REFLECTION HABITUATION ON THE ONLINE TUTORIAL

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Abstract

This study aims to produce a reflective learning program that can be applied to the online tutorial for the final project to improve students' reflective thinking skills. Through a series of phased activities, a reflective learning program using discussion as the core of activities followed by reflection activities using the Gibbs' reflective cycle has produced a reflective learning program in an online tutorial that is ready to be tested. The test was conducted to measure the students' reflective thinking level before and after using the program using the Kember reflective thinking level instrument. The study show that the program has the main characteristic of sharpening students' reflective thinking skills. After using the program, students' reflective thinking skills showed an increase in the highest score at the critical reflection level. The program has the advantage that students will get used to doing reflection and can practice higher-order thinking skills through discussion activities. Program limitations occurred because of the effect of program characteristics, namely, students must have high motivation, discipline, and independent learning, students must have sufficient computer and IT skill. The program has the potential to increase the ability of reflection to support a change/shift towards a higher level of reflective thinking.

Keywords: reflective learning; reflective learner; reflective thinking level; discussion ability

INTRODUCTION

Universitas Terbuka (The Indonesian Open University) (UT) is one of the higher education providers that implement the Distance Education System. UT - in this case, Faculty of Teacher Training and Educational Sciences (FTTES) - has the mandate to provide opportunities for teacher professional development. Meanwhile, a teacher must have skills as a professional educator who has 4 areas of competence, namely pedagogical competence, personality competence, social competence, and professional competence. These teacher competencies are obtained through a lifelong learning process that can be done effectively by getting used to thinking reflectively. The habit of reflective thinking allows teachers to know their potential to develop themselves and to know the competencies they have and do not currently have. Therefore,

reflective thinking skills will help further study, improve professional abilities and other skills. The process of lifelong learning can be more effectively carried out through habituation to reflective thinking. Teachers who used reflective thinking to analyze the intricacies of their students' activities were able to respond to their student's needs more effectively. Teachers were also able to use teaching as a learning tool, where they could learn from their mistakes over time (Barnhart & van Es, 2015). Teachers who were asked to reflect on their teaching considered it to be beneficial in terms of problem-solving and resolution (Hayden & Chiu, 2015). This is in line with 21st-century skills including self-direction, risk-taking and creativity, communication, reflection, and application of real-world knowledge (Green et al., 2010).

Reflective thinking is an active, persistent, and careful consideration of beliefs or expected forms of knowledge, the reasons that support that knowledge, and further conclusions that lead to that knowledge (Dewey,1910). In this case, learners recognize and control their learning by actively participating in reflective thinking – assessing what they know, what they need to know, and how they bridge the gap – during learning. Reflective thinking is a state in which individual teaching is open to development and evaluation (Pollard,2002). Reflective thinking as a process characterized as "remembering, overthinking and objectively evaluating each experience" (Ayazgök & Aslan, 2014).

Reflective thinking is an important type of thinking that must be possessed by a teacher because reflective thinking skills affect the quality of teachers. With reflective thinking, teachers can reflect on their educational and learning activities, critically evaluate them so that they can realize their mistakes, look for different ways to solve problems and keep up with innovations in education (Tican & Taspinar, 2015).

Models with varying levels of reflective thinking have been proposed by experts. The reflective thinking model has three levels of hierarchy: critical thinking, practical reflection, and technical reflection (Manen, 1977). Reflective thinking model in the form of a four-level reflection hierarchy, namely 1) habitual action, students are involved in routine and frequent activities, with little or no conscious thought); 2) understanding, students act to understand and apply knowledge within contextual constraints, and without considering the meaning and personal application to extend learning; 3) reflection, students assess their learning experiences to evaluate their actions for future improvement, as well as consider various possibilities as solutions to problems; and 4) critical reflection, students evaluate ideas and actions based on the underlying assumptions (Mezirow, 1991). Reflective thinking model with six levels: non-reflective action, technical-methodological reflection on content, descriptive reflection on content, dialogical reflection on the process, critical reflection, and meta-reflection (Jacobs & Murray, 2010).

To understand reflective thinking, the concept of reflection must be understood first. Reflection involves questioning or criticizing the existence or underlying problem during the presentation of the problem (Mezirow, 1991; Schaaf, Baartman, Prins, Oosterbaan, & Schaap, 2013). Meanwhile, some define reflection as an activity that takes place as a part of the learning cycle (Kolb, 1984). The reflective concept of John Dewey relates to the ability to think reflectively and be reflective. Reflective thinking requires cognitive and affective activities. Reflection involves 'intellectual and affective activities in which learners engage to explore their experiences to gain new understandings and appreciation (Boud, Keogh, & Walker, 1985). It is assumed that reflective thinking includes thinking activities such as describing, organizing, reasoning, analyzing, evaluating, connecting, inferring, and planning. Therefore, the idea of reflective thinking which consists of thinking activities can be linked to the experiential learning cycle model of practice, which incorporates activities in the next phase.

Reflective learning emphasizes that learning comes from experience and can be updated continuously through the process of recording/recording and thinking about the experiences you have. In Higher Education, a high worth is set on the skill of being a reflective learner. This implies students can fundamentally assess their learning, recognize spaces of their learning that are required for an additional turn of development, and make themselves more independent learners. The Gibbs Reflective Cycle identifies 6 stages of reflection that help learners to understand their learning as shown in Figure 1.

Figure 1. Gibbs' Reflective Cycle
(adopted from Lia, P (2016)

Figure 1 shows that the 1st stage of reflection is the description. It gives the information of what happened that gives an unmistakable and point-by-point

depiction of the circumstance that happened during the discussion. The 2nd stage is feeling, which portrays what was thought and felt previously, during, and after the circumstance happened, and depicts student responses in the circumstance. The 3rd stage is evaluation, which gives an outline of what worked out positively and went poorly and how the circumstance finished. The 4th stage is analysis, which clarified why things worked out in a good way and things went poorly and what the outcomes were. The 5th stage is the conclusion, which clarified what lessons were gained from the circumstance and things that can be changed to advance the circumstance. The 6th stage is an action plan, which clarifies how will be dealt with managing a similar circumstance later on and advance the circumstance.

The final project is one of the requirements for Biology Education students at FTTES to get graduation. In the final project, students are confronted with learning cases that should be analyzed for their strengths and weaknesses and how to solve the problems that exist in these learning cases. Therefore, to assist students to face the final project, an online tutorial consisting of 6 sessions or 6 weeks has been provided. In every session, there is a discussion forum to solve problems that exist in cases of learning biology as well as cases related to understanding biology material in society and at school. A teacher or prospective teacher ought to can think reflectively to discover what they have and have not had. This discussion will be exceptionally significant in case there is a course of reflection on the cycle and consequences of the discussion they take an interest in very meaningful if there is a process of reflection on the process and results of the discussions they participate in. Consequently, by becoming accustomed to doing reflection, it is normal that students' capacity in intelligent reasoning will be sharpened.

Research led by (Sekarwinahyu, Rustaman, Widodo, & Riandi, 2019) in regards to the development of a problem-based Plant Development online learning program with a Gibbs reflective cycle and an electronic portfolio to improve students' reflective thinking skills shows that 1) a powerful program to further develop reflection capacity upholds a change/shift towards the degree of intelligent reasoning higher; 2) a successful program to further develop the authority of ideas. Notwithstanding, albeit overall students give a good impression of the program they use, they need to invest more energy to have the option to follow this program to fulfillment since they feel that this program is excessively mind-boggling. In view of this, it is important to do additional research to get a simpler online learning model in online tutorials for courses in the Biology Education Department that can improve students' reflective thinking skills. The exploration directed is about the advancement of reflective learning programs in the online tutorial of the Biology Education Department.

METHODOLOGY

This research is the primary year of the long-term research plan. The strategy utilized in this review is research and development which adjusts the 4D model of (Thiagarajan, 1974) by taking into account the essence that must be met in the conduct of research. The 4D model in this study incorporates 1) Define, which is determining the problem that comes from preliminary studies, 2) Design, to be a specific plan, 3) Development, specifically advancement, and 4) Dissemination. Consequently, this research design helped out through four phases, in particular, 1) preliminary study, 2) program design, 3) program development which includes program testing and program revision, and 4) program implementation/application. For the main year, it is carried out up to the program trials stage.

The research subjects were Biology Education Department students who took the Online Tutorial for the final project for the 2020/2021.1 academic year. To measure the ability of discussion and reflection used discussion and reflection rubrics, while to measure the ability of initial and final reflective thinking used a reflective thinking questionnaire was adopted from (Kember et al., 2000). The research results presented in this paper are the results of program trials.

FINDINGS AND DISCUSSION

1.   Discussion and Reflection

To hone students' reflective thinking skills, reflective thinking is integrated into reflection activities using the Gibbs reflective cycle which is preceded by discussion activities. The core of the activities carried out by students in the Gibbs reflective cycle consists of six steps that support reflection activities and at the same time encourage reflective thinking. The results of the discussion and student reflection activities were obtained based on student answers in the discussion forum in the 1st to 5th sessions and based on student reflections in the 1st to 5th sessions.

The ability of discussion and reflection is shown by the scores obtained by students. Of the 37 students who took the tutorial, there were 21 students who completely answered the discussion and who gave their reflections from session 1 to session 5, and who filled out the forms for initial reflective thinking and final reflective thinking. Therefore, the data taken from this study are data obtained from 21 students. The results of measuring the ability to discuss and reflect can be seen in Figure 2.
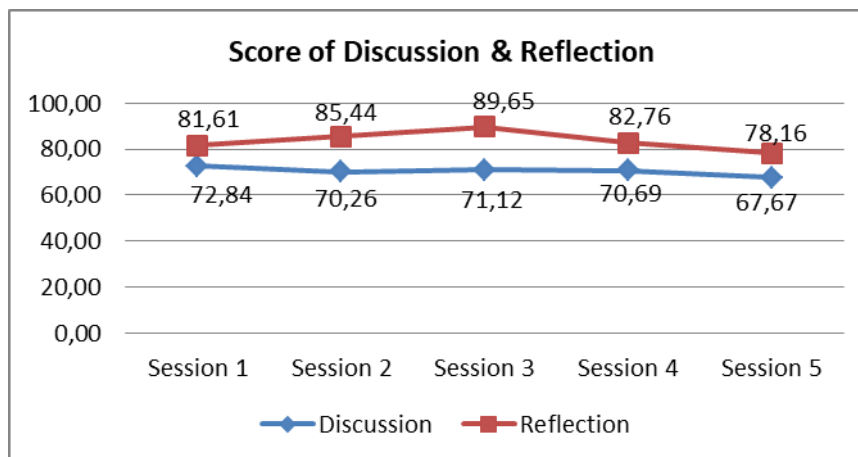
Figure 2. Comparison of Participants' Discussion and Reflection Scores

Figure 2 shows that the discussion ability tends to decrease. This can be caused by several factors including lack of feedback that is not immediately conveyed, the less role of tutors as moderators. So that discussions tend to run in one direction and are individual in nature, which can cause participants not to be so enthusiastic in answering discussions as conveyed by students participating in the tutorial.

> *"The process is good but there is no feedback in the form of correct answers and no reinforcement from the tutor" (Student_15).*

This assertion shows that feedback from tutors is required by students to work on an understudy certainty, mindfulness, and energy for learning.

> *"In my opinion, it would be better in the discussion the tutor could act as a moderator. So that it can increase activity in discussion activities" (Student_12).*

This assertion shows that tutors should effectively energize knowledge construction by being effectively engaged in conversation, activities, and discussions.

> "I think that discussion activities tend to be individual, not many comments, and most, including me, are about giving opinions on discussion topics without responding to other people's posts" (Student_1).

This assertion shows that there is no communication between students. They only give opinions on the topic of discussion without giving opinions on the answers to other students' discussions.

Meanwhile, the ability of reflection tends to increase from the first session to the third session and decreases in the fourth to fifth session. This can be caused by several factors, one of them is reflection questions which tend to be the same that can cause confusion and boredom in reflecting, as stated by the following online tutorial participants:

"I find it quite difficult to fill in the reflection because at first glance the questions asked to seem the same so that I feel confused about the answer I should write in each item of the reflection." (Student_1)

"I have a little difficulty in reflecting because in my opinion if we are not careful in reading and understanding the questions, we will feel confused because the questions are almost the same" (Student_13)

Based on the results of discussions and reflections and based on students' opinions about discussion and reflection activities, it is necessary to make improvements for the next implementation related to the pattern of discussion and reflection activities. Discussions must be carried out with a moderator who directs discussion activities so that they run smoothly and there is communication between students and students with tutors. Improvement reflection activities can be done by providing examples of reflection. The questions that exist in each reflection activity for each session are attempted to be submitted with different questions but do not change the essence of the answers expected from tutorial participants.

2.   Reflective Thinking

The reflective thinking skills of the online tutorial of the final project students were measured at the beginning of the tutoring activity and at the end of the tutoring activity using a reflective thinking questionnaire adopted from (Kember et al., 2000). Reflective thinking is divided into four levels, namely the level of habitual action, understanding, reflection, and critical reflection. The results of the measurement of the average score for each level of initial and final reflective thinking of students participating in final project tutoring (n = 21) can be seen in Figure 3.
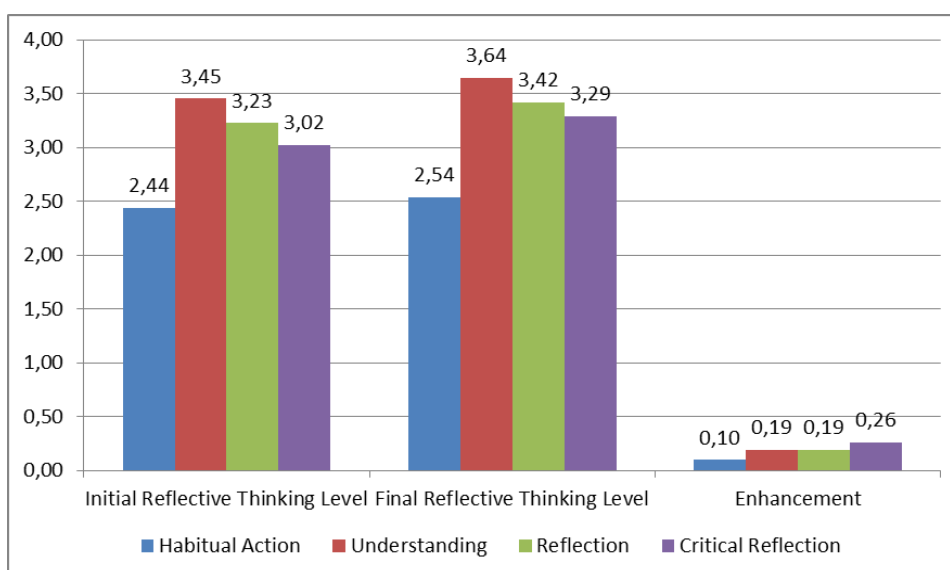
Figure 3. Comparison of Initial and Final Reflective Thinking Levels of Participants in Final Project Online Tutorials

Figure 3 shows that in the initial and final measurement of reflective thinking, the students' reflective thinking level showed a tendency to the level of understanding. This is in line with the results of research (Sargent, 2015) showing that students' reflective thinking at four-year colleges in the Southeastern United States, the habitual action level, has the lowest score and the understanding level has the highest score. Figure 2 also shows that although the critical reflection level does not occupy the highest score at the time of measuring the final reflective thinking level, the critical reflection level has the highest score increase of 0.26. The activities in this online tutorial program have the potential to support a change/shift towards a higher level of reflective thinking, for example, reflecting activities that begin with discussion activities, namely analyzing cases in learning activities.

Each level of reflective thinking is built by students' responses to each of the four statements at each level of reflective thinking (Kember et al., 2000) shown in Tables 1 to 4.

Students of the Biology Education Department, who took the final project tutorial, did not agree with the four statements at the initial and final habitual action levels This is indicated by the average score of student responses to the four statements at the initial and final habitual action levels, as shown in Table 1. Student disapproval of statements 1 and 13 weakened at the time of the final reflective thinking measurement. The results of previous studies showed that distance learners from the Allabama Iqbal Open University (AIOU) teacher education program supported the 13th statement but opposed the 5th statement (Buzdar & Ali, 2013).

Table 1. Average Score of Student Responses to Statements at the Initial and Final Habitual Action Levels

Statement	Average	
	Initial Score	Final Score
1. When I am working on some activities, I can do them without thinking about what I am doing.	2,19	2,38
2. In this tutorial, we do things so many times that I started doing them without thinking about it.	2,43	2,43
3. As long as I can remember handout material for examinations, I do not have to think too much.	2,57	2,57
4. If I follow what the tutor says, I do not have to think too much about this course	2,57	2,76
Habitual Action	*2,44*	*2,54*

The students participating in the final project online tutorial expressed their support for the four statements at the initial and final understanding levels. The average score for the four levels of understanding statements revealed a strong agreement from students as can be seen in Table 2.

Table 2. Average Score of Student Responses to Statements at the Initial and Final Understanding Levels

Statement	Average	
	Initial Score	Final Score
1. This tutorial requires me to understand the concepts taught by the tutor.	3,52	3,71
2. To pass this course I need to understand the contents	3,71	3,90
3. I need to understand the material taught by the tutor to perform practical tasks	3,53	3,57
4. In this tutorial, I have to continually think about the material I am being taught	3,05	3,38
Understanding	***3,45***	***3,64***

The average score of student responses to the four statements at the initial and final reflection levels shows that the students of the final project online tutorial have a strong intention to question the procedural process of problem-solving and decision-making adopted by themselves or others. Most rethink and reevaluate their previous experiences with the aim of learning and improving their thinking practices. The average score of student responses to the four statements at the initial and final reflection levels can be seen in Table 3.

Table 3. Average Score of Student Responses to Statements at the Initial and Final Reflection Levels

Statement	Average	
	Initial Score	Final Score
3. I sometimes question the ways others do some things in a better way	3,14	3,29
7. I like to think over what I have been doing and consider alternative ways of doing it	3,14	3,48
11. In this tutorial, I often reflect on my actions to see whether I could improve on what I did	3,24	3,48
15. I often re-appraise my experience so I can learn from it and improve my next performance	3,38	3,43
Reflection	***3,23***	***3,42***

The average score for the four critical reflection level statements on the final reflective thinking measure indicates that the final project online tutorial program supports students to challenge their deeply held ideas and helps them find their underlying mistakes. Students accept that they change their normal way of doing things as a result of this program. The score of the student's level of agreement with the four statements at the initial and final critical reflection levels can be seen in Table 4.

Table 4. Average Score of Student Responses to Statements at Initial and Final Critical Reflection Levels

Statement	Average	
	Initial Score	Final Score
1. As a result of this tutorial, I have changed the way I look at myself.	3,10	3,48
2. This tutorial has challenged some of my firmly held ideas	2,86	3,19
3. As a result of this tutorial I have changed my normal way of doing things	3,14	3,33
4. During this tutorial, I discovered faults in what I had previously believed to be right	3,00	3,14
Critical Reflection	*3,02*	*3,29*

Students' disagreement with statements 1 and 13 weakened at the time of the final reflective thinking measurement. The increase in the average score of the 1st and 13th statements could be due to the repetition of activities from the 1st initiation to the 6th initiation. This is contrary to the results of previous research on the assessment of the level of reflective thinking in English Language Teaching (ELT) students which showed that third and fourth-year students disagreed with the four items at the habitual action level, and the level of disagreement of fourth-year students was stronger than the level of agreement of third-year students (Naghdipour & Emeagwali, 2013).

Strong increase in student approval of the four statements at the understanding level, in line with the results of research on the development of reflective thinking through distance teacher education programs which show that distance students from the AIOU teacher education program support all statements at the understanding level (Buzdar & Ali, 2013).

Discussion activities that require students to analyze problems in learning cases or related to the subject matter are activities that require students to understand the material. Thus, the discussion can affect the increase in agreement on the four statements at the level of understanding.

The students' level of agreement with the four statements was stronger at the final reflective thinking measurement. This is consistent with the findings of (Naghdipour & Emeagwali, 2013), who discovered that students in three groups (first year, second year, and fourth-year students) agree with the items in this reflection level category, though their level of agreement varies, with fourth-year students agreeing more than second and third-year students. Research conducted by Sekarwinahyu (Sekarwinahyu et al., 2019) also showed the same thing, namely the average score representing the responses of students participating in the Plant Development Online Tutorial experienced an increase in the final reflective thinking measurement.

Increasing the level of student agreement with all statements at the reflection level is supported by reflection activities at each initiation through the

Gibbs' reflective cycle. Reflection is preceded by discussion activities in the program. In reflection activities, through the Gibbs reflective cycle, students are asked to do 6 steps of reflection. The six steps of reflection include:

- providing a clear and detailed description of the situation that occurred during the discussion with relevant data.
- describing what was thought and felt before, during, and after the situation occurred, and describing student reactions in the situation.
- provide an overview of what went well and didn't go well and how the situation ended.
- explained why things went well and things didn't go well and what the consequences were.
- explained what lessons were learned from the situation and things that can be changed to improve the situation.
- explain what will be done to deal with the same situation in the future and to improve the situation.

Meanwhile, the opinions of students who support increasing the level of agreement with these statements are as follows.

"Reflecting is an act of reflecting on the activities that have been carried out and reflection activities are carried out to evaluate the advantages and disadvantages of learning" (Student_3).

"Very motivating to be even better" (Student_6).

"The task of doing reflection is a must for a teacher because that is where we learn to evaluate ourselves about strengths and weaknesses during learning so that we become professional educators." (Student_8).

The student's level of agreement with each statement at the critical reflection level was stronger at the final reflective thinking measurement. This is in line with research that shows that fourth-year students support all of these items more strongly than third and second-year students. This gap is also clearer for the 12th and 16th statements in the critical reflection category which can be the most representative statements in assessing reflective thinking (Naghdipour & Emeagwali, 2013). Student statements that support the statements in the critical reflection level are as follows.

"In my opinion, doing a reflection task on the final project online tutorial can change my mindset as a teacher to improve learning in the classroom" (Student_21).

2.   Program Evaluation

Evaluation is carried out on components related to the reflective learning program through online tutorials which include evaluation of guidebooks, discussion activities, reflection activities, and evaluation of the overall course of

the program. Of the 37 students who took the tutorial, there were 22 students who completely answered the questionnaire. Based on the results of the questionnaire (n = 22) it was found that 95% of students studied the guidebook. This indicates that the placement of the guidebook in the initial introduction (pra-session) is quite effective in inviting students to study the guide before entering the initial session.

Students' opinions about the discussion activities carried out at the final project online tutorial as much as 68% gave positive statements and 32% gave negative statements. Positive statements are mainly related to the responses/answers from students, communication between students, and the benefits of discussion. Meanwhile, negative statements are mainly related to the lack of feedback obtained by students, the role of tutors in discussions and discussion time.

Students' opinions about the reflection activities carried out in this final project online tutorial as much as 73% gave positive statements and 27% gave negative statements. Positive statements are mainly related to the benefits of reflection and negative statements are mainly related to the benefits of reflection, the form of questions, how to fill out reflections, and the role of tutors in reflection activities.

Opinions and inputs from tutorial participants (n = 22) regarding things that need to be improved in the reflective learning program can be grouped into three main things, namely related to feedback from tutors, materials, and reflection activities.

Based on the findings, it can be concluded that the reflective online tutorial program is applied to the final project guidance to develop students' reflective thinking skills. However, it is still necessary to improve the strategies carried out in reflection activities so that they lead to a higher level of reflective thinking skills (reflection and critical reflection).

CONCLUSION

The program developed has the main characteristic of honing students' reflective thinking skills. The essence of the activities carried out by students in the Gibbs reflective cycle which consists of 6 steps is to support reflection activities and at the same time encourage reflective thinking.

The program has the potential to increase the ability of reflection to support a change/shift towards a higher level of reflective thinking. After using the program, students' reflective thinking skills showed the highest score increase at the critical reflection level.

The developed program has advantages and limitations. The program has the advantage that students will get used to doing reflection and the program can practice higher-order thinking skills through discussion activities.

Meanwhile, program limitations occur due to the effects of program characteristics, namely:

- students must have high motivation, discipline, and independence in learning.
- students must have sufficient computer and IT skills.
- students and tutors must spend more time.
- tutors must be able to motivate students and spend more time.
- the fluency of following the program is influenced by the availability of the internet network.

Students generally give a positive impression of the program they use although some students feel that this program is not working because of the lack of guidance and feedback from tutors.

This program is more suitable to be followed by students who have high motivation. Providing immediate feedback must be done to keep students' learning motivation high. Furthermore, the role of the tutor is also very important in motivating students who have low learning motivation to encourage students to be more enthusiastic.

Students who use this program must provide free time to be able to follow the program completely. Tutors who use this program should also devote more time to providing immediate feedback on any assignments and activities undertaken by students. This is necessary so that student motivation in participating in this program can be maintained.

The results of this study need to be continued for online tutorials in other courses by improving the strategy for implementing discussions and reflection activities and paying attention to the role of tutors who can support the implementation of this program.

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