

Implementation of the Post-Covid-19 Audiovisual-Based Jigsaw Method: An Innovation to Increase the Capacity of Junior High School Teachers in Maros Regency, Indonesia

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ABSTRACT: *The team of lecturers at the Cultural Sciences Faculty of Hasanuddin University, is obliged to disseminate ideas of knowledge and skills to the public in order to contribute to educating the life of the nation and state in Indonesia. One of the activities initiated by the team of lecturers was the implementation of the jigsaw method of writing audiovisual-based scientific papers for 20 junior high school teachers in Maros Regency, Indonesia. The goal to be achieved is that these teachers gain insight, understanding, experience, awareness, and skills in producing high-quality scientific paper that is ready for publication. The method used is an audiovisual-based jigsaw. It is a cooperative learning technique consisting of several members in a group who are responsible for mastering a part of the learning material and are able to teach that material to other members in their group. Based on the pretest and posttest results obtained by the participants it can be explained that all aspects of the assessment have increased, the total average score in the pretest was 72.12 or the good category increased to 82.81 or the very good category. This increase was due to the fact that it was easier for participants to understand the technicalities of writing scientific papers through audiovisual media and participants found it easy to explore ideas for writing scientific papers through collaborative work.*

KEYWORDS – jigsaw method, audio-visual, scientific paper, teachers

I. INTRODUCTION

The method of community service that is right on target and effective in realizing teachers who are smart, creative, and have noble character is the jigsaw method. Teachers in the jigsaw method work together in groups, discussing each other to deepen the teaching material so that it affects the teacher's achievement in writing scientific papers. According to Saguni [1], the jigsaw type can improve learning achievement because students work together in groups to explore a learning material. To disseminate new knowledge, a jigsaw method is needed, in which the teacher teaches the results of his research in the form of scientific work to other group members so that the whole group is able to understand all the material that was previously their respective responsibilities.

Teachers at Junior High School of SMP Negeri 13 Bontoa, Maros Regency, need of training in preparing scientific papers. In fact, teachers often take part in materials and training on the preparation of scientific papers. However, this training has not optimally helped teachers develop ideas or notions in the scientific work. They still feel confused about stringing sentences to produce cohesive and coherent paragraphs. It was also impressed that the teacher had not mastered well the application of the problem-based learning method with the jigsaw method and the technique of writing scientific papers so that it had an impact on the teacher's misunderstanding. They are not yet skilled at finding and collecting data. Likewise, how to process and analyze data has not been well described. The meaning of the information obtained is still lacking. Including

research reports that have not been presented systematically and have not fully implemented the structure and writing rules so that the work has not yet reached high quality and has not been guaranteed to be published. The success of the jigsaw method starts from valid research results because it will be formulated for other teachers to equalize perceptions of the findings at the research location.

The solution to the teachers' problem is to apply the audio-visual-based jigsaw method in compiling scientific work for teachers at Junior High School of SMP Negeri 13 Bontoa, Maros Regency. The training was given for two days using the methods of lecture, discussion, and role play. The application of the audiovisual-based jigsaw method is carried out by first showing a video of the results of research that has been carried out by the team received in the previous year. The end result of this training is of course that these teachers are expected to be able to compile quality scientific writing in the form of reports, modules, or scientific articles that can be published in national journals.

The target of this activity is that teachers at Junior High School of SMP Negeri 13 Bontoa, Maros Regency in Indonesia are motivated to improve themselves to have the ability or skills in compiling quality scientific work and being able to apply it to their students. The final goal to be achieved is the creation of scientific works which will later become modules or scientific articles to be adapted by teachers and stakeholders as innovations in the field of education.

II. RESEARCH METHOD

The community service team of Cultural Sciences Faculty of Hasanuddin University applied and combined the jigsaw and audiovisual (J-AV) method in training for making scientific papers for teachers at Junior High School of SMP Negeri 13 Bontoa, Maros Regency. According to Anderson [2], audio-visual media is a series of electronic images accompanied by audio-sound elements that also have image elements that are poured via video tape. The purpose of the J-AV method is implementing audiovisual media is relatively more efficient and can help teachers obtain ideas, process information, and express ideas well, then analyze and evaluate them. Then, teachers are helped to reflect on their thoughts and thought processes in a more interesting way by presenting original systematic reports. In this case, every activity of teachers in the field can be well documented, especially matters related to searching and collecting data so that all data can be described completely. Likewise, the dissemination of information will be easy to understand. Audio-visual assistance will seem more communicative because the output can be seen visually and also heard audiotively making it easier for teachers to process and analyze data and give meaning systematically to the information obtained. Finally, the results can be written in the form of a high-quality, highly accurate and accountable scientific report. Based on the above problems, the community service team needs to take concrete steps to assist teachers in the form of training in the application of the audio-visual-based jigsaw method in compiling the scientific work of teachers at Junior High School of SMP Negeri 13 Bontoa, Maros Regency.

The implementation of this service begins with choosing and determining 20 teachers to take part in this training. Then, provide materials or reading materials/books to them regarding the correct technique of writing scientific papers using the lecture method. Next, there will be an in-depth discussion and question-answer in groups regarding the material that has been provided by four facilitators. This discussion activity lasted one day. Each teacher as a discussion participant is required to make a discussion report in their respective groups. On the second day, the audio-visual-based jigsaw method was implemented using the role play method. This method was proposed by Joice and Weil [3] as a learning strategy that emphasizes relaxed and enjoyable conditions for students to avoid boredom and tension.

Etymologically according to Gulo [4] jigsaw comes from English, namely "jigsaw" and there are also those who call it the term puzzle, which is a puzzle that composes pieces of cooperative learning pictures. Cooperative learning is a learning strategy, namely students learn in small groups with heterogeneous levels of cognitive ability. Jigsaw was first developed and piloted by Elliot Aronson and his friends at the University of Texas. Later, the jigsaw was adapted by Slavin and his friends at Johns Hopkins University into a learning model known as the jigsaw type.

In applying the jigsaw type, the service team pays attention to the schemata or background of the teacher's experience and helps the teacher activate the schemata so that lessons become more meaningful. In addition, teachers work together with fellow teachers in a mutual cooperation atmosphere which has many opportunities to process information and improve communication skills. According to Arends [5], jigsaw type cooperative learning is a cooperative learning technique consisting of several members in a group who are responsible for mastering part of the learning material and are able to teach the material to other members in the group.

In the cooperative learning model of jigsaw type, there are original groups and expert groups. Original group, namely the main teacher group is consisting of teachers with diverse abilities, origins, and knowledge backgrounds. The original group is a combination of several experts. Expert group, which is a group of teachers consisting of members from different original groups who are assigned to study and explore certain topics also complete tasks related to the topic, then explained to members of the original group. The steps for implementing the jigsaw type in this training refer to Sugiyono's construction [6] as follows:

1. The facilitator divides a class into several groups. Each group consists of 4-6 people with different abilities. This group is called the original group. The number of members in the original group adjusts to the number of learning material sections that the teacher will study in accordance with the service objectives to be achieved. In this type of jigsaw, each teacher is given the task of studying one part of the learning material. All teachers with the same material study together in groups called expert groups (counterpart groups/CG). In expert groups, the teacher discusses the same parts of learning material as well as plans for how to convey it to his friends when he returns to the original group which is known as the jigsaw group (saw-tooth).
2. After the teacher has discussed in the expert group and the original group, then a presentation is made for each group or a draw is carried out for one of the groups to present the results of the group discussion that has been carried out so that the teacher can equate perceptions of the learning material that has been discussed.
3. The facilitator rewards the group through an award score based on the improvement in each other's work.

III. RESULT AND DISCUSSION

This section begins with a description of the implementation of community service activities among junior high school teachers in Maros Regency. Then the results of these activities are comparisons between the pre and post-tests and discussions in the form of explanations related to these achievements.

3.1 Implementation of Community Service Workshops

The community service team from the Faculty of Cultural Sciences, Hasanuddin University carried out activities in Maros Regency, Indonesia on Tuesday-Wednesday, 28-29 February 2023. This team consisted of a number of lecturers, namely Asriani Abbas, Abbas, Ikhwan M. Said, Haryeni, Indarwati, and Basri . On the first day, the team conducted a workshop with presentation materials namely the Audiovisual-Based Jigsaw Method: An innovation to increase the capacity of writing scientific papers, rules of language for writing scientific papers, conversion of scientific writing into popular scientific (opinion articles), and implementation/simulation of the audiovisual-based jigsaw method. Participants in the workshop on implementing the jigsaw method of writing audiovisual-based scientific papers were 20 teachers of Junior High School of SMP Negeri 13 Bontoa, Maros Regency as listed in table 1.

Tabel 1. Teachers participating in the Community Service Workshop

No.	Name	Occupation	Sex
1.	Irwan	Teacher	Male
2.	Muh. Anwar	Teacher	Male
3.	Safri	Teacher	Male

4.	Hamka	Teacher	Male
5.	Samauli	Teacher	Male
6.	Tadjuddin Kacang	Teacher	Male
7.	Haeruddin	Teacher	Male
8.	Irmayana	Teacher	Female
9.	Rahmawati	Teacher	Female
10.	Sarina Mansyur	Teacher	Female
11.	Asia	Teacher	Female
12.	Nurlinda	Teacher	Female
13.	Haijah	Teacher	Female
14.	Nur Afifa	Teacher	Female
15.	Nasrah	Teacher	Female
16.	Agustina	Teacher	Female
17.	Radiah	Teacher	Female
18.	Rosma	Teacher	Female
19.	Hasriani	Teacher	Female
20.	Chairani	Teacher	Female



Picture 1. The community service team of the Cultural Sciences Faculty of Hasanuddin University presents audiovisual-based jigsaw learning materials in front of junior high school teachers

Participants in community service activities are divided into 4 groups and the title of the papers, namely each group consists of 5 teachers as listed in table 2.

Table 2. Working Groups of Teachers and Titles of Scientific Papers

	No.	Name	Titles of Scientific Papers
Group 1.	1.	Irwan	<i>Strategi pembelajaran mandiri melalui media audiovisual berbasis materi ajar muatan lokal</i> (Independent learning strategies through audiovisual media based on local content teaching materials)
	2.	Haeruddin	
	3.	Irmayana	
	4.	Rahmawati	
	5.	Sarina Mansyur	
Group 2.	1.	Muh. Anwar	<i>Pengintegrasian Kurikulum Merdeka Belajar kedalam nilai-nilai budaya lokal</i> (Integrating the Free Learning Curriculum into local cultural values)
	2.	Hamka	
	3.	Asia	
	4.	Nurlinda	
	5.	Haijah	
Group 3.	1.	Safri	<i>Pemberdayaan potensi sumber daya alam lokal guna menghasilkan energi ramah lingkungan</i> (Empowering the potential of local natural resources to produce environmentally friendly energy)
	2.	Samauli	
	3.	Nur Afifa	
	4.	Nasrah	
	5.	Agustina	
Group 4.	1.	Tadjuddin Kacang	<i>Mengajar kearifan lokal melalui Sastra dan Seni</i> (Teaching local wisdom through Literature and Arts)
	2.	Radiah	
	3.	Rosma	
	4.	Hasriani	
	5.	Chairani	

3.2 Achievement of Activity Results

Before entering the workshop for writing papers based on predetermined titles, the Community Service Team of Cultural Sciences Faculty, Hasanuddin University conducted a pre-test. This test is needed to measure the initial capacity of teachers in making scientific work before being given the jigsaw method of writing audiovisual-based scientific papers. The assessment as stated by Widodo and Pratomo [7] is divided into four parts, namely format, writing, data presentation, and data analysis. The assessment parameters are 86-100 (Excellent), 80-85 (Very Good), 70-79 (Good), 60-69 (Fairly), 50-59 (Poor), and 00-59 (Very Poor). Based on the pre-test, the results are as listed in table 3.

Table 3. Results of the Pre Test Working Group of Teachers in Compiling Scientific Papers

	Titles of Scientific Papers	Assessment Aspects	Achievement Score
Group 1.	<i>Strategi pembelajaran mandiri melalui media audiovisual berbasis materi ajar muatan lokal</i> (Independent learning strategies through audiovisual media based on local content teaching materials)	Format	75
		Writing	72
		Data Presentation	72
		Data Analysis	72
		Average Score	72.75
Group 2.	<i>Pengintegrasian Kurikulum Merdeka Belajar kedalam nilai-nilai budaya lokal</i> (Integrating the Free Learning Curriculum into local cultural values)	Format	74
		Writing	72
		Data Presentation	70
		Data Analysis	72
		Average Score	72.00
Group 3.	<i>Pemberdayaan potensi sumber daya alam lokal guna menghasilkan energi ramah lingkungan</i> (Empowering the potential of local natural resources to produce environmentally friendly energy)	Format	73
		Writing	72
		Data Presentation	71
		Data Analysis	72
		Average Score	72.00

Group 4.	<i>Mengajar kearifan lokal melalui Sastra dan Seni</i> (Teaching local wisdom through Literature and Arts)	Format	74
		Writing	71
		Data Presentation	70
		Data Analysis	72
		Average Score	71.75
Total Average Score		72.12	



Picture 2. The teachers carried out an audiovisual-based jigsaw learning simulation to test the effectiveness of this method in writing scientific papers

After obtaining a demonstration of the application of the jigsaw method of writing audiovisual-based scientific papers, the results of the quality of the teachers' scientific work increased from the good category to very good. This achievement is measured from the results of the post-test as listed in table 4.

Tabel 4. Results of the Post Test Working Group of Teachers in Compiling Scientific Papers

	Titles of Scientific Papers	Assessment Aspects	Achievement Score
Group 1.	<i>Strategi pembelajaran mandiri melalui media audiovisual berbasis materi ajar muatan lokal</i> (Independent learning strategies through audiovisual media based on local content teaching materials)	Format	85
		Writing	84
		Data Presentation	82
		Data Analysis	82
		Average Score	83,25
Group 2.	<i>Pengintegrasian Kurikulum Merdeka Belajar kedalam nilai-nilai budaya lokal</i> (Integrating the Free Learning Curriculum into local cultural values)	Format	84
		Writing	84
		Data Presentation	81
		Data Analysis	82
		Average Score	82.75
Group 3.	<i>Pemberdayaan potensi sumber daya alam lokal guna menghasilkan energi ramah lingkungan</i> (Empowering the potential of local natural resources to produce environmentally friendly energy)	Format	83
		Writing	83
		Data Presentation	82
		Data Analysis	82
		Average Score	82.50
Group 4.	<i>Mengajar kearifan lokal melalui Sastra dan Seni</i> (Teaching local wisdom through Literature and Arts)	Format	84
		Writing	83
		Data Presentation	82
		Data Analysis	82
		Average Score	82.75
Total Average Score		82.81	

Based on the comparison between the results of the pretest and posttest, it can be seen that all aspects of the assessment have increased, the total average score in the pretest was 72.12 or the good category increased to 82.81 or the very good category. This increase in achievement was due to several factors, namely audiovisual media making it easier for participants to understand the technicalities of writing scientific papers, collaborative work among group members made it easier for them to find writing ideas, the work atmosphere was more comfortable and relaxed so that the exchange of ideas took place in harmony, work effectiveness and efficiency were relatively focus more on completing scientific paper writing. This increase in achievement also indicates that the community service activities carried out by the team of lecturers from the Cultural Sciences Faculty of Hasanuddin University can achieve the desired goals and targets.

IV. CONCLUSION

The audiovisual-based jigsaw method is an activity carried out by a team of lecturers from the Cultural Sciences Faculty of Hasanuddin University to increase the capacity of junior high school teachers in producing quality scientific work. This activity is a community service program carried out at 20 teachers of Junior High School of UPTD SMPN 13, Maros Regency, Indonesia. The audiovisual-based jigsaw method or J-AV is a cooperative learning technique consisting of several members in one group using audiovisual media. The methods used are lecture, discussion, and role play methods. The application of the J-AV method can be implemented well because audiovisual media is relatively more efficient and can be listened to repeatedly so that it can help teachers find issues of writing scientific papers, process information, and express ideas comprehensively, then analyze and evaluate them. Based on the pretest and posttest results obtained by the participants it can be explained that all aspects of the assessment have increased, the total average score in the pretest was 72.12 or the good category increased to 82.81 or the very good category. This increase was due to the fact that it was easier for participants to understand the technicalities of writing scientific papers through audiovisual media and for participants to easily find ideas for writing scientific papers through collaborative work.

REFERENCES

- [1] Saguni, F. *The Effectiveness of the Problem-Based Learning, the Jigsaw Type Cooperative Learning, and Lecturing Methods As Problem Solving*. (Jakarta: Cakrawala Pendidikan, 2013).
- [2] Anderson, Benedict. *Imagined Communities: Reflection on the Origin and Spread of Nationalism*. (London, New York: Courier Companies, 1991).
- [3] Joice, Bruce and Weil. *Models Of Teaching*. (United States Of America: A Pearson Education Company, 2000).
- [4] Gulo, W. *Strategi Belajar-Mengajar*. (Jakarta: Grasindo, 2008).
- [5] Arends, R.I. *Classroom Instruction and Management*. (New York: Mc Graw-Hill, 1997).
- [6] Sugiyono. *Metode Penelitian Kualitatif, Kuantitatif dan R& D*. (Bandung: Rosda Karya, 2015).
- [7] Widodo, Agus dan Pratomo Andi. *Penuisan Karya Tulis Ilmiah*. (Jakarta: Nizamia Learning Center, 2018).