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Online Learning Evaluation of Moodle-Based Quality Assurance Management on Self-Regulated Learning Capabilities

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Abstract

The research conducted aims to evaluate Moodle-based online learning in Quality Assurance Management courses from aspects: (1) The ability of cadets to use Moodle; (2) The active communication of cadets and lecturers in the use of Moodle; and (3) Self-Regulated Learning Capabilities in Quality Assurance Management Courses. The research methods to be used use descriptive research. The subject of the study is a cadet who takes quality assurance management courses. Data collection techniques use (1) a questionnaire to obtain information from cadets; (2) Documentation, i.e. retrieving log data on Moodle; and (3) Interviews, to obtain data from lecturers related to ability and activity, Interviews in this study use unstructured interviews. The results showed that: (1) Cadets can follow the learning process using Moodle-based online learning, (2) The activeness of communication of cadets and lecturers in the use of Moodle falls into the good category, and (3) Self-Regulated Learning Skills in Quality Assurance Management Courses fall into the good category.

Keywords: Moodle, Self-Regulated Learning, Quality Assurance Management

1. INTRODUCTION

The quality of learning is one of the educational problems that must be highlighted in improving the education system (Akhmedov, 2021). Efforts that can be made to improve this quality are developing student-oriented learning (Drewery et al., 2022). Learning systems can be built so that students can learn interactively, more interesting and varied (Astriawati, 2020). Competencies must be possessed by students that are useful for their future. The development of technology information and infrastructure can now be used to improve the quality of learning in building a system known as online learning or online learning (Palvia

et al., 2018). Online learning was first known for the influence of the development of electronic-based online learning (Wibowo & Astriawati, 2020). With e-learning systems, the delivery of online instruction and the supply of knowledge resources can be done without time and space restrictions (Turnbull et al., 2021). The three components integrated into an effective e-learning platform are the virtual environment, Learning Management System (LMS), and Learning Content Management System/ LCMS (Sejzi & Arisa, 2013). The virtual environment is where students can communicate and share information with other students or lecturers and can access all available resources (Ketelhut, 2007). LMS provides opportunities for lecturers to be able to manage various learning materials, upload materials, compile syllabi, make quizzes, monitor activeness, provide grades, process grades, also interact between students and each other in chat forums, and other activities (Pertiwi et al., 2021). LCMS deals with the management of material content that can also be stored in material database repositories. Students can download learning materials, access information and interact with others, transaction assignments, do quizzes/exams, see the achievement of learning results, and others(Contractor et al., 2015).

In the context of education, the use of technology in the learning environment is further increased when the lecturer's pedagogical approach to teaching is consistent with the chosen technology (Crawford & Jenkins, 2017). Several LMS are well-known and used in Indonesia such as Moodle, Dokeos, Claroline, Ilias, and Atutor. The LMS is an open-source LMS and is not a paid or free license. Moodle is widely found in several universities in Indonesia. A comparative study of the usability of several open source LMSs Atutor, Moodle, Claroline, Ilias, Sakai, and Dokeos, shows that Moodle is at the top of its position because it has a communication tool with an interface that is easier to use by its users (Pratama et al., 2023). Moodle is better for virtual learning environments compared to Blackboard based on three types of comparisons, namely as a communication tool, a productivity tool, and a student engagement tool (Astriawati & Pratama, 2021). Blackboard and Moodle user experience based on surveys and comparisons applied to faculty and students results show that Moodle is easier to use (Sachan and Singh, 2015). Moodle became one of the most widely used LMS platforms internationally (Kerimbayev, et al., 2017). On the Moodle platform, lecturers and students show high levels of satisfaction and acceptance of technology (Escobar-Rodriguez & Monge-Lozano, 2012). LMS model being developed at Sekolah Tinggi Maritim Yogyakarta.

Based on the results of the researcher's interview with the lecturer, several courses at the Yogyakarta Maritime College have used Moodle. One of the courses that has applied it is Quality Assurance Management. In the learning process, lecturers use Moodle-based LMS which is located at http://vclass.stimaryo.ac.id:8072/vclass/. In terms of the teaching

experience of lecturers in the 2020/2021 academic year, there are several obstacles faced in the learning process of the Quality Assurance Management course. The first obstacle in terms of task collection, is email. When submitting assignments via email, lecturers have to download assignment files one by one and grade them manually and label them one by one so the process is inefficient and takes a lot of time. The second obstacle is related to lecturer communication with students/cadets. Sometimes lecturers provide sudden information through Danlas (Class Commanders) outside the classroom. This is less effective because there is no open forum to convey information that can be read and responded to by one class simultaneously. Lecturers and students feel the ease of using e-learning which has a positive impact on the learning process (Al Rawashdeh et al., 2021). The evaluation of the learning process is part of the teaching system, including inputs, processes, and outputs with all components in them. The principles of assessment of learning outcomes must be valid, educational, competency-oriented, fair, objective, open, continuous, comprehensive, and meaningful (Mantra et al., 2021). Based on this presentation, researchers used the Moodle LMS for the Quality Assurance Management course in the 2020/2021 academic year and the results were evaluated as research material.

2. RESEARCH METHOD

This research is descriptive. Descriptive research is research that seeks to describe certain social units which include individuals, groups, institutions and society (Mohajan, 2018). The main focus of this study is to evaluate Moodle-based online learning in the Quality Assurance Management course from the aspects of (1) The ability of cadets to use Moodle; (2) the Active communication of cadets and lecturers in the use of Moodle; and (3) Self-Regulated Learning Skills in Quality Assurance Management Courses.

In descriptive research, there are 4 types of research, namely survey research, case studies, correlational research, and causal research. And in this case, the research that the researcher will do includes survey research. Nassaji (2015) defines survey research methods as critical observations/investigations to obtain clear and good information on a particular problem and in a particular area. Survey research generally aims to achieve generalizations and partly also to make predictions. Furthermore, Krosnick (2018) stated that survey design is a procedure where researchers carry out surveys or provide questionnaires or scales on one sample to describe the attitudes, opinions, behaviours, or characteristics of respondents. From the results of this survey, researchers make claims about trends that exist in the population. This research was conducted at the Marine Transportation Management Study Program, Yogyakarta Maritime College. This research was carried out in September 2020-January 2021 in the Quality Assurance Management course.

Population consists of objects/subjects that have certain characteristics that are used by researchers to make conclusions. A population is not just a group of humans such as lecturers, cadets, employees, and other individuals. Populations can also be non-human groups such as classes or schools. That population is at the centre of the study. Population is not only the number of objects/subjects, but groups that represent characteristics/traits possessed. The population in this study is cadets in the Marine Transportation Management Study Program. A sample is a particular group that can represent the characteristics of a particular population. The sample must be representative of all characteristics of the population. Sample selection is very important in a study. According to Arikunto (1998), if the subjects are less than 100, it is better to take all so that the research is a population study. The sample used for this study was cadets who took the Quality Assurance Management course in the MTL TA Study Program. 2020 / 2021 was 74 cadets who filled out questionnaires.

The data collection technique uses the interview method to obtain data from lecturers related to abilities and activities, then uses questionnaires, and documentation taken from log data on the Moodle system. The process of retrieving report logs documentation data in the system can only be done by users with administrator and teacher roles in each course created. Researchers download all activity logs on Moodle that are implemented in the Quality Assurance management course and analyze quantitative data in the form of cadet assessment questionnaire scores to calculate the percentage of answers. For qualitative analysis as a basis for decision-making about cadet ability using LMS Moodle, adapted criteria from Supangat (2010) as seen in Table 1 are used.

Table 1. Cadet Ability Criteria

Category	Percentage
Very less	0-25%
Less	26-50%
Enough	51-75%
Good	76-100%

The cadets' ability to use Moodle is said to be successful if it is in the Good category (76-100%).

3. RESULT AND DISCUSSION

The Ability of Cadets to Use Moodle Evaluating the application of Moodle-based online learning, especially in the Quality Assurance course, researchers distributed online questionnaires based on the indicators in

Table 2. The results obtained are as follows. Table 2. Cadets' ability to use Moodle

Indicator	Average Percentage				
	Very Incapable	Incapable	Less Capable	Capable	Very Capable
Cadets know the URL address to access Moodle e-learning (V-class)	0.00%	2.70%	10.81%	52.70%	33.78%
Cadets can log in to access Moodle e-learning (V-class)	0.00%	0.00%	9.46%	40.54%	50.00%
Cadets can edit their respective profiles	0.00%	1.35%	14.86%	47.30%	36.49%
Cadets can download materials provided by lecturers	0.00%	1.35%	4.05%	43.24%	51.35%
Cadets can submit assignments online	0.00%	0.00%	6.76%	40.54%	52.70%
Cadets can chat on V-class	2.70%	1.35%	31.08%	51.35%	13.51%
Cadets can send messages to other cadets	1.35%	4.05%	10.81%	60.81%	22.97%
Cadets can send images/links to other cadets	1.35%	2.70%	13.51%	58.11%	24.32%
Cadets can access resources provided by lecturers (*resources= Book File Folder IMS content package Label Page URL)	0.00%	2.70%	12.16%	59.46%	25.68%
Cadets can access activities provided by lecturers (*activities= Attendance,	0.00%	1.35%	9.46%	54.05%	35.14%

Forum, Questionnaire, Quiz, Survey, Via, Wiki, Workshop, Zoom, meeting)					
Average percentage	0.54%	1.76%	12.30%	50.81%	34.59%

Based on Table 2 above, the average percentage of cadets' ability to use Moodle can reach 50.81% and the percentage of very capable is 34.59%. So the average percentage of cadets' ability to use Moodle is 85.40%. Based on indicators number 1 to 10 show that cadets fall into the category of good in using Moodle. In the percentage with the highest capable criteria with a value of 52.70% obtained in the 5th indicator, cadets can submit assignments online), while for the average percentage with the highest capable criteria of 60.81% obtained in the 7th indicator, cadets can send messages to other cadets. The highest average percentage of very incapable was obtained in the 6th indicator, namely cadets who can chat on V-class, which is 2.70%. The ability of cadets to know the URL address to access Moodle e-learning (v-class) averaged a percentage in the capable and very capable criteria of 86.49% (good category), this can be indicated that most cadets have been able to access v-class e-learning. The ability of cadets to log in to access Moodle e-learning (V-class) with the criteria of capable and very capable of 90.54% (good category), it can be concluded that most cadets already know how to log in to access Moodle. The ability of cadets to edit their respective profiles with the criteria of capable and very capable amounting to 83.78% (good category), It can be concluded that cadets can edit profiles on the Moodle feature provided.

The ability of cadets to download material provided by lecturers with capable and very capable criteria of 94.59% (good category), can indicate that all cadets can get material provided by lecturers of quality assurance courses. Cadets can submit assignments online, this is obtained from an average percentage of 93.24% (good category) with the criteria of capable and very capable. The percentage with the lowest capable and very capable criteria is that cadets can chat on V-class, which is 64.86%, so efforts need to be made to conduct training related to how to chat in the Moodle application. The ability of cadets to send messages to other cadets by 83.78% (good category) with the criteria of able and very capable, it can be concluded that cadets can interact with other cadets in Moodle. While the ability of cadets to send images/links to other cadets with the criteria of capable and very capable by 82.43% (good category), it can be concluded that sending images/links to other cadets has no significant obstacles. The ability of cadets to access the resources provided by lecturers (*resources Book File Folder IMS content package Label Page URL) of 85.14% (good category) and the ability of cadets to access activities provided by lecturers

(*activities= Attendance, Forum, Questionnaire, Quiz, Survey, Via, Wiki, Workshop, Zoom, meeting) with the criteria of being able and very capable of 89.19% and included in the good category, This indicates that cadets have no difficulty in accessing resources and activities provided by lecturers. This has a positive impact on the learning process. Lecturers and cadets find it easy to use Moodle-based e-learning at Yogyakarta Maritime College. The following is a graph of cadets' ability to use Moodle that has been provided by Yogykarta Maritime College.

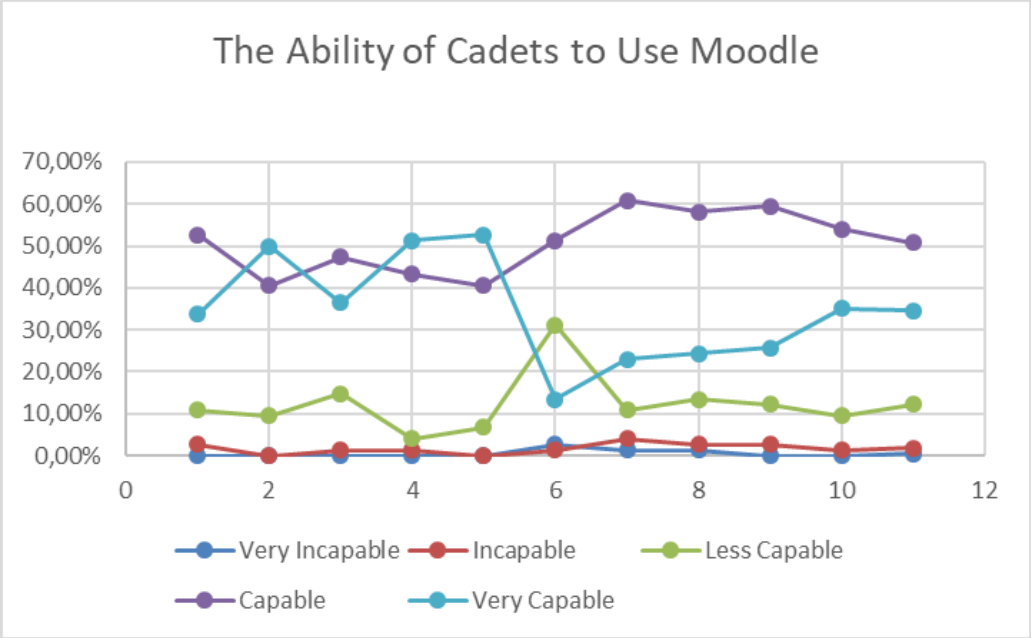

Figure 1. Graph of cadets' ability to use Moodle

Communication Activity of Cadets and Lecturers in the Use of Moodle

Activities related to active communication that have been carried out by cadets and lecturers in the use of Moodle-based online learning, especially in the Quality Assurance course can be known based on the indicators that have been prepared, while all activities can be seen in table 3 below.

Table 3. Communication activity of cadets and lecturers in the use of Moodle

No	Indicator	Average Percentage				
		Very Rare	Rarely	Ordinary	Often	Very Often
1	Frequency of cadet login in online learning using V-class	1.35 %	1.35 %	8.11%	48.65 %	40.54 %
2	Activeness / Ease of material transfer given by lecturers to cadets	0.00 %	1.35 %	10.81 %	50.00 %	37.84 %
3	Online assignment to cadets given by lecturers into V-class	0.00 %	0.00 %	10.81 %	47.30 %	41.89 %
4	Feedback given by lecturers to cadets	0.00 %	4.05 %	10.81 %	55.41 %	29.73 %
5	The occurrence of chats between lecturers and cadets in discussing issues surrounding the Quality Assurance Management course	1.35 %	5.41 %	14.86 %	39.19 %	39.19 %
6	The occurrence of forum discussions on the course between cadets and lecturers	0.00 %	6.76 %	13.51 %	56.76 %	22.97 %
7	The provision of online quizzes given by lecturers to cadets, assessments and feedback made by lecturers to the duties of cadets	2.70 %	1.35 %	13.51 %	55.41 %	27.03 %
	Average	0.77 %	2.90 %	11.78 %	50.39 %	34.17 %

Based on Table 3 above, the average percentage of communication activity of cadets and lecturers in using Moodle with criteria often reaches 50.39% and the percentage is very often 34.17%. So the average percentage of active communication between cadets and lecturers in the use of Moodle is 84.56%. Based on indicators number 1 to number 7, shows

the communication of cadets and lecturers in the use of Moodle that occurs when online learning is included in the good category. The percentage with the highest very frequent criteria with a value of 41.89% was obtained in indicator 3, namely online assignments to students given by lecturers in the V-class, while the average percentage with the highest "frequent" criteria of 56.76% was obtained in indicator 6, namely the occurrence of forum discussions on courses between cadets and lecturers. The average percentage is very rare, the highest obtained in the 7th indicator, namely the occurrence of forum discussions on courses between cadets and lecturers, which is 2.70%. The frequency of cadets logging in online learning using V-class with frequent and very frequent criteria is 89.19% (good category), This indicates that cadets often use V-class in the online learning process of Quality Assurance Management courses. Activeness/ease of material transfer given by lecturers to cadets with frequent and very frequent criteria of 87.84% (good category), it can be concluded that lecturers are always active in transferring material to cadets. Online assignments to cadets given by lecturers into V-class with frequent and very frequent criteria of 89.19% (good category), this indicates that lecturers often do online assignments to cadets, From the results of interviews with course lecturers, it was obtained that assignments were given according to the lecture schedule, either in the form of individual assignments, assignments in the form of online seminars or group assignments.

The feedback given by lecturers to cadets with frequent and very frequent criteria amounted to 85.14% (good category), This shows that lecturers not only give assignments but always provide feedback on each task given well. The occurrence of chats between lecturers and cadets in discussing issues surrounding the Quality Assurance Management course with frequent and very frequent criteria of 78.38% (good category), This shows that even though it is not face-to-face, online learning can run well using Moodle e-learning media. The occurrence of forum discussions on the course between cadets and lecturers with frequent and very frequent criteria amounted to 79.73% (good category), This shows that the discussion activities provided by the Moodle application are well used by cadets and course lecturers. The provision of online quizzes given by lecturers to cadets, assessment and feedback given by lecturers to cadet assignments with frequent and very frequent criteria of 82.43% (good category), indicates that during online learning all activities provided by Moodle are used by cadets and lecturers well. All communication facilities in the Moodle application can be utilized optimally for discussion activities related to quality assurance management courses without having to meet face to face or directly so that there can be time efficiency for lecturers or cadets who are attending lectures. The following is a graphic regarding the active communication of cadets and lecturers in the use of Moodle.

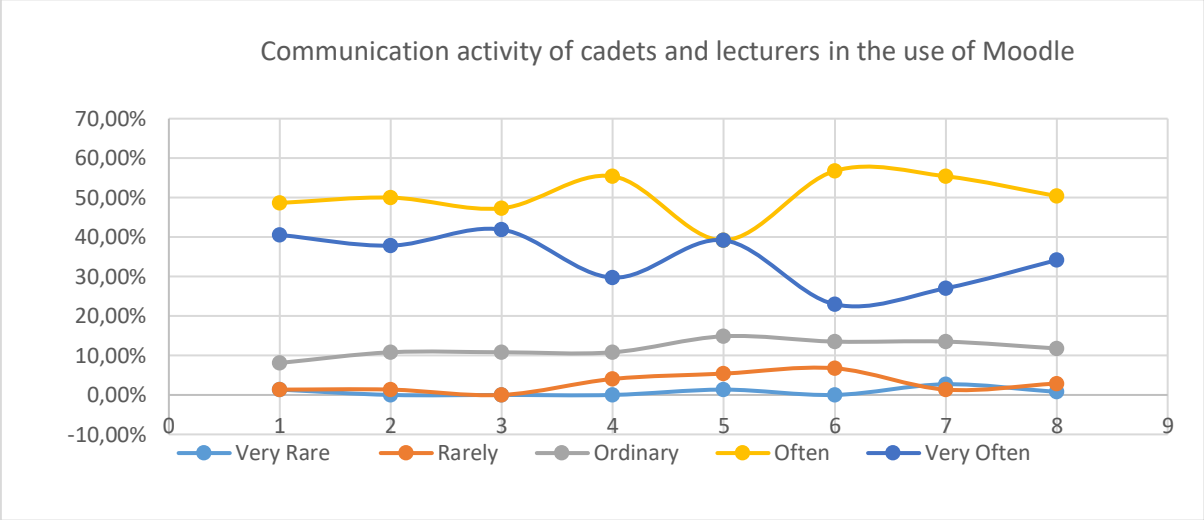

Figure 2. Graph of Communication Activity of Cadets and Lecturers in the Use of Moodle

Self-Regulated Learning Ability in Quality Assurance Management Courses

Evaluation of an ability where cadets are active in regulating and managing thoughts, behaviours, and emotions during learning as illustrated in Self-Regulated Learning related to goal setting, environment structuring, self-evaluation, task strategies, help-seeking and time management can be known based on the indicators that have been prepared, while all activities can be seen in table 4 below.

Table 4. Self-Regulated Learning Skills of Cadets

No	Indicator	Average Percentage				
		Very Incapable	Incapable	Less Capable	Capable	Very Capable
1	Cadets can set their own goals in online learning through Vclass	2.70%	2.70 %	9.46%	64.86 %	20.27%
2	Cadets can organize a learning environment in online learning through Vclass	0.00%	2.70 %	12.16 %	55.41 %	29.73%
3	Cadets can set strategies for achieving online tasks	0.00%	0.00 %	13.51 %	63.51 %	22.97%
4	Cadets can seek help when hampered by online learning	2.70%	0.00 %	14.86 %	50.00 %	32.43%

5	Cadets can manage time in online learning	0.00%	1.35 %	10.81 %	55.41 %	32.43%
6	Cadets can conduct self-evaluations in online learning through Vclass	1.35%	2.70 %	8.11%	60.81 %	27.03%
	Rata-rata	1.13%	1.58 %	11.49 %	58.33 %	27.48%

Based on Table 4 above, the average percentage of self-regulated learning ability in the Quality Assurance Management Course in using Moodle with criteria can reach 58.33% and the percentage is very capable of 27.48%. So the average percentage of self-regulated learning skills in the Quality Assurance Management Course in the use of Moodle is 85.81%. Based on indicators number 1 to number 6, shows that the ability of self-regulated learning in the Quality Assurance Management Course in the use of Moodle is included in the good category.

In the percentage with the highest very capable criteria with a value of 32.43% obtained in the 4th and 5th indicators, cadets can seek help when hampered in online learning and cadets can manage time in online learning. As for the average percentage with the highest capable criteria, which is 64.88%, obtained in the 1st indicator, cadets can set their own goals in online learning through Vclass.

In the first indicator, cadets can set their own goals in online learning through Vclass, the average percentage in the capable and very capable criteria is 85.14%, This shows that the cadets' goal-setting ability is in the good category. In the 2nd indicator, cadets can manage the learning environment in online learning through Vclass, the average percentage in the capable and very capable criteria is 85.14%, This shows that the ability of environmental structuring is in the good category. In the 3rd indicator, cadets can set strategies for achieving online tasks with an average percentage in the capable and very capable criteria of 86.49%, this shows the ability of task strategies in the good category. The 4th indicator, namely cadets able to seek help when hampered in online learning, averaged a percentage in the capable and very capable criteria of 82.43%, this shows the ability to help in the good category. In the 5th indicator, namely cadets able to manage time in online learning, the average percentage in the capable and very capable criteria is 87.84%, this shows the ability of time management in the good category. The last indicator is the 6th indicator, Cadets can conduct self-evaluation in online learning through Vclass with an

average percentage in the capable and very capable criteria of 87.84%, this shows the ability of self-evaluation in the good category.

4. CONCLUSİON

Based on the results of research that have been conducted on "Evaluation of Moodle-Based Online Learning on Self-Regulated Learning Capabilities in Quality Assurance Management Courses", it can be concluded that: Cadets can follow the learning process using Moodle -based online learning, including cadets know the URL address to access moodle e-learning (v-class), cadets can log in to access Moodle e-learning (V-class), Cadets can edit their respective profiles, cadets can download materials provided by lecturers, cadets can collect assignments online, cadets can chat on V-Class, cadets can send messages to other cadets, cadets can send pictures/links to other cadets, cadets can access resources provided by lecturers and cadets can access activities provided by lecturers. The activeness of communication between cadets and lecturers in the use of Moodle is included in the good category, This can be seen from the frequency of cadet logins in online learning using V-class which is frequent, the activeness of material transfer given by lecturers to cadets, online assignments to cadets given by lecturers into V-class, feedback given by lecturers to cadets, the occurrence of chats between lecturers and cadets in discussing issues surrounding the Quality Assurance Management course, The occurrence of forum discussions on the course between cadets and lecturers, the provision of online quizzes given by lecturers to cadets, assessment and feedback given by lecturers to cadet assignments. All communication facilities in the Moodle application can be utilized optimally for discussion activities related to quality assurance management courses without having to meet face to face or directly so that there can be time efficiency for lecturers or cadets who are attending lectures. The ability of Self-Regulated Learning in the Quality Assurance Management Course is included in the good category, This can be seen from the 6 main roles in the Self-Regulated Learning learning process, namely: goal setting, environment structuring, self-evaluation, task strategies, help-seeking and time management all in the good category, proven by cadets being able to set their own goals in online learning through Vclass, cadets being able to organize a learning environment in online learning through Vclass, cadets being able to set strategies for achieving online assignments, cadets being able to seek help when hampered in online learning, cadets being able to manage time in online learning, cadets being able to conduct self-evaluations in online learning through Vclass.

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