

# Implementation Collaboration of Learning Model Jigsaw and Fan-N-Pick to Improve Student Motivation and Learning Outcome

## (Study on the Students of Class XI TAV SMK Negeri 1 Jetis Mojokerto on the Lessons of Workshop and Entrepreneurship)

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### Abstract

This study aims to examine the use of collaboration jigsaw and fun-n-pick model as an effort to improve student motivation and learning outcomes on the subjects of Workshop and entrepreneurship, students of class XI Audio Video Technique SMK Negeri 1 Jetis Mojokerto. The method of research is classroom action research (CAR) which is carried out in 2 cycles with each cycle of 4 meetings. Implementation of the model has carried out alternately at each meeting. The results showed that the implementation of collaboration jigsaw and fun-n-pick model can improve student's learning motivation from 78; 86% in cycle 1 increased 7.01% to 85, 87% in cycle 2 and in the very high category. The application of collaborative jigsaw and fun-n-pick models also improves student learning outcomes. This is indicated by the increase in the average score of students 7.32 from 77.33 in the first cycle to 84.65 in cycle 2. Classical learning completeness also increased 10% from 83.33% in cycle 1 to 93.33% on cycle 2. Motivation and Student learning outcomes have met the criteria of success of the action.

**Keywords:** *jigsaw, fun-n-pick, learning motivation, and student learning outcomes, Classroom Action Research*

The learning process is a very complex concept related how to make a learning activity that happens to be more effective, efficient and also create a conducive learning atmosphere in the sense of fun. This process involves various elements in a learning environment such as teachers, students, media, and other elements that support the interaction of learning.

Learning model has important roles in teaching and learning activities. The ability in receiving lessons by students can be influenced by the selection of appropriate learning models so that the learning objectives will be achieved. There are various models of learning that can be used as an alternative for teachers to make learning activities in the classroom more effective and optimal. One of them is by using cooperative learning model.

As the teacher at SMK Negeri 1 Jetis, the researcher observes many teachers who are still teaching conventionally both in terms of learning models, learning resources, and also the media of learning. Especially for the subjects of Workshops and Entrepreneurship, the researcher observed from July to August 2017 and communicated with Mrs Srigati as a teacher subjects of Workshops and entrepreneurship, it less of students motivation, the ability of students to think creatively is low, liveliness students in the classroom are also low, students tend to be bored and indifferent in following the subjects of workshop and entrepreneurship. It was also reinforced by the results of the interviews of students class XI TAV (Audio Video Technique), which mostly stated that the less learning process motivates students to follow the learning process.

Because of that, the researcher tries to implement cooperative learning which prioritizes cooperation among students to achieve the learning objectives. Cooperative learning has an enormous advantage in providing opportunities for students to further develop their abilities. This is because, in cooperative learning activities, students are required to be active in learning through cooperation activities in groups. In this case, the researcher tried to use cooperative learning model Jigsaw and Fan-n-Pick.

According to Baharuddin and Wahyuni (2015), Cooperative learning is a strategy used for the learning process, where students will more easily determine comprehensively the difficult concepts if they discuss with other students about the problems faced. In cooperative learning strategy, students learn in pairs or groups to help each other solve the problems faced.

Chotimah & Dwtasari (2007) suggests that the procedure of the jigsaw learning model are: 1) The teacher divides the students into groups (each group consists of 4 persons), 2) Each student in the group is given different material parts (group of origin), 3) students in the group reading assigned materials, 4) Different group members who have studied the same section / sub-section meet in new groups (expert groups) to discuss their sub-chapters, 5) After completion of the discussion in the expert group, each student go back to the original group and take turns teaching the group's friends about the sub-chapter and all the other members listen carefully, then make a summary, 6) Each group of experts presents the results of the discussion, 7) Teachers and students make conclusion, 8) Teachers give evaluation.

According to Kagan (1994) cooperative learning fun-n-pick is a successful teaching strategy where small teams, every group consist of students from different levels and ability, use different learning activities to enhance their understanding of a subject. Each team member should be responsible and not only to learn what is taught but also help their friends, thus creating an atmosphere of accomplishment together. The steps of the fun-n-pick model are: 1) Student number 1 holds the question cards and says, "grab a card, any card!", 2) Student number 2 takes a card, reads questions aloud, and gives the thinking time for 5 seconds, 3) Student number 3 answers the question, 4) The student number 4 responds to the answer, 5) The students switch roles, one person walks clockwise for each round.

According to Hamalik (2016) explains that the value of motivation in teaching is the responsibility of the teacher so that the material that given becomes successful. There are many ways teachers can generate student motivation, but the most important things that are motivations that arise from within the students themselves, such as the need for encouragement, awareness of purpose, and also the teacher personality as an example that can stimulate student's motivation.

Uno (2016) states the visible learning outcomes of students acquired abilities. Learning is done to seek behavioural change in the learning individual. Behaviour change is the result of learning.

These research aims are 1) to know the implementation of collaboration jigsaw and fun-n-pick model, 2) to know the improvement of student's learning motivation, 3) to know the improvement of student learning result, 4) to know the supporting factor and the implementation of the collaboration of jigsaw and fun- n-pick in class XI TAV (Audio Video Technique) SMK Negeri 1 Jetis Mojokerto on the subject of workshop and entrepreneurship.

## **METHOD**

This research is a qualitative research where the type is Classroom Action Research. According to Arikunto (2017) classroom action research is a study that explains the causal occurrence of treatment, as well as describes the entire process from the beginning of treatment to the effects of the treatment. Thus, it can be said that classroom action research or CAR is a kind of research that describes both process and outcomes, which conduct CAR in its classroom to improve the quality of its learning.

As a research instrument, researchers have an obligation to plan actions, carry out actions, collect data, analyze and process data, conclude and report on research results. Researchers are assisted by 3 (three) observers in which 2 (two) persons are subject teachers of workshop and entrepreneurship and 1 (one) peer researcher. While for the research subjects are students of class XI TAV (Audio Video Technique) SMK Negeri 1 Jetis Mojokerto 2017/2018 lesson year as many as 30 students.

This research describes the application of collaborative learning models jigsaw and fun-n-pick on the subjects of workshop and entrepreneurship. Types of data used consisted of 1) Result of questionnaire used to measure teacher accuracy in applying model and increase student's learning motivation, 2) Observation result used to know model execution, 3) Interview result used to know the supporting factor and inhibiting application of model, 4) The field note sheet is used as a supplementary data of observation and interview activities, 5) A formative test is used to find out student learning outcomes and classical completeness.

Stages of classroom action research are carried out in 2 cycles, for each cycle performed for 4 (four) meetings with a duration of 2 X 45 minutes. Application of learning model is done alternately at each meeting. Stages of 1 cycle include 1) the planning stage is to define the design of learning. The first stage of the process is observation, discussion and interviews with teachers and students, preparing lesson plans, preparing tools and materials for learning models, preparing research instruments consisting of pre-test and post-test questions, observation sheets, motivation questionnaires and field notes. 2) Implementation stage consists of an explanation of learning materials, learning objectives, the syntax of learning model, forming groups of each 4 (four) students each group on a heterogeneous basis, initial ability tests, implementation of learning models, post-test. 3) Observation stage (observation) during the model implementation process takes place 4) Reflection stage. The researcher use the results of action cycle 1 as a consideration for the action on cycle 2, in the hope that the results of action cycle 2 can achieve the success criteria of action.

## **RESULTS AND DISCUSSION**

### **1. The achievement of Implementation Learning Model**

According to Kagan (1994) cooperative learning is a successful teaching strategy where small teams comprise students with different levels of ability, using different learning activities to improve their understanding of a subject. The advantages of this model lie in teambuilding, social skills, knowledge building, and thinking skills.

The implementation of the jigsaw and fun-n-pick models in this research is presented in the following data:

**Table 1 the Achievement of Learning Model**

Implementation of Model		% Cycle 1	% Cycle 2	% Increased
Teachers	Jigsaw	75,93	88,89	12,96
	Fun-n-pick	85,19	94,44	9,25
	Average	80,56	91,67	11,11
Students	Jigsaw	78,00	90,67	12,67
	Fun-n-pick	78,67	93,33	14,66
	Average	78,34	92,00	13,67

Based on the above table it can be concluded the average implementation of the model by teachers in the first cycle of 80.56% increased 11.11% to 91.67% in cycle 2, while the average model implementation by students in cycle 1 of 78.34 % increased 13.67% to 92.00% in cycle 2. It means that the learning model has met the success criteria of action because it is in very good category.

The results of this research support previous research that also apply the collaborative model of cooperative learning, which is done by 1) Ariyanti (2015) stated that the teacher must make careful preparation to carry out the learning, so it looks the result of research implementation model reach 84.77% that is a good category. 2) Mustifah (2015) states that this learning model is feasible to use, this model requires good classroom management because the involvement of all students is active. Teachers should explain the learning steps so that all students can perform their role well. The result of this research shows that the implementation model by teacher reaches 90,50% and student equal to 85,80% with the very good category. 3) Bali (2015) states that learning models can be combined or collaborated with other cooperative models, teachers must explain in detail for the syntax of learning models attempted to use illustrations in front of the classroom. With this result, the research shows the model implementation at the end of the action reaches 94.00% for teachers and 85% for students. 4) Frianto (2016) the result of data implementation model reaches 85.15% in the very good category. It is because students can play their respective roles according to the syntax of the model as explained by the teacher.

### 1. Improvement Student Learning Motivation

The implementation of the collaborative jigsaw and fun-n-pick learning model can improve students' learning motivation, as presented in the following table:

**Table 2 Scores of Student Learning Motivation**

No	Motivation Indicators	Average of Learning Motivation					
		Pre-implementation		Cycle 1		Cycle 2	
		Score	Category	Score	Category	Score	Category
1	Intrinsic Motivation	63,00	fair	78,33	High	86,17	Very High
2	Extrinsic Motivation	67,50	fair	80,83	High	87,67	Very High
3	Assessment of Assignment	65,56	fair	78,89	High	85,11	Very High
4	Learning Control	65,17	fair	76,67	High	85,50	Very High
5	Self Confidence	66,00	fair	78,44	High	85,44	Very High
6	Anxiety Test	64,67	fair	80,00	High	85,33	Very High
	Average	65,32	fair	78,86	High	85,87	Very High

Based on the above data, it showed that the results of this research indicate that student learning motivation increased after implementation Jigsaw and Fan-n-Pick models. the motivation of student learning before the action of 65, 32% enough category, increased to 78, 86% high category in cycle 1 and increased by 7.01% to 85, 87% in cycle 2 with the category of student's learning motivation is very high, so it can be concluded that the criteria of implementation have met the success criteria of implementation to improve students' learning motivation. This is in line with Hamalik (2016) the value of motivation in teaching is the responsibility of the teacher for the learning given successfully.

The results of this research support the previous research conducted by 1) Maariwuth (2014) who found that the students' learning motivation was increased so that it can be used as a learning model to enable students indicated by the indicator of success orientation, failure anticipation, innovative and responsibility. 2) Ariyanti (2015) obtained research result that student motivation at end of cycle reaches 82, 44% after implementation of the learning model. 3) Mustifah (2015) clarified that the implementation of this model increase student's motivation reaching average 81, 54% was in the very high category. This motivation arose because the learning model involves the involvement of all students. 4) Frianto (2016) revealed that students' learning motivation after the implementation of learning model reaches 81.10% was in the category of very high motivation.

### 2. Improvement Student Learning Outcomes

In a learning process, assessment of learning outcomes is very important because it is a reference for process development. Without an assessment, the process cannot be measured meaningfulness. According to Sudjana and Ibrahim (2009) learning outcomes should show changes in circumstances for the better, so it can be

concluded that the learning outcome is a change of students in terms of attitude, knowledge, and skills. In relation to this research, learning outcomes were measured from the acquisition of values taken from the post-test in the form of multiple-choice questions. Student learning outcomes are listed in the following table:

**Table 3 Students' Learning Outcomes (25 students)**

No	Learning Outcomes	Cycle I	Cycle II
		score	score
1	Pre Test	55,00	60.1
2	Post test	73.33	84,67

Based on the above data, it shows that students' learning outcomes in cycle I obtained an average score of 77.33 with 25 students passed, 83.33% classical completeness means that it has not met the success criteria of implementation, and cycle 2 average score becomes 84.67 with 28 students passed so that the classical completeness become 93.33% and has met the criteria of success in implementation.

These results support research conducted by 1) Natalia (2012) research results show that there is an increase in the average value of student achievement. It is known that the average student test score in cycle I is 32.63. In cycle II the average score of students increased to 70.83. While on the second cycle average student test score is 75.69 increased to 90.29. Improvement of student achievement can be seen from the increase of post-test result of the cycle I and post-test result of cycle II increased by 19, 46%. Accordingly, the average increase of learning outcome value from the cognitive aspect of cycle 1 (81,71%) to cycle II (91,85%) where all students have reached learning mastery. 2) Maariwuth (2014) research results show that: the application of cooperative learning model FNPMV modification can improve student cognitive and affective learning outcomes in which the percentage of classical completeness always increased from cycle I to cycle II. 3) Ariyanti (2015) obtained research results that the application of cooperative learning type of Mix Pair Share with Fan-N-Pick can improve student learning outcomes. It can be seen from the average daily test score before the action of 72.63, the average score of the final learning outcome of the first cycle has increased to 76.32 and the average score of the learning outcomes cycle II also increased to 83, 42. The value of classical completeness before the action of 57.89%, at the end of the first cycle, increased to 68.42% and the end of the second cycle increased to 89.47%. 4) Bali (2015) obtained research results that IPS learning results also increased. The final test results show the classical completeness reach 69% in the first cycle increased to 95% in cycle II, the acquisition increased by 26% are categorized very good criteria and learning is stated successful. 5) Riadi (2016). Based on the research result of applying cooperative learning model of Fan-N-Pick and Quick on the Draw in class IV at SDN Karangobar Banjarnegara can be concluded that students' learning mastery is 26.32% increase of 68.42% in cycle I to 86.84% in cycle II. 6) Puspitasari (2016) obtained research results that IPS learning through cooperative learning model Fan N Pick using audiovisual media can improve student learning outcomes. The learning outcomes in the first cycle of classical completeness reached 63% with good enough criteria and in the second cycle reached 87.5% with very good criteria with a percentage increase of about 24.5%. 7) Frianto (2016) Based on the results of research implementation of learning model Team Game Tournament and Fan-N-Pick in class VIII SMPN 25 Tanjung Jabung East, Jambi can be concluded that the students' learning mastery before the model implementation only 14 students from 24 students or 58.33%. After the implementation of the cycle, I model, students' learning completeness is 17 students or 70.83% and up to 87.50% or 21 students in cycle II. 8) Sopalang (2017) the results showed that the percentage of achievement of the minimum completeness criteria of learning outcomes has increased, i.e. from 15% in the pre-action stage increased to 38.10% in cycle I and increased again to 85.71% in cycle II. Improved achievement and quality of learning is due to students already involved in cooperative learning process Jigsaw assisted mind mapping and can be said this learning model can improve student activity and learning outcomes.

### 3. Supporting Factors and Problem Faced in Implementation of Collaboration Model

During the implementation learning model jigsaw and fun-n-pick, there are several supporting factors:

1. This learning model has never been implemented by the students, thus causing interest and motivation of students.
2. Each student has a handbook of K-13 subjects of workshop and entrepreneurship so that students can learn the material before the implementation of the process of learning.
3. The number of students in the class, not more than 30 students so it is easy to control the implementation of the learning model.
4. Heterogeneous classes both in terms of gender and ability, so groupdetermination is easier and can be randomized.

This supporting factor in line with Kagan's (1994) explanation that cooperative learning is a successful teaching, where a small team of students with different levels of ability jointly use learning activities to improve understanding of the subject. This will establish positive interdependence, recognition in response to individual differences, relaxed and fun class atmosphere, warm and friendly relationships, and every student has the opportunity to express himself.

The problems factors or constraints that faced by researchers when the implementation of the action is as follows:

1. It takes more time, mind, energy and cost to implement this learning model.
2. In the beginning implementation of learning model, although there is interest because students have never implemented this model, the initial obstacle is the confusion of students in the application of the model. It can see that students are not yet aware of their respective roles, and require more time for the first implementation of the model.
3. The division of groups that should be divided into 8 groups with each group consists of 4 students because there are 2 students who resign so that the number of rombel stay 30 students, this makes the group 8 only 2 students so that the observer involved in the implementation of the model.
4. Not all students learn the material to be used in the implementation of the model, this makes implementation inhibited.
5. Not all students have the ability to discuss and work in groups, so there are still some children who tend to dominate the group.
6. Preliminary activities in the learning process takelonger because they have to organize space and prepare other devices such as card questions.

Inhibiting factors occur primarily at the beginning of the model implementation, as time goes by, the learning process progresses better and all success criteria for implementation have been achieved.

## CONCLUSION

Based on the results of classroom action research conducted by Collaboration Implementation of Jigsaw and Fan-n-Pick Learning Model on XI TAV (Audio Video Technique) students of SMK Negeri 1 Jetis Mojokerto on the subject of Workshop and Entrepreneurship, the result can be concluded that:

1. At the end of the Implementation of the collaborative learning model of jigsaw and fun-n-pick shows an improvement and it is in the very good category.
2. The implementation of the collaboration of jigsaw and fun-n-pick models can improve students' learning motivation. This is indicated by the increase in student learning motivation in cycle 1 is in the high category becomes a very high category in cycle 2.
3. The implementation of the collaborative jigsaw and fun-n-pick models can improve student learning outcomes. This is indicated by the increase in the average value of students and the completeness of classical learning at the end of implementation.
4. In every implementation of learning model, there must be supporting and inhibiting factors. If a teacher is able to maximize the support factor, then the inhibiting factor can be minimized. With good model planning, correct classroom management skills, mastery of learning materials, and communication skills of a teacher, and the willingness to improve the learning process of collaborative implementation of the jigsaw and fun-n-pick models can be well implemented and can improve student motivation and learning outcomes.

## RECOMMENDATION

Based on the research that has been implemented, there are some things that can be used as advice, that is;

1. For teachers, the implementation of collaborative learning model of jigsaw and fun-n-pick can be done with good preparation. It is important to prepare the necessary equipment and explain the model steps to the students, preferably the students are invited to first model simulations.
2. Based on the results of current and previous research, the implementation of the collaborative jigsaw and fun-n-pick models can improve students' learning motivation, so it is advisable for teachers to apply this model or other cooperative models.
3. The implementation of cooperative learning model especially jigsaw and fun-n-pick can improve student learning outcomes, so it is expected that teachers apply in schools to improve the quality of student learning outcomes.
4. Each learning model has advantages and disadvantages, the ability of teachers in managing the class, using the appropriate model according to the material and learning objectives is needed. The jigsaw and fun-n-pick models require more thought, effort, and cost, but seeing improvements in student motivation and learning outcomes this model deserves to be applied by teachers with good planning and preparation.
5. For the next researcher, it is advisable to conduct research on the collaboration of jigsaw and fun-n-pick learning models in the subject that same training or another training subject that fit the characteristics of the learning model in different places to develop innovative and creative learning models in the process of learning.

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