used to gather data for the realization of descriptive socio-economic-educational profile and considered qualitative model of Baluma's 5-Point scale rating to determine the levels of teachers' communicative competency and teaching performance at among respondents at the Tawi-Tawi Regional Agricultural College in Nalil, BongaoTawi-Tawi.

The questionnaire consisted of three parts; the first was centered on the demographic profile, the second, on the teaching communicative competency, and the third was the actual teachers' teaching performance competence in English second foreign language as a medium using Britton's language functions in (Bachman, 1992)at the Tawi-TawiRegional Agricultural College, Nalil, BongaoTawi-Tawi. The desired data of the study were treated by the following instruments. The observation by Gay SuPinnel exemplifying the 3 major classroom discourse (cited in Norton, 1993) was used to monitor the respondent's communicative competency and teaching performance. For scoring and interpreting the respondents level in the same variables,the 5-point scale of Baluma (1992) was also adopted (see the appendix Table B below).

Table 1-B. Descriptions Level of Score Points of Communicative Discourse Competency and teachingDiscourse Performanceof FacultyUnderstudy adopted from Baluma(1992)

LEVEL	DISCOURSE DESCRIPTION ofFaculty Competency and Teaching Performance in Britton's (1987) in (Personske, and Bachman 1990)	SCORE (POINTS)
5	High Competency	90-100
4	Very Good Competency	80-89
3	Moderately Good Competency	70-79
2	Poor Competency	47-69
1	Very Poor Competency	Below 46

Criteria Legend:

Accuracy — 20 points
Tone — 20 points
Clarity — 20 points
Organization — 15 points
Spelling — 10 points
Vocabulary — 15 points

A tabulated summary was used to record and monitor individual respondents performance to guarantee that each respondents has read and written the comprehension based on the passage theoretically framed with Briton's in Personske theory.

Validity of Instrument

To establish the validity of the instrument, the data gathered were submitted into the hands of the most capable, well informed and knowledgeable panel of experts. Hence, suggestions and comments are extremely important considerations for a well-polished instrument.

Reliability of the Instruments

The validated questionnaire was administered to non-respondents-teachers of this study through a pre-administration to get the precision and reliability of the instrument.

Procedure to Administer the Instruments (Gathering the Data)

After the instrument was well done ready for the administration to the respondents, a written permission from the Schools Division Superintendent of the Department of Education was then secured first and the prepared questionnaire was administered at once upon consent of the same head of department. Recovery and retrieval of the instrument was done after three days.

Method of Unit Analysis

The study utilized descriptive research parameter to determine the demographic profile of respondents, significant difference of communicative competence and the teaching discourses performance and the influence of communicative competence on the teaching performance ratingamong respondents teachers of Tawi-Tawi Regional Agricultural College in Nalil, BongaoTawi-Tawi.

To find out data on the demographic profile of the respondents, the researcher used frequency count and percentage distribution. Mean and Standard deviation was also used to identify the levels of respondents in communicative competence and their teaching performance. To test the significant difference and relationship between the former variables and the later, T-Test, Test of Coefficient Regression ($R^{2)}$ were utilized, respectively.

Further to measure the accuracy of interpretation of the data treatment the statistical tools used were test of coefficient correlation (r).

RESULTS AND DISCUSSION

This chapter presents the analysis and interpretation of data gathered based on the research problems of the study on "Communicative competencies and Teaching Performance among faculty members teaching

English at Tawi-Tawi Regional Agricultural College. The presentation of data followed the sequence of the statement of the problems.

Problem No. 1 what is the socio-demographic profile of respondents?

Table 1 shows the distribution of respondents according to socio-demographic profile of respondents. As shown in the table, in terms of age, most of the respondents with frequency 15 or 30 percent in the distribution belonged to the age bracket of 41-50 years old, followed closely by a frequency 14 or 28 percent of the respondents belonged to the age bracket of 21-30 years old. Then, third rank in the distribution with frequency 12 or 24 percent of the respondents belonged to the age bracket of 31-40 years old. Then fourth rank in the distribution with frequency 7 or 14 percent of the respondents belonged to the age bracket of 51-60 years old. And the least rank in the distribution with frequency 2 or 4 percent of the respondents belonged to the age bracket of 61 years old and above.

In terms of sex, the same table shows that majority of the respondents numbering 34 or 68 percent in the distribution was female and 16 or 32 percent of the respondents was male.

Then, in terms of civil status, the highest number of respondents with frequency 37 or 74 percent in the distribution was married, followed by a frequency 12 or 24 percent of the respondents was still single. And one of the respondents or 2 percent in the distribution was already separated.

In terms of basic monthly salary, most of the respondents numbering 22 or 44 percent in the distribution has basic monthly salary of P3,000.00-6,000.00, followed by both receiving basic monthly salary ranging from 17,000.00-22,000.00 and 23,000.00 pesos and above with equal frequency of 13 or 26 percent each group. And the least in the distribution was also equally distribution to monthly basic salary bracket of 7,000.00-9000.00 and 10,000.00-16,000.00 pesos with frequency one or two percent each.

As regards to classification of respondent according to degree course earned, the same table shows that most of the respondents with frequency 14 or 28 percent in the distribution was BSAgEd graduate, followed by a frequency 12 or 24 percent of the respondents was a graduate of other courses. Then followed closely by a frequency 11 or 22 percent of the respondents was BSCS graduate. The fourth rank in the distribution with frequency 6 or 12 percent of the respondents earned the degree of Bachelor of Science in Agriculture (BSA). The least rank in the distribution was BS Forestry graduate, and next to the least with frequency 4 or 8 percent of the respondents was BSHT graduate.

Then, as regards to field of concentration/specialization, the highest number of respondents with frequency 33 or 66 percent in the distribution

acquired other field of specialization, followed by a frequency 5 or 10 percent of the respondents specialized in Animal Science, for third, fourth and fifth ranks in the distribution with frequency 3 or six percent each specialized in both English, Biology, and Economics. The least in the distribution with frequency 1 or 2 percent of the respondents has major in Filipino. And next to the least in the distribution with frequency 2 or 4 percent of the respondents with major in mathematics.

In terms of most handled subjects, the same table presents that most of the respondents numbering 26 or 52 percent in the distribution handled other subject like education subjects, Crop science, statistics and physics subjects; followed by 10 or 20 percent of the respondents handled computer science subjects. The third rank in the distribution with frequency 6 or 12 percent or the respondents handled animal science subject and for fourth and fifth rank in the distribution both with frequency 3 or six percent each handled mathematics and English subjects. And the least in the distribution with frequency 2 or four percent of the respondents handled Filipino subjects.

As regards to relevance of Teaching assignment of faculty members/ respondents to their respective field of concentration, 43 out of 50 or 86 percent in the distribution divulged that their teaching assignment was within their field of field of concentration and 7 or 14 percent of the respondents revealed not relevant to their field of specialization.

In terms of number of years of teaching the subject, most of the respondents numbering 17 or 34 percent in the distribution, disclosed that they had been teaching the subjects for 6-10 years already. Followed closely by 16 or 32 percent of the respondents handled the subjects for the period of below 5 years. The third rank in the distribution with frequency 8 or 16 percent of the respondents revealed that they had been teaching the Subjects for 22 years already and above. Then, the fourth rank in the distribution with frequency 5 or 10 percent in the distribution had been teaching the Subjects for 17-21 years already. And the least in the distribution with frequency 4 or eight percent of the respondents handled the subjects for the period of 11-16 years.

In terms of working experience, the highest number of respondents with frequency 20 or 40 percent in the distribution had been already in the service for the period of 6-11 years. Followed by 12 or 24 percent of the respondents had been in the college for the period of 5 years and below. Then, third in the distribution, with frequency 7 or 14 percent in the distribution had been already in the service for the period of 22 years and above. Fourth in the distribution with frequency 6 or 12 percent of the respondents had been in

the service for the period ranging from 17-21 years. And the least rank in the distribution with frequency 5 or 10 percent of the respondents had been teaching for the period ranging from 12-16 years.

Finally, in terms of number of relevant training, seminar and conferences attended, most of the respondents with frequency 21 or 42 percent in the distribution disclosed that they have attended for 1-5 times only, followed by a frequency 15 or 30 percent of the respondents attended trainings, seminar and conference for 6-10 times. Third in the distribution with frequency 8 or 16 percent in the distribution had attended trainings, seminars and conferences for 11-16 times. Fourth rank in the distribution with frequency 4 or eight percent of the respondents had attended 17 times and above. And the least in the distribution with frequency 2 or four percent of the respondents revealed that they have not yet attended training, seminar, or conferences.

Table 2. The Frequency and Percentage Distribution of Respondents According to Socio-Demographic Profile

Profile	Frequency	Percentage
Age		
21-30	14	28.0
31-40	12	24.0
41-50	15	30.0
51-60	7	14.0
61 and above	2	4.0
Total	50	100.0
Sex		
Male	16	32.0
Female	34	68.0
Total	50	100.0
Civil Status		
Married	37	74.0
Separated	1	2.0
Total	50	100.0
Basic Monthly Salary		
P3, 000-6000	22	44.0
7,000-9,000	1	2.0
10,000-16,000	1	2.0
17,000-22,000	13	26.0
23,000 and above	13	26.0
Total	50	100.0

Degree Earned		
BSA	6	12.0
BSAgEd	14	28.0
BSF	3	6.0
BSHT	4	8.0
BSCS	11	22.0
Other	12	24.0
Total	50	100.0
Field of Concentration/ Specialization		
English	3	6.0
Filipino	1	2.0
Mathematics	2	4.0
Biology	3	6.0
Animal Science	5	10.0
Economics	3	6.0
Other	33	66.0
Total	50	100.0
Subject most Handled		
Math	3	6.0
English	3	6.0
Animal Science	6	12.0
Filipino	2	4.0
Computer	10	20.0
Other	26	52.0
Total	50	100.0
Relevance of Teaching Assignment		
Yes	43	86.0
No	7	14.0
Total	50	100.0
Number of yeas in Teaching the subject		
Below 5 years	16	32.0
6-10	17	34.0
11-16	4	8.0
17-21	5	10.0
22 and above	8	16.0
Total	50	100.0
Working Experience		
5 years and below	12	24.0
6 – 11	20	40.0
12 – 16	5	10.0
17 – 21	6	12.0
22 and above	7	14.0
Total	50	100.0
In – service Training		
None	2	4.0
1 – 5	21	42.0
6 – 10	15	30.0
11 – 16	8	16.0
17 and above	4	8.0
Total	50	100.0

Problem No. 2 what is the level of communicative competencies on the three Britton's major language functions among Faculty members at Tawi-Tawi Regional Agricultural College?

Table 3 presents the level of competency of TRAC Faculty members on the three Britton's major communicative language in terms of Expressive Function, Transactional Function and Poetic Function.

As presented in the table, the communicative competencies of TRAC Faculty members in terms of Expressive Function was rated with mean rating of 82.82 percent with standard deviation of 4.284 described very good competence. Likewise, in terms of Transactional Function with mean rating of 80.66 and standard deviation of 4.373 also described very good competence. However, in terms of poetic Function, the respondents earned a mean rating of 78.98 with standard deviation of 5.868 described moderate or good competences. But generally based on grand mean of 80.82 and standard deviation of 4.224, the level of communicative competencies of TRAC Faculty members on the three major Britton's language functions was described very good competence.

In terms of measure of variation of rating competencies, with mean values and standard deviations in the three language functions such as; mean value of 82.82 and standard deviation of 4.284 for Expressive function, mean of 80.66 and standard deviation of 4.373 for Transactional function, mean of 78.98 and standard deviation of 5.868 for poetic functions, which all divulged that the set of values constituted the distribution of rating competency was less scattered(homogeneous). It can be construed that the performance ratings of the respondents were closely similar.

Table 3. The Level of Communicative Competencies on the three Major Britton's Language Functionamong Faculty Members at Tawi-Tawi Regional Agricultural College

Factors/Language Functions	Mean	S.D.	Verbal Description
Expressive Function	82.82	4.284	Very Good Competence
Transactional Function	80.66	4.373	Very Good Competence
Poetic Function Competence	78.98	5.868	Moderate/Good
Grand Mean	80.82	4.284	Very Good Competence

Scale	Range of Mean	Verbal Description
5	90-100	Very High Competence
4	80-89	High/Very Good Competence
3	70-79	Moderate/Good Competence
2	47-69	Low Competence
1	46 and below	Very Low Competence

Table 4 shows that twelve (12) of the fifteen statements on the level of teaching performances of TRAC Faculty Members in English Subject were described moderately adequate and three rated adequate. The highest weighted mean (2.58) was given to knowledge in subject-verb idea with verbal description of adequate. It implieds that the Faculty members have good knowledge in subject-verb agreement. Followed by adequate writing ability with mean value of 2.56. In addition, the TRAC Faculty Members have also adequate (2.52) knowledge in organizational structuring. It can be inferred that teachers have very good knowledge in organization of writing and paragraph arrangement.

On the other hand, the TRAC Faculty members were moderately adequate (2.46) in both conversational capability and sentence analysis. Moreover, the Faculty members were also moderately adequate (2.42) in Command in English Language and Spelling. Itconstrued Faculty members under consideration were not wide readers particularly in English Books.

Furthermore, the least mean value of Faculty teaching performance was given to performance in contextual analysis with mean rating of 2.12 described moderately adequate. Next to the least performance was synthesis analysis with mean value of 2.16 described moderately adequate.

The average weighted mean of Faculty teaching performance was 2.377 described moderately adequate-not so good in Command of English Language or proficient which may affect their ability to make teaching-learning process more effective and interesting for students. The measure of variation among responses on the statements of teaching performances of TRAC Faculty in English Subject, it can be shown by standard deviation as percentage of the mean values in table 3 relative to the mean values of all statements manifested low standard. It implied perceptions of the respondents on the statements of Teaching Performance were similar. It can be construed that the faculty members were in common in the way they assessed their Teaching Performances in English language in terms of the given variables.

Table 4. The Level of Teaching Performance among Faculty Members in Academic Capability in English Disciplines at Tawi-Tawi Regional Agricultural College

Statements	Weighted Mean	SD	Verbal Description
1. Subject-Verb idea	2.58	0.609	Adequate
2. Writing Ability	2.56	0.577	Adequate
3. Organizational Structuring	2.52	0.544	Adequate
4. Conversational Capability	2.46	0.579	Moderately Adequate
5. Sentence Analysis	2.46	0.543	Moderately Adequate
6. Command in English	2.42	0.538	Moderately Adequate
7. Spelling	2.42	0.575	Moderately Adequate
8. Grammar	2.36	0.485	Moderately Adequate
9. Punctuation	2.36	0.525	Moderately Adequate
10. Oral Speech Capability	2.34	0.519	Moderately Adequate
11. Theoretical Application	2.34	0.593	Moderately Adequate
12. Verbal Analysis	2.26	0.487	Moderately Adequate
13. Textual Analysis	2.22	0.465	Moderately Adequate
14. Synthesis Analysis	2.16	0.510	Moderately Adequate
15. Contextual Analysis	2.12	0.480	Moderately Adequate
Average Weighted Mean	2.377	0.368	Moderately Adequate

2.5 – 3.0 = Adequate, 1.5 – 2.49 = Moderately Adequate, 1.0 – 1.49 = Inadequate

Table 5 showed the result of t-test for independence/uncorrelated of level communicative competency and teaching performance of faculty members categorized according to male and female divulged significant difference did not exist between sexes in Britton's three major language functions, such as; expressive, transactional and poetic, and teaching performance. Expressive has t-value =-0.64; transactional has t-value = 0.27 and poetic has t-value = 0.45. Teaching performance has t-value = 0.56 with probability of occurrence under the null hypothesis greater than the alpha level revealed non-significant.Therefore, the null hypothesis was accepted since the variables tested in the study manifested no significant difference between male and female among faculty members. The observed mean ratings evidently supported the findings where the respondents did not vary significantly in their performances along the variables tested.

Table 5. Significant Difference of the Communicative Competency in Britton's three Major Language Functions and Teaching Performance between the Male and Female Faculty

Variables	Mean Ranks of Sex Category		t-obs	P-value	Decision on Ho
	Male	Female			
Communicative Competency					
Expressive Function	82.42	83.19		0.5223	Accepted
Transactional Function	80.83	80.50		0.7908	Accepted
Poetic Function	79.38	78.62		0.6521	Accepted
Teaching Performance	2.408	2.349		0.5760	Accepted

ns = not significance at 5% level of significance.

Table 6 showed coefficient r (r = 0.64) indicated moderate relationship existed between the communicative competencies in terms of three Britton's major language functions, such as; Expressive, Transactionaland poetic taken collectively and Teaching Performance in terms of Academic Capability in English Discipline among Faculty members at Tawi-Tawi Regional Agricultural College. In addition, the coefficient of determination (R^2 = 0.4108) divulged that 41.08 percent of the variance of Teaching performance can be accounted for by the communicative competencies in the three Britton's major language functions taken collectively among the respondents. It implied further that 58.92 percent of the factors which contributed to the teaching performances in terms of Academic Capability in English discipline among the respondents were not covered in this study. The F – observed value of 10.69 with probability value less than the alpha level (P–value = 0.000<0.01) revealed relationship between the communicative competencies of TRAC Faculty members in terms of language functions such as; Expressive, Transactional and poetic taken collectively and their teaching performance (academic capability) in English discipline statistically reflected highly significant.

Likewise, when taken individually, the communicative competencies of respondents in the three Britton's major communicative language functions indicated a directly proportional relationship with their teaching performance in English discipline in terms of academic capability. It revealed that as the communicative competencies of respondents in language functions . . . improve, eventually their teaching performance in English discipline will also improve or vice versa. As such; the communicative competencies of respondents in Expressive function reflected a regression coefficient of 0.16175 with standard error of 0.087932, although its T – Value

of 1.84 with probability value of greater than the alpha level (P–value = 0.023> 0.05) disclosed relationship between the communicative competencies of respondents in Expressive function and their teaching performance in English discipline was not significant. This finding did not corroborate with the finding earlier, that the level of communicative competencies of TRAC Faculty members in Expressive function was very good competence (Table 2). It can be construed that the faculty members did not use properly their expressiveness as a communicative means in classroom discourse.

On the other hand, the communicative competencies of respondents in transactional function indicated a regression coefficient of 0.18487 with standard error of 0.084376, its T –value of 2.19 with probability value less than the alpha level (P-value = 0.0475<0.05) and poetic function with regression coefficient of 0.22811 and standard error of 0.086149, its T – value of 2.65 with probability value less than alpha level (P–value = 0.0111 < 0.05), both revealed relationship between the communicative competencies in terms of Transactional and poetic functions and the training performance in terms of academic capability in English discipline among TRA C Faculty members was significant.

Based on the foregoing findings, the null hypothesis was rejected at 5 percent level of significance. There is sufficient evidence to conclude significant linear relationship between the communicative competencies of respondents and their teaching performance in English discipline existed.

The result revealed further communicative competencies of TRAC faculty members in terms of Transactional and poetic functions were good predictors for teaching performance but not in Expressive function.

Table 6. The Relationship between the Communicative Competencies in Britton's Major Communicative Language Functions andTeaching Performance in Terms of Academic Capability in English Disciplineamong Faculty Members atTawi-Tawi Regional Agricultural College

Predictor Variables	Regression Coefficient	STD Error	Student's T – value	P
Expressive Function	0.16175	0.087932	1.84^{ns}	0.0723
Transactional Function	0.18487	0.084376	2.19*	0.0475
Poetic Function	0.22811	0.086149	2.65*	0.0111
r = 0.64		F – obs = 10.69^{**}		
R^2 = 0.4108			P – value = 0.000	

** = significant at 1 percent level, * = significant at 5 percent level, ns = not significant

Table 7 disclosed coefficient r (r = 0.42) indicated a moderate relationship existed between the socio-demographic profile of TRAC Faculty members such as; Age level, Sex, Civil status, Basic Monthly Salary, Degree earned, Field of Specialization/Concentration, Subjects handled most, Relevance of Teaching assignment to field of specialization, number of years in teaching the subjects, working experience, and In – Service Training in terms of number of relevant Training, seminar and conferences attended taken collectively and the Teaching Performance in terms of Academic Capability in English Discipline among the respondents. The Coefficient of determination (R^2 = 0.1754) disclosed 17.54 percent of the variance of Teaching Performance in English discipline among TRAC Faculty members explained by their socio-demographic profile taken collectivelyimplied further that 82.46 percent of the factors that contributed to the teaching performance of the respondents were not discussed in this study. Although the observed F – value (F – obs = 0.735) with probability value of 0.6987 greater than the alpha level (p – value = 0.6987>0.05) attested relationship between the socio-demographic profile taken collectively and the teaching performance in English discipline among the respondents was not significant.

Likewise, when taken individually, not even one of the respondents' profiles significantly affected their teaching performance in English discipline.

The finding of the present study led to the acceptance of null hypothesisstated "there is no significant relationship between the socio-demographic profile and Teaching Performance in English Discipline among TRAC Faculty Members at Tawi-Tawi Regional Agricultural College". There was no substantial evidence to declare significant relationship between the respondents' socio-demographic profiles and their Teaching Performance in English Discipline.

Table 7. The Extent of Relationship between the Socio-Demographic Profile andTeaching Performance in Terms of Academic Capability in English Discipline among TRAC Faculty Members at Tawi-Tawi Regional Agricultural College

Predictor Variables	Regression Coefficient	STD Error	T-value	Student's P
1. Age	0.0000512	0.09614	0.01^{ns}	0.9958
2. Sex	-0.017332	0.11806	-0.15^{ns}	0.8841
3. Civil status	-0.070313	0.13363	-0.53^{ns}	0.6018
4. Basic monthly salary	-0.018043	0.04448	-0.41^{ns}	0.6871
5. Degree earned	0.0057851	0.02777	0.21^{ns}	0.8361
6. Field of specialization	0.017347	0.02905	0.60^{ns}	0.5539
7. Subject handled most	-0.080111	0.04195	-1.91^{ns}	0.0637
8. Relevance of teaching Assignment	0.065328	0.17738	0.37^{ns}	0.7147
9. Number of years in handling subject	0.04074	0.14127	0.29^{ns}	0.7746
10. Working experience	-0.077079	0.1707	-0.45^{ns}	0.6542
11. In-Service training	0.13386	0.078674	1.70^{ns}	0.0970

r = 0.42
R^2 = 0.1754
F – obs = 0.7350^{ns}
P – value = 0.6987
ns = not significant.

CONCLUSION

Based from the foregoing summary of the findings, the study concluded the following:

The socio-economic- educational profile of the respondents revealed majority age belong to reflected the following: age 41-50 years old, with least 4 percent respondents' age 61 and above year, more female than male, married, with 24 percent still single and 2 already separated. Forty four (44) of the respondents received Php3,000.00-6,000.00, with the least bracket of Php7,000.00-9000.00 and 10,000.00-16,000.00 frequency.

The level of communicative competencies in the three Britton's major language functions: Expressive, Transactional and Poetic among Faculty members at Tawi-Tawi Regional Agricultural College reflected the following: expressive and transactional functions were described very good competencies; while Poetic Function, respondents were described moderate or good competency; and generally based on grand mean of 80.82

and standard deviation of 4.224, the level of communicative competencies of TRAC Faculty members on the three major Britton's language functions which was described very good competencydivulged homogeneous, or closely similar performance competency.

There isperceptual significant difference of the Communicative Competency and teaching performance between the male and female faculty members at the Tawi-Tawi Regional Agricultural College.

The significant Relationship between communicative competencies in the three Britton's major language functions and Teaching Performance in terms of Academic Capability in English Discipline among Faculty members in Tawi-Tawi Regional Agricultural College.

The extent of significant relationship between socio-economic-educational profile and teaching performance in terms of Academic Capability in English Discipline among Faculty members in Tawi-Tawi Regional Agricultural College.

RECOMMENDATION

Based on the foregoing statistical findings and analyses, the researcher recommended to conduct another study among selected faculty professors teaching English discipline in the four higher educational institutions, such as; Mindanao State University-Tawi-Tawi College of Technology and Oceanography (MSU-TCTO), Tawi-Tawi Regional Agricultural College (TRAC), Abubakar Computer Learning Center Foundation, Incorporated (ACLCFI) and Mahardika Institute of Technology (MIT) in Tawi-Tawi.

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Faculty and Student's Perception of the Factors Affecting Students' Academic Performance

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ABSTRACT

Student's academic achievement plays an important role in the academe since it reflects the quality of education. The study aims at discovering which of the five factors: school-related factors, teacher-related factors, home-related factors, and cadet-related factors, as perceived by the faculty and cadets, is most likely to impact student's academic performance. Further, an intervention program was explored to address the academic needs of the students. The descriptive-quantitative approach was used to determine the perception of the faculty and students on the factors affecting the academic performance of the students. Using percentage, weighted mean, independent samples t-test, and analysis of variance, data from an adopted questionnaire by Alos, Caranto, and David (2015) which was modified accordingly to fit the context of the research locale, as well as interviews, were analyzed. Findings revealed that school-related and teacher-related factors have the greatest impact on the students' academic performance.

Further, there is a significant difference between the perception of faculty and cadets of the factors that affect the latter's academic performance. The intervention programs recommended were: send teachers to trainings; conduct a seminar about healthy studying techniques; encourage cadets to talk to the Guidance personnel; create study groups; and conduct remedial classes.

KEYWORDS

Maritime education, academic performance, perception, intervention, descriptive-quantitative, Philippines, Asia

INTRODUCTION

Student academic achievement reflects the quality of education that a higher education institution is offering, thus, it is an integral part of the academe. Through the years, many studies were conducted in order to investigate the factors that significantly affect the academic performance of students. It is seen by many that the socio- economic background of students also affects their academic performance being a developing country, understanding what affects student academic performance is important to ensure the development of human capital in our country.

According to Gaultney (2010), many college students are at risk of sleep disorders, and those at risk may also be at risk of academic failure. This shows that the number of hours of sleep and the feeling of being well rested have effect on the academic performance of a student. Studies also show that self-discipline and motivation are factors that greatly affect the academic performance. The motivated they are, the better their performance in classes. Mendezabal (2013) found that unfavorable study habits and attitudes significantly correlated with their performance. As an overarching personality trait, self-control and perseverance are also linked to academic success (Ivcevic & Brackett, 2014; MacCann, Duckworth, & Roberts, 2009). Moreover, MacCann, C., Fogarty, G. J., Zeidner, M., & Roberts, R. D. (2011) suggest that emotion management and problem-focused coping skill are significantly related to educational outcomes. They stressed that better educational outcomes might be achieved by targeting skills relating to emotion management and problem-focused coping.

Family structure is a major factor in children's academic performance. Parents' involvement has been defined as the positive attitude that parents have towards education and the activities that they conduct at home and

at school. Vieira, Vieira, and Raposo (2018) in their study identified that the geographical distance that separates place of study and family residence is a negative determinant on students' academic performance. On the other hand, Abar, B., Carter, K. L., & Winsler, A. (2009) found out that authoritative parenting is associated with high levels of academic performance and study skills.

Accordingly, teachers have direct responsibility in shaping a student's academic achievement and are the most important school-based factor in their education Gandhi-Lee, Skaza, Marti, Schrader, and Orgill (2015), and Maltese, and Tai (2011) enumerated a number of ways that student persistence in science can be affected by teachers through their way of managein the classroom. These are some of the practices in the classroom that were cited: (1) teacher enthusiasm for the subject matter, (2) contextualizing content in subject matter important to students, (3) stimulating lessons, and (4) discussion about careers and issues in science. This supports the claim that the activities and the way teachers handle their classes have an effect on the performance of a student in the class that the teacher is handling. Students appreciate teachers who actively listened and encouraged them, as well as provide fun and support such as having presence of closeness, warmth and positivity (Knoell, 2012; Hamre, & Pianta, 2001).

Studies on the effect of the unfavorable school environment show that it may result to students' under performance (Mayama, 2012; Lumuli, 2009). Accordingly, Mushtaq and Khan (2012), that students' performance is significantly correlated with satisfaction with academic environment and the facilities of library, computer laboratory, and others in the institution.

This study focused on the perception of the faculty and students on the factors affecting cadets' academic performance. Specifically, this study: (1) looked at the perception of the faculty and students on the four variables namely: school-related factors, teacher-related factors, home-related factors, and student-related factors and which of these variables has a significant effect on the academic performance of the students; (2) determined the difference between the perception of the faculty and students; and (3) designed an intervention program to improve the academic performance of the students.

METHODOLOGY

The descriptive-quantitative approach was utilized to determine the perception of the faculty and students on the factors affecting the academic performance of the students.

The study was conducted during the second semester of SY 2017-2018 where twelve (12) faculty members who handled the second-year students and one hundred twelve (112) second year students as respondents of the study. Random stratified sampling was utilized to identify the respondents.

A survey-questionnaire adopted from the study of Alos, Caranto, and David (2015) was the main data gathering instrument of this study. Some of the items were customized according to the characteristics of the Academy. It was not further validated since it was adapted from an existing questionnaire which was customized to fit the profile of the Academy. The revised questionnaire was reviewed by the members of the Research Council. Upon approval, the survey was administered to the students.

There were two sets of questionnaires: one each for the students and faculty members. Each questionnaire has two (2) parts: (1) profile of the respondent; and (2) corresponds to their perception of the impact of the different factors that affect their academic performance. Two (2) Focus Group Discussions (FGDs) composed of students and faculty handling second-year courses respectively, were also conducted. The discussion was guided by the researcher who introduced topics for discussion and helped the groups to participate in a lively and natural discussion.

Frequency, weighted mean, Analysis of Variance (ANOVA), and independent samples t-test were utilized to analyze the data. The perceived factors affecting the academic performance of the students were measured using 5-point Likert scale values.

Results and discussion

The students and faculty members rated how the student-related, school-related, home-related, and teacher-related factors affect the students' academic performance. The rates ranged from no effect to very high impact. The discussions below present the faculty and students' perception on the impact of the following factors that affect their academic performance:

Student and faculty perception on the impact of students' personal factors

Table 1. Faculty and Student Perception on the Impact of Students Personal Factors on Students' Academic Performance

Students' Perception				Faculty Perception			
Factor	Description	WM	Rank	Interpretation	WM	Rank	Interpretation
Personal Condition	1. Feeling Sleepy in class	3.42	3	High Impact	4.33	1	Very High Impact
	2. Feeling Hungry in class	2.74	8	Low Impact	3.33	17	Low Impact
	3. Anxiety, pressure and stress	2.77	7	Low Impact	3.83	6.5	High Impact
	4. Frequent complaints of illness	2.00	17.5	Very Low Impact	3.17	19	Low Impact
	5. Loneliness, lack of emotional control	2.00	17.5	Very Low Impact	3.50	15	High Impact
	6. Low self esteem	1.92	19	Very Low Impact	3.25	18	Low Impact
	TOTAL MEAN	2.475		TOTAL MEAN	3.568		
Study Habits	1. I only study when there is a quiz and test	2.71	9	Low Impact	4.25	2	Very High Impact
	2. I feel bored doing difficult assignments	2.23	15	Very Low Impact	3.50	15	High Impact
	3. I prefer to talk to friends, listen to music etc.	2.59	12	Very Low Impact	3.67	10	High Impact
	4. I am lazy to study	2.13	16	Very Low Impact	4.17	3	High Impact
	5. I am disturbed when studying	2.63	11	Low Impact	3.67	10	High Impact
	6. I study only when I like	2.38	13	Very Low Impact	3.92	5	High Impact
	7. I don't have a comfortable place to study	2.95	6	Low Impact	3.58	12.5	High Impact
	8. I copy the assignments of friends	1.83	20	Very Low Impact	3.67	10	High Impact
	9. I see to it that extracurricular activities do not hamper my studies	2.37	14	Very Low Impact	3.50	15	High Impact
	TOTAL MEAN	2.424		TOTAL MEAN	3.750		

Interest	1.I listen attentively to the lecture of my teacher	3.52	2	High Impact	4.08	4	High Impact
	2.I want to get good grades on quizzes, tests, assignments and projects	3.96	1	High Impact	3.75	8	High Impact
	3.I make myself prepared for the subject	3.33	5	Low Impact	3.58	12.5	High Impact
	4.I actively participate in the discussions and activities	3.39	4	Low Impact	3.83	6.5	High Impact
	5.I get frustrated when the discussion is interrupted or when the teacher is absent	2.70	10	Low Impact	3.00	20	Low Impact
	TOTAL MEAN	3.380		TOTAL MEAN	3.648		
OVER-ALL MEAN		2.75		Low Impact	3.655		High Impact

Table 1 shows that the students perceived interest and personal factors having a big impact on their academic performance. Specifically, getting good grades on quizzes, tests, assignments and projects rank #1 high impact with WM of 3.96; listening attentively to the lecture of the teacher as rank #2 high impact with WM of 3.52; and personal factor-sleeping in class as rank #3 high impact with WM of 3.42. All other factors in the personal condition, study habits and interest were rated low impact and very low impact on their academic performance. Over-all, the cadets perceived that the personal factors have low impact on their academic performance with WM of 2.75.

On the faculty's responses on the impact of student related factors on the performance of the cadets, the table shows that most of the factors were rated high impact. The factors sleeping in class rank #1 with WM of 4.33 followed by cadet's habit of studying only when there is a quiz and test with WM of 4.25 which means very high impact, while feeling hungry with WM of 3.33, and complaint of illness with WM of 3.17, were rated low impact. Over-all, the faculty perceived student-personal factors have high impact on the students' academic performance with WM of 3.655.

Data implies that the students perceive their personal-factors do not affect their academic performance contrary to the faculty perception where they observe that students' personal factors significantly affect the students' academic performance.

Student and faculty perception on the impact of home factors

Table 2 shows the distribution of responses on the students' perception on the impact of home-related factors in their academic performance. The table shows that only parent's motivation has a high impact on their performance. Living with parents, distance-school far from the house, number of siblings in the family, have very low impact on their performance, while distance-school near the house has no impact, and financial support of parents has low impact. Over-all, the students perceive home-related factors have low impact on their academic performance with WM of 2.43.

Table 2. Student and faculty perception of the impact of home-related factors on students' academic performance.

Home-Related Factors	Student's Perception			Faculty Perception		
	WM	Rank	Interpretation	WM	Rank	Interpretation
1.I live far away from school	2.42	4	Very Low impact	3.42	3	High Impact
2.I live near the school	1.60	8	No impact	2.83	8	Low Impact
3. I live in a boarding house	2.46	3	Very Low impact	3.08	6	Low Impact
4.I live with my parents	1.79	7	Very Low impact	2.92	7	Low Impact
5.Both my parents are working	2.20	5	Very Low Impact	3.17	5	Low Impact
6.I have many brothers and sisters	2.09	6	Very Low impact	3.33	4	Low Impact
7.My parents motivate me to go to school	3.75	1	High Impact	3.75	2	High Impact
8.My parents can sustain my financial needs	3.09	2	Low impact	3.92	1	High Impact
OVER- ALL MEAN	2.43		Very Low impact	3.30		Low impact

Faculty responses show that the faculty perceived that the distance of the school-far away from home with WM of 3.42, parents' motivation WM 3.75, and financial support with WM of 3.92 have high impact on the cadets' academic performance. All other home-related factors were perceived with low impact. The over-all WM of 3.30 indicates that the faculty perceives that home related factors have low impact on the academic performance of the cadets.

Data implies that both students and faculty perceive home related factors have low impact on the students' academic performance.

Student and faculty perception on the impact of school-related factors

On school-related factors, as shown in table 3, the students perceived that only classroom time schedule has high impact on their academic performance. All other factors like daily routine, school programs/activities, internet connections, classroom condition laboratories and simulators were perceived to have low impact on their academic performance. Over-all, the students perceive that school related factors have low impact on their academic performance with WM of 3.09.

On the other hand, faculty members perceived that all the school-related factors such as classroom schedule, daily routine, school program/activities, internet connection, classroom, laboratory and simulator utilization, have high impact on the cadets' academic performance with the over-all WM of 3.79

Table 3. Students and faculty perception of the impact of school-related factors on the students' academic performance.

Home-Related Factors	Students			Faculty		
	WM	Rank	Interpretation	WM	Rank	Interpretation
1.The classroom time schedule is followed	3.40	1	High Impact	4.00	1.5	High Impact
2.The daily routine is followed (e.g. study call, taps)	3.28	3	Low impact	3.67	6	High Impact
3.There are school programs/ activities	3.13	4	Low impact	3.58	7.5	High Impact
4. There are available library references accessible to students	3.33	2	Low impact	3.92	3	High Impact
5. There is fast internet connection	2.94	5.5	Low impact	3.58	7.5	High Impact
6.Classroom is comfortable and conducive	2.76	8	Low impact	3.75	5	High Impact
7.Laboratories are functional	2.91	7	Low impact	3.83	4	High Impact

8.Simulators are utilized	2.94	5.5	Low impact	4.00	1.5	High Impact
OVER ALL MEAN	3.09		Low impact	3.79		High Impact

Data implies that the students perceive that school-related factors do not affect their academic performance contrary to the faculty perception where they observe that school related factors significantly affect the students' academic performance.

Student and faculty perception on the impact of faculty-related factors

The students and faculty responses on the impact of teacher-related factors are distributed in table 4. The table shows that for the students, only personality traits and instructional materials affect their academic performance, specifically, the faculty's relationship with cadet with WM of 3.45, ability to impose proper discipline with WM of 3.44, and his/her smartness and confidence with WM of 3.48 have high impact on their academic performance. On the instructional materials, the faculty's use of visual aids and powerpoint presentations with WM of 3.40 has high impact on their performance. However, the faculty's teaching skills are rated with low and very low impact. Over-all, the students perceived that teacher-related factors do not affect their academic performance with WM of 3.13.

On the other hand, the faculty perceived that the teacher's openness to suggestion and opinions with WM of 4.25, his/her smartness and confidence with WM of 4.33, ability to provide varied activities and techniques with WM of 4.33 and ability to organize and follow the course outline with WM of 4.33, significantly affect the student' academic performance. All the other factors were rated with high impact. The over-all WM of 4.01 indicates that the faculty observe that teacher-related factors has high impact on the student' academic performance.

Data shows opposite perception of the impact of teacher-related factors on students' academic performance.

Table 4. Student and faculty perception of the impact of teacher-related factors on students' academic performance.

Factor	Description	CADETS			FACULTY		
		WM	Rank	Interpretation	WM	Rank	Interpretation
Personality Traits	1.Has good relationship with cadets	3.44	3	High Impact	4.00	10.5	High Impact
	2.Imposes proper discipline in following the prescribed rules	3.45	2	High Impact	3.83	14	High Impact
	3.Has appealing personality with good sense of humor	3.31	6	Low Impact	4.08	6.5	High Impact
	4. Is open to suggestion and opinions	3.39	5	Low Impact	4.25	4	Very High Impact
	5.Shows smartness and confidence	3.48	1	High Impact	4.33	2	Very High Impact
	6.Always scolds cadets	2.92	14	Low Impact	4.00	10.5	High Impact
Teaching Skills	1.Has Mastery of the subject matter	3.24	8	Low Impact	4.08	6.5	High Impact
	2. Provides varied activities and techniques	3.25	7	Low Impact	4.33	2	Very High Impact
	3.Is organized and systematically follows course outline	3.07	11	Low Impact	4.33	2	Very High Impact
	4. Make realistic demands of students	2.97	13	Low Impact	4.00	10.5	High Impact
	5.Stimulating, imaginative and challenging	3.08	10	Low Impact	4.08	6.5	High Impact
	6.Give too much memory work	3.03	12	Low Impact	3.75	15	High Impact
	7.Frequently out/ absent in class	2.58	16	Very Low Impact	4.08	6.5	High Impact
	8. Always late	2.51	17	Very Low Impact	3.92	13	High Impact
Instructional Materials	1.Use Chalk and Board in explaining the lesson	2.88	15	Low Impact	3.42	17	High Impact
	2. Use Visual aids/powerpoint presentations	3.40	4	High Impact	4.00	10.5	High Impact
	3. Use workbook/references	3.20	9	Low Impact	3.67	16	High Impact
OVER ALL MEAN		3.13		Low impact	4.01		High Impact

Over-all perception on the factors affecting students' academic performance

Table 5. Over-all perception on the factors affecting students' academic performance.

Factor	Weighted Mean				TOTAL Mean	Rank	Interpretation
	Cadets		Faculty				
Student-Related	2.56	Low Impact	3.59	High Impact	3.08	3	Low Impact
Home-Related	2.42	Low Impact	3.30	Low impact	2.86	4	Low Impact
School-Related	3.09	Low Impact	3.79	High Impact	3.44	2	High Impact
Teacher-Related	3.13	Low Impact	4.01	High Impact	3.57	1	High Impact

Table 5 shows that among the different factors that affect the academic performance of the students, teacher-related factors ranked #1 with over –all WM of 3.57, ranked #2 is school-related factors with over-all WM of 3.44. It implies that both teacher-related and school-related factors were considered with high impact on the students' academic performance. On the other hand, student-related and home-related factors were considered as having low impact with over-all WM of 3.08 or ranked #3 and 2.86 or ranked #4 respectively.

Difference between the perception of students and faculty on the factors that affect the students' academic performance

The test of difference between the student and faculty's perception was computed using the SPSS Independent Samples t-test.

Student-related factors

An independent sample t-test was conducted to compare the perception of the students and the faculty on student-related factors. Table 6 shows that there is a significant difference in the mean for students (M= 2.56, SD = .68587) and faculty (M= 3.59 SD = .43488) perceptions; t (106) = -8.979, p=.000 .These results suggest that students and faculty have opposite perception on the impact of student-related factors on the students' academic performance. Specifically, the result suggests that students perceive student-related factors do not affect their academic performance while the faculty perceive it as having significant impact.

Table 6. Difference between the perception of students and faculty on the impact of student-related factors on students' academic performance.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Factors Equal Variances Assumed	1.427	.235	-8.979	106	.000	-1.08481	.12082	-1.3243	-.8452
Equal variances not assumed			-8.979	104.594	.000	-1.08481	.12082	-1.3243	-.8452

Home-related factors

An independent sample t-test was conducted to compare the perception of the students and the faculty on home-related factors. Table 7 shows that there is a significant difference in the mean for the students (M= 2.42, SD .70161) and the faculty (M=3.30, SD .38410) perceptions; t (14) = -3.103 p=.008. These results suggest that both students and faculty perceive home-related factors having low impact on the students' academic performance but the faculty gave significantly higher ratings.

Table 7. Difference between the perception of students and faculty on the impact of home-related factors on students' academic performance.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tail ed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Home-R elated Factors	1.371	.261	-3.103	14	.008	-.87750	.28280	-1.4840	.-2709
Equal variances assumed			-3.103	10.850	.010	-.87750	.28280	-1.5009	-.2540
Equal variances not assumed									

School-related factors

An independent sample t-test was conducted to compare the perception of the students and the faculty on school-related factors. Table 8 shows that there is a significant difference in the mean for students (M= 3.09, SD .23225) and faculty (M=3.79. SD .17357) perceptions; t (14) = -6.877, p=.000. The results suggest that student and faculty have contrary perception on the impact of school-related factors on the students' academic performance. This implies that the faculty perceived school-related factors with significantly high impact on the cadets' academic performance while students perceived it to be with low impact on their academic performance.

Table 8. Difference between the perception of students and faculty on the impact of school related factors on students' academic performance.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
	F							95% Confidence Interval of the Difference		
		Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
School-Related Factors	Equal variances assumed	1.523	.237	-6.877	14	.000	-.70500	.10251	.92486	.48514
	Equal variances not assumed			-6.877	12.960	.000	-.70500	.10251	.92653	.48347

Teacher-related factors

An independent sample t-test was conducted to compare the perception of the students and the faculty on teacher-related factors. Table 9 shows that there is a significant difference in the mean for students (M= 3.13, SD .29160) and faculty (M= 4.01, SD .24451) perceptions; t (32) = -9.528, p=.000. The results suggest that student and faculty have contrary perception on the impact of school-related factors on the students' academic performance. This implies that the faculty perceived teacher-related factors with significantly high impact on the cadets' academic performance while students perceived it to be with low impact on their academic performance.

Table 9. Difference between the perception of students and faculty on the impact of teacher-related factors on students' academic performance.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig	t	df	Sig (2-tailed)	Mean Difference Lower	Std Error Difference Upper	95% Confidence Interval of the Difference	
Teacher- Related Factors	Equal variances assumed	1.122	.297	-9.528	32	.000	-.87941	.09230	-1.067	-.6914
	Equal Variances not assumed			-9.528	31.056	.000	-.87941	.09230	-1.068	-.6912

Over- all difference between perceptions of factors affecting students' academic performance

An independent sample t-test was conducted to compare the overall perception of the students and the faculty of the factors affecting students' academic performance. Table 10 shows that there is a significant difference in the mean for students (M= 2.79, SD= .60771) and faculty (M= 3.71, SD=.41643) perceptions; t (108) = -9.216, p=.000. This implies that the faculty gave significantly higher ratings while the students gave significantly lower ratings within and between the factors that affect students' academic performance.

Table 10. Over-all difference between the perception of cadets and faculty on the impact of the factors.

		Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Factors	Equal Variances assumed	8.291	.005	-9.216	108	.000	-.91545	.09934	-1.11236	-.71855
	Equal variances not assumed			-9.216	95.550	.000	-.91545	.09934	-1.11265	-.71826

Result of focus group discussion

Supplementary data from interviews and focus group discussions are grouped and analyzed based on the factors being studied. The interviews and focus group discussions with the key informants reinforced the findings of the survey as follows:

Table 11. Results of focus group discussion.

	Questions	Students	Faculty
1.	What is your opinion regarding the quality of education in PMMA?	The cadets agree that PMMA is providing the best quality of education to its students	The Faculty believes that they are contributing in providing quality education to its students.
2.	What is your comment regarding the facilities, teachers, policies and activities in PMMA?	• some teachers don't have mastery of the subject matter • some does not teach well • some does not come to class regularly	• teachers should use more visual aids such as videos that may help cadets understand the lesson better • students sleep in class • there are a lot of extra- curricular activities aside from the academic requirements
3.	What do you think are some of the major problems that hinder academic performance?	• lack of reference materials • there are a lot of reporting • lack of sleep	• Some teachers do not use all the time for teaching • Teachers do not fully utilize the use of equipment
4.	What do you think should parents, teachers and PMMA administration do to improve on the academic performance of the cadets?	• longer study call time • improve teaching ability • acquire more simulators • more hands-on training • employ good instructors • provide air condition units for the classrooms	• conduct validation exams for all year levels • give cadet enough time for sleep and study call

Proposed intervention program

Table 12. Recommended intervention programs

INTERVENTION	WEIGHTED MEAN		TOTAL	RANK	Interpretation
	Student	Faculty			
Conduct seminar about healthy studying techniques	3.11	2.58	2.85	2	Recommended
Invite graduates that would give advises about the tricks of the trade and share his/her experiences surviving cadetship	2.45	2.42	2.44	7	Slightly Recommended
Encourage cadets to talk to the Guidance personnel	2.61	2.83	2.72	3	Recommended
Encourage cadets to share their thoughts and emotions to friends	2.68	2.75	2.71	4	Recommended
Send teachers to trainings in order to adapt to new teaching methods and techniques	2.97	3.08	3.03	1	Recommended
Create study groups	2.82	2.58	2.70	5	Recommended
Program remedial classes	2.66	2.67	2.66	6	Recommended
Conduct parents/guardian conferences	2.15	2.42	2.29	9	Slightly Recommended
Implement emergency cash loans to students	2.33	1.58	1.96	10	Slightly Recommended
Conduct seminar on alcohol abuse	2.53	2.17	2.35	8	Slightly Recommended

Table 12 shows the distribution of responses on the intervention programs recommended by the cadet-respondents and faculty-respondents in order to help cadets improve their academic performance. It shows that the intervention programs recommended by the respondents are: send teachers to trainings in order to adapt to new teaching methods and techniques ranked #1; conduct seminar about healthy studying techniques ranked #2; encourage cadets to talk to the Guidance personnel ranked #3; encourage cadets to share their thoughts and emotions to friends ranked #4; create study groups ranked #5; and program remedial classes ranked #6.

Consequently, the programs slightly recommended by the respondents are: Invite graduates that would give advises about the tricks of the trade and share his/her experiences surviving cadetship, conduct parents/guardian conferences, implement emergency cash loans to students and conduct seminar on alcohol abuse.

CONCLUSION AND RECOMMENDATION

Analysis of the survey data obtained in this study shows that the students perceived that: feeling sleepy in class, listening attentively to the lecture, desire to get good grades on quizzes, exam, assignments and projects, the level of parent's motivation on their schooling, the classroom time schedule, teacher's good relations, imposing proper discipline, smartness and confidence, and use of visual aids and PowerPoint presentations significantly affect their academic performance.

Moreover, data shows that the faculty perceived that: students' feeling sleepy in class, when cadets only study when there is a quiz or exam, living away from home, parent's level of motivating them and parent's ability to sustain cadet's financial needs , all issues under school-related factors, faculty's openness to suggestions and opinions, smartness and confidence, ability to provide varied activities and techniques and having organized and systematic course outline significantly affect the students' academic performance.

The over-all rating of the faculty and students on the factors that affect the academic performance of the students implies that the faculty gave higher scores or rates within and between the student-, home-, school- and teacher-related factors affecting the academic performance of the students.

The intervention programs recommended by the student-respondents and faculty- respondents in order to help students improve their academic performance are: send teachers to trainings in order to adapt to new teaching methods and techniques; conduct seminar about healthy studying techniques; encourage students to talk to the Guidance personnel; encourage students to share their thoughts and emotions to friends; create study groups; and program remedial classes.

The above results hold very significant implications for policy. It is evident that the school administration should strictly implement the daily routine schedule of the students and the Department of Midshipmen Affairs to closely monitor the study call hours of the students. A training program for faculty development should be in place to train the faculty on varied teaching strategies and techniques; the Guidance Office should conduct seminar on healthy study techniques and the academic deans to create remedial classes to students who are failing in class.

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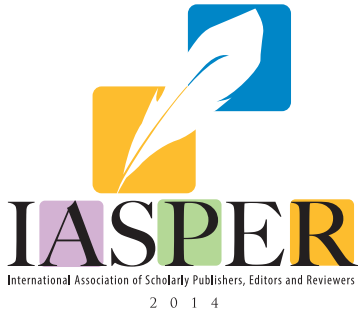

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