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Research Article

Mentoring Program on Shipboard Training, Navigation and Seamanship: PMMA's Supplementary Learning Support amid Learning Crisis due to Covid-19

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ABSTRACT

The onset of the COVID-19 pandemic disrupts not only the delivery and implementation of the maritime curriculum but also training preparations before apprenticeships of higher education institution students. While the Philippine Merchant Marine Academy adapts the Alternative Learning Delivery mode during the quarantine and restriction period, the College of Marine Transportation led the implementation of two supplementary learning support (SLS) programs to utilize time and availability and therefore maximize the learning of in-house scholars. The implementation of the Peer Mentoring Program in preparation for the Shipboard Training Program (STP) and Collaborative Learning in Navigation and Seamanship subjects urged this program evaluation research. Using the Context, Input, Process, and Product (CIPP) model for the implementation of SLS, the study shows that both mentoring and collaborative learning programs intensify the knowledge, understanding, and know-how skills of the beneficiaries in terms of shipboard training, navigation, and seamanship by providing the simplest approach to learning. The programs promoted camaraderie and established interactive-academic relationships between the senior and junior cadets/cadettes. Through the SLS programs, senior mentors and peers increased the awareness, readiness, and confidence of the mentees or the juniors despite the academic interruption brought by the pandemic. However, the study identifies a gap in the curriculum particularly in the shipboard training program. The results of this program evaluation research shall be considered before the institutionalization of these SLSs.

Keywords: Learning support, Maritime education and training, Mentoring, Program evaluatin

I. INTRODUCTION

In the field of academe, by theory and practice, every learner is unique and has different learning needs. Academic inclusion, a process where educators ensure that all learners have access and engagement in learning is always and has been the priority of all educational institutions. Thus, learning support has been adopted since immemorial with the ultimate goal of supporting learners with special needs and supplementing learning achievement. Previous research suggests that Supplementary Learning Support (SLS) is more appropriate for learners who display difficulties or live with conditions that affect learning. The SLS program is also applicable to learners who have limited access to suggested teaching and learning including curricular instruction and academic inclusiveness. The SLS provides learners with support to set and meet learning targets. In addition, SLS is more effective for those learners who may require instruction beyond regular teaching sessions. This may involve utilizing collaborative and cooperative learning, mentoring, tutoring, and creative approaches to teaching and learning which may come in different formats, modes, and frequencies.

"Mentoring occurs when a senior person or mentor provides information, advice, and emotional support to a junior person or student for a period of time" (Lev, Kolassa & Bakken, 2010). The mentor is typically more experienced in a context or field and draws his/her experiences to guide and support the mentees in the same context or field. In

higher education institutions, there are several forms of mentoring to facilitate students' educational success. These include traditional one-on-one, situational, developmental, and career, reverse, distance, group-based or collaborative, and peer-based mentoring. In addition, mentoring can be long-term or short-term and can be formal, one-stop, or informal.

Mentoring programs have gained recognition as effective supplementary learning support in education, particularly in higher education institutions. Peer mentoring is commonly used to facilitate the transition from school to higher education, and universities have integrated mentoring across undergraduate programs (Cornelius et al., 2016). These programs serve as valuable resources for mastery of content and knowledge transfer. They provide a collaborative and critical dialogue space that can lead to individual and institutional changes within higher education. Both hierarchical and peer mentoring approaches have been identified as best-practice strategies for promoting college student success, impacting student identity acquisition and mentor credibility. Likewise, peer mentoring is especially important for first-year students, positively influencing their personal and psychosocial aspects. University-wide peer mentoring programs have shown multiple positive outcomes for mentors and mentees, contributing to academic, social, and personal integration. Mentoring programs also facilitate student retention and improve academic performance, as observed in South Africa (Dos Reis & Yu, 2018) and the University of Rochester (Lewis, 2017). Mentoring benefits not only mentees but also mentors themselves, leading to positive experiences, academic improvements, and increased scientific productivity. Peer mentors play critical roles as program designers, partners, and co-researchers, providing valuable insights into the mentoring experience.

In maritime education, the evolving maritime industry and increasing requirements for shipowners necessitate continuous improvement in training approaches to develop competitive maritime professionals. Mastery of competencies in maritime education involves theoretical and practical training, investigation of accidents, research work, participation in maritime communities, and mentoring to cultivate critical and creative thinking (Zavalniuk, Nesterenko & Zavalniuk, 2019). Research on mentoring programs in maritime education emphasizes their application and impact. Germo (2015) advocates for the sustainability of peer mentoring programs to enhance student achievement in maritime education. Le Goubin (2009) highlights the importance of mentoring in passing on experiential knowledge and developing ship-handling skills. The use of technology in training is increasing, but mentoring remains highly valued for enhancing skills in handling dangerous environmental conditions (Van Buskirk et al., 2019). Petrescu et al. (2021) emphasize the role of mentoring in addressing leadership and communication issues to ensure safety in maritime operations. Mentoring programs are seen as a means to foster strong decision-making skills and should be integrated into maritime education to support the development of future officers (Sitka, 2019).

During the onset of the COVID-19 pandemic, the Philippine Merchant Marine Academy (PMMA) adopted the Alternative Learning Delivery (ALD) in curriculum delivery and implementation. This was the best option due to the Academy's dormitory scheme for student scholars. However, the proponent realized that even though the Academy implements ALD, the community quarantine amidst suspension of regular classes, created more vacant time for the students, thereby, this study was conceptualized. The proponent utilized the military set-up of the academy and provided SLS to the corps of midshipmen/women to ensure that learning continuity is supported despite ongoing quarantine measures in the locality. Two (2) mentoring activities as SLS were conducted to fill the gap in the teaching and learning process during the quarantine period when midshipmen and midshipwomen were not able to maximize their learning potential. These are peer and collaborative mentoring programs that not only augment learning among target beneficiaries but also prepare the Academy to institutionalize the provision of SLSs

The first SLS activity is the conduct of a 10-day Peer Mentoring Program in preparation for the Shipboard Training Program (STP) of incoming 2Cl midshipmen/women. The mentoring program activity supplemented the existing knowledge and skills acquired by the incoming shipboard trainees during the first two years in the academy. The supplementary information and other related skills were delivered by the current 1Cl midshipmen/women who have just completed their shipboard training program. Ten (10) significant key areas were included in the mentoring program which includes shipboard training familiarization, safety awareness, cargo watch, bridge watch, security watch, mooring/anchoring, pilot boarding and disembarkation, ship maintenance, housekeeping, and emergency drills. The second SLS activity is the implementation of collaborative learning in Navigation and Seamanship subjects. This collaborative learning encompassed the participation of ten (10) small groups of cadets/cadettes in teaching and learning. Participants include all 4Cl and selected 3Cl and 1Cl midshipmen/women. Collaborative

learning focuses on the importance, concepts, principles, and applications of navigation and seamanship courses in maritime. Particularly, the activity provided a deeper understanding of RADAR and ARPA, STABILITY, ECDIS, CELNAV, and a review of COLREGS, topics that are very crucial in navigation and seamanship for the incoming 3CL.

The research was founded on the Theory of Change. This theory serves as the study's initial framework, allowing the Academy to essentially project the program's positive impact by understanding how and why a desired educational change is expected to occur, most notably in learning navigation and seamanship. A theory of change, according to the United Nations Development Group (2018), explains how a given intervention, or set of interventions, is expected to result in specific development change. A change theory assists in identifying solutions to effectively address the causes or problems that impede progress and guides decisions on which approach to take. It also aids in the identification of underlying assumptions and risks that must be understood and revisited throughout the process to ensure the desired change. In relation to this study, the findings may compel the academic department to reconsider not only the provision of SLS as an intervention, but also to revisit and review the curriculum when there are academic disruptions.

The framework of this program evaluation research is also grounded on the robust steps and standards of program evaluation. The order and subsequent process together with the evaluation standards are intended to provide an understanding of the core of the program and provide a reliable assessment of the program delivery. The program evaluation study is aligned with the Context-Input- Process-Product (CIPP) model. The basic framework as described earlier composed of basic program evaluation areas. The primary area of this model is the context evaluation or the context in which the program was rooted that helps the proponent develop a goal. This gives the rational reason why the programs have to be implemented. In this research, the proponent's goal is to provide SLS programs amid the educational crisis brought about by the COVID-19 pandemic. The input evaluation helps the study to shape or structure the proposal and the entirety of this project. The inputs were integrated from planning to implementation of the programs. Input evaluation provides the proponent sources and parameters which are later utilized to achieve the program objectives. This comprises players of the programs (mentors and collaborators), facilities and laboratories, learning resources and equipment, and the program itself. The findings from this evaluation may enhance the design, strategy of the implementation, and procedures of the programs among others. The process evaluation focuses merely on the implementation process of the SLS programs. This evaluation provides feedback on how the programs were implemented. The process evaluation covers the potential sources that cause gaps and failure of the program implementation if any. These are factors affecting the delivery of the program over which the proponent and key players have no control. These may include restrictions on attendance due to the quasi-military setting, the ongoing culture or relationship between the mentors and or collaborators and mentees, as well as the gap in the present curriculum. The results of this evaluation may assist the proponent in coming up with implementing decisions in the future. The product or output evaluation measures and interprets the achievement of the objectives. This area also covers the effect of the expected and unexpected scenarios as a result of the SLS program's implementation. These include observed behaviors, changes in relationships, changes in perception, and the perceived effectiveness of the programs.

II. METHODOLOGY

The researchers, as program implementer developed and initiated a mentoring program for shipboard training and collaborative learning for seamanship and navigation subjects as SLSs during the implementation of ALD in the College of Marine Transportation. In both SLS programs, the proponent conceptualized, designed, and planned the activities prior to the presentation of the project proposals. Initially, a dialogue with the midshipmen/women was conducted to get their perception of the plan to conduct SLS as part of the academic intervention during the lockdown. The proponent noted their suggestions and recommendations of areas that they thought to be their downside and need reinforcement. The proponent validates their statement from select concern personnel. The inclusion of all midshipmen/women is also decided upon hearing their requests, particularly in terms of shipboard training. The goals of the SLS programs were explained to the Office of the Assistant Superintendent for Academics and the proponent ensured that all necessary protocols would be regulated.

The researchers used a program evaluation approach to assess the mentoring program instead of a traditional assessment method. Program evaluation is a systematic process of collecting, analyzing, and interpreting information about a program's goals, outcomes, and impacts. It provides an in-depth understanding of the program's strengths, weaknesses, and effectiveness, and helps to identify areas for improvement. In this case, the researcher used a

combination of qualitative and quantitative methods to gather data from participants, mentors, and program administrators. The data collected included feedback from participants about their experiences in the program, mentor evaluations, and analysis of program outcomes. The primary sources of data for SLS programs are merely participants of the programs. Mentoring has a group of participants that includes twenty (20) 1CL mentors and eighty-four (84) 2CL mentees, while collaborative learning has a group of participants composed of ten (10) 1CL, twenty (20) 3CL, and one hundred sixty-seven (167) 4Cl Midshipmen/women.

For the selection of topics or learning areas that will be included and given priority in the SLSs, a focus group discussion was conducted with the mentors and senior collaborators. Each of the competencies for shipboard training, seamanship, and navigation was considered, however, due to limited time and the health protocols, the group filtered and selected the priority topics and came up with the list as mentioned earlier. During the mentoring and collaborative learning activities, the proponent conducted periodic observations. Small group discussions with the mentors and senior collaborators were also carried out and inserted every two days to monitor the conduct of SLSs. Positive feedback from both mentors and mentees was noted.

Program evaluation research commenced upon the completion of 10-day mentoring activities for shipboard training and 10-day collaborative learning in the CMT. With the same participants, the program evaluation was conducted through a descriptive approach using a survey as the main data-gathering tool. The proponent assumed that the relevant findings of this study may serve as the basis for mentoring program adjustment, alignment of curriculum, curriculum and competency mapping, and alignment of the shipboard training program of the Department of Shipboard Training (DST). Likewise, the proponent strongly understood that the evaluation of these mentoring programs may lead to the success and institutionalization of these SLS programs in the future. This ensures that the PMMA provides research-based academic reinforcement and learning support activities and that CMT is equipped and prepared to implement such whenever necessary.

The program evaluation was conducted through a survey. The survey tool comprised the indicators focusing on the program implementation in terms of input, process, and output. In addition, the survey also encompasses other questions in relation to the significance, weaknesses, and strengths of the intervention. In the case of the mentoring program for shipboard training, the proponent included questions that describe the existing curriculum delivery.

Data and information from the beneficiaries including their observations and feedback were gathered at their convenience and after the program implementation to reduce bias and subjectivity. Beneficiaries were informed that the conduct of evaluation, solicitation of feedback and recommendation as well as their learning gaps and issues during the SLS program implementation were important to enhance the program and the curriculum in general. There were no delimitations and limitations identified as of this date as the program is new and the study calls only for a program evaluation design.

III. RESULTS AND DUSCUSSION

A. Mentoring Program in Shipboard Training

This SLS encompassed shipboard training preparation through a peer mentoring program which focused on the ten (10) key areas of shipboard training. The program utilized selected and highly qualified 1CL midshipmen/women who served as mentors and all incoming 2CL midshipmen/women who served as mentees. The structure of the program is highly recommended because the mentors have the latest experience of the shipboard training program, thus, sharing of information is timely and relevant. This student mentoring activity aimed to explain the basic principles and importance of the shipboard training program with emphasis on the 10 key areas and share experiences on the shipboard training program. The Shipboard Preparation Mentoring program aimed to tackle the common practices that a deck cadet/cadette will most likely encounter upon their embarkation on their vessels regardless of the type of ship. This program became a call for the pursuit to answer the most frequent question of what a deck cadet/cadette does on board. Throughout its whole duration, the program has been an appropriate venue for learning for both the mentor and mentees.

In the initial sessions, mentors find difficulty in the implementation of mentoring services due to inexperience in teaching or handling classes. Resources are not enough, particularly, ICT supply and materials such as HDMI cable, memory stick/storage, and whiteboard markers. A limited allocation of time. During mentoring, the mentees asked many questions and sometimes asked for a review of the concept and principle, making the session longer and

extended. In terms of risks, there are times when the participants are delayed due to the DMA schedule and protocols. Similarly, during the mentoring activity, some participants were summoned and pulled out by other units due to urgent matters. Also, DMA duty hinders the implementation of the mentoring activity.

The program implementer strongly recommends training the students, especially the 1Cl to handle classes through class reporting, peer mentoring, and other learning activities to improve their confidence, communication, and social skills. Provide learning materials such as whiteboards and markers at the dormitory building for the students to utilize during small group discussions to create a venue for practice/habit of teaching and learning among the midshipmen/women. Recommend additional purchases of ICT supplies and equipment intended for student consumption. Extend the session for an additional hour intended for review and recall of shipboard concepts and principles. Recommend that the Muster of participating midshipmen be made upon the start of the mentoring session, said Muster is to be submitted to the DMA tactical officer at the Quarter Deck. Coordinate with other units regarding the approved activity to avoid overlapping schedules. Coordinate with the DMA Security Officer for the exemption of the Midshipmen/Women involved in the Activity from DMA Duties and Responsibilities.

B. Program Evaluation Results of the Mentoring Program

The mentees overwhelmingly agreed on various aspects of the mentoring program. They strongly agreed that the included topics were timely, accurate, and relevant and that the objectives of the program were clearly defined and communicated. The mentees also felt that the selected mentors were knowledgeable and well-prepared and that the content and topics were organized and easy to follow. They generally agreed that the allotted time for daily activities was sufficient and that the mentoring room and facilities were comfortable. The mentees strongly agreed with the program inputs, indicating a high level of satisfaction. In terms of the program process, the mentees strongly agreed that the activities provided during mentoring were helpful and contributory and that the mentors cared about their progress. They felt that participation was encouraged, meaningful and quality discussions took place, and the mentors effectively communicated their ideas. The mentees also noted that appropriate teaching tools and equipment were utilized, and the materials used and presented were pertinent and useful. Once again, the mentees strongly agreed on the program process, reflecting a positive experience. Regarding the program output, the mentees strongly agreed that the mentoring program's objectives were met. They felt that their knowledge of shipboard training improved, their readiness for shipboard training increased, and their confidence level to perform shipboard training tasks and assignments grew. The mentees demonstrated a high level of agreement on the program output, indicating successful outcomes.

Overall, the mentees' feedback highlighted their satisfaction with the mentoring program, emphasizing its effectiveness in providing relevant knowledge, fostering progress and confidence, and achieving the program's objectives. The findings give a clear understanding of the program evaluation conducted and highlight the effectiveness of the learning intervention for maritime students before embarkation. The findings indeed agree with the study of Carragher & McGaughey (2016) which argues and reiterates that the best way to implement and evaluate mentoring as an effective intervention is through systematic program evaluation. The positive findings also corroborate the findings of Rokhmani et al. (2019) which state that the strength of the mentoring program lies in the student-centered active and participatory learning with systematic process simultaneously combined with academic, career, personal, and social guidance. In the mentoring program, the academic intervention and process show the value of commitment to providing better and quality education.

C. Noted Observations, Areas for Improvement and Strengths of the Mentoring Program

Mentors purposively utilize roleplaying during the re-enactment of scenarios onboard the training ship. Some of the principles and concepts were integrated into various tasks to be clearly understood by the mentees. These tasks and scenarios were uprooted from the experiences of the mentors onboard, thus, the accuracy and replicability of the competencies were observed. Moreover, the mentors describe and explain tasks and scenarios in the simplest approach which is very useful for future shipboard trainees. The mentee's observations fall under the domain of experiential learning. Role play as a teaching technique proved to be an effective approach for the mentoring program. Both mentors and mentees allow themselves to explore scenarios with a realistic approach considering the lessons learned during the discussions. To this effect, the program has become a venue for sharing real-life experiences during shipboard training. These findings support the analysis of Petrescu et al. (2021) that the majority of mentors reportedly provide content-related support to their peers. This finding is expected as mentors have

recently taken the course and are a valuable source of knowledge for their peers. The study strongly upholds the importance of mentors as a relatable figure who helps students learn meaningfully. Results show that the majority of mentees strongly agreed that mentors provide valuable help in the course and laboratory work. Mentees highlight the quality of the help provided by the mentors in learning highly technical competencies. Further, Gusar et al. (2020) also argue that the approach to mentoring is an important factor that affects students' satisfaction and in return, it influences the achievement of final learning outcomes and professional development of students. Accordingly, the highest quality of mentoring support was reported by students in the individual approach and the lowest quality of mentoring support was reported by students mentored in a group of four to six students by a single mentor. In the individual approach, the students highlighted the continuous availability of the mentor, recognition of personal study needs, respect, safety, appreciation, and patience. Furthermore, the findings support the claim of previous research which states that indeed mentoring is a positive experience that affects the personal, and psychosocial life of students (Skaniakos et al., 2014) and contributes to the student's academic, social, and personal integration into the higher education environment (Robbins et al., 2009)

Although the provision of role-playing seems to be effective, there are program inputs that are seen as factors that affect the smooth implementation of the mentoring program. For instance, the 10 key areas of shipboard training were compressed into 10-day mentoring activities. The 10 days were perceived to be inadequate as mentees' interest to learn more is increasing each day. The discussion was also regulated due to limited time allotment. Some topics require more time to effectively understand, acquire, and master by the mentees. In addition, learning resources such as simulators, equipment, multimedia presentations, and other audio-visuals were also limited due to the restricted transactions due to alternative work arrangements of personnel in charge of these learning resources amid the COVID-19 pandemic. The absence of simulators proved to be a challenge for the program implementation, particularly for the mentors. During the activity, there are no available guidelines yet on the use of simulators and other laboratories. Furthermore, the findings highlight the limited time and resources to effectively deliver the mentoring program. This institutional factor may be attributed to the quasi-military setting and highly expensive shipboard training facilities and equipment of which the academy, the College of Marine Transportation, and the program implementer do not have control. Sitka (2019) reiterates that maritime educators should utilize teaching aids and methods that stimulate the affective domain, as early as possible in the education process, to promote growth in student decision-making skills. He also argues that the implementation of the mentoring program within the maritime industry and making it a part of normal practice for new officers will foster strong decision-making skills. To that end, the curriculum for leadership and managerial skills courses required in maritime education should include the benefits of a mentoring program and how such a program should be implemented.

Mentees maximized the availability of their mentors and their corresponding experiences and asked all their queries as the open forum commenced. Due to these participative activities, camaraderie and relationships were strengthened after each of the mentoring periods. It is evident also that this type of activity not only increases knowledge but also boosts the morale of incoming shipboard trainees. Establishing rapport is deemed necessary to develop trust and confidence amongst participants as it lessens the seniority culture embedded in the Academy's quasi-military setting. The program created an opportunity to provide both mentors and mentees with a different environment for learning, a new culture of participatory learning amid educational disturbance. This set of the strengths of peer mentoring suggests that the educational output of the program was met. The claim of Le Goubin's (2009) research was found to be aligned with the findings in this area. According to the author, experiential knowledge will address the cost of marine accidents due to the limited knowledge of marine officers before embarkation. Le Goubin reiterates that mentoring, as a traditional way of passing this knowledge from senior to junior will largely decrease the soaring number of accidents maritime industry. These could also be attributed to Ulsu's (2020) finding that mentoring program generates huge potential to enrich the scientific productivity of both mentees and mentors and that mentoring program offers a unique understanding and insights into the academic program (Seery et al., 2021). Lewis (2017) claim also supports this finding and argues that students gain academic and teaching skills, greater awareness, deeper understanding, inclusivity, and social skills when involved in learning interventions like the mentoring program.

D. Competencies Most Learned, Emphasized and Better Learned from the Mentoring Program

Unlike shipboard mentoring, the collaborative learning program's topics were selected based on actual subjects offered as per the existing curriculum. The only difference is that the discussion focuses on the difficult topics of

navigation and seamanship subjects. While the teaching or mentoring approaches are the same, the collaborators merged their knowledge and plan consequently how to deliver the topics according to needs per level, thus were perceived by the juniors as simplified learning. Other techniques included as part of this simplified learning approach include an easy way of memorization complex procedures and concepts, short computations, and mathematical calculations among others. Using the frequency of responses, security watch is the most appreciated topic in the peer mentoring activity followed by anchoring and mooring, pilot boarding and disembarking, bridge watch, housekeeping, and cargo watch. Likewise, other learned topics include shipboard familiarization, safety awareness, shipboard maintenance, and emergency drills. The significant result for security watch can be attributed to the quasi-military training mandated in the Academy. The regimental training as part of the Academy's set-up also required the midshipmen/women to perform scheduled security watches. Having this type of training and mentors who deliberately explain and describe how the security watch performs on board is one of the most essential contributions of this mentoring program. Security watch is deemed prevalent among many other topics. Security watch task is one of the common duties of a cadet and is routinary on board. The significant learnings of this topic are likely affected by the mentor's up-to-date experience. Anchoring and Mooring together with Pilot Boarding and Disembarking are also some of the most engaging tasks on board. During shipboard training, the cadet is commonly supervised by the Bosun during the preparations of these tasks. Mentees share how to accept and handle orders to safely accomplish their tasks amidst adversities. The results on security watch, anchoring and mooring, and pilot boarding and disembarking show how the sharing of knowledge and experiences affects the learning and perception of the mentees in relation to these shipboard activities. During the observations, mentees' eagerness and excitement were reflected in discussions of scenarios of vessels coming from a long voyage, anchoring, mooring, embarkation, documentation processes, and other activities concerning security duties. Indeed, the sharing of experiences is deemed to have a positive effect on the learning of the mentees. On the other hand, Bridge Watch, Housekeeping, and Cargo watch are tasks commonly given to a cadet where the cadet plays as support to the Officer of the watch. Mentors' experience depends upon their contribution and participation in these undertakings and on the confidence of the Officer in the capacity and ability of the cadet. Likewise, the company's cadetship program also affects the implementation of duties onboard vessels. The capabilities of the mentors reflect the quality of their Shipboard Training which also shows how they conducted their mentoring activities. The mentees have an overview of how they shall contribute to the operations of the vessel. Mentors perceived Bridge Watch, Housekeeping, and Cargo Watch as the favored topics.

The study found that there are lessons under these areas that were not given much importance and focus in the classroom instructions. This presentation does not claim that the PMMA curriculum is not compliant with the standards but rather shows that there are gaps in the curriculum delivery and implementation. Using the responses of the mentees, the study shows that there are lessons and competencies in security watch, pilot boarding and disembarking, and housekeeping that are not discussed and presented in the classroom. Other competency includes anchoring and mooring, cargo watch shipboard maintenance, bridge watch, safety awareness, shipboard familiarization, and emergency drills. With reference to the existing curriculum, until this date, there are no specific subjects that solely focus on the learning of security watch, pilot boarding, disembarking, and housekeeping. Usually, these topics are included or embedded in various training programs offered by maritime training centers. Meanwhile, some of the manning and shipping agencies provide separate training or in-house training for these purposes, for instance, training for security watches. In line with this, the result may not be attributed to the existing program of the Academy. However, to ensure that gaps in the curriculum delivery and competency building, this concern should be addressed properly. The perception of the mentees is misleading and yet it should not be taken for granted. These topics should be included as part of the preparation of cadets/cadettes before shipboard training as it is necessary and useful onboard.

On the other hand, findings show that there are competencies learned better from peer mentoring than from classroom instructions. Using mentees' responses, anchoring and mooring, bridge watch, cargo watch, and pilot boarding and disembarking are shipboard training areas learned better by mentees during peer mentoring. Other areas under security watch, shipboard familiarization, and safety awareness. Accordingly, these competencies were better delivered and understood in the peer mentoring activity than in the classroom instructions. Mentors clearly defined and explained the necessary principles, concepts, and uses of each of the competencies onboard training. In addition, the sharing of experiences and stories of the seniors accustomed the mentees to what really happened and how to properly react during and on shipboard training activities. The results can be attributed to the fact that instructions in the classroom are purely curriculum-based while learning in the mentoring program is most likely to be competency-based. Curriculum-based as

instructors deliver and implement maritime topics and courses based on the existing program of study as reflected in the syllabus. In addition, classroom instructions emphasize competencies in a linear and sequential approach throughout the program and dwell on theories, principles, and concepts and maybe possible future applications. Mentoring, on the other, based their teaching approaches on their most recent experiences which are the required competencies needed for shipboard training. The different theories and practical applications were reviewed accordingly before sharing them with the mentees. Mentors share the target topics and lessons in the simplest and most comprehensible manner using their experiences as an effective learning tool. Also, mentoring provides the application of competency for each of the specific tasks onboard the vessel. The results may also suggest that these competencies can be learned effectively from active seafarers equipped with the updated or latest knowledge, skills, and experience of shipboard operations. The strong recall combined with prior knowledge of the mentors makes learning more accurate and useful than in a classroom setting. Finally, the variations of learning due to the number of mentors alternating during the discussion or mentoring activities provide a wider scope for knowledge acquisition.

E. Collaborative Learning in Navigation and Seamanship

The collaborative learning program is a meaningful learning activity aimed at discussing important concepts, principles, and applications of navigation and seamanship. Specifically, the activity aimed to discuss the concepts and principles of COLREGS, RADAR, STABILITY, ECDIS, and CELNAV; discuss applications of these principles in Navigation and Seamanship; and share insights and experiences of the actual application of these concepts and principles on board seagoing vessel. The 1Cl and 3Cl cadets/cadettes were assigned to review and master a certain topic in navigation and seamanship and conducted collaborative (peer) learning with the 4Cl cadets/cadettes.

Teaching is new to the senior collaborators (1Cl and 3Cl). Thus, it was considered as one of the factors that made collaborative learning challenging, the mentors are still on the verge of finding the appropriate teaching technique for them to deliver their lectures properly. Also, given the level of seniority, there are some instances that the 3CL Cadets would feel intimidated due to the higher and in-depth knowledge of the 1CL seniors. However, with the constant monitoring of the program implementer, it came to the attention of the 1CL that they must be involved and let the 3CL engage during the discussions. As days go by, the mentors have a grasp on their way of teaching delivery and approach making it easier and easier for them to infuse understandings towards the 4Cl class cadets/cadettes. At the end of the program, the following observations were noted. The first three sessions made the 1Cl collaborators experience difficulty in managing the class, particularly in giving in-depth discussions about the topics. Accordingly, they need to adjust their teaching with the inputs of the 3Cl cadets/cadettes and with the existing knowledge of the 4Cl cadets/cadettes. During the monitoring of the collaborative learning, it was found that there were significant variations in the faculty teaching, techniques, and focus with respect to teaching navigation and seamanship across all levels. Similarly, 1CL cadets/cadettes as senior collaborators showed a lack of communication skills, especially in the first three sessions. There are times and instances that cadets/cadettes were delayed for the activity due to DMA daily routine activities.

The program implementer strongly recommends revisiting and aligning the syllabus of navigation and seamanship across all levels. Ensure that the prerequisite knowledge, information, and competency are provided in sequence. Utilize appropriate teaching techniques to deliver lessons and topics effectively. Train the cadets/cadettes to communicate their ideas and insights to build their confidence and ability in communication. Let them handle classes through peer teaching to boost their knowledge and skills in maritime education. Coordinate approved academic activities with the DMA office to avoid overlapping schedules and delays.

F. Program Evaluation Results of Collaborative Learning

The evaluation of a collaborative learning program in navigation and seamanship courses revealed positive results and strong agreement from the mentees. They strongly agreed that the learning topics were timely, accurate, and relevant and that the selected senior collaborators were knowledgeable and well-prepared. The mentees also felt that the objectives of the collaborative learning were clearly defined and communicated and that the content and topics were organized and easy to follow. Although the mentees agreed that the time allotted for daily activities was sufficient and the learning rooms and facilities were comfortable, their agreement was not as strong as in other areas. Overall, the mentees strongly agreed with the program inputs, indicating a high level of satisfaction. Regarding the program process, the mentees strongly agreed that the senior collaborators were enthusiastic and caring about their progress. They found the activities helpful and contributory, and participation was encouraged. The mentees also

highlighted meaningful and quality discussions and effective communication by the collaborators. They recognized the opportunities to apply their knowledge and skills, and they appreciated the use of pertinent materials and appropriate teaching tools and equipment. The average weighted mean of the mentees' perception of the program process indicated a strong agreement, emphasizing the positive experience. In terms of program output, the mentees strongly agreed that their confidence level and readiness for navigation and seamanship tasks and other related courses increased. They also felt that their knowledge of navigation and seamanship improved, and they believed that the collaborative learning program objectives were met. The average weighted mean of the mentees' perception of the program output indicated a strong agreement, highlighting successful outcomes. Overall, the evaluation demonstrates the effectiveness and positive impact of the collaborative learning program in navigation and seamanship, with mentees showing high levels of satisfaction and improved academic and technical readiness. The findings support the value of mentoring and collaborative learning as crucial elements in maritime education and training.

In the conducted collaborative learning in navigation and seamanship courses, the program evaluation shows the success and positive impact of the learning support in the increased confidence level and readiness of the students academically and technically. The possibility of using mentoring to improve academic performance is very high. This can be attributed to the motivational support which inspired students to do more. It also facilitates retention and increases the overall achievement rate of the students (Dos Reis & Yu, 2018). Indeed, mentoring is still the most appreciated learning support to enhance these skills. Casareale et al. (2021) also argue that the man element is still the key to improving safety and accountability on board thus senior personnel need to share maritime skills and develop leadership among junior personnel. Mentfostersfoster decision-making skills. Sitka (2019) also argues that mentoring and collaborative learning positively affect the curriculum for leadership and managerial courses required in maritime education. In addition, the study also supports the claim of Aarnikoivu et al. (2020) which shows that collaborative learning resulted in a variety of changes within the university. According to the authors, these types of learning programs have a high potential to offer an excellent space for collaborative critical dialogue, which could ultimately facilitate change among individual academics, but also potentially more widely within higher education

G. Noted Observations Areas for Improvement, and Strengths of the Collaborative Learning

Collaborators ranked knowledge sharing on the top list followed by commitment of collaborators and lastly limited lecture and example. The use of focus group discussion, role-playing, and immersion activities during the collaborative learning in navigation and seamanship resulted in efficient knowledge sharing among the collaborators. Though the culture of seniority is still high, learning takes place most conveniently and efficiently. The higher Senior to Junior collaborator ratio also resulted in increased participation of the junior, especially the 4th class cadets/cadettes. In return, participative learning boosts the confidence of senior cadets in teaching the lessons. Among the highlights of the discussion are the lessons in RADAR Plotting, ECDIS route planning/plotting, Celestial navigation, and Trim and stability calculations. This also serves as review sessions for the senior collaborators in relation to their preparation for validating examinations. Likewise, a thorough discussion of COLREGS is also observed with emphasis on significant areas that the seniors perceive to be difficult in classroom instruction. The activity provides brainstorming for the clarifications and validations of COLREGS concepts and principles including its application on sea-going vessels. These discussion activities showcase the commitment and eagerness of the seniors to share what they have already understood about the navigation and seamanship applications in the maritime profession. Lastly, the limited lectures and examples provided during the program can be attributed to the time allocation, particularly in the discussion sessions of each lesson or topic. Another reason can be attributed to the numerous sub-topics of navigation and seamanship that senior collaborators needed to cover within the target time frame. For instance, the discussion of RADAR plotting, ECDIS route planning/plotting, Celestial navigation, and Trim and stability calculations consumes more than half of the entire time of the program, thus, senior cadets opted to focus on practical applications rather than giving lectures and examples. Despite the evidence of limited resources as one of the noted observations, the collaborative learning activities' sharing of knowledge and commitment of collaborators positively affect the target groups. As Beltman & Schaeben (2012) describe university-wide programs offer multiple positive outcomes. Likewise, a positive impact is also identified and emphasizes personal and psychosocial aspects of the student's life (Skaniakos et al., 2014).

In terms of areas or rooms for improvement of the program, collaborators ranked utilization of laboratories, equipment, and facilities on the top list, followed by availability of learning resources, and lastly learning delivery

and approaches. Collaborators find the activity and discussion challenging particularly in some of the principles and concepts that need simulation and visual representation to aid the learning process. Similarly, the availability of learning resources is inadequate for some practical applications of the lessons. With regards to the learning delivery and approaches, these findings can be attributed to the teaching style of senior collaborators wherein they preferred to teach applicability and usability of concepts and principles on board and in the maritime profession in general. Despite the positive outcome of collaborative learning, there are still issues that call for a more careful investigation. The intrinsic dynamics of both mentoring and collaborative learning in higher education drive support for the conceptualization of new schemes of these learning interventions. A highly formalized mentoring process, the extent of the program, and the relationship between the mentor, mentees, and collaborators may overshadow the positive effect of these programs (Christie, 2014). Cornelius et al. (2016) also emphasize that the matching process, training, and orientation as well as the frequency of sessions and interactions are key aspects in the design and implementation of learning support and interventions. Again, these findings affirm the importance of teaching aids and methods that stimulate the affective domain of the students which promotes decision-making skills (Sitka, 2019). In addition, Olivier and Burton (2020) reiterate that to possibly manage a large-scale mentoring program, the conduciveness of the learning environment and the issues of limited resources should be addressed first to withstand the challenges during the implementation

For the strength of collaborative learning in navigation and seamanship, collaborators ranked the program as providing advanced learning on the top list, followed by promoting interactive relationships, and lastly, learning was simplified. Prior to the collaborative learning, the program implementer together with the senior collaborators identified topics and lessons under navigation and seamanship which were perceived to be useful and yet difficult to grasp in a one-time discussion or presentation. These lessons and topics are mainly complex concepts that senior collaborators have already discerned and understood after completion of the semester and of the level where the courses are included. Having this additional learning junior collaborators will easily understand and anticipate discussion in the future. Again, this collaborative learning is based on the experiences of senior collaborators under each of the courses and, thus, can be a reliable tool for knowledge building. Another strength of the program is the promotion of an interactive relationship between senior and junior cadets/cadettes. The conduciveness of the learning environment may be a factor although the culture of seniority is still there. The activities were conducted inside the classroom where seating arrangement and layout are accommodating, encourage participation, and sustain the interest level of the collaborators.

IV. IMPLICATIONS AND RECOMMENDATIONS

This program evaluation research provides valuable insights into the effectiveness of programs and interventions, and the findings can be used to inform future decision-making and program development. To make the most of the research results, the author provides clear and actionable recommendations that can guide program improvements and modifications. These recommendations are based on the strengths and weaknesses identified during the evaluation process, as well as an analysis of the program's outcomes and impact. The goal of providing recommendations is to help program stakeholders make informed decisions and implement changes that will enhance the program's effectiveness and better serve the intended population. Below is the list of recommendations:

1. Strengthen input variables for the mentoring program. Maximize resources, both physical and human resources.
2. Empower 1Cl cadets, the mentors, continue to utilize their potential and experiences to support the DST in the preparation of shipboard trainees.
3. Utilize collaborative or peer learning to maximize the learning of seamanship and navigation. Address the input variables and maximize the program as an in-house intervention. The program Implementer shall conduct adjustments to both programs and perform an in-depth review of the implementing guidelines prior to institutionalization. Consider noted observations and room for improvements in the conduct of program adjustment.
4. The Academic department shall strictly conduct M&E of the curriculum delivery and implementation to ensure compliance with standards, procedures, and requirements.
5. Findings on the curriculum suggest conducting a review and competency mapping, particularly in terms of shipboard training where onboard tasks related to housekeeping are a concern. The Academy as the pioneer institution in maritime education in the country may lead the review and likewise the development of a good

M&E mechanism for the shipboard training program. By utilizing these M&E results, the Academy may provide a call for re-alignment and/or revision of the shipboard training program if necessary.

6. Curriculum Developers shall also revisit STCW and provide feedback on the way KUPs were grouped in relation to the required competencies. Constructive feedback with regard to sequence (pre-requisite/co-requisite) and workplace application is also necessary.
7. A comprehensive curriculum review shall be conducted to address the learning gaps identified in the existing curricular program of maritime education.
8. Further comparative study shall be conducted to compare peer teaching with other interventions provided by the Academic department.

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