IMPLEMENTATION OF COOPERATIVE SCRIPT METHOD THROUGH LESSON STUDY TO IMPROVE COLLABORATION AND COMMUNICATION SKILLS

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ABSTRAK: Keaktifan dan peran serta mahasiswa secara menyeluruh dalam proses pembelajaran penting untuk dikembangkan dalam rangka penyiapan lulusan perguruan tinggi yang mampu menjadi jembatan penghubung antara masyarakat dan permasalahan maupun tantangan yang mungkin muncul di lingkungan. Hal tersebut membutuhkan keterampilan kolaborasi dan komunikasi. Penelitian ini bertujuan untuk mengetahui (1) penerapan metode *cooperative script* melalui *lesson study* dalam meningkatkan keterampilan kolaborasi mahasiswa dan (2) penerapan metode *cooperative script* melalui *lesson study* dalam meningkatkan keterampilan komunikasi mahasiswa. Penelitian ini merupakan penelitian tindakan melalui lesson study yang dilaksanakan dalam 4 siklus. Data penelitian yang diperoleh berupa temuan hasil observasi dan angka-angka yang selanjutnya dideskripsikan. Hasil penelitian menunjukkan bahwa (1) penerapan metode *cooperative script* melalui *lesson study* dapat meningkatkan keterampilan kolaborasi mahasiswa. Persentase keterampilan melalui *self-assessment* pada dua siklus 1 dan 2 adalah 81.25% dan 88.54%, sedangkan persentase keterampilan kolaborasi hasil pengamatan observer pada dua siklus 1 dan 2 adalah 81.25% dan 93.75%. (2) Penerapan metode *cooperative script* melalui *lesson study* dapat meningkatkan keterampilan komunikasi mahasiswa. Persentase keterampilan komunikasi *peer-assessment* pada dua siklus 1 dan 2 adalah 76.9% dan 78.81%, persentase keterampilan komunikasi *self-assessment* pada dua siklus 1 dan 2 adalah 73.89% dan 77.46%, dan , persentase keterampilan komunikasi hasil pengamatan observer saat presentasi pada dua siklus 1 dan 2 adalah 69.14% dan 79.78%

Kata kunci: *cooperative script*, *lesson study*, *keterampilan kolaborasi, keterampilan komunikasi*

ABSTRACT: The activeness and participation of students as a whole in the learning process is important to develop in order to prepare university graduates who are able to become bridges between the community and problems and challenges that may arise in the environment. It requires collaboration and communication skills. The purpose of this study is to identify (1) how the cooperative script technique can be applied through lesson study to enhance student collaboration abilities and (2) how it can be applied to enhance student communication skills. This study is an action research project that involves four cycles of lesson-based research. The results of the investigation are presented as observations and figures, which are then discussed. (1) The implementation of the cooperative script approach through lesson study can enhance students' collaboration skills, according to the study's findings. The percentage of skills through self-assessment in two cycles 1 and 2 were 81.25% and 88.54%, while the percentage of collaboration skills observed by observers in two cycles 1 and 2 were 81.25% and 93.75%. (2) The use of the cooperative script approach in lesson study helps enhance students' communication skills. The percentage of communication skills of peer-assessment in two cycles 1 and 2 was 76.9% and 78.81%, the percentage of communication skills of self-assessment in two cycles 1 and 2 were 73.89% and 77.46%, and, the percentage of communication skills observed by observers during presentations in two cycles 1 and 2 are 69.14% and 79.78%

Keywords: cooperative script, lesson study, collaboration skills, communication skills

INTRODUCTION

There are many synergistic breakthroughs in empowering learning in the form of educational and learning innovations. Today in tertiary institutions, the idea of renewal emerges with the introduction of the concept of the Indonesian National Qualifications Framework (KKNI). UIN Walisongo Semarang is one of the universities that has implemented it. Being able to apply their area of specialization, use science and technology in their profession to solve problems, and be able to adapt to the scenario at hand are among the abilities that undergraduate graduates must possess (Premendikbud No. 73 of 2013). The statement implicitly also contains life skills education to face various challenges in the current global era.

Higher education is an educational institution that will produce graduates who are expected to be able to become a link between problems and alternative solutions in dealing with problems that arise in their environment. The issues facing education, particularly in terms of educating the workforce for the future, are becoming more complex. Future workplaces will generally be more uncertain, undergo more frequent and fast change, and require workers to be more adaptable. This fundamental change not only requires a workforce that has stronger basic skills, but also demands the ability to demonstrate more cognitive mastery, problem solving and collaborative work (Sukamto, 2001).

The results of observations in the Statistics class showed that not all students were active in groups, only a few students seemed active, while other students seemed to depend on their group members; less focus in lectures; poor time management; classically, only a few students are active; and low student reading interest. The problems that arise are assumed to occur because the existing learning activities have not optimally empowered the activities, abilities and skills of student collaboration and communication.

Greenstein (2012) states that communication involves meaning, instilling knowledge, skills, and trust in others, as well as receiving input from various sources. Throughout the teaching and learning process, communication skills might be explicitly taught or included. Collaboration is the process of helping, listening to, and encouraging others so that you can plan and work together, take into account other viewpoints, and participate in discussions. Dooly (2008) adds that in contrast

to cooperative, collaboration gives more responsibility to work together, build shared knowledge, and develop abilities and skills together. According on Permendikbud No. 65 of 2013 concerning process standards, it is said that multiple learning concepts are applied, including from students being told to students discovering and from the teacher as the only source of learning to learning based on several learning sources.

A learning strategy that can foster collaboration as well as interaction must be used in light of the aforementioned issues. On the basis of this, it is envisaged that it will boost student engagement in the learning process and total student participation. One of the alternatives proposed to improve the collaboration and communication skills of students majoring in Biology Education is by implementing Cooperative Script learning through Lesson Study (LS).

By using the cooperative script technique, students work in pairs and alternately verbally summarize different aspects of the content being studied (Suprijono, 2012). Cooperative scripts can enhance science learning activities, according to research done by Subekti et al. (2011). The research results of Mustajab, et al. (2012) showed that the cooperative script learning method could increase student participation in class. The results of research conducted by Andriani (2013) show that the Cooperative Script learning model has an effect of 68.50% on the critical thinking skills.

Lesson Study (LS) is a form of applying the concept of learning community (learning community). LS is a way to improve learning, namely by collaborating with other teachers to design (plan), observe (do), and reflect (see) on learning Susilo (2009). In practice, groups of teachers design learning together and when it is implemented, one of the teachers is in charge of carrying out the learning, while the other teacher becomes an observer or observes students learning (Syamsuri and Ibrohim, 2011). The results of research conducted by Fitriyati (2012) show that the implementation of blended learning through lesson study-based PPL can increase the motivation and learning outcomes of biology students in class VII SMP Negeri 1 Malang. Lesson study is considered effective in changing teacher teaching practices such as using concrete learning materials to focus on problems to make them more meaningful, taking explicit learning contexts and teacher experiences, providing

support to teachers in peer relations, and so on. This study aims to determine the application of the cooperative script method through lesson study in improving student collaboration and communication skills.

METHOD

This style of research involves action research through LS employing a qualitative descriptive technique. It is divided into 4 cycles, with each cycle consisting of the 3 LS stages of plan, do, and see.

Plan stage

At this stage the researchers together with the learning community carry out planning including determining learning materials; discuss together the preparation of lesson plans (including apperception activities, learning scenarios, time allocation, learning tricks and tactics, the media used); discuss the types of evaluation; and develop a scoring rubric.

Do stage

The action's implementation step involves putting the design that was created during the planning stage into practice. The sequence of activities during the implementation of the action is in accordance with the cooperative script learning syntax. During implementation, observation was also carried out by observers by observing the activities of model lecturers and students.

See stage

At this stage the researchers together with the learning community carried out activities including reflection on model lecturers, delivery of observations by observers, and comments and discussions. Based on the results of reflection, the advantages contained in cycle I will be maintained. If there is a deficiency in cycle I, it will be corrected in cycle II and so on.

The presence of researchers in the field in LS research is very necessary because they act as planners, data collectors, data analyzers, and reporters of research results. In this study, researchers acted as lecturers who carried out learning activities. In addition, researchers are also assisted by observers who help observe and record the implementation of learning activities. This research was conducted in the Biology education study program at UIN Walisongo Semarang for 1.5 months,

starting September 1 2022-October 13 2022. The subjects of this study were students of Biology Education Statistics semester V class of 2020 class PB-5A and PB-5B. Data, data sources, data collection instruments can be seen in Table 1.

Table 1 Data, Data Sources, and Research Instruments

No.	Data	Data Sources	Instruments
1.	Implementation of cooperative script learning through LS	*Learning community* (*LS team*)	a. Monitoring sheet for the plan stage b. Do stage monitoring sheet c. See phase monitoring sheet d. Observation sheet of learning activities through LS
		Student	e. Questionnaire on the implementation of learning activities f. Student response questionnaire on cooperative script learning through LS
2.	Collaboration skills	Student	g. Collaboration skills questionnaire
3.	Communication skills	Student	h. Communication skills questionnaire

Data analysis in this study used a proportion descriptive analysis approach. The formula used is as follows.

$$\text{Implementation (\%)} = \frac{\sum \text{obsercable indicators}}{\sum \text{all indicators}} \text{ x } 100\%$$

$$\text{Average implementation (\%)} = \frac{\sum \text{implementation of each stage}}{\sum \text{ implementedstage}}$$

The values obtained from the calculation results are converted so that the percentage data assessment criteria are obtained as shown in Table 2 below.

Table 2 Level of Implementation

Implementation (%)	Level of Implementation
80-100	Very good
61-79	Good
40-60	Enough
21-39	Not enough
0-20	Poor

Source: adaptation from Riduwan (2009)

RESULTS

Data from collaboration skills research for self-assessment and collaboration based on observer observations, peer communication skills and self-assessment in pairs and communication skills during presentations (by observers), implementation of the LS stages, and implementation of cooperative script learning, respectively presented in Table 3 , Table 4, Table 5, and Table 6.

Table 3 Data of Collaboration Skills Self-Assessment (white) and Observer Observation Results (gray)

No.	Aspect	Percentage (%)		Percentage (%)	
		P1	P1	P1	P2
1.	Work productively	83.33	83.33	91.67	100
2.	Show respect	79.17	79.17	83.33	100
3.	Compromise	79.17	79.17	75	87.5
4.	Responsibility; group member contributions	83.33	83.33	75	87.5
	Total Percentage (%)	**81.25**	**88.54**	**81.25**	**93.75**
	Category	Very good	Very good	Very good	Very good

Table 4 Data on Peer Communication Skills and Self-Assessment in Pairs (white) and Observation Results of Observers During Presentations (gray)

No.	Aspect	Percentage (%)				Percentage (%)	
		P1		P1		P1	
		Peer	*Self*	*Peer*	*Self*	*P1*	*P2*
1.	Oral communication	84.29	84.29	84.29	84.29	72.22	81.94
2.	Message interpretation	72.86	72.86	72.86	72.86	66.67	80.56
3.	distinguish messages	72.14	72.14	72.14	72.14	68.06	80.56
4.	Use of communication strategies	79.29	79.29	79.29	79.29	77.78	83.33
5.	Clarity of communication to achieve goals	77.86	77.86	77.86	77.86	66.67	79.17
6.	Communication skills	80.71	80.71	80.71	80.71	75	83.33
7.	Using various means of communication	74.29	74.29	74.29	74.29	68.06	77.78
8.	Skills to convince others	70.71	70.71	70.71	70.71	65.28	75
9.	Attitude when receiving information					62.5	76.39
	Persentage	**76.9**	**73.89**	**78.81**	**77.46**	69.14	79.78
	Category	**Good**	**Good**	**Good**	**Good**	Good	Good

Table 5 Data on the Implementation of LS Stages

LS Stages	Percentage of completed cycles (%)			
	1	2	3	4
Plan	100	100	100	100
Do	100	100	100	100
See	100	100	100	100
Average	**100**	**100**	**100**	**100**
Category	**Very good**	**Very good**	**Very good**	**Very good**

Table 6 Data on the Implementation of Cooperative Script Learning

Cycle	Implementation Percentage (%)	Category
1	98.57	Very good
2	91.43	Very good
3	92.86	Very good
4	98.57	Very good
Average	**95.36**	**Very good**

DISCUSSION

Collaboration Skills of Biology Education students in Statistics (class of 2020 class PB-5A and PB-5B)

The results showed that the application of the cooperative script method through lesson study could improve the collaboration skills of Semester III Biology students, State University of Malang. This can be seen from the scores of collaboration skills which were assessed independently by students and observers during learning activities. The results of data analysis showed that the percentage score of students' classical collaboration skills in cycle 1 was 81.25% with very good criteria, while in cycle 2 it was 88.54% with very good criteria. Based on this, it can be seen that student collaboration skills increased by 7.29%.

Classically, the percentage of collaboration skills observed by observers in cycles 1 and 2 was 81.25% and 93.75% with very good criteria. Based on this, it can be seen that student collaboration skills increased by 12.5%. Assessment by students and observers in cycle 1 produced the same score, namely 81.25%, while in cycle 2 there was a difference where the assessment by students was 88.54% while the assessment by observers was 93.75%.

Greenstein (2012) stated that collaborative learning is based on the idea that a job will get better results when collaborated with others compared to done individually. Today many ideas emerge as a result of collaboration, and in fact most

of the problems can no longer be solved by individuals, but are the result of collaboration with other people. In a collaborative classroom, students prioritize learning activities, collaborate on meaningful tasks, work toward goals, and produce ideas and products.

The CS learning approach involves students working in pairs to verbally summarize various aspects of the content they are studying. This form of learning is useful for developing creative problem-solving abilities, critical thinking abilities, and a spirit of daring in expressing new ideas that the learner feels to be true. This instructional strategy instills greater faith in the students' capacity to think critically, find additional sources of information, and pick up knowledge from other students while also teaching them to trust the lecturer. Students are taught how to verbally communicate their thoughts and contrast them with those of their friends in order to teach them to appreciate both students with high and low talents and to accept the disparities that exist.

The CS learning method is able to facilitate students to play an active role in searching, reading and summarizing to find their own material concepts so that they can enrich and deepen their knowledge of the material being studied. That knowledge can last a long time or can be remembered when compared to knowledge learned in other ways. CS learning truly empowers students' potential to actualize the knowledge they have acquired and also their skills. Slavin (1994) added that CS is a learning method that can improve student memory. According to Hadi (2007) and Brousseau (2002), the CS learning technique inadvertently creates a learning contract about how to collaborate between professors and students and between students and students. The method of collaborating used is a mutual agreement so that students are expected to be able to learn as comfortably as possible and collaboration skills will increase. Jacobs (1996) calls CS a "MURDER Script" (Mood, Understand, Recall, Detect, Elaborate, Review). Mood is the stage of agreement that determines the rules for collaboration, such as delivering a signal if there is a mistake in expressing the primary ideas through a shoulder tap, vocal signals, or other means.

The research results of Natalina, et al. (2013) showed that the application of the cooperative script learning model could increase the activity and learning

outcomes of biology class. The results of Razak's research (2013) show that the use of collaborative learning strategies can help students interact and express opinions, make it easier to learn material, and create a longer and more flexible learning time.

In collaborative classes, the lecturer is not the sole authority holder, but more of a facilitator. The lecturer continues to control the class by creating a framework that students will follow. Formation of flexible groups based on topics, objectives, results to be achieved by taking into account the heterogeneity within the group. In groups, students act as facilitators, restorers, monitors, and recorders. The sequence of activities in the group begins with defining goals, rules, and efforts to achieve goals. Objectives can be determined by the lecturer based on existing standards or determined by students independently. Students share and develop knowledge, ideas and questions can be sorted and sequenced so that learning is more directed.

Technology can also be used by students to create and design collaborative learning. Computers can facilitate students to explore and exchange information. Students can use computers in conversations and discussions, produce original materials, or solve problems. Collaboration can also be combined with other 21st century skills, such as problem solving, digital literacy, and verbal, visual, and written skills. In addition, collaboration can also be carried out across classes and across materials (Greenstein, 2012). When CS learning takes place, students use laptops to compile comparison tables of sporogenesis. Besides that, presentation activities also utilize laptops to present material/charts of group work results. Jonassen (1996) suggests that collaborative learning can help students acquire more meaningful knowledge when compared to individual learning. By carrying out learning activities collaboratively, communication skills will be learned by students indirectly.

Communication Skills of Biology Education students in Statistics (class of 2020 class PB-5A and PB-5B)

The results showed that the application of the cooperative script method through lesson study in improving the communication skills of Semester III students of Biology, State University of Malang. This can be seen from the scores of communication skills that were assessed independently by students and observers during learning activities. The results of data analysis showed that the percentage

of students' peer-assessment classical communication skill scores in cycle 1 was 76.9% and in cycle II was 78.81%. These figures have good criteria. Based on this, it can be seen that student collaboration skills have increased by 1.91%.

Classically, the percentage of self-assessment communication skills in cycles 1 and 2 is 73.89% and 77.46%. These figures have good criteria. Based on this, it can be seen that student collaboration skills have increased by 3.57%. Classically, the percentage of communication skills observed by observers during presentations in cycles 1 and 2 was 69.14% and 79.78% with good criteria. Based on this, it can be seen that student collaboration skills increased by 10.64%.

Greenstein (2012) states that humans communicate in the most complex ways: written, oral, visual, and through several sensory modalities. Communication involves meaning, imparting knowledge, skills, and trust in others, as well as receiving input from various sources. Many 21st century abilities, including technology, cooperation, problem solving, analysis, and evaluation are necessary for effective communication. It is possible to expressly teach communication skills or include them into the teaching and learning of other topics. Reading, listening, observing, analysis and synthesis are core elements in education. ACGME (2005) states that communication skills can be learned by means of small group discussions. Jacobs (1996) states that CS learning is learning where there are stages to describe the results of a summary of the material to their partners so that it can be said that CS is appropriate for use in honing communication skills.

The findings of Ibrilusiyanti's (2013) study, which show that classes that use the Direct Instruction model are included in the category medium with an average activity of 51.28%, support the findings of this study by showing that student learning activities by applying the Cooperative Script Learning Model with practicum methods are included in the active category with an average activity of 64.02%. According to Suwardi's (2012) research, the experimental class's critical thinking abilities averaged a gain score of 46.59, compared to a gain score of 16.12 for the control group. As the control class's average gain score for learning outcomes is 10.71 and the experimental class's average gain score is 43.72, it can be concluded that cooperative scripting has a considerable impact on both learning outcomes and critical thinking abilities.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Based on the research that has been carried out, it can be concluded as follows. 1) The application of the cooperative script method through lesson study can improve student collaboration skills. The percentage of skills through self-assessment in cycles 1 and 2 is 81.25% and 88.54%, while the percentage of collaboration skills observed by observers in cycles 1 and 2 is 81.25% and 93.75%. 2) Students' communication skills can be enhanced through the use of the cooperative script approach in lesson study. The percentage of peer-assessment communication skills in cycles 1 and 2 was 76.9% and 78.81%, the percentage of communication skills self-assessment in cycles 1 and 2 were 73.89% and 77.46%, and , the percentage of communication skills observed by observers during presentations in cycles 1 and 2 is 69.14% and 79.78%

Recommendations

The following recommendations can be made based on the findings of research on the use of cooperative script learning. 1) For the UIN Walisongo Semarang Biology study program, it can be used as material for consideration for improvement in the learning process. 2) For lecturers, it can be used as an alternative in teaching and learning activities to improve collaboration skills and communication skills. 3) For students, they should still be able to collaborate and communicate with anyone and at any time, especially during learning activities. 4) For researchers can be used as knowledge and experience in teaching. 5) For future researchers, they should be able to develop instruments that can be used to monitor student collaboration and communication skills that are carried out outside the classroom, besides that they should conduct research with different materials.

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