

Maritime Students' Satisfaction on the Utilization of Learning Management System

Panopio, Fervin Adrian Acuzar¹, Amigo, Allen Miranda², Casas, Shem Gabriel Tulilic³, Falame, Christian Jude Medrano⁴, Sarcia, Cedic Ivan Vitto⁵ Dr. Beverly T. Caiga²

¹Lyceum of International Maritime Academy

²College of Education, Arts and Sciences,

Lyceum of the Philippines University Batangas

²beverlycaiga@yahoo.com

Asia Pacific Journal of
Maritime Education

Vol. 7 No. 1, 72-79

June 2021

P-ISSN: 2423-2033

E-ISSN: 2467-513X

apjme@lpubatangas.edu.ph

www.apjme.apjmr.com

Abstract – The study determined the learning management system utilization of maritime students. Using online channels, the Learning Management System, or LMS, has been a huge assist in connecting students and educators to higher education institutions. Using it as a platform allows students to access classroom resources and activities more easily, just as they would in a face-to-face setting. This study used the descriptive survey type of research among the 297 Maritime students, all data were treated using a statistical software known as PASW version 26 to further interpret the result of the study using an alpha level of 0.05. The findings reveal that the respondents are satisfied with the utilization of the Learning Management System. The level of satisfaction in the utilization of LMS does not vary across the respondents' profile. Practical contribution was implied as a plan of action was proposed to further improve the satisfaction of Maritime students in the utilization of the Learning Management System.

Keywords – Internet Accessibility, Gadget, LMS, Maritime Education

INTRODUCTION

Due to recent and quick improvement of technology around the world, the learning management system has become a compelling and productive method in the field of instruction. Learning Management System or LMS is software that is designed to create, distribute and manage the delivery of educational content to the students in terms of their courses and programs.

Maritime Students in LIMA have experienced learning online by the use of Learning Management System (LMS) for the study platform. Additionally, it allows students to obtain knowledge and understanding through online activities. However, the use of the Learning Management System in the fulfilment of the studies of maritime students may not be effective upon their learning in maritime education. Maritime Education requires students to develop skills based on their learnings from the studies, there are some lessons that need the acquisition of the physical ability that cannot be done through online learning. Moreover, in South-East Asia, the Philippines is one of the slowest internet providers, this may affect the use of the Learning Management System and it also affects the maritime students. There are some students that cannot afford to buy fast internet, gadgets and laptops which they need upon learning [1].

The Learning Management System or LMS has been a big help in connecting students and educators to higher institutions using online portals. Using this as a platform makes the students easier for them to access the classroom materials and activities just like on a face-to-face set-up. It allows students to formulate discussions by using forums that enables them to interact with their instructors. According to studies, the internet is being used as a medium for academics nowadays. In addition to this, students that are more inclined in using LMS and the internet tend to be very supportive in this new learning environment causing them to have a better attitude and improvement on their studies. Using LMS as an only platform for learning can be a subject for some problems. Universities should be able to provide the students and instructors proper guidance and training in adapting to this new kind of learning platform. Most of the Universities around the world have access to LMS as their alternative learning platform. In relation to this, a huge number of positive reviews has been made in the use of LMS, therefore proving that LMS implementation to universities around the world is effective [2].

Yuen et. al., [3] stated that there are no differences between the level of use of a student and on how students use LMS. The performance of the

students highly depends on the system of LMS. Technology is widely used in learning that is why using LMS as a learning platform or source contributes to the satisfaction of the students. With the use of LMS, students will be able to learn like in the set-up of face-to-face classes. This study is important to know whether the students accept this kind of learning system. As time goes by, the LMS has been widely used by different institutions to support the learning of the students even in different areas and time zones.

Satisfaction on LMS highly depends on the proper utilization of LMS. That is why for the researchers, it is very important to focus if the LMS is properly utilized in providing learning materials and knowledge the same as face-to-face learning. To help the researchers in measuring the satisfaction of students towards LMS, identifying the respondents according to their program, age, internet accessibility and gadget used in learning will be a key step to know whether these classifications affect their satisfaction.

At the midst of the COVID-19 Pandemic in the Philippines in March 2020, social Isolation had become a main standard for higher-education students, specifically courses that require face-to-face laboratory exams, the Maritime Program in particular [4]. With this, face-to-face education had collapsed and the utilization of LMS became the main platform for the uploading of learning content and distribution of activities to be supported by online meetings in a synchronous and asynchronous session as a fast, productive, and cost-effective way of learning. LMS had become one of the most popular means of education which almost every employee and student agreed with. However, not all learning outcomes improved as a result compared to normal as problems had risen and decreased satisfaction and confusion had been noticed and further analysis was needed for a conclusion [5]. Online learning in the Maritime program had a factor affecting the use of LMS in online learning, experience through practical activities. Furthermore, an increasing number of Maritime students had not grasped the use of LMS and had the pressure of non-familiarization with the equipment when embarkation comes to mind and the factor of internet connectivity [6].

Most students are encountering several problems such as technical issues, distractions and time management, lack of adapting to unfamiliar technology, understanding course expectations, lack of in person interaction and self-motivation. Three

specific problems found based on interviews are with students' perception of online courses, administrative issues and lack of online education experience among instructors and students [7]. In a survey conducted with previous online learning experiences tended to have more effective learning strategies when taking online courses, and later had higher levels of motivation in their online courses. The students with higher levels of technology self-efficacy and course satisfaction also earned high final grades [8].

With the present time, LMS is still growing on improvement and is continuously providing necessities to further assist the Maritime students. Through LMS improvement, "one size fits all" approach might be recognized and the generalized assumptions where collaborative learning tasks often applied to the online environment have less focus on the delivery and more attention to the task/content are no more [9].

However, students are having a hard time in studying and sometimes they do not fully understand the topics and lessons, they end up saying that online learning through LMS is not that effective compared to face-to-face learning or actual based learning. Maritime students need to focus on the activities that need to enhance and develop their skills. The chance to explore, communicate, exercise and role play, all 'live' and with feedback from a facilitator on site, is the best resource that face-to-face learning offers. Effective learning resources are being part of a community and being kept accountable. For the maritime students, face to face learning is much more productive than face to face learning they are given the capacity to communicate with their teachers and other learners [10].

This study is important in order to make necessary adjustments, changes or improvements on the existing LMS in consideration of the proper utilization and satisfaction of maritime students in using LMS. The main purpose in conducting this study is to assess the Maritime Students' satisfaction on the utilization of LMS in order to evaluate whether the current LMS in used is effective in addressing and providing the knowledge needed by the students or to adopt a more effective online application especially for the maritime students.

OBJECTIVES OF THE STUDY

The study determined the learning management system utilization of maritime students. Specifically, it will seek answers for the following;

determine the profile of respondents in terms of program, age, internet accessibility, gadget used in learning; determine the satisfaction of the students on the utilization of LMS; determine the satisfaction of students on the utilization of LMS.

MATERIALS AND METHODS

Research Design

This study used the descriptive survey type of research. Descriptive studies aim to look at the characteristics within the population in order to find the existing problem or transparency within the organization. Using the descriptive approach eliminates the researchers' ability to manipulate the variables but rather only describe the sample as stated by Siedlecki [11] The researchers used the descriptive method to measure the Maritime students' satisfaction on the utilization of LMS.

Participants of the Study

The respondents in this study were First year to Third year LIMA students who are using LMS in taking the required courses or subjects for completing BSMT and BSMarE program which is composed of two-hundred-four (204) BSMT students and ninety-three (93) BSMarE students with a total of 297 Maritime students consist of mostly regular and a fraction of irregular students.

Instruments

The data required in this study is obtained through an adapted questionnaire from Naveh, et al., [12] in their study titled "Student LMS use and satisfaction in academic institutions: The Organizational Perspective". The first part of the questionnaire is the respondent's demographic profile such as academic program, age, internet accessibility and gadget used. The second part of the questionnaire determines the satisfaction of Maritime students on the utilization of LMS. The researchers adapted various questions and revised them according to the purpose of the study and were validated by an expert.

Data Gathering Procedures

The questionnaires were personally distributed online via private message in messenger to a number of maritime students in LIMA through Google form. The contents of the questionnaire were explained first to the respondents before answering. The accomplished questionnaires were collected and tallied within a week.

Data Analysis

To perform data analysis, the following statistical tools were used. Frequency and percentage distribution were used to describe the demographic profile of the respondents. Weighted means and ranking were used to assess the learning management system of maritime students. The result of Shapiro-Wilk Test revealed that p-values of four major variables are less than 0.05 which means that the data set is not normally distributed. Therefore, Mann-Whitney U test for two groups and Kruskal Wallis test for three groups were used as part of the non-parametric tests to determine the significant differences. The following Likert Scale was used in assessing the variables: 3.50-4.00 –Fully Satisfied; 2.50-3.49 – Satisfied; 1.50 – 2.49 –Less Satisfied; and 1.00 – 1.49 –Not Satisfied. In addition, all data were treated using a statistical software known as PASW version 26 to further interpret the result of the study using an alpha level of 0.05.

Ethical Considerations

To distinguish the highly classified nature of the respondents, no particular names were indicated in the report. The identities of the respondent were not revealed except they were college students of Lyceum of the Philippines University – Batangas. Information and results were only given based on the data gathered without the personal opinion of the researchers.

RESULTS AND DISCUSSION

Table 1
Characteristics of the Respondents Profile

Program	F	Percentage
BS Marine Transportation	204	68.70
BS Marine Engineering	93	31.30
Age		
16-18	40	13.50
19-21	228	76.80
22-24	23	7.70
25 and above	6	2.00
Internet Accessibility		
Wi-Fi	173	58.20
Mobile Data	119	40.10
Hotspot	5	1.70
Gadget		
Mobile Phone	206	69.40
Laptop	63	21.20
Desktop	24	8.10
Ipad	4	1.30

Table 1 presents the characteristics of the respondents' profile. As shown in the table above, the most of the respondents are from the BSMT program with a frequency of 204 or a percentage of 68.70%. Meanwhile, only 93 or 31.30% are part of the BSMARE program. It only shows that most of the respondents are still aspiring to be part of the deck department aiming to become a successful Deck Officer or Master Mariner someday. This is connected to the study conducted by Orence and Laguador [13] which stated that there was a total of 1,012 students who took the BSMT program and a total of 180 for the BSMARE in the Lyceum International Maritime Academy from 2007-2011. It only shows that most of the students are aspiring to be in the deck department dreaming to become successful deck officers and master mariners.

Also, in terms of age, the majority of the respondents are 19 to 21 years old with a total of 228 students or 76.80% while 25 years old and above got only a total of 6 students or 2.00%. This is because the majority of the respondents of this study are the Senior 3 ranging in age from 19 to 21 years old and the least number of respondents are from Senior 3 also whose age are ranging 25 and above. To the study conducted by Heo and Han [14] there is no significant correlation in terms of age in the academic performance of students undergoing online classes. This is from the response of 186 students to the questionnaire to examine the significance of age in terms of Self-directed learning readiness (SDLR). It is found out that only motivation and academic stress contributes to the overall performance of the students.

Further in terms of internet accessibility of the respondents, the majority are using wi-fi with a frequency of 173 students or 58.20%. However, hotspot is ranked third with the frequency of 5 students or 1.70%. It only shows that the majority of the respondents of this study are using wi-fi because it is the most convenient way of accessing the internet and also most of the students live in urban areas. However, the least number of the respondents are using hotspots due to poor internet connection in terms of their location. This is connected to the article by Bolton [15], which stated that there are more users of Wi-Fi rather than mobile data/cellular data and hotspot. There are many advantages of using Wi-Fi rather than mobile/cellular data. According to the article, Wi-Fi consumes less battery than a smartphone or laptop. Wi-Fi is much faster than mobile data, mobile data requires

strong signal to obtain higher speed but, in the Philippines, there are places that have low signal which causes slow internet connection.

However, in terms of gadgets utilized by the respondents, the majority of them are using mobile phones with a frequency of 206 or 69.40%. Likewise, the rank third with the frequency of 4 respondents or 1.30%. It only implies that the majority of the respondents are using mobile phones because it is the easiest way to access the LMS due to its unique features such as creating videos, chatting, recording audios and many more. However, the least number of respondents are using the iPad because of its price, which may only add to the financial problems of the students. As stated in the study of Muthuprasad, et al., [16], mobile phones have been the primary means that students use in attending online classes. Meaning it is important to consider that the LMS that will be used is compatible with all kinds of Mobile phones used by the majority of the students. It is found that the gadget used by the students significantly affects the level of perception and knowledge acquired by the students especially that during the pandemic, almost all the students around the world rely on online materials and teachings.

Table 2 shows the student's satisfaction on the utilization of LMS. The composite means of 3.31 indicates that the respondents are satisfied with the LMS of the institution. Among the items cited, the teaching materials can be easily accessed on LMS, learning materials posted on LMS contribute on my course, all courses and simulators are available on LMS, I am pleased from the posted learning materials by my instructors, I am pleased from posting my activities, assignments and projects using LMS, were all rated as satisfied with the highest rank, respectively. In the study of Dellosa, et al., [17], this is because of the concept of LMS as a whole and its features which enables instructors to conduct online course on the way of posting lecture notes and slides, quizzes, forum topics, and announcements, as well as providing a facility for submissions and other course-related activities as mandated.

Following the sudden suspension of face-to-face classes as a response due to COVID-19 pandemic, maritime students are satisfied that LMS is a platform capable of providing learning materials in an easy way to assist them through implementation of blended learning.

Table 2
Satisfaction of Maritime Students on the Utilization of LMS

Indicators	WM	VI	R
1. The LMS contributes greatly to my course.	3.38	Satisfied	7
2. All courses and simulators are available on LMS.	3.43	Satisfied	3
3. The teaching Materials can be easily accessed on LMS.	3.47	Satisfied	1
4. Learning materials posted on LMS contribute on my course.	3.47	Satisfied	2
5. I can easily interact with my classmates and instructors using LMS.	3.35	Satisfied	9
6. My internet accessibility affects the use of LMS.	3.30	Satisfied	12
7. I was oriented properly on how to use LMS.	3.37	Satisfied	8
8. I am pleased from the posted learning materials by my instructors.	3.40	Satisfied	4
9. I am pleased from posting my activities, assignments and projects using LMS.	3.39	Satisfied	5
10. I am satisfied with the use of LMS on my selected gadget.	3.39	Satisfied	6
11. Resources and other reference materials are easily accessible in the LMS.	3.31	Satisfied	11
12. All my courses are on the LMS.	2.94	Satisfied	20
13. Forums and other important features that I need in my course are on LMS.	3.17	Satisfied	18
14. Survey features for other courses are also on the LMS.	3.24	Satisfied	16
15. LMS helps me interact with classmates and instructors.	3.23	Satisfied	17
16. LMS is very much utilized in my course.	3.29	Satisfied	15
17. Survey for the improvement of its system is also a feature of LMS.	3.35	Satisfied	9
18. The system that the LMS has satisfies the need of the course	3.29	Satisfied	14
19. An alternative app or website is needed to support the current LMS.	3.11	Satisfied	19
20. I am pleased with the overall experience of using LMS.	3.30	Satisfied	13
Composite Mean	3.31	Satisfied	

Legend: 3.50 – 4.00 = Fully Satisfied; 2.50 – 3.49 = Satisfied; 1.50 – 2.49 = Less Satisfied; 1.00 – 1.49 = Not Satisfied

In the case study of Shayan, and Iscioglu,[18], LMS is very vital to the students in Cyprus. Wherein their study resulted that the two Universities in Cyprus achieved a high level of acceptance of the students to their respective LMS. The learning materials available online and submission of activities and requirements are made possible even in an online learning environment. Regardless of the age, program and the department of the students, students from the two Universities produced a high level of satisfaction on the present LMS. However, the grades of the students play a significant role in the level of satisfaction of students.

On the other hand, As seen from table 2, all items were rated satisfied as revealed by the composite mean of 3.31, indicates that the respondents agreed among the items cited, “All my courses are on the LMS” were rated the least by the respondents and got the lowest weighted means score and ranked 20. It obtained the lowest weighted means score because there are some students who don’t have their complete subject courses in their LMS at the start of the semester. As per You [19], self-regulated learning is very hard and not useful in online learning. According to the survey that he gathered about the relationship between LMS data measures and course achievements, the

results show that students are late for the submission of assignments and activities and not attending class sessions. The findings show the importance and advantages of self-regulated learning in relation to the behaviour and performance of the students.

Furthermore, in the study of Sonmez and Mustafa [20], LMS are used for delivering learning contents that will support the students even in an online environment. According to the survey that they conducted to a number of college students, a huge number of them cited the Moodle online learning system as the most efficient for providing learning services for students and very helpful for instructors. They also identified that assignments, forums and other learning materials can effectively be delivered by means of LMS.

In addition to this, “An alternative app or website is needed to support the current LMS” and got the second lowest weighted means score and ranked 19. It got the second lowest weighted means score because there are times that some students experience difficulties in terms of accessing the LMS, especially those students who are from the province. LMS is a useful tool when it comes to learning and to the other organizations, but as time goes by, technologies are

changing, and users are expecting better updates on the LMS. Many alternative applications can be considered needed to support the flow of the LMS, it may guide the users and it could be much easier to use [21]. As attested by Maske [22], LMS is a platform that is highly customized and an effective tool for an online learning environment. However, many organizations need a top-grade LMS in order for their customers to train easily. The article explained that LMS should have alternatives to guide and support the other features regarding the use of LMS, the alternatives must be easy to organize and cost effective.

Table 3

Difference of Responses on Satisfaction on the Utilization of LMS when grouped according to Profile

	U / λ^2_c	p-value	I
Program	9092.00	0.565	NS
Age	1.612	0.657	NS
Internet Accessibility	0.052	0.975	NS
Gadgets & Devices Used	1.452	0.693	NS

Legend: Significant at p-value < 0.05

Table 3 displays the comparison of responses on students' satisfaction on the utilization of LMS when grouped according to profile. It was observed that there was no significant difference found since the obtained p-values were greater than 0.05 alpha level. This means that the responses do not vary significantly and implies that the students have the same level of satisfaction across their profile. This is because the respondents are well-versed in the use of the internet and its capabilities. This is connected to the study conducted by Cuerdo, et al., [23], in which they stated that having more time and experience engaged in different social media platforms contributed to the application of various information of the students, more importantly, the ease of familiarity in using the LMS.

All of the students in Lyceum International Maritime Academy regardless of their courses, age, internet accessibility and gadget use are all obliged to comply with all the requirements given by their instructors in all of their subjects using the Learning Management System. All of the students seem to have the same level of satisfaction since they are all using the same model and features of the Learning Management System as their online tool for online classes.

Table 4

Proposed Plan of Action to Enhance the Maritime Students' Satisfaction on the Utilization of LMS

Key Results Area	Strategy/Projects	Persons Involved
A. Satisfaction of Maritime Students on the Utilization of LMS All my courses are on the LMS.	<ul style="list-style-type: none"> Activation of Courses in the LMS must be made simpler upon enrolment. 	<ul style="list-style-type: none"> Dean Department Chair MIS/CTEE Students
An Alternative app or website is needed to support the current LMS.	<ul style="list-style-type: none"> Have additional supporting applications as a permanent feature in LMS. 	<ul style="list-style-type: none"> Dean Department Chair MIS/CTEE Students
Forums and other important features that I need in my course are on LMS.	<ul style="list-style-type: none"> To have a much proper utilization and addition of existing features in facilitating forums and other important details that is more convenient to the users. 	<ul style="list-style-type: none"> Dean Department Chair LIMA Instructors MIS/CTEE Students
LMS helps me interact with classmates and instructors.	<ul style="list-style-type: none"> Have a user-friendly messaging feature on LMS to provide an effective communication between students and instructors. 	<ul style="list-style-type: none"> Dean Department Chair LIMA Instructors MIS/CTEE Students

<p>Survey features for other courses are also on the LMS.</p>	<ul style="list-style-type: none"> ● Establish a survey feature on LMS that can be accessed with minimal effort. 	<ul style="list-style-type: none"> ● Dean ● Department Chair ● LIMA Instructors ● MIS ● CTEE ● Students
---	---	---

CONCLUSION AND RECOMMENDATION

Majority of the respondents were enrolled in Bachelor of Science in Marine Transportation, aged 19 – 21 years old, WI-FI as Internet accessibility, and Mobile phone as gadget being used in learning. The respondents are satisfied with the utilization of the Learning Management System. The level of satisfaction in the utilization of LMS does not vary across the respondents' profile. A plan of action was proposed to further improve the satisfaction of Maritime students in the utilization of the Learning Management System.

Students of Lyceum International Maritime Academy may properly utilize and maximize the time they are using LMS in order to be more familiar with the use of LMS and to increase their level of satisfaction towards the current LMS. Lyceum International Maritime Academy and MIS may include an online video conferencing tool in the LMS for every synchronous class of the students. Lyceum International Maritime Academy with the help of the LIMA Faculty and MIS may improve their method of orienting the students on how to properly utilize the LMS. In addition to the Profile variables of this study, future researchers may add the location as a factor on the signal strength of students using the Learning Management System. The Plan of action may be evaluated and tabled for implementation.

REFERENCES

- [1] Pappas C. (2020). 8 reasons why your current LMS is missing the mark. Christopher Pappas.
- [2] Adzharuddin, N. A., & Ling, L. H. (2013). Learning management system (LMS) among university students: Does it work. *International Journal of e-Education, e-Business, e-Management and e-Learning*, 3(3), 248-252.
- [3] Yuen, A. H., Cheng, M., & Chan, F. H. (2019). Student satisfaction with learning management systems: A growth model of belief and use. *British Journal of Educational Technology*, 50(5), 2520-2535.
- [4] Joaquin, J. J. B., Biana, H. T., & Dacela, M. A. (2020, October). The Philippine Higher Education Sector in the Time of COVID-19. *In Frontiers in Education*. 5, 208. Frontiers.
- [5] Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open*, 1, 100012.
- [6] Stan, L. C. (2014). Online teaching technique in maritime learning process. *Procedia-Social and Behavioral Sciences*, 116, 4517-4520.
- [7] Nurakun Kyzy, Z., Ismailova, R., & Dündar, H. (2018). Learning management system implementation: a case study in the Kyrgyz Republic. *Interactive Learning Environments*, 26(8), 1010-1022.
- [8] Wang, C. H., Shannon, D. M., & Ross, M. E. (2013). Students' characteristics, self-regulated learning, technology self-efficacy, and course outcomes in online learning. *Distance Education*, 34(3), 302-323.
- [9] Gillett-Swan, J. (2017). The challenges of online learning: Supporting and engaging the isolated learner. *Journal of Learning Design*, 10(1), 20-30.
- [10] Knowledge Anywhere. (2019). The Advantages and Disadvantages of a Virtual Learning Environment.
- [11] Siedlecki, S. L. (2020). Understanding descriptive research designs and methods. *Clinical Nurse Specialist*, 34(1), 8-12.
- [12] Naveh, G., Tubin, D., & Pliskin, N. (2012). Student satisfaction with learning management systems: A lens of critical success factors. *Technology, Pedagogy and Education*, 21(3), 337-350.
- [13] Orence, A., & Laguador, J. M. (2013). Employability of Maritime Graduates of Lyceum of the Philippines University from 2007-2011. *International Journal of Research in Social Sciences*, 3(3), 142. Retrieved from <https://d1wqtxts1xzle7.cloudfront.net/>

- [14] Heo, J., & Han, S. (2018). Effects of motivation, academic stress and age in predicting self-directed learning readiness (SDLR): Focused on online college students. *Education and Information Technologies*, 23(1), 61-71.
- [15] Bolton, N. (2016, October 26). The Advantages of Using Wi-Fi on Your Smartphone. Small Business - Chron.Com. - using-wifi-smartphone-71651.html
- [16] Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021). Students' perception and preference for online education in India during COVID-19 pandemic. *Social Sciences & Humanities Open*, 3(1), 100101.
- [17] Dellosa R.M., Prospero, M.R., Rodriguez J.L. (2012) Learning Management System for LPU-Laguna. *Lyceum of the Philippines–Laguna Research Journal*, 2(1).
- [18] Shayan, P., & Iscioglu, E. (2017). An assessment of students' satisfaction level from learning management systems: case study of Payamnoor and Farhangian Universities. *Engineering, Technology & Applied Science Research*, 7(4), 1874-1878.
- [19] You, J. W. (2016). Identifying significant indicators using LMS data to predict course achievement in online learning. *The Internet and Higher Education*, 29, 23-30.
- [20] SONMEZ, E. E., & Mustafa, K. O. C. (2018). Pre-service teachers' lived experiences with taking courses through learning management systems: A qualitative study. *Turkish Online Journal of Distance Education*, 19(2), 101-116.
- [21] Karaolis, S. (2019, November 7). Alternatives to LMS: what, when and why? Elucidat.
- [22] Maske, P. (2021, February 26). Moodle Alternatives and Competitors. Paradiso ELearning
- [23] Cuerdo, A.C., Argueza, A., Buño, Z.A., Castronuevo, A.G., Ramirez, R.A. (2017) Effectiveness of social media and Online Methods in the Application for Cadetship of Maritime Students