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THE INFLUENCE OF CO-CURRICULAR LEARNING ON CADETS' SKILLS IN THE SUBJECT OF CONSTRUCTION AND SHIP STABILITY AT MALAHAYATI MARITIME POLYTECHNIC

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ABSTRACT

To achieve the goals of national education, efforts are needed, such as maximizing the learning experiences of students because learning experiences greatly influence learning outcomes, especially in vocational education. Students' learning experiences can be accommodated through three activities: curricular, extracurricular, and co-curricular. While curricular and extracurricular activities are frequently heard of and discussed, it seems that co-curricular activities have not been fully utilized for strengthening learning. Co-curricular activities are carried out to reinforce, deepen, or enrich curricular activities. They are conducted outside regular class hours (including during breaks) and can take place in school or off-campus to support curricular implementation. Co-curricular activities must directly support the curricular activities and the students' learning interests with an emphasis on a more realistic context. Therefore, it is not solely focused on the curricular content, as it emphasizes real-world problem contexts, co-curricular activities have numerous benefits for students. Some of the benefits of co-curricular activities include character development, the cultivation of good values, the development of social skills and leadership abilities, the promotion of awareness and appreciation of diversity, increased enthusiasm in addressing evolving global issues, and the development of literacy and numeracy competencies. This can also be observed at Malahayati School of Maritime Polytechnic where co-curricular learning is one of the mandatory activities applied to cadets to help reinforce the learning materials they acquire in the classroom.

INTRODUCTION

The teaching and learning activities inside the classroom, where teachers provide subject matter to students, are referred to as intracurricular activities. Intracurricular activities are considered essential and should be reinforced through co-curricular activities to help participants in training better understand the lessons and increase their knowledge (Widiyani et al., 2021).

Co-curricular activities, on the other hand, are activities conducted outside of regular class hours with the purpose of expanding participants' knowledge and reinforcing the subject matter taught in the classroom. When co-curricular activities are maximally implemented, they can enhance the skills of participants and aid in their comprehension of what is taught through intracurricular activities. They also aim to assist in developing the potential and skills of human resources (HR) possessed by learners, both in terms of applying the knowledge they have acquired and, specifically, in helping learners develop their inherent potential and talents through mandatory and elective activities (Suwardiyanto & Yuliandoko, 2017).

In practice, the implementation of various co-curricular programs at the school will yield numerous benefits, not only for the participants but also for the effectiveness of the educational

process in the institution. The implementation of co-curricular programs is an integral part of the overall development of the school.

Building upon the issues mentioned above, the researcher is interested in choosing a research title about "The Influence of Co-Curricular Learning on the Skills of Cadets in the Construction and Ship Stability Course at Malahayati School of Maritime Polytechnic."

The research problems in this study are as follows: 1. The influence of co-curricular learning on the skills of cadets in the Construction and Ship Stability Course at Malahayati School of Maritime Polytechnic. 2. To what extent does co-curricular learning influence the skills of cadets in the Construction and Ship Stability Course at Malahayati School of Maritime Polytechnic?

The specific objectives of this research are as follows: 1. To determine the influence of co-curricular learning on the skills of cadets in the Construction and Ship Stability Course at Malahayati School of Maritime Polytechnic. 2. To assess the extent to which co-curricular learning influences the skills of cadets in the Construction and Ship Stability Course at Malahayati School of Maritime Polytechnic.

Literature Review

State of The Art

State of The Art is a collection of journals used as a reference in this study. State of The Art also provides an explanation of the differences between previous research and research to be carried out. The following is the State of The Art described in the form of a table / matrix.

Table 1. State of The Art

No	Journal Description	Discussion
1	Development of co-curricular and extracurricular activities **Year :** 2020 **Researchers :** Khusna Farida Shilviana Tasman Hamami **Research Methods :** Library Research Method **Journal :** Jurnal PALAPA	**Research Results :** The results of research on the development of co-curricular activities are that in their activities must lead to activities that support intracurricular activities and student learning interests, do not contain excessive burdensome burdens, and need administration, guidance or assistance, monitoring, and assessment. While the development of extracurricular activities through several stages including: 1) needs analysis which also aims to identify the needs, potentials, and interests of students. 2) establish the types of extracurricular activities through tests, questionnaires and interviews. 3) develop an Extracurricular Activity Program. 4) implementation stage. 5) Monitoring and evaluation stage. The development of extracurricular activities is also supported by education unit policies, the availability of coaches, and the availability of educational unit facilities and infrastructure. **Reasons to Become a Research Review:** The following journal can strengthen this research by providing references on how significant the

No	Journal Description	Discussion
		influence of co-curricular learning on ship construction and stability courses. **Differences with Research to be Conducted:** Research in this journal discusses the Development of Co-curricular and Extracurricular Activities, while the research that will be carried out looks at the influence of co-curricular learning on the skills of ship construction and stability courses at the Malahayati Shipping Polytechnic.

Co-curricular Learning

Co-curricular activities are activities that are part of the school program and are conducted outside of regular class hours (Singh, 2017; Zehner, 2011). Their purpose is to help students deepen their understanding and appreciation of various subjects they will study later during intracurricular activities. According to other definitions, co-curricular activities can be described as follows: a) Co-curricular activities are activities conducted outside of regular class hours and can also take place during holidays. In practice, these activities can be carried out both within and outside of school premises, with the primary aim of supporting the intracurricular program. b) Co-curricular activities are programs designed to deepen and appreciate the material that students have gained from intracurricular activities, originating from activities inside the classroom, including core subjects and special programs. In practice, co-curricular activities can encompass a variety of tasks, such as delving into specific subject matter, conducting research, completing assignments or creating clippings and wall magazines, as well as developing skills that allow for a more profound understanding of the lesson material. All of these activities will be considered when evaluating related courses (Marais, 2011).

Co-curricular activities have several objectives, which serve as guidelines for the importance of these activities to support intracurricular activities. Some of these objectives include: a) Co-curricular activities aim to support the practice of intracurricular programs, with a primary focus on enabling students to appreciate the subject matter they have acquired and to develop their sense of responsibility in completing their tasks. b) Co-curricular activities aim to help students learn and understand subject matter that they will encounter later (Das, 2016).

Some examples of co-curricular activities include assigning homework to students, which can be either group work or individual tasks. For instance:

a) Group assignments are meant to foster teamwork, mutual respect, tolerance, and cooperation, which helps shape students into responsible individuals who will thrive in society.
b) Individual assignments focus on developing students' interests and abilities, fostering independence. Examples include delving into specific subject matter, completing homework, or engaging in activities outside of school or campus. (Daniyal et al., 2012)

To develop co-curricular activities, adherence to certain principles is essential. Among these principles are:

a. Co-curricular activities should directly support intracurricular activities and students' learning interests. This is meant to help students better understand and appreciate the material they have learned.
b. Co-curricular activities should not create excessive burdens for students, whether mentally or materially. In practice, co-curricular activities should be designed carefully

to avoid imposing an excessive burden on participants. It's important to ensure that students do not feel overwhelmed by these activities, as well as to prevent additional financial burdens on the students' parents.

In the implementation of co-curricular activities, administrative processes, guidance, supervision, and assessment are necessary. These elements are essential because, when a teacher organizes co-curricular activities, they should include clear instructions for the tasks, systematic record-keeping, and guidance or assistance. These steps are important to facilitate the enhancement of co-curricular activities, ensuring that the intended goals are achieved. For example, scheduling each activity properly, providing guidance and supervision by teachers, and conducting evaluations based on pre-established assessment guidelines are all part of the process.

RESEARCH METHOD

Research Approach

The choice of method is certainly very important because this is closely related to the accuracy of data and knowledge development and to test a truth in knowledge, the research method used is a descriptive method with a quantitative approach, because the quantitative descriptive method in this study describes the situation that occurs at the present time systematically and factually.

Research Location

The location of the study shows the understanding of the place or location of research which is characterized by the presence of elements of actors, places and activities that can be observed (Bintari & Khotimah, 2021). The research location in this study is at the Malahayati Shipping Polytechnic, which is located at Jl. Laksamana Malahayati KM.19 Gampong Durung District Mesjid raya, Aceh Besar Regency.

Population and Sample

Research subjects are subjects who are treated as respondents. Before determining the subject of research, it will be described first:

1. Population is a generalized area consisting of: objects or subjects that have certain qualities and characteristics determined by researchers to be studied and then drawn conclusions (D. Sugiyono, 2013). The population in this study is all educators and cadets of batch IX of the Nautical Study Program as data sources and research subjects.
2. Samples are part of the number and characteristics possessed by the population (D. Sugiyono, 2013). The samples in this study were employees of educators and cadets of batch IX of the Nautical Study Program at the Malahayati Shipping Polytechnic.

Data Collection Techniques

The data collection techniques used in this study included observations, questionnaires and interviews. In collecting questionnaire data, which is used to obtain information from respondents. The questionnaire used is a type of selected questionnaire that asks respondents to choose an answer, one answer that has been determined. For alternative answers in this questionnaire, a score was assigned to each option using a modified Likert scale. Thus in this study respondents in answering questions there are only 4 categories including strongly agree (SS), agree (S), disagree (TS), strongly disagree (STS), from the answers above have a weight score with the following details:

Table 2. Assessment Score Weighting

Questions/statements	Frequency
Totally Agree (SS)	4
Agree (S)	3
Disagree (TS)	2
Strongly Disagree (STS)	1

The questionnaire grid table in this study is described in the table as follows:

Table 3. Co-curricular Learning Instruments

Variable	Indicator	Number of Items
Co-curricular Learning	1. Learners' understanding of co-curricular learning	10
	2. Forms of activity (individually/in groups)	10
	3. Activity Giving Intensity	10
Total		**30**

Table 4. Learning support instruments for Ship Construction and Stability

Variable	Indicator	Number of Items
Skills	1. Learning Material management process	15
	2. Assessment Process	15
Total		**30**

Instruments Test

Validity

Instrument testing in research should be measured by its validity. A questionnaire is said to be valid if the questions on the questionnaire can reveal something that the questionnaire will measure. The validity is also said to be valid.

A test or measuring instrument can be said to have high validity if the instrument performs its measuring function. Where it is also said that validity comes from the word *validity*, which means the extent to which the accuracy and accuracy of a measuring instrument (test) in performing its measuring function. In this study, the validity used is content *validity*. Content validity indicates the extent to which items in the test cover the entire content area that the test seeks to measure. The content of the test must remain relevant and not go outside the constraints of the measurement purpose. According to Darmadi & Azwar, (2011) "testing the validity of content is not through statistical analysis but using rational validity".

Testing the validity of content using rational analysis or through *professional judgment.* First of all, the aspects and characteristics to be measured are determined first. Furthermore, researchers will compile items that refer to blue *prints* that have been made before. After that, researchers ask for *professional judgment* before items are used as measuring instruments. In this study, *professional judgement* is a supervisor. A valid instrument means that the measuring

instrument used to obtain data (measure) is valid. Valid means that the instrument can be used to measure what should be measured (Sugiyono, 2018).

Testing the validity of items for instruments in this study uses analysis with the product moment coefficient formula proposed by Pearson (Djali, 2008: 53), namely:

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

Information:

rxy : Correlation coefficient between variable X and variable Y
N : Number of respondents
X : Score item
Y : Total Score

The decision making of a valid item or not is determined by the ratio of rtable prices obtained from the r list with a significant level of 5 % in free degrees (db) = n-2. Thus the retrieval is formulated as follows :

a. If $r_{hit} > r_{tabel}$, then the item is valid
b. If $r_{hit} < r_{tabel}$, then the item is invalid

Testing the validity and reliability of co-curricular learning and skills is carried out to ensure that the research instruments used are accurate and trustworthy and reliable when used as tools in data collection. The validity testing uses computerized assistance from the SPSS program version 25.0 *for Windows.*

The instrument criteria are said to be valid if the correlation coefficient of items > 0.30 and items that have a correlation coefficient (r) of < 0.30 are declared void and will not be used as research instruments.

Reliability

Reliability is translated from the word *reliability*. Measurements that have high reliability mean measurements that can produce reliable data. Reliability is a criterion for determining the level of accuracy of techniques or assessment tools; when used to measure a student's learning outcomes. The provision applies to every measuring instrument equally. *Reliability* is expressed by the reliability coefficient. Often interpreted as "*Standard Error of measurement*."

An index that shows the number of times in which a measurement device is reliable or reliable and which number of measurements twice or against the same phenomenon is called reliability. The fact is that every measurement is always expected to get accurate and objective measurement results. One of the efforts to achieve this is that the measuring instrument used must be valid. According to Hadi (2000: 269) "the reliability of measuring instruments shows the degree of accuracy or consistency of the measuring instrument concerned, when applied several times on different occasions".

The reliability test of measuring instruments uses an internal consistency approach, namely *single trial administration*, which means using one form of test that is imposed once on a group of subjects. This approach is seen as economical, practical and high-efficiency (Azwar, 2009: 83). The statistical formula used to test the reliability of measuring instruments is *Cronbach*'s Alpha with the help of computerization of the SPSS program version 25.0 *for Windows.*

The reliability of measuring instruments that can be seen from the reliability coefficient is an indicator of consistency or confidence in measuring results, which contains the meaning of measurement accuracy. (Arikunto, 2010) to determine the reliability of measuring instruments in this study used "reliability test based on *Cronbach Alpha*".

Formula :

$$r_{11} = \left[\frac{k}{k-1}\right]\left[1 - \frac{\sum \sigma_b^2}{\sigma_t^2}\right]$$

Information :

r_{11} : Instrument Reliability Coefficient (*Cronbach Alpha*)

k : the number of question items or the number of questions

$\sum \sigma_b^2$: Number of item or item variants

σ_t^2 : varian total

The criteria of a research instrument are said to be reliable using this technique, if the reliability coefficient (r_{11}) > 0,6.

Data Analysis Techniques

Quantitative Analysis

Data analysis technique is a technique used in research with the intention of testing and finally drawing a conclusion from the test results. Data analysis is used to determine whether or not there is an influence between two variables, namely co-curricular learning on construction course skills and ship stability at Poltekpel Malahayati

The data analysis technique used in this study is a hypothesis testing requirement test with the use of parametric statistics in hypothesis testing, then it must first be done, namely:

Test for normality. The normality test is intended to determine whether the distribution of distribution data is normal or not. The normality test of score distribution in this study was conducted using the computer-assisted program SPSS *version 25.0 for windows.*

Linearity tests. Linearity tests using regression analysis require that the relationship between the independent variable (X) and the bound variable (Y) must be linear. The Linearity test of the relationship between the independent variable (X) and the dependent variable (Y) is based on the linear significance level of regression of the independent variable (X) individually to the dependent variable (Y). Marnita, (2006 : 56).

This is done with the help of the computer program SPSS *version 25.0 for windows.*

Hypothesis Test.

The analysis technique used is multiple regression analysis, because multiple regression is a method to determine the collective contribution of two or more independent variables (X) to the dependent variable (Y), in this study multiple linear regression analysis is used. Regression analysis is a method used to reveal whether there is a functional relationship between one or more dependent variables, which are notated with *Y* and predictor variables or independent variables notated with X1, X2, X3,....XP. Simple regression is used for regression methods that examine only one dependent variable and one independent variable. In general, according to (P. D. Sugiyono, 2019) a simple regression equation with one predictor can be formulated as follows:

Ý = a + bX

Ý = Predicted value

a = Constant or when price X = 0

b = Regression coefficient

X = Value of independent variable

Multiple linear regression is used to predict how far the value of the dependent variable changes, when the value of the independent variable is changed or fluctuated. Multiple

regression analysis is actually a continuation of simple regression, only the difference is that the number of variables analyzed is more than one independent variable.

The mechanism of testing the significance of F-calculate prices in analysis with SPSS is slightly different from manual analysis. In data analysis with SPSS, the significance of the F-count value is determined based on the significance value obtained from the calculation. If the significance value obtained from the calculation (Sig.) is smaller than the established significance level (0.05), then the F-count value obtained is significant, which means Ha is accepted (Muhammad, 2015: 201).

In the SPSS *Model Summary output table, the* R Square *value is shown which shows the value* of the coefficient of determination or the contribution / contribution of the independent variable / independent to the dependent variable (Muhammad, 2015: 236).

Qualitative Analysis

In qualitative analysis, researchers are in line with the opinion of Miles and Huberman (Fuad & Nugroho, 2014) who explain that: "the method chosen to analyze data is an interactive analysis method, which starts from data collection, data reduction, data presentation, and conclusions". According to Fuad and Bladder (2014: 64-65), data collection is a search for information, both through primary data and secondary data. Data reduction is the process of selecting, focusing, simplifying and abstracting data in *a fieldnote*. The presentation of data is a series of information that forms an argument for the preparation of research conclusions. While drawing conclusions is an effort to draw conclusions from the results of data reduction and presentation.

RESULTS AND DISCUSSION

To achieve the goals of national education, efforts are certainly needed such as maximizing the learning experience of students because the learning experience is very influential on learning outcomes, especially in vocational education. The learning experience of students can be accommodated by three activities, namely intracurricular, co-curricular, and extracurricular. Maybe intracurricular and extracurricular have often been heard and discussed. However, it seems that co-curricular activities are still not much maximized for strengthening learning (Slameto, 2014).

Co-curricular is an activity carried out for strengthening, deepening, or enriching intracurricular activities. Co-curricular activities are carried out outside of regular class hours (including holidays) and can be done at school or outside school to support intracurricular implementation.

Co-curriculars should directly support the intracurricular and learning interests of learners with an emphasis on more real contexts. So, not only fixated on learning materials contained in the intracurricular, because it emphasizes more on the context of more real problems, co-curricular has many benefits for students. Some of the benefits of co-curricular such as being able to develop good character, develop skills, skills and leadership abilities, encourage the growth of awareness and appreciation of diversity, increase enthusiasm in addressing developing global issues, and develop literacy and numeracy competencies, especially in the maritime world.

This can also be seen at the Malahayati Sailing Polytechnic where co-curricular learning is one of the mandatory activities applied to cadets to help strengthen the learning material they get in the lecture hall. This can be seen based on the results of data processing through SPSS version 25.0 as follows:

Hypothesis (H1) "The Effect of Co-Curricular Learning on cadet skills in the Ship Construction and Stability Course at the Malahayati Shipping Polytechnic"

Table 5. Multiple Regression Analysis Results

Model	R	R Square	Adjusted R Square	Sig
1	.882	.777	.775	0.000

Table 6. *Work Environment Correlations* to Performance

Correlations

		Performance	Working Environment
Pearson Correlation	Skills	1,000	,882
	Co-Curricular Learning	,882	1,000
Sig. (1-tailed)	Skills	.	,000
	Co-Curricular Learning	,000	.
N	Skills	85	85
	Co-Curricular Learning	85	85

The results of linear regression analysis between co-curricular learning (X1) and skills (Y) showed a coefficient of R = 0.882, a coefficient of determination of R2 = 0.777. With a significant level = 0.000 i.e. P < 0.05. Thus it can be understood that the research hypothesis is accepted, it can be concluded that Co-curricular Learning has a significant effect of 77.7% in supporting ship construction and stability learning at the Malahayati Shipping Polytechnic, meaning that the better the provision of co-curricular learning, the better the skills cadets have in understanding and applying ship construction and stability courses. And this means that the provision of co-curricular learning has proven to benefit cadets to improve competence and support intracurricular learning at the Malahayati Sailing Polytechnic. With the hope that the skills and skills of cadets will increase so that at the time of sea practice and graduation, cadets have special skills and skills, especially in understanding the construction and stability of ships that may not be possessed by cadets from other UPT.

At the Malahayati Shipping Polytechnic itself, Co-curricular learning is carried out on Saturdays which are holidays for cadets, one of which is learning Ship Construction and stability, in which cadets are equipped with knowledge and enter directly into the stability laboratory so that cadets can immediately understand well the construction and stability of ships are two important things in ship construction to how stability has a considerable relationship against the balance of the ship so that the ship can operate properly.

CONCLUSION

Based on the results of research, discussion and the results of influence testing that have been described about the effect of co-curricular learning on cadet skills in ship construction and stability courses at the Malahayati Shipping Polytechnic, it can be concluded that there is a significant influence between co-curricular learning on cadet skills in ship construction and stability courses.

The second result of how much influence co-curricular learning has is 77.7%, which means that co-curricular learning is considered important to be carried out because it can provide benefits for improving cadets' skills and skills, especially in ship construction and stability courses.

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