

The Laboratory Management and Nautica Simulators at PIP Semarang and Poltekpel in Surabaya

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Abstract:- Factors causing the low quality of competency quality of graduate students of Semarang Shipping Science Education cadets and Surabaya Shipping Polytechnic (Poltekpel) due to the lack of utilization of the Laboratory Room (LR). Management of the Laboratory Room in question is how to use it as a place to practice educational tools in improving the competence of cadet students in the world of shipping work. This study used a qualitative design with the observation method, in-depth interviews, observation and documentation. The research subjects were the head of the laboratory, practical teachers and lecturers who are in charge of theory and practice in the Laboratory Room. The results showed that laboratory and nautical management at PIP Semarang and Poltekpel Surabaya needed the AST (Assistance, Supporting and Training) model. 1) Assistance includes the role of senior lecturers to young teachers so that they can guide the use of quality and achievement tools, 2) Supporting includes support for a boarding laboratory in the purchase of new equipment. 3) Training by carrying out practice for all LR users by distributing clear, professional work and continuous promotion activities. These three components are a suitable strategy in an effort to improve the quality of the output of cadet students in the next world of work. professional and ongoing promotional activities. These three components were a suitable strategy in an effort to improve the quality of the output of cadet students in the next world of work. professional and ongoing promotional activities. These three components were a suitable strategy in an effort to improve the quality of the output of cadet students in the next world of work.

Keywords:- Laboratory Room Management (LR), Assistance, Supporting, Training.

I. INTRODUCTION

Steven C. Mallam (2020) said low basic laboratory skills correlated with low frequency of laboratory use and neglect of laboratory presence in higher education institutions. Furthermore, this will affect the process and learning outcomes of shipping cadet students. A strong indication of the empowerment of knowledge and basic laboratory skills is important for laboratory teaching staff at the Maritime Science Education (PIP) Semarang and Poltekpel Surabaya. Vidya Selasдини, et al., (2020) said that the competency demands of cadet students in order to complete the output skills of cadet students in the world of work are directly proportional to the ability to teach laboratory teaching practices. This should be considered as an important consideration for shipping education institutions. Therefore, every practical teacher must be equipped with basic laboratory skills.

Diah Zakiah (2020) also formulated that the more advanced technology in the Indonesian shipping world is, the higher the demands for increasing the competence of cadet students in their education units. Through the management of the Laboratory of Imulators and Nautica as a practice area. So educational institutions are targeting both the quantity but also the ideal quality of cadet students every year.

Through laboratory and nautica strategic management, namely linking theory and practice. Management principles are needed to be reviewed in practice. What is contained in practical experience is sought after in theory. The relationship between theory and practice should be in an integrative layered manner where theory and practice alternately and gradually fill each other up, seek each other's foundations, and examine each other.

In connection with the above link, laboratories and nautica in shipping education institutions must be utilized as much as possible. Facilities for educational tools at LR are teaching-learning processes that deserve attention. LR is a place to train cadet students in terms of skills in carrying out shipping practices, demonstrations, experiments, research, and scientific development. Laboratory Room referred to here does not only mean a room or building used for scientific experiments, for example in the fields of science, engineering, and so on; but also includes the place of scientific activity itself in the form of experiments / experiments, research and research, observations, demonstrations related to activities to fulfill the competence of cadet students later in the world of work.

Trisanti, et al., (2020) said that laboratory work is a scientific activity (work) in a place carried out by cadet students or teachers or other parties, either in the form of practicum, observation, research, demonstration and development of learning models carried out in the context of teaching and learning activities. The question is how to manage the laboratory so that the laboratory can be used as an optimal learning resource?

Roland Tormey (2021) formulate Learning resources are all sources (data, people, and goods) that can be used by students as a separate resource or in combination to facilitate learning and include messages, people, materials, tools, techniques, and the environment. Learning resources even turn into components of an instructional system if the learning resources are pre structured, designed and selected and then combined into a complete instructional system, resulting in purposeful and controlled learning.

The purpose of the Laboratory in Maritime Science Education in Semarang and Poltekpel Surabaya is clearly stated as one of the learning resources that must be the main

concern of the laboratory manager. To achieve this goal, it is necessary to carry out a service management that focuses on the learner as a customer. Services must pay attention to and apply the rules of service quality management. By applying this, a laboratory service can achieve its goals.

The management process of quality laboratory services is a total quality management approach that can help maintain and develop learning resources and learners so that they can expand the function of the laboratory. Make the leadership process the primary resource that provides the best value for learners.

II. METHOD

This research used a qualitative design with the type of case study in the Higher Education Institutions of PIP Semarang and Poltekpel Surabaya. The use of case studies is due to many cases that occur, namely the decline in the output competence of cadet students in the world of work, the need for replacement of educational equipment in LR, the lack of LR teaching staff understands the equipment in LR. The research instrument used the method of observation, interviews, and documentation to the head informant of LR and practical teachers and employees at LR.

III. DISCUSSION

A. Assistant

Working in the laboratory there is always the possibility of accidents for users of practical tools. Simon Marvin (2018) states that accidents can occur due to several factors, namely the attitudes and behavior of cadet students, unsafe conditions and negligence. For this reason, accidents can be avoided by working carefully and with discipline in following the rules that have been made and set by the laboratory manager. Attitudes and behavior of teachers and cadets that may be dangerous ranks first as the cause of accidents. Their attitudes and behavior must receive supervision (assistance) in practical activities.

Peter C Ashbrook (2021) mentions Laboratory supervisors play an important role. Procedures and working methods need to be clearly and perfectly explained by the supervisor before being carried out by the instructors. It is also very important for the supervisor's knowledge to know every possibility (anticipate) the dangers that arise from a material and practical chemistry experiments for first and second level students may also be at a higher level.

Unsafe conditions can be caused by materials, tools and techniques. Working with expensive and sophisticated equipment that is also full of electrical power is an example of an unsafe situation for laboratory users. For that because at any time it can cause conditions in the workspace or environment. the situation becomes more unsafe if the tools experience a short circuit and others.

B. Support

Preparation as an international standard LR requires systematic, directed, and planned stages. Frank R. Spellman (2021) begins with increasing the capacity of supporting appropriate educational tools. This is followed by

increasing the capacity of human resources in the form of competent teaching staff. With this condition, LR is expected to be able to educate cadet students to be able to master theoretical concepts, choose the appropriate method from a variety of options and then analyze the data.

The cadet students are also expected to manage work groups and be responsible for their own work or in groups. The most important thing is that cadets are educated and trained and trained so that they have competence as Navigation Guard Officers in ship control, and are able to become captains on ships under 1,500 GT Near Coastal Voyage. Graduates will get ANT-III competence and Diploma III Nautical diploma.

C. Training

The competence of teachers at LR is one of the important thing that determines the quality of practical learning that affects the competence of cadets and cadets so that they are ready to be deployed in the world of work. Therefore, the improvement of this competency must be productive so that it is in line with developments and dynamics that occur in the industrial world and the world of work.

The importance of a teacher as a driving force in LR is to build the ability of cadet students in critical thinking, creative, communicative and support cadets to be able to collaborate and be active because these abilities are very important when cadets enter the world of work and are sought after by companies, not just the dimension of knowledge. So, teachers need to be active and creative in packaging learning so that learning is interesting and more understood by cadet students. Furthermore, the importance of the apprenticeship program for productive young teachers is to continuously update skills and knowledge of real work in companies and the world of work today, so that they can provide maximum knowledge for cadets.

However Michael Knoll (2021) says In its implementation, it must be clear how the concepts, rules, and results must be met from these activities, so that the teaching internship program activities have an impact on the output of Semarang Maritime Science Education graduates and Surabaya Polytechnics. For this reason, senior lecturers are ready to assist and facilitate apprenticeship programs for young instructors of nautical and commercial ship engineering, both in workshops, ships, and in LR. Rudolph D. Lindquist (2020) Internships can be scenarios in several types according to the needs of increasing the competence of the required teaching staff.

IV. CONCLUSION

In managing the laboratories that are already available at PIP Semarang and Poltekpel Surabaya, the head of the laboratory is centered. In this case, through assistance, support and training, cadets are included in the management process as members. Because the main users of the main laboratory are teachers and cadet students. So this is very important as a bridge between cadet students and the head of the laboratory. Aspirations will be conveyed to the head of the laboratory about all criticisms and suggestions for the progress of the laboratory.

The advantage for the head of the laboratory is not managing the laboratory alone, both in terms of procurement of tools, maintenance of tools, borrowing of tools, to returning of tools. The head of the laboratory can monitor remotely how the members are performing. Students who become members of laboratory management will learn to be responsible and disciplined for the tools available in the laboratory. Indirectly, cadet students learn how to manage laboratories.

Procurement of equipment in the laboratory must be synchronized with the times. Adapted to the department that bears the name Service Science Education, all practical tools and laboratory nautica must really be used for education. Always follow developments so that the tools in the laboratory are not left behind by the technology that continues to develop. Balanced with the number of cadet students available so the room can feel comfortable.

In the management of laboratories in the Department of Marine Science Education, it cannot be separated from all stakeholders in LR. Therefore, cadet students have the same right to participate in the management of the laboratory. After all, cadet students are part of the laboratory as active users who not only use the laboratory but also take care of the laboratory.

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