

The use of besmart to improve students' self-discipline in community economy course

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Abstract: The use of e-learning applications in learning needs to consider the potential for improving students' character. This classroom action research was aimed at investigating the use of Besmart e-learning in improving the students' self-discipline in the Community Economy course. The participants of this research were 108 students majoring in Management at the Faculty of Economics, Universitas Negeri Yogyakarta. This study was based on the model by Kemmis and McTaggart, which comprises steps of planning, implementing/acting, observing and evaluating, analyzing, and reflecting. This study was classroom action research. The data were collected in two cycles of the model through questionnaires, observations, interviews, and system monitoring. This study employed triangulation techniques of data source and method to ensure the data validity. The findings show that using e-learning can improve the students' self-discipline. The students' self-discipline was reflected in self-learning materials, participation in the discussion forums, and submitting the assignments. Besmart is not only a learning medium but can also increase student self-discipline and participation in learning. The success factor in this research is not only the learning media but also the skills of lecturers and students to optimize the use of this media.

Keywords: *Besmart, self-discipline, Community Economy*

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INTRODUCTION

Technology has developed rapidly in all countries, including The Association of Southeast Asian Nations (ASEAN). These ASEAN countries use technology for teaching and learning, including teaching in higher education. Research has found that technology is used in higher education, such as distance or e-learning (Pandey & Indrakanti, 2017).

Technological development is in line with learning innovations, including economics (Pol, 2013). While in the past, educators could use a traditional method of instructional media using blackboard and chalk, nowadays, teachers are required to be skillful in utilizing instructional media related to information technology such as Virtual Education Learning (VLE). Previous studies found that virtual learning is more effective than traditional learning (Moazami, Bahrapour, Azar, Jahedi, & Moattari, 2014). For example, students' competencies increase with the help of a computer (Makransky *et al.*, 2016). It is, therefore, necessary to develop e-learning media in this globalization era to help educators deliver materials according to learning objectives. The benefit of e-learning is that students have flexibility in time and place to improve their knowledge and skills, save costs, control

learning speed, reduce stress, and organize study time (Balaji, Al-Mahri, & Malathi, 2016; Hartanto, 2016).

The e-learning system has been activated and can be accessed at <http://besmart.uny.ac.id> (Surjono, 2008). Simatupang (2010) recommends that in utilizing the class with the e-learning system, an educator should determine the class that will be used as the audience (students in the third semester are way better than the first-year students since they at least have known the domain of the particular field of knowledge and have possessed the specific level of the Internet literacy); ask for support from the internal stakeholders, faculty members, study program members, and fellow lecturers; start from a single subject and gradually improve participants' involvement in learning activities, such as downloading materials and interacting with fellow lecturers as well as other participants; make continuous improvement for those who have started online service.

One of the courses utilizing e-learning is economy community. This course aims to enable students to identify problems, analyze them, and find solutions to problems related to the community economy. This course is compulsory for all Faculty of Economics and Business, Universitas Negeri Yogyakarta students. It was conducted by using the conventional method of instruction. Because it was classical paper-based learning, the use of papers for all instructional media, resources, academic papers, and assignments was undoubtedly high. By utilizing an e-learning system for this course, instructional materials can be technically transformed into paperless ones. In teaching, educators should provide knowledge and become the role model for students. The educators can show good behavior by reducing paper waste.

Based on the observation and interview with some students joining the community economy course, it was found that as many as 30% of students were habituated to late assignment submission; others did not read the learning materials; many used their mobile phones for off-task activities during the class; and the students were not aware of the importance of developing community economy, for example, the students preferred to shop in department stores/modern markets rather than in small shops/market stalls.

Furthermore, it was found that students' self-discipline tends to become an obstacle to learning. The most challenging problem related to students' self-discipline in learning is late assignment submission. Even though self-discipline is a crucial parameter for successful e-learning (Gorbunovs, Kapenieks, & Cakula, 2016). Also, when the students are bored, they play with their mobile phones instead of listening to the lecturer. Students' use of mobile phones for off-task classroom activities is an undeniable issue. The students' ability to use such information technology is not a threat, but rather a challenge that a lecturer should be able to take advantage of in learning processes (Prensky, 2003). Lecturers can utilize e-learning for instructional purposes. Besides e-learning, an online exam is widely utilized for students in most academic disciplines and conventionally taught courses (Gaebel, Kupriyova, & Morais, 2014). Self-discipline is considered by (Gorbunovs *et al.*, 2016) as the vital indicator to increase output in e-learning.

One possible solution to these problems is e-learning (Vitoria, Mislinawati, & Nurmasyitah, 2018). Students can benefit significantly from self-discipline. In the context of the community economy, self-discipline will benefit the students and their surrounding community. Many students misspend their money and need to spend it more wisely. They tend to shop in malls, supermarkets, or modern markets, although they can easily buy goods they need in small shops nearby for prestige rather than needs. In fact, by buying goods in

small shops, particularly in their neighborhood, the students can help develop the economy around them. To address this specific matter, the materials in the e-learning system need to be carefully designed and interestingly presented. The materials should improve students' motivation to manage their money.

Even though discipline is an important aspect, it is often ignored in the e-learning system (Smith, Torres-Ayala, & Heindel, 2008). According to a study conducted by (Baroroh, Lestari, & Suwarna, 2016; Vitoria *et al.*, 2018), one of the inhibiting factors in the utilization of the e-learning system is the need for students' self-discipline to access e-learning resources without the instruction given by their lecturers. The students are not accustomed to being disciplined in using such e-learning media. Thus, this article presents a study on implementing an e-learning system to improve the students' self-discipline in the community economy course.

The integration of e-learning systems has dispersed rapidly in various educational sectors (Kiryakova-Dineva, Levunlieva, & Kyurova, 2017). Knowledge referring to the concept of e-learning in higher education institutions is introduced in an efficient educational system (Nicolau & Popescu, 2013). Unlike face-to-face instruction, the instruction in an e-learning system is different because it is based on virtual environments (Moore-Adams, Jones, & Cohen, 2016). Interaction among students and between students and teachers is conducted online through computers and the Internet. This interaction requires students' self-discipline.

Technology-based learning is a type of learning utilized by electronic technology such as the Internet, intranet, audio and video conferences, webcasts, etc. Both online and computer-based learning use computers, the Internet, and modern technology for learning. Technology-based learning is synonymous with the concept of e-learning. The latest trend in e-learning is efficiency, which is closely related to reducing time consumption (Nicolau & Popescu, 2013). Thus, technology such as video learning is not the enemy (Prensky, 2003).

Common challenges in the e-learning system are students' involvement in learning (Khan, Egbue, Palkie, & Madden, 2017) and internet connection problems (Hamdan, Mohamad, & Shaharuddin, 2017). An effective instructional design is, therefore, imperative in an online learning system because of the need to compensate for the physical absence of an instructor (Costley & Lange, 2017).

The students instilled behaviors, character values, discipline, and motivation because several students came to school unprepared for learning (Sung, 2010). In maintaining self-discipline, sometimes students must comply with school regulations since a fair and appropriate punishment will affect student behavior (Gagnon, Gurel, & Barber, 2017) school, and local education agency (LEA. Discipline is essential because it leads people to do the right thing, and the right thing can be productive and profitable (Makransky *et al.*, 2016). Self-discipline is measured by student activity parameters during a course (Gorbunovs *et al.*, 2016)

Indicators of self-discipline appear in perseverance, self-control, resilience, thinking before acting, finishing what you start to do, and the ability to carry out one's decisions and plans despite discomfort, difficulties, or obstacles (Gorbunovs *et al.*, 2016). The self-discipline character was shown in various activities in the learning process while using e-learning materials, such as gathering information, communicating via email and chat, downloading free software, watching videos, and listening to audio (Pituch & Lee, 2006). Thus, in e-learning, self-discipline is seen in participation in materials, chats, discussion forums, and quizzes.

METHOD

In order to utilize information technology to support learning activities, a technical management unit at the Information and Technology Center at Universitas Negeri Yogyakarta (UNY has developed the “UNY E-Learning System”). This system is applied in an online learning paradigm integrated with using LMS (Learning *et al.*) called Moodle. The study was conducted in the Management Study Program at the Faculty of Economics, Universitas Negeri Yogyakarta. The participants in this study were 108 students. This study was classroom action research. In this study, the researcher played the role of a teacher who provided treatment to the subject of the research. The researcher is supposed to be fully aware of the need to implement a particular action and be emotionally involved (Madya, 2007).

The research procedure used in this study was the action research model developed by Kemmis, McTaggart, and Nixon (2014). It consisted of a series of cycles: planning, implementing/acting, observing and evaluating, analyzing and reflecting. The basic process of this study can be seen in Figure 1.

Data collection techniques used in this study were observations, interviews, questionnaires, and system monitoring. Quantitative data was gathered from the Besmart system (<https://besmart.uny.ac.id/v2/>) monitoring and questionnaires, which all 108 participants answered. On the other hand, the quantitative data were gathered using in-depth interviews with the nine participants as samples. The samples were chosen using random sampling. Data triangulation was conducted to ensure the validity of the data. As stated by Moleong (2005), data triangulation is a technique used to examine data validity by utilizing and comparing multiple perspectives of different data sources. The triangulations used in this study were time and method triangulations.

Researchers observed student discipline using an observation rubric. At the end of the cycle, a questionnaire was given to the students. The questionnaire consists of questions about using Besmart, and the answers provided range from never to very often.

The secondary quantitative data were gained from the Besmart application. The data gained were learning material on community economics, chat material of economics community, quizzes on community economics, and discussion forums on community economics. The data were then analyzed using the Likert scale as described in Table 1.

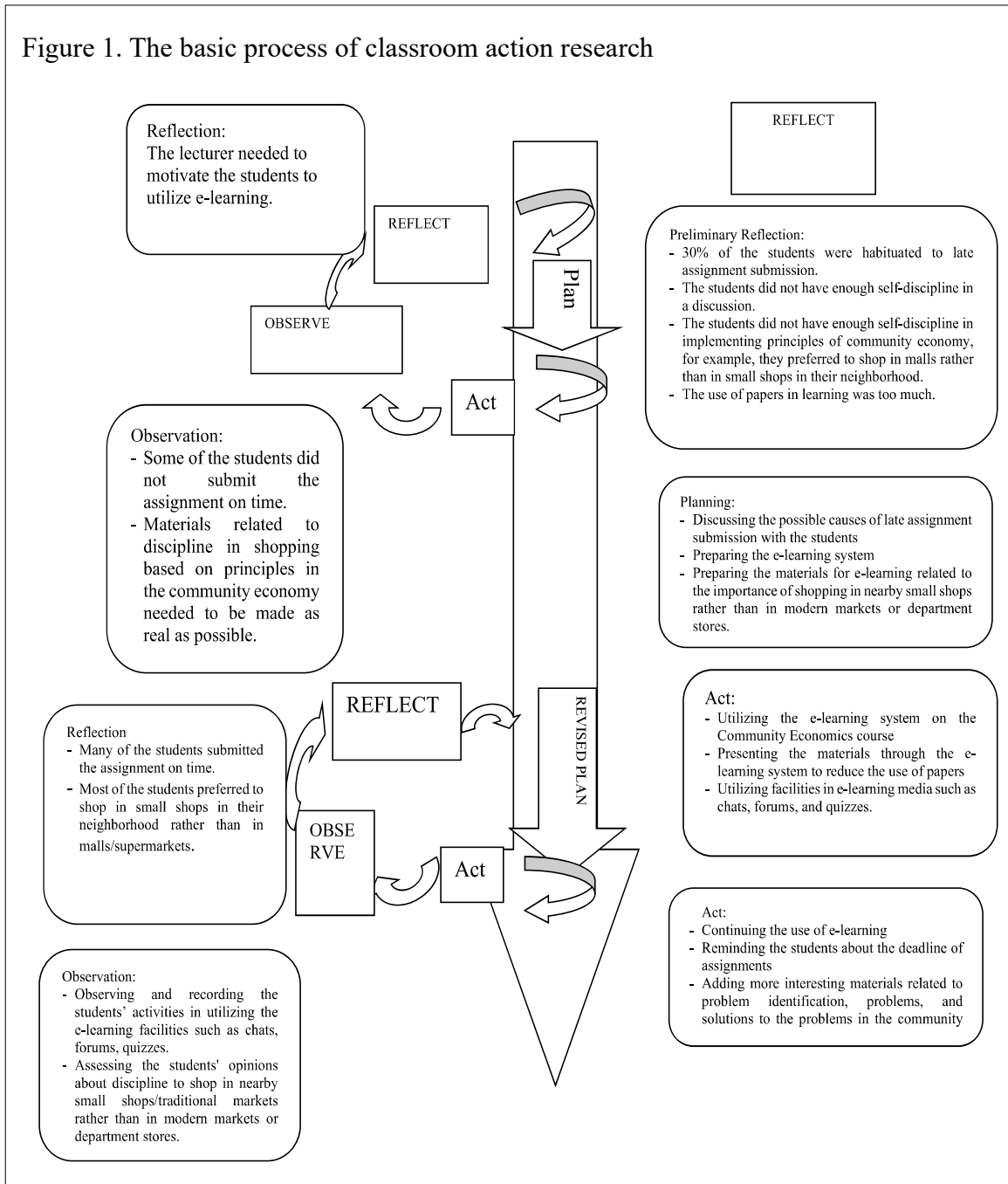
Table 1
Likert scale

Calculation Range	Category
$X > Mi + 1,8 Sbi$	Very high
$Mi + 0,6 Sbi < X \leq Mi + 1,8 Sbi$	High
$Mi - 1,8 Sbi < X \leq Mi + 0,6 Sbi$	Medium
$Mi - 1,8 Sbi < X \leq Mi - 0,6 Sbi$	Low
$X \leq Mi - 1,8 Sbi$	Very low

Sources: Widoyoko, 2009; Susanto, & Retnawati, 2016

In-depth interviews were conducted to complete and deepen the study. Students in the low category were interviewed to gather qualitative data from in-depth interviews. An

Figure 1. The basic process of classroom action research



in-depth interview was conducted to find the root of the problem in the teaching-learning process and resolve the unsolved problems in Cycle 1. Data triangulation from quantitative data and qualitative data analysis was combined to validate and reinforce the research results. Quantitative data in questionnaire percentages is triangulated with the results of observations and interviews, which are qualitative data. The success of the action was indicated by the number of students in the minimal medium category (minimum 80% students).

FINDINGS AND DISCUSSION

This study consisted of two cycles, each conducted in two meetings. In each cycle, the lecturer designed lesson plans used for implementing the e-learning system, developed observation sheets for the teaching-learning process and student worksheets for group work, and prepared interview guidance and student questionnaires. In this stage, the lecturer gave e-learning instruction based on the previously prepared lesson plan. Prior to this implementation stage, the lesson plans had been consulted by an expert in Community economy, an expert in teaching, and an expert in instructional media. While implementing the actions, a collaborator assisted the researcher in observing the teaching and learning processes.

The first meeting of the cycle I was held in week 10 with the following actions: the lecturer started the lesson by greeting the students, checking the student's online presence, giving a brief presentation, and telling the basic competency of the course; the lecturer presented the outline of the e-learning materials and conducted apperception leading to e-learning materials; the lecturer conducted a question-answer session with the students; the students were asked to access the materials in the e-learning system; and the students were invited to join the discussion forum.

Meanwhile, the second cycle meeting was held in week 11. The actions for the second meeting were quite similar to the first meeting. However, based on the reflection of cycle 1, some new strategies were implemented. In cycle two, students need to prepare a signal booster or cell phone to reduce a poor internet network. The lecturer again reminded students that they should be smart more often so they can increase their lecture activities through being smart. Lecturers will give rewards to students active in discussion forums through activity points. At the end of the second meeting, the lecturer gave a quiz and a question-answer exercise from the discussion forum in e-learning. The result actions questionnaire in cycle I is presented in Table 2 below.

Table 2
The category of character values of students' self-discipline in e-learning in cycle I

Category	Total	%
Very high	0	0
High	17	15.74
Medium	67	62.04
Low	15	13.89
Very low	9	8.33
	108	100

It can be seen from Table 1 that almost two-thirds of students have a medium level of self-discipline (62.04%). The number of students with a high level of self-discipline is slightly higher than those with a low level of self-discipline, at 17 and 15, respectively. Meanwhile, the nine remaining students need to improve their level of self-discipline. The number of students with a medium level of self-discipline is 77.74%. It indicates that the actions done in the class are not successful. Therefore, further actions were needed in the next cycle.

In the reflection and evaluation stages in cycle I, it is found that some students have a medium level of self-discipline while others have very low self-discipline. Furthermore,

problems found in those cycles are presented as follows: the internet network problem (campus wifi and students' mobile phone internet connection), such as a slow or unstable connection and congestion problems; the lack of internet connectivity, web errors, and lack of explanation related to the e-learning system; lack of socialization from the management team of UNY e-learning system (BeSmart); difficulties in accessing the website due to the poor signal; the minimal number of participants joining the online chat (not all lecturers use the e-learning system); and incomplete learning materials; and poor understanding of procedures in using BeSmart (some students were confused about what to do next and then).

The problems encountered in cycle I are then categorized into internal and external problems. The internal problem is related to the student's need to better understand procedures in using BeSmart. Although the students are trained to use BeSmart in the new student campus orientation event, they need help remembering the procedures and their BeSmart password. Moreover, the external problem is related to the Internet facilities, which encounter frequent errors and sudden drop/lost connections.

Regarding the unsuccessful results obtained in cycle I, the quality of learning needs to be improved in the next cycle. The improvement is focused on character values and learning materials. The students are required to submit their assignments on time (Risabete & Astuti, 2017). One of the educators' roles is to generate students' motivation. In this way, the lecturers must always motivate the students to improve their self-discipline. Thus, the lecturer recommended the students prepare a modem or their mobile phone to anticipate any trouble with the Internet network on campus. She reminds the students to access BeSmart more often to increase their participation in e-learning activities. Rewards are given to the students actively participating in the discussion forum.

In cycle II, instruction is given by the lecturer based on the previously prepared lesson plan. During the implementation of actions, the researcher is assisted by two collaborators to observe the teaching and learning processes. The first meeting in cycle II was held in week 12 with the following actions: the lecturer started the lesson by giving a brief overview of the learning materials, conducting apperception and identifying the development policy of community economy; the students downloaded e-learning resources and had a discussion about them; the lecturer conducted a question-answer session with the students; the lecturer gave rewards to the students for each correct answer, and the lecturer taught how to identify the development policy of community economy.

The second meeting in cycle II was held in week 13, with similar actions implemented in the first meeting. In this second meeting, the lecture is about patterns of partnerships. The learning material used in this lecture is a PowerPoint presentation uploaded by the lecturer. The lecturer explains the material by involving the students in a question-answer session. If the students cannot answer the questions correctly, the lecturer repeats the explanation more clearly. Finally, the students are asked to complete the questionnaire about the influence of using BeSmart on their self-discipline in reading the course materials, participating in the discussion forums, and submitting their assignments in the e-learning system. The result of actions conducted in cycle II is presented in Table 3.

According to Table 3, three-quarters of students have a medium level of self-discipline. Surprisingly, seven students have a very high level of self-discipline, and the remaining twenty have a high level of self-discipline. Meanwhile, no one possesses a low level of self-discipline. These results show that the implemented actions are successful. The result

Table 3
The category of character values of students' self-discipline in cycle II

Category	Total	%
Very high	7	6,48
High	20	18.52
Medium	81	75
Low	0	0
Very low	0	0
	108	100

Source: Primary data (processed)

is in line with a study by Setyohadi, Aristian, Sinaga, and Hamid (2017) that the social factor is more influential than the benefits and easiness of using an e-learning system. In the interview, student A says that the e-learning system allows them to access course materials more efficiently and helps reduce paper waste. In this way, the students show their care for the environment and perform economic behavior. In cycle II's reflection and evaluation stages, no more students submit their assignments after the due date. All of them remember their BeSmart password so they can submit their work on time. Moreover, they download course materials to learn before the class.

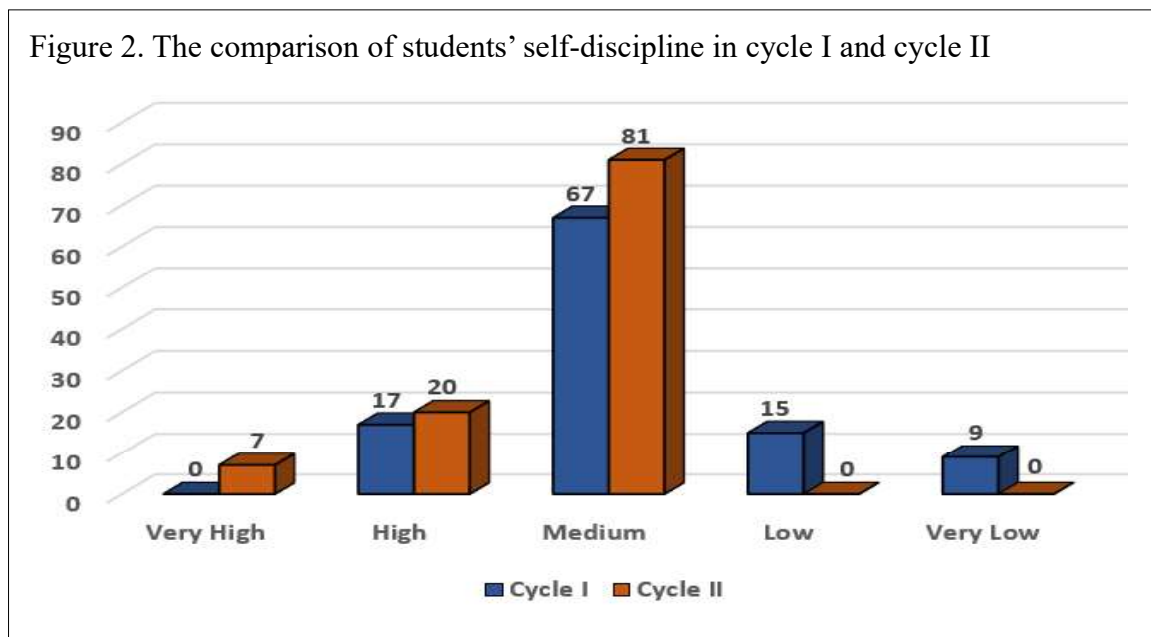
This study mainly uses the asynchronous learning approach during the lessons. This approach allows the lecturer to sit with the students in the classroom (Cappel & Hayen, 2004). Teachers and learners should sit together in front of a computer as a learning process is carried live through video or audio conferences. In addition, there is another approach called self-paced independent study. This approach requires the course users to be online at their own schedule. In this way, students only need someone else available to respond to their questions and provide feedback. This e-learning approach requires the highest self-discipline and motivation. Another approach is the synchronous interactive, which allows users to participate in the lessons with the instructor and other students, but not simultaneously. It is not a one-way e-learning model, and the feedback is provided by other people using different discussion forums or other online facilities. Many examples of this model can be found on the Internet. In this context, the researchers choose synchronous learning because the students are still new to e-learning, so they need direct guidance from the lecturer. The students' self-discipline improvement during cycles I and II is presented in Table 4.

Based on Figure 2 and the chart above, it can be seen that there is considerable improvement in students' self-discipline in three categories, namely 'very high,' 'high,' and 'medium.' By contrast, the 'low' and 'very low' categories dropped sharply to zero. These results indicate that the effort made to increase the student's self-discipline through the e-learning system is successful. The students' self-discipline improves in the following ways: continuously studying in BeSmart, having the commitment to learn in BeSmart, having a schedule to learn in BeSmart, submitting assignments on time, using facilities provided in the e-learning system, using their spare time to learn in BeSmart, using the chat room in BeSmart, completing the quiz in BeSmart, and participating in the discussion forum in BeSmart.

Table 4
The comparison of students' self-discipline in cycle I and cycle II

Category	Cycle I	%	Cycle II	%
Very high	0	0	7	6.481
High	17	15.74	20	18.52
Medium	67	62.04	81	75
Low	15	13.89	0	0
Very low	9	8.333	0	0
	108	100	108	100

Source: Primary data (processed)



In cycle I, the students are confused about how to use the e-learning system (Robinson, Sheffield, Phillips, & Moore, 2017). An orientation session may improve students' self-confidence in the context of e-learning. E-learning is a learning model requiring students to be more independent. One student in this study says he is happy to use the e-learning system because it is accessible anywhere. At first, the students need to become more familiar with the e-learning system. Therefore, the lecturer needs to explain the procedures of using e-learning to the students. The problem came when some students needed to remember their initial password, and thus, they could not log in to their accounts. At the early stage of the implementation of e-learning, the lecturer always reminds the students to download the course materials provided in e-learning and to submit their assignments on time. The lecturer also provided a unique "forum" in the e-learning system where the students are expected to comment on the ongoing course materials. This activity increases students' awareness of their responsibility to answer questions and complete tasks on time.

Students' late submissions of assignments are initially caused by the students' carelessness in meeting the deadline. Some students assume their assignments are always

due at 12.00 a.m. midnight. In fact, the teacher usually sets the deadline before midnight (after working hours), for example, at 4:00 p.m. In this case, the students must contact the lecturer to re-open the system to allow their late submissions. Therefore, the lecturer reduces the students' scores as a penalty for late assignment submissions.

The awareness of using technology for learning should be accompanied by good character, i.e., self-discipline. Students, as the users of the e-learning system, for example, should pay attention to the deadline of assignments and leave the habit of procrastination. Technology changes every day, and nothing lasts forever but the change itself. By utilizing the e-learning system in this study, the lecturer familiarizes the students with the utilization of technology and instills character values of self-discipline and caution. In addition, e-learning is also a facility that can influence student motivation in learning (Ruman, Kusumajati, & Gea, 2015).

Table 5
The category of student motivation in using e-learning

Category	Cycle I	%	Cycle II	%	Increase (%)
Very low	8	7.4	0	0	
Low	18	16.7	0	0	
Medium	62	57.4	70	64.81481	7.414815
High	17	15.7	25	23.14815	7.448148
Very high	3	2.8	13	12.03704	9.237037
	108	100	108	100	

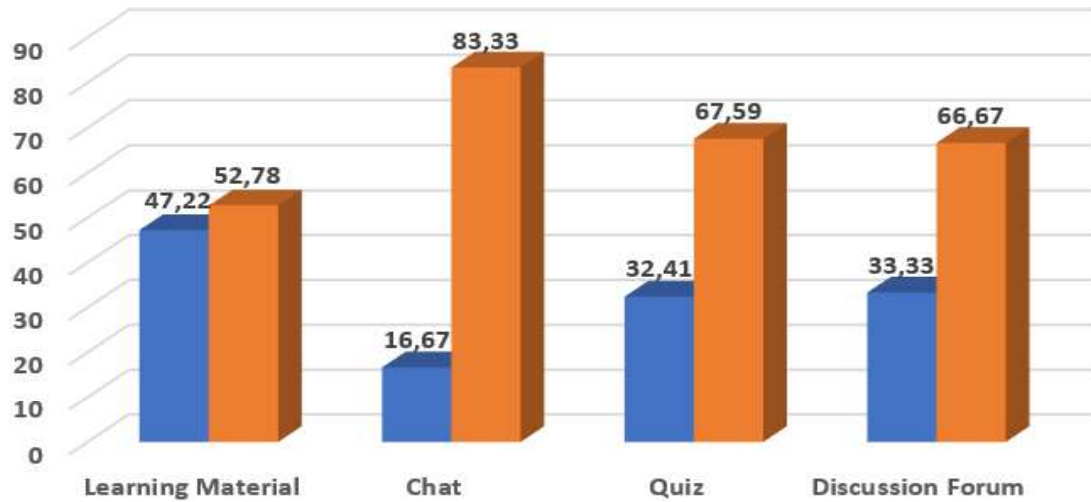
Source: Primary data (processed)

According to Table 5 above, there are considerable increases in student motivation in using the e-learning system for three categories, namely 'very high' (9.24%), 'high' (7.45%), and 'medium' (7.41%). By contrast, the two remaining categories, namely 'low' and 'very low', dropped to zero in cycle II.

As illustrated in Figure 3, learning materials is the most successful activity in cycle I. Meanwhile, most students need help participating in the chat activity. Some mention they are reluctant to participate in the chat room because their friends do not. In cycle II, however, the students become more actively involved in the chat as the lecturer encourages them more often. The improvement in scores from cycles I and II is presented in Figure 4.

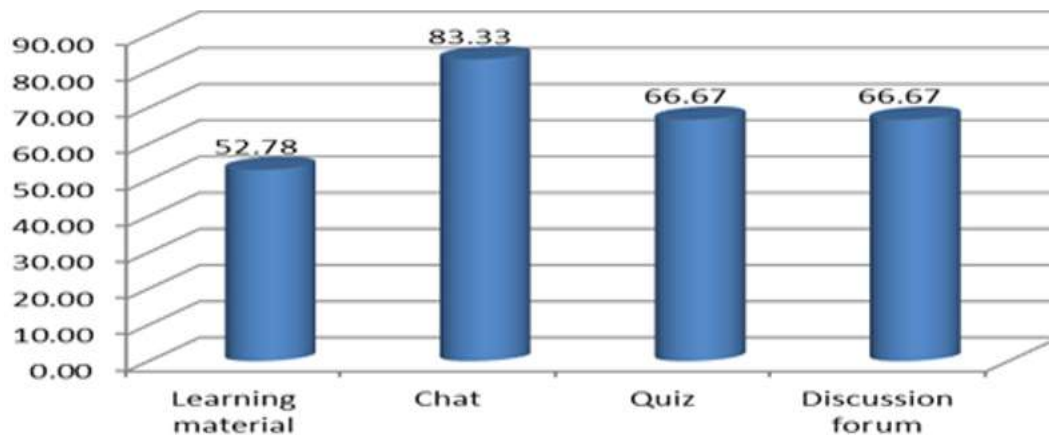
It can be seen in Figure 4 that the highest improvement achieved in cycle II is in the chatting aspect (83.33%). The students in this stage are willing to participate in the chat. In addition, quiz and discussion forum activities are next (66.67%). The last on the list is the learning material at 52.78%. The value of discipline in using e-learning facilities can be applied in school as it is the best place for instilling character education. Students need to learn character education for their future lives. Students need character education both in school and in their daily lives (Costley, 2018). Learning activities in a lecture will affect students' character in their future careers. People with specific character values of discipline tend to work more productively and generate more profits for the organization wherever they work. The teaching environment should be designed as a place for communicating norms

Figure 3. The distribution of e-learning activities



Source: Primary data from documentation (processed)

Figure 4. The percentage of students' participation in the e-learning activities



Source: Primary data from documentation (processed)

and values, as well as to meet the growing habits (Littlejohn, 2019). In studying with the e-learning system, students can use various styles, habits, and different learning strategies (Urh & Jereb, 2014).

Improvements in cycle 2 are: there is an increase in student discipline when using e-learning. If previously they were often late when sending assignments to e-learning, then in cycle two, students submitted assignments on time. Likewise, for reading material, forum discussions, completing quizzes and submitting assignments.

Self-discipline cannot be instilled in students' behaviors in an instant. At first, using the e-learning system in this study urges the students to be punctual in downloading the lesson

materials, participating in the discussion forums, and submitting assignments. Ultimately, the students will become accustomed to disciplined behavior and implement it naturally in their daily lives.

CONCLUSION

The findings show that the use of the e-learning system in community economy courses can improve students' self-discipline, particularly in reading the materials from e-learning resources, participating in the discussion forum or chat room, completing quizzes, and submitting their assignments on time. The conclusion has led to the following suggests that instilling self-discipline characters is a continuous process. In conducting a class with e-learning activities, improvement in facilities, especially the Internet connection, is urgently needed to ensure that the learning process and online presence run effectively. Every lecturer is supposed to have a good understanding of e-learning processes, and he/she should be capable of using the e-learning system in the classes continuously. The e-learning system for the Community Economy course can be mainly developed to encourage students to have self-discipline in many aspects, such as shopping, reducing paper usage, submitting assignments, and participating in e-learning activities.

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