

# Technology Development for Final Semester Exams for Meteorology Courses with Master Applications during the Covid-19 pandemic at Malahayati Shipping Polytechnic

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**Abstract:** The virtual Final Semester Examination (UAS) is part of the implementation of the concept of distance learning (distance learning). As the name implies, the virtual UAS program at IAINU Kebumen is carried out online. Based on the information contained in the UAS schedule even for the 2020/2021 academic year, lecturers carry out virtual UAS independently according to a predetermined schedule using the application: Google Classroom, Google Form, Google Drive, Whatsapp or via E-Mail.

The long-distance Final Semester Examination which has been carried out by the Malahayati Shipping Polytechnic starting in 2020 has certainly been evaluated with the hope of improvement and development in order to improve the quality of diploma education at the Malahayati Polytechnic even though everything is in a limited pandemic period. With this in 2021, Malahayati Shipping Polytechnic will develop a new remote Semester Final Examination technology called the Master application, where development can provide convenience for various parties, namely students, educators and education staff in implementing the Distance Semester Final Examination system. away at the Malahayati Shipping Polytechnic. In addition, of course, the Master's Application is also expected to be able to maximize the assessment system for students, where when the cadets are at home, the lecturer can maximize the giving of end-of-semester exams from the courses he is currently teaching.

**Keywords:-** Testing, Education, Training.

## I. INTRODUCTION

The explosion of *Covid-19* cases in the Republic of Indonesia, which had subsided, spiked again in 2022. It is known that after the second wave of the Delta variant's impact slowed down at the end of 2021, the trend of daily Corona cases again experienced an increase after the new year 2022. The spread of the Omicron variant and the restrictions on mobility that has not changed into the cause and certainly brought changes to the habits of human life in the world, especially in Indonesia, events of course create new habits for all human activities starting to study, work and worship from home, this certainly brings changes to the learning system implemented in every educational institution which brings changes to the learning system, namely the Distance System (PJJ) or Online.

The distribution of *Covid-19* is based on data obtained from the website [www.covid19.go.id](http://www.covid19.go.id) on January 26, 2022, the number of people exposed to *Covid-19* in Indonesia reached 4,301,193 positive COVID-19 people with a total recovery of 4,127,662 people and the number of people who died as many as 144,254 people. Referring to these data, of course, makes the government more vigilant in providing policies in regulating all community activities so that Indonesia does not experience another spike in the spread of *Covid-19* as happened at the beginning of the 2020 pandemic.

It is also explained in Law Number 20 of 2003 concerning the National Education System (Sisdiknas) section five on non-formal education which aims to develop the potential of students with an emphasis on mastering knowledge and functional skills as well as developing professional attitudes and personalities. Malahayati Shipping Polytechnic is a marine training institution of the Ministry of Transportation, Transportation Human Resources Development Agency which aims to provide excellent, professional and ethical sea transportation human resources.

Malahayati Shipping Polytechnic began to carry out shipping education and training activities in 2013 by opening the Level IV Seafarers Training program (DP-IV) and in its development, Malahayati Shipping Polytechnic experienced very rapid development where in 2018 Malahayati Shipping Polytechnic was able to carry out education and training Diploma III program with the Study Program of Nautics, Ship Machinery and Ship Electrical Systems.

One of the government's policies in dealing with the pandemic is in terms of the learning system which requires learning to still use the distance system. Universities that previously carried out face-to-face learning systems and other academic activities now need to convert them to Distance Learning (PJJ) methods. In other terms it is called *online learning*, *e-learning*.

For universities located in areas with good internet connections, of course, this is not a challenge, it is different for areas in geographic areas with weak internet connections, so this is a challenge for students, this is certainly a challenge for universities in implementing the learning system must still pay attention to learning outcomes that are expected to be maximally accepted by students.

Monitoring in every organizational activity is very important, because in organizational activities it must be based on the expected goals so that monitoring is very important so that what is done is in accordance with a predetermined work plan. Monitoring is very necessary, it gives better and guaranteed results because it has a close relationship between one part and another.

Malahayati Shipping Polytechnic is one of the Vocational Colleges under the Ministry of Transportation, the Transportation HR Development Agency under the guidance of the Sea Transportation HR Development Center which has the task of organizing Vocational Education, Research and Community Service in the shipping sector according to the Regulation of the Minister of Transportation Number PM. 27 of 2019 concerning the Organization and Work Procedure of the Malahayati Shipping Polytechnic has held Diploma III Education for students / I or at the Malahayati Shipping Polytechnic often called Taruna / i, the influence of the Industrial Revolution 4.0 for Higher Education is unavoidable. This happened at the same time as the emergence of MOOCs (*Massive Open Online Courses*) which started disruption in universities and even the entire higher education system must of course be able to answer the challenges during the COVID-19 pandemic so that learning outcomes have been set in the operational curriculum of the Diploma III program of Malahayati Shipping Polytechnic. can be achieved so that they can graduate shipping graduates who are Prima, Professional and Ethical, and of course an evaluation must also be carried out regarding the learning of cadets / I in the form of a virtual Final Semester Examination (UAS) Program.

The virtual Final Semester Examination (UAS) is part of the implementation of the concept of distance *learning* (*distance learning*). As the name implies, the virtual UAS program at IAINU Kebumen is carried out *online*. Based on the information contained in the UAS schedule even for the 2020/2021 academic year, lecturers carry out virtual UAS independently according to a predetermined schedule using the application : *google classroom, GoogleForm, Google Drive, Whatsapp* via E-Mail.

The long-distance Final Semester Examination which has been carried out by the Malahayati Shipping Polytechnic starting in 2020 has certainly been evaluated with the hope of improvement and development in order to improve the quality of diploma education at the MalahayatiPolytechnic even though everything is in a limited pandemic period. With this, in 2021 the Malahayati Shipping Polytechnic will develop a new remote Semester Final Examination technology called the *Master application* , where development can provide convenience for various parties, namely students, educators and education staff in implementing the Distance Semester Final Examination system. away at the Malahayati Shipping Polytechnic. In addition, of course , the *Master Application* is also expected to be able to further maximize the assessment system for students , where when the cadets are at home, the lecturer can maximize the giving of end-of-semester exams from the courses he is currently teaching .

Based on the description above, the author would like to conduct a research entitled "Technology Development for Final Semester Exams for Meteorology Courses with Master Applications during the Covid-19 Pandemic at the Malahayati Shipping Polytechnic".

The purpose of this study was to observe the relationship with the learning achievement of students and the activeness of lecturers in carrying out the long-distance Final Semester Examination using the *Master application* . so that shipping education and training activities at the Malahayati Shipping Polytechnic can run smoothly and it is hoped that the graduates of Commercial Shipping Officers will be excellent, professional and ethical.

## II. RESEARCH METHODS

In this study using a *qualitative descriptive approach*. In connection with this problem, Surachmad (2014) said that in general the form of descriptive investigation is to tell and interpret the existing data, about the situation experienced, the view of the attitude that appears or about an ongoing process. As for the characteristics of descriptive research, namely (1) Focusing on solving problems that exist in the present, on actual problems, and (2) The data collected is first compiled, explained and then analyzed. Descriptive research does not intend to test the hypothesis. Qualitative research is not just a data collection technique, but is an approach to empirical data.

Qualitative research according to Arikunto (2014) is research that does not use numbers in collecting data and in providing an interpretation of the results. A *research* , *especially in the empirical sciences* , generally aims to find, develop or test the truth of knowledge. According to Hadi (2016) finding means trying to get something to fill a void or deficiency, developing means expanding and digging deeper into what already exists or is still in doubt, so that research results are scientific works that can be accounted for.

This research was conducted at the Malahayati Shipping Polytechnic school. This research was carried out in July 2020 at the Malahayati Shipping Polytechnic. According to Sukardi (Nirwana, Murniati, and Yusrizal, 2015:40) what is meant by the place (location) of research is: "a place where the study process used to obtain research problem solving takes place".

Research instrument is a tool used to collect research data. The goal is to make it easier for researchers to collect data. The instrument in this research is the researcher himself. According to Sugiyono (2013:305): "in qualitative research, the research instrument or tool is the researcher himself". Therefore, the researcher as an instrument must also be validated to what extent qualitative researchers are ready to conduct research which then goes into the field. Validation of the researcher as an instrument validates the understanding of qualitative research methods, mastery of insight into the field being studied, the readiness of researchers to enter the object of research, both academically and logistically. The instruments in this study

were interview guidelines, observation guidelines and documentation studies.

The data collection technique that will be used in carrying out this research is using observation techniques by making observations or observations, namely observing and recording social phenomena in the right and appropriate categories. This means that the author held an observation made directly to the intended research object. According to Sugiyono (2013: 197) stated that: "observation is a process to obtain first-hand data by observing people and places at the time of research". Furthermore, the data collection technique used is the interview technique. The interview technique is a tool that will be used in conducting research in the form of a number of oral questions posed by information seekers and answered verbally by respondents in the form of responses, opinions, beliefs, thoughts and knowledge of a person about everything that is questioned regarding the problem to be developed. According to Sugiyono (2013: 188) suggests that: "interviews are used as a data collection technique if researchers want to conduct a preliminary study to find problems that must be investigated, and also if researchers want to know things more deeply and the number of respondents is small / small". The last technique in collecting data in this research is the documentation technique. Documentation that can be used as research materials/tools such as report cards, magazines, bulletins and other forms of information produced by an institution. Documentation comes from the word document which means written items. The documentation method in this study is used to obtain accurate data as a mirror of the actual situation or condition.

The data analysis technique in this study by using the procedure that has been proposed by Sugiyono (2014: 92), namely: "the first stage of data reduction, then display data, and the third draw conclusions and verify data". Data reduction is a first step in analyzing data, where the data that has been obtained summarizes it, selects the main things, and focuses on the important things, data from observations, interviews, questionnaires and documentation studies, this activity aims to facilitate understanding of the data that has been collected, making it easier for researchers to carry out the next steps of analysis. Furthermore, the display stage is the stage of systematically compiling research data with narrative text. This stage can be done by making temporary conclusions or summaries of the meaning of the Supervision System for the Implementation of Shipping Education and Training at the Malahayati Shipping Polytechnic. In addition, the summary also implies that the appropriate assessment material is carried out using the main indicators of the themes discussed. The last is the verification stage, which is an in-depth assessment stage as well as drawing conclusions. The decisions taken to make a standard conclusion are the result of a systematic analysis using relevant methods. This test is intended to make a comparison between the theoretical truth and the conditions that occur in the field, therefore the verification stage is a very decisive stage in giving birth to significant conclusions.

### III. RESEARCH RESULTS AND DISCUSSION

Implementation of the Evaluation of Learning Education and training in shipping science at the Malahayati Shipping Polytechnic showed a change from less than optimal to more optimal and each related unit had carried out its duties and responsibilities to the maximum.

From the results of the interview with the Director of the Malahayati Shipping Polytechnic, it was found that the Malahayati Shipping Polytechnic is currently preparing a semester evaluation plan using online policies that have been set by the Head of the Transportation Human Resources Development Agency. The readiness for the completeness of the learning evaluation tools at the Malahayati Shipping Polytechnic is currently adequate. The testing method that will be delivered by the Malahayati Shipping Polytechnic Lecturer has been adjusted to the semester learning plans that have been prepared previously and the Director of the Malahayati Sailing Polytechnic has assigned the Head of Academic and Youth Administration and the Head of Sub The Academic Administration Section in compiling academic administration as a basis for implementing the evaluation of shipping science education and training at the Malahayati Shipping Polytechnic and has also assigned Deputy Director I and the Head of the Study Program to be able to make a learning evaluation monitoring tool such as: lecturer attendance list, cadet attendance list, evidence of lecturers' teaching and monitoring forms for cadets' attendance and learning progress.

From the results with the Head of the Academic Administration and Youth and the Head of the Sub-Division of Academic Administration, it was found that the academic administration and cadets had carried out the preparation of academic administration as a basis for conducting the evaluation of shipping science education and training at the Malahayati Shipping Polytechnic such as: Director's Decree on the Determination of Cadets who can take part in learning in that semester and the Semester Academic Calendar from the beginning of the semester until the semester increases.

From the results of the interview with the Head of the Study Program, it was answered that the study program had arranged learning evaluation administration in order to provide education and training in shipping science at the Malahayati Shipping Polytechnic such as: a list of lecturers who examined the end of semester exams and the burden of the assessment system in the semester that must be completed by the cadets. , a plotting list of supporting lecturers and the courses that will be taught by the lecturers, the form for monitoring the attendance of cadets and lecturers, the teaching evidence form for the implementation of learning that has been carried out by the lecturer and the recapitulation form for attendance and monitoring the progress of learning outcomes that have been carried out in that semester.



From the results of interviews that have been carried out by the author, it can be seen that the learning evaluation process that has been running in the implementation of shipping education and training at the Malahayati Shipping Polytechnic. The learning evaluation process is the final evaluation stage of the learning process. Learning evaluation is a process to obtain the data and information needed to determine the extent and how the learning has progressed in order to make judgments and improvements needed to maximize the results. This is a highly expected part for good management at the Malahayati Shipping Polytechnic. The existing management has adopted it in accordance with applicable regulations, as well as the control carried out is very effective and efficient so that it can be a benchmark for better learning evaluations in the future that will be carried out by the Malahayati Shipping Polytechnic. As a Malahayati Shipping Polytechnic Lecturer, he is required to have a semester learning plan to evaluation of learning which from the beginning has a commitment to carry out their respective duties, so that the control carried out will be as expected. From the results of the monitoring carried out, it was found that there were several obstacles in the field in the implementation of the final semester exam for this Meteorology course, the availability of unstable signals from each provider. Weather conditions that have entered the rainy season will certainly affect the stability of the internet signal. Especially if you add a power outage due to heavy rain, of course, it will add to the problem because if your cellphone or laptop battery is weak, it will be difficult to charge it. Busy internet traffic If many students are doing PTS Online simultaneously in an area, it will result in a busy internet network so that it will slow down the connecting process and even connection failure. This can be seen in the activities of the cadets in carrying out the final semester exams, although some of the controls faced by the cadets are the difficulty in accessing the exams, this happens because the location of the Malahayati Shipping Polytechnic is quite far from the city center and the many hills in the shipping Polytechnic environment. Malahayati, Even though the lecturers have tried to carry out their management functions well with the planning and targets to be obtained, there are still obstacles in carrying out the learning evaluation functions properly, but if the learning evaluation system can be carried out optimally then the lecturers will be able to identify the results of achievements and learning progress that have been owned by the cadets so that with the supervision system the objectives of the material provided can be achieved. The term test is then used in the field of psychology, and is further limited to psychological methods, namely methods of investigating a person. One of the assessment teachers in the form of a project is Pak Arwahyu who agrees with Gabel in Ulan (2007:2) that tangible

assessment is divided into two broad categories, traditional assessment and alternative assessment. According to Hasan Hermawan (2017:30), the next step in developing the concept of this assessment adheres to the basic understanding that assessment exists. A lecturer must be able to carry out learning evaluations well so that they are able to achieve learning objectives such as providing a good example to the cadets in terms of harmonious cooperation such as: mutual respect for friends and lecturers when learning takes place, how to speak politely with other lecturers and cadets, be responsible responsible for achieving the goals that have been set, directing each cadet to group and organize and divide learning tasks well and efficiently.

These considerations determine the value (value / merit) of the thing being evaluated. No judgment is not an appraisal activity. According to Mardapi in Widoyoko (2009:2), the optimization of the evaluation system has two meanings, the first is an evaluation system that provides optimal information. Initially, the principle of evaluation was strongly influenced by the concept of measurement. One of them is the concept presented by Rapln W. Tyler in Hermawan (2017:30).

#### IV. CONCLUSION

From the results of this study, it can be concluded that the Development of Semester Final Examination Technology for Meteorology Courses with Master Applications during the Covid-19 pandemic at the Malahayati Shipping Polytechnic resulted in:

- Coordination meetings related to the evaluation of the learning of the Malahayati Shipping Polytechnic in order to monitor and evaluate the implementation of shipping science education and training have been carried out routinely and maximally;
- The exam schedule and the implementation of the final semester exam for Meteorology courses using the Smart Application have been carried out properly and maximally by lecturers or cadets;
- The monitoring form for the progress of the cadets' learning outcomes has been made and evaluated properly through the management coordination meeting of the Malahayati Shipping Polytechnic.

For further researchers, there are several suggestions that need to be considered, including:

- Future researchers are expected to study more deeply in terms of adding internet networks which have an important role in the implementation of the final semester exam for the Meteorology course that will be held;

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