

Students' Course Feedback Survey on Marine Engineering Professional Courses: AY 2018-2019

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Abstract – This study provided an in-depth understanding of the institution's need for improvement and curriculum development as it aimed to determine the feedback of students of Marine Engineering of Assessment Year 2018-2019 in terms of the relevance of professional courses taken; course organization and Intended Learning Outcomes (ILOs), teachers and TLA's, assessment methods, the learning environment and counseling involved while taking the professional courses. A total of 119 BS Marine Engineering were the main respondents. The study reveals that the factors of counseling and learning environment were strongly agreed by the respondents that further needs to be improved. The study also revealed that a learning environment was needed to give importance and recommendations. The Marine Engineering program was mainly composed of courses that provide technical and practical skills, and the school environment significantly affects their learning. Practical Contribution were implying as the researcher were able proposed set of recommendation for improvement.

Keywords – Marine Engineering, learning environment and professional courses.

INTRODUCTION

Academic institutions are in the 21st Century's frontline that hones the student competencies through innovative strategies. With this, the best quality of education suitable for the requirements of the next generation will be served [1]. Lyceum of the Philippine University-Batangas never stops pursuing its lifelong mission and vision to continue making the Maritime Education curriculum responsive to the global community's needs.

Since higher education in the Philippines is continuously facing new demands and challenges, students' feedback is valuable. This will help meet those trends in education, resulting in an attentive enhancement of the curriculum from different colleges. A curriculum can serve as a guidepost in meeting the graduate learning skill. According to Mamoon-Al-Bashir, et. Al [2], feedback is considered a problematic issue in the higher education arena. Besides, Oza, et al [3] acknowledged it as an essential element of improving the students learning process. Feedback is the ultimate necessity to ensure effective learning. It helps the students to comprehend the subject being examined and gives a clear direction on the most proficient method to enhance their learning. The collection of student feedback is seen as a central strategy to monitor the quality and standards of teaching towards learning in higher education

institutions [4]. Student evaluations of teaching and learning play an increasingly important role in the delivery of high-quality, student-centered education. Insights into student perceptions of their learning experience provide information that can be used to inform course design and development. The significance of student evaluation of teaching is to inform the educator' about the strengths and weaknesses of their teaching approaches [5].

This study focused on Bachelor of Science in Marine Engineering; a four-year program designed to produce engine officers. In the study of Alcantara, et. al. [6], aspirations of maritime students in one higher education in the Philippines indicated that maritime students belong to the determination category where they try their best to have high/good grades for future employment, to become a ship captain in the future no matter how hard it was and to have their own set of objectives and direction to achieve their goals. Lyceum of the Philippines University –Batangas continues to develop and enhance student competence to attain excellence; they uplift the quality of education by engaging in curriculum development to improve the student's learning [7].

The Commission on Higher Education (CHED), Maritime Industry Authority (MARINA), and ISO 9001:2008 are accrediting and certifying agencies that annually visits and monitors the performance of the LPU-B. The Standards of Training, Certification, and

Watchkeeping (STCW) for seafarers are the basis of compliances [1]. School facilities, equipment and teaching competence with the usage of good instructional materials shall be upgraded to meet the quality standards [8].

This research answered some of the requirements of accrediting agencies and provided an in-depth understanding of the institution's need for improvement and curriculum development. This may serve as a considerable input for the enhancement of teaching and learning strategies, especially in professional subjects. This study is a part of the initiative in curriculum development of BS Marine Transportation and Marine Engineering in LPU-B which is also in line with quality management systems' objectives for continuous and further improvement.

OBJECTIVES OF THE STUDY

This study aimed to determine the feedback of students of Marine Engineering of Assessment Year 2018-2019 in terms of the relevance of professional courses taken; course organization and Intended Learning Outcomes (ILOs), teachers and TLA's, assessment methods, the learning environment and counseling involved while taking the professional courses.

MATERIALS AND METHOD

Research Design

This study used the descriptive method to analyze the feedback of BS Marine Engineering students in their professional courses. Descriptive research is typically used to describe the characteristics of a population being studied. It does not answer how/when/why but addresses the "what" question.

Participants of the Study

The researchers included 119 BS Marine Engineering students who already have taken professional subjects

in AY 2018-2019 out of the 167 who enrolled. The respondents were chosen by availability or convenience sampling due to the current pandemic.

Data Gathering Instrument and Procedure

The data required in this study were obtained through a standardized questionnaire available in the university to assess the course feedback. The first part of the questionnaire was the respondent's demographic profile including their academic program. The second part of the questionnaire covered the standardized instruments to measure students' feedback, including the relevance of professional courses taken, its organization, teaching strategy, assessment methods, and the learning environment. The researchers used Google Form to gather data, assuring the respondents that all of the information included was only for study purposes.

The researchers used the standardized questionnaire available in the university to assess the course feedback. The questionnaires were then given out to 167 Third-year Students of BSMarE during AY 218 - 2010 via Google Forms which were explained first to the respondents via messenger before answering. It took three weeks to end the retrieval, yielding 70 % rate finally

Data Analysis and Ethical Consideration

The collected data were interpreted using different statistical tools such as percentage, ranking, and weighted mean. These tools were used through SPSS. To observe the highly confidential nature of the study, the researchers did not include any particular names on the report. The identities of the respondent were not revealed in the study. There was no personal opinion added or given by the researchers, only information and result based on the data gathered.

RESULTS AND DISCUSSION

Table 1:

Summary of BSMarE Students' Feedback on the Professional Courses: 1st Semester of AY 2018-2019

First Semester	Draw 1	E mat 1	Electro 1	Ma Shop 1	VI	Rank
I. Relevance of Course	3.58	3.65	3.62	3.61	Strongly Agree	1
II. Course Organization and ILOs	3.47	3.60	3.42	3.58	Strongly Agree	4
III. Teachers and TLAs	3.55	3.59	3.55	3.58	Strongly Agree	2
IV. Assessment	3.51	3.57	3.50	3.57	Strongly Agree	3
V. Learning Environment	3.37	3.51	3.49	3.51	Strongly Agree	6
VI. Counseling	3.43	3.57	3.49	3.48	Strongly Agree	5
Grand Composite Mean	3.50	3.58	3.51	3.56	Strongly Agree	

Among all the professional courses, students strongly agreed that Engineering Materials (EMAT 1) and Machining Tools (Mach Shop 2) helped them to develop practical skills and develop relevant subject knowledge on the BSMarE program which gained the highest composite mean. Additionally, students develop a positive attitude on their program evinced with the combined mean gained by the Basic Electricity (Electro 1), 3.62. Meanwhile, Hand and Measuring Tools (Ma Shop 1) gained 3.51 which means that students strongly agreed to develop their leadership and communication skills. Maritime Drawing and Diagram (Draw 1) with 3.58 composite mean helped them also to develop teamwork skills. Above all the professional courses from the 1st semester of A.Y. 2018-2019, BSMare students strongly agreed that courses that were relevant to their program. According to Stuckey et al., [9], 'relevance' is one of the key terms related to reforms in the teaching and learning of science. It is often used by policy-makers, curriculum developers, science education researchers, and science teachers.

The course organization in Engineering Materials (EMAT 1) gained the highest composite mean; the course was implemented according to the approved curriculum. Meanwhile, there was no overlapping of contents within a course in terms of Hand Measuring Tools (Ma Shop 1) with the composite mean of 3.58. However, in Maritime Drawing and Diagrams (Draw 1) 's intended learning outcomes (ILOs) were made known from the beginning. The total composite mean of Basic Electricity (Electro 1), 3.42, implies that there was a high level of course organization, relevance, and clarity of ILOs of professional courses during the first semester. According to Callister [10], all engineering structures and devices utilized materials that have been selected based on their properties. These properties along with design considerations enabled the desired performance level. Therefore, engineers of every type were well served in their careers by an understanding of the scientific foundations of materials that govern these properties. The course Engineering Materials (EMAT 1) was designed to provide an introduction to engineering materials with an emphasis on how atomic and molecular bonding, structure, composition, and processing influence material properties.

In terms of teacher and their TLAs, students strongly agreed that Engineering Materials (E Mat) got the highest composite mean where they observed that their teachers motivated students to learn during its first semester. Aside from that, 3.58 composite mean from

Hand and Measuring Tools (Ma Shop 1) indicated that students strongly agreed that their teachers and Teaching – Learning Activities (TLAs) were useful and relevant. Students also strongly agreed that the TLAs within the said course were sequenced logically. Lastly, among the courses during the 1st semester, the Maritime Drawing and Diagram (Draw 1) and Basic Electricity (Electro 1) got similar composite mean; 3.55. The students strongly agreed that their teachers provided adequate opportunities for independent learning, adequate opportunities for teamwork. On the other side, both of the mentioned courses were strongly agreed by the students that their Independent Learning (ILs) activities such as journal reading, research work, projects, etc. were useful and relevant and team teaching was done as applicable. According to Klaijnsen et al., [11] teachers' innovative behavior and professional development were important aspects of high-quality education. It is often thought that motivation influences teachers' innovative behavior and professional development. Paniagua and Istance [12] stated that pedagogy was the heart of teaching and learning. Preparing young people to become lifelong learners with a deep knowledge of subject matter and a broad set of social skills requires a better understanding of how pedagogy influences learning. Focusing on pedagogies shifts the perception of teachers from technicians who strive to attain the education goals set by the curriculum to experts in the art and science of teaching. Seen through this lens, innovation in teaching becomes a problem-solving process rooted in teachers' professionalism, rather than an add-on applied by only some teachers in some schools"

Students strongly agreed that Engineering Materials (E Mat) and Hand and Measuring Tools (Ma Shop 1) provided feedback and the assessment methods of teachers used were told at the beginning of the course feedback were timely. This got the highest composite mean. However, Maritime Drawing and Diagrams (Draw 1) with its 3.51 composite mean, indicated that the number of assessments was appropriate and adequate as allocation of marks/grade among assessments was satisfactory based on the students. Basic Electricity (Electro 1) obtained the lowest mean indicating that assessment covered all main topics taught and distribution of assessments over a semester was appropriate and adequate. It implies that there was an extraordinary implementation of using the assessment method on the professional courses during the 1st semester. Tosuncuoglu [13] stated that assessment has an important role in education and it has

a critical role in the teaching process. Through appropriate assessment, teachers can classify and grade their students, give feedback, and structure their teaching accordingly. According to Scneider and Bodensohn [14], competence in the evaluation has been identified as a key feature in teachers' professional success. However, assessment competence was a complex field, comprising capacity in both summative and formative assessment.

In terms of student feedback in their learning environment, students strongly agreed that the available laboratory, library facilities, recreation facilities were adequate, and access to computer facilities was sufficient. Engineering Materials (EMat) and Hand Measuring Tools (Ma Shop I) obtained the highest composite mean, 3.51. Maritime Drawing and Diagram (Draw 1), however, got the lowest mean of 3.37. Available facilities in the classrooms were satisfactory. Engineering Materials (EMat) and Hand Measuring Tools (Ma Shop 1) obtained the highest composite mean. Sufficient access to the internet and electronic databases obtained the lowest composite mean in Maritime Drawing and Diagram (Draw 1). Overall, the high composite mean in each course, implies that there was a high level of adequacy in terms of laboratory, library, and other facilities provided in the 2nd semester. According to Thuan [15], classrooms should be equipped with compulsory tools and equipment, such as computers, projectors, available used tables, and chairs, to provide motivating learning environments for students to easily comprehend and

digest the teaching materials. The design and procedures of the management of classrooms' space were also worthy of contributing to the convenient conditions for learning and teaching activities. Workshop rooms were expected to be equipped with tools and equipment both in quality and quantity to offer students the opportunity to perform well in practice.

In terms of counseling, teachers from Engineering Materials (E Mat) obtained the highest weighted mean, 3.57 while Maritime Drawing and Diagram (Draw 1) got the lowest during the 1st semester. Academic counseling was available when needed in terms of teachers of Engineering Materials (E Mat). Students strongly agreed that the teachers were available for consultation whenever needed in courses of Basic Electricity (Electro 1) and Hand Measuring Tools (Ma Shop 1). Meanwhile, the indicator "counseling on non-academic matters were available when needed" got the lowest weighted mean in Maritime Drawing and Diagram (Draw 1). In general, counseling obtained a 3.49 composite mean indicating a high-level counseling of all the teachers during its 1st semester. According to Egbo [16], counseling was a learning process in which a counselor helps an individual or individuals learn, understand themselves and their environment, and be in a position to choose the right type of behaviors that will help them develop, grow, progress, ascend, mature and step up, educationally, vocationally and socio personally.

Table 2
Summary of BSMarE Students' Feedback on the Professional Courses: 2nd Semester AY 2018-2019

2nd Semester	Electro 2	Ma Shop 2	NA	Thermo	Mech	VI	Rank
I. Relevance of Course	3.69	3.76	3.67	3.71	3.67	Strongly Agree	1
II. Course Organization & ILOs	3.55	3.58	3.60	3.62	3.65	Strongly Agree	4
III. Teachers and TLAs	3.63	3.60	3.63	3.66	3.62	Strongly Agree	3
IV. Assessment	3.60	3.59	3.56	3.61	3.56	Strongly Agree	5
V. Learning Environment	3.53	3.57	3.52	3.57	3.56	Strongly Agree	6
VI. Counseling	3.61	3.65	3.62	3.65	3.66	Strongly Agree	2
Grand Composite Mean	3.60	3.62	3.60	3.63	3.63	Strongly Agree	

During the 2nd semester of the same year, students strongly agreed that they developed related practical and teamwork skills in BSMarE while having a positive attitude on their program for Maritime Electronics and Electrical Maintenance (Electro 2) evinced with the composite mean of 3.69 and Thermodynamics

(Thermo) with a 3.71 composite mean. Meanwhile, students developed a moderate level of leadership and communication skills in the course of Naval Architecture (NA) and Mechanics and Hydromechanics (Mech) that both obtained the composite mean of 3.67. Rimal [17] stated that "teachers can bridge existing gaps between national

educational goals, social needs and the interest of people. But the current school curriculum development process takes place at the top where curriculum experts play a decisive role. These experts seek school teacher's contributions only at the review phase of the curriculum development process which is not enough to incorporate teacher's expertise. In this respect, teachers will be able to view curriculum not in terms of content to be covered, but as a transformative process."

The highest mean on course organization was obtained in Mechanics and Hydromechanics (Mech) with a 3.65 composite mean; course implementation according to the curriculum was strongly agreed while Maritime Electronics and Electrical Maintenance (Electro 2) course obtained the least composite mean during the 2nd semester. There was no overlapping of contents within the course of Thermodynamics (Thermo). Naval Architecture (Naval Arch) gained the highest score in informing students of its intended learning outcomes (ILOs) of the course from the beginning. Machining Tools (Ma Shop 2) and Marine Electronics and Electrical Maintenance (Electro 2) obtained the highest mean on making the ILOs relevant and clear in all the professional courses during the Second Semester. In summary, BSMarE students strongly agreed that all the professional courses were relevant to their organization, ILOs, and TLAs.

Thermodynamics (Thermo) obtained the highest mean on assessing their teacher and TLAS while Machining Tools (Ma Shop 2) obtained the least during the 2nd semester. Teaching-Learning Activities (TLAs) such as practical, educational tour, etc. were useful and relevant; this was strongly agreed by the students in Thermodynamics (Thermo). The same composite mean of Naval Architecture (Naval Arch) and Marine Electronics and Electrical Maintenance (Electro 2) with 3.63 indicated that students that their teachers TLAs within a course were sequenced logically while their Independent Learning (ILs) activities such as journal reading, research work, project, etc. were useful and relevant. Meanwhile, in terms of assessing how teachers motivated the students to learn and how they provide adequate opportunities for independent learning, it obtained a mean of 3.62 in Mechanics (Mech). But among courses during 2nd semester the lowest mean was obtained by Machining Tools (Ma Shop 2); it implies that teachers still provided adequate opportunities for teamwork and the teaching was done applicable. According to Mansfield, et al., [18] issues of teacher quality and effectiveness inform teacher education, policy, practice, and research

and were connected with teacher resilience and retention. Effective teachers were strongly associated with resilient teachers, those who possess particular personality traits and maintain their commitment to the job despite the challenges they face [19].

Thermodynamics (Thermo) obtained the highest composite mean while Naval Arch (NA) and Mechanics (Mech) got the lowest. Students strongly agreed that the said least courses provided feedback, the number of assessments over the semester was appropriate and adequate. During the 2nd semester, students' feedback as assessment method to be was informed by the instructor at the beginning of the course in Thermodynamics (Thermo). In terms of assessments, it covered all the main topics taught in the course, evinced with the composite mean of 3.60 in Marine Electronics and Electrical Maintenance (Electro 2). In the professional course, Machine Shop 2 (Ma Shop 2), students strongly agreed that their teachers provided timely feedback on student performance and the allocation of marks/grade among assessments was satisfactory. In conclusion, obtaining its 3.59 composite mean indicated that the implementation of giving assessment was extraordinary based on the feedbacks of the students. Clime and Henley [20] stated that school-based practitioners were often called upon to provide assessment and recommendations for struggling students. These assessments open doors to specialized services or interventions and provide opportunities for students to build competencies in areas of need. According to Tosuncuoglu [13], the assessment procedures relate to authenticity, practicality, reliability, validity, and washback, and were considered the basic principles of assessment in teaching and learning. The main value of these aforementioned principles was to distinguish the effects of assessment and review any classroom-based issues between the teacher and the student.

While during the 2nd semester, Machining Tools (Ma Shop 2) and Thermodynamics (Thermo) got the highest composite mean, 3.57. However, Naval Architecture (NA) got the lowest. Students strongly agreed laboratory, library facilities, recreation facilities were adequate, and access to computer facilities was sufficient for the 1st semester.

In Machine Tools (Ma Shop 2) and Thermodynamics (Thermo), students' feedback on available facilities in the classrooms was satisfactory and gained the highest composite mean. Meanwhile, the indicator "sufficient access to the internet and

electronic database" obtained the lowest mean in Naval Arch. In conclusion, obtaining its 3.55 composite mean for the 2nd semester indicated that there was still a high level of adequacy in terms of laboratory, library, and other facilities, access to the internet, and electronic database provided in the whole academic year during AY 2018-2019. Audu et al [21] emphasized the importance of training machines and other equipment related to workshop facilities on improving the practical skills and knowledge of students.

During the 2nd semester, consecutively counseling obtained a high composite mean indicating high-level counseling of all the teachers during its 1st semester with a 3.64 weighted mean. Mechanics obtained the highest mean while Marine Electronics and Electrical Maintenance (Electro 2) got the lowest. In assessing if teachers in Mechanics (Mech) academic counseling were available when needed got the highest weighted mean. While from the courses of Machining Tools (Ma Shop 2), Naval Architecture (NA), and Thermodynamics (Thermo) students strongly agreed that counseling on non-academic matters was available when needed. The teachers were available for consultation whenever needed in Marine Electronics and Electrical Maintenance (Electro 2) obtained the lowest weighted mean among the professional courses during the 2nd Semester. According to Oviogbodu [22], counseling can be defined as several procedures in assisting an individual to solve his problems. Counseling was more involved emotionally in the affective realm personalized learning, that was, emotions, and feelings, values, attitudes. Egbo [16] stated that the total development of a child can only take place in an environment conducive to teaching and learning. It was in the realization of the above that all educational services which can promote teaching and learning in schools were given prominent attention by educational planners.

In the summary of BSMarE Students' Feedback on the Professional Courses During AY 2018-2019, each component of both semesters was strongly agreed upon by the students indicating positive feedback. Both semesters show that all the courses that students took were relevant to their profession. But among all the components, the learning environment obtained the least score wherein the administration of LPU-Batangas especially in LIMA was continually working through providing adequate facilities and simulation laboratories in its growing number of enrollees.

CONCLUSION AND RECOMMENDATION

Based on the findings, the following conclusions were drawn: Respondents of study are all BS Marine Engineering Students during AY 2018-2019 who were enrolled in all professional courses of the program. The study concluded that the respondents are strongly agreed that all professional courses during AY 2018-2019 are relevant to their program. The study reveals that the factors of counseling and learning environment were strongly agreed by the respondents that further needs to be improved.

Based on the conclusions stated, the following recommendations are offered: The study revealed that a learning environment was needed to give importance and recommendations. The Marine Engineering program was mainly composed of courses that provide technical and practical skills, and the school environment significantly affects their learning. The university must provide a working area during the practical assessment. The site should have spacious laboratories and be comfortable to use where equipment is in the proper location and consistently maintained. Due to the growing demand of enrollees, providing additional equipment must be considered by the administration. It may impact how the students if there is a lack of equipment. Students will need to wait for their turn to do their practical assessment, and this may result in a limited time to do tasks and may lead to challenges in achieving the course learning outcome. The study also revealed that counseling was needed to give importance and recommendations. The administration must provide pieces of training for all instructors for proper class management and counseling. This helps the teacher to advance their knowledge in different strategies in assisting the needs of their students. Other studies relative to the current research should be conducted to support the present investigation by future researchers using different variables in assessing the course feedback.

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