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Application of Cooperative Learning Models of Type Jigsaw to Improve Student Learning Result in Smk Patang Makkunessa1), Nurlinda2), Lahming3) 1,3)Lecturer of Makassar State University 2) Graduate of Engineering Faculty\_ Makassar State University Makassar, Indonesia 1)drpatangunm@gmail.com 2)Nurlindasalahuddin@gmail.com  
Abstract — This study is a classroom action research which aim to know the improvement of learning outcomes on the subject of agribusiness of vegetable crops using a jigsaw type cooperative learning model students class XI agribusiness food crops and horticulture SMK State 4 Gowa.

The subjects of this study were students of class XI ATPH 3 SMK State 4 Gowa lesson year 2017/2018 with a total of 21 students which is implemented in two cycles and each cycle is held in 4 meetings. Data collection techniques used is through the initial test and the test at the end of the cycle. The results of this study indicate that the application of jigsaw type cooperative learning model can improve the learning outcomes agribusiness vegetables.

Plearners in the first cycle with the average value that is 69,85%, whereas for classical completeness reach 42,85% and on the implementation of cycle II increases with the average value 81,90%, whereas for classical completeness reach 95,23% or 20 students from 21 students who are in the category of completion. Keywords — cModel, Cooperative Learning, Jigsaw, Student I.

INTRODUCTION Education is a very important human need because education has the task to prepare human resources for nation and state development. Advancement of science and technology resulting in changes and growth towards a more complex. This raises social problems and new demands that can not be foreseen before, so that

education is always facing the problem because of the gap between expected with achievable results of the educational process (Adi, 2012). In this case, **the role of teachers** is very important in order to achieve the educational outcome.

Guru **is one of the** human element in the educational process. In the process of education in school, teachers hold the dual task of being teachers and educators. As a teacher of teachers in charge of pouring a number of lessons into the brains of students, while as educators, teacher in charge of guiding and fostering students to become a capable, active, creative, and independent human being.

Djamarah (2005) argue that both teaching and educating is the duty and responsibility of teachers as professionals become human decency capable, active, creative, and independent. Therefore, heavy duty of a teacher basically it can only be implemented by teachers who have professional competence which is high. Included in it for **the role of teachers in** vocational education. Efforts of teachers in teaching and learning process also affects the learning outcomes.

Teacher's high passion to teach, making learners more passionate about learning. Teaching and learning activities should be able to foster motivation to learn so that the effect on the learning outcomes of learners. Motivation learning **plays a very important role in** spirit, pleasure in learning, so as to have high motivation.

Motivation is an impulse within a person to try to control good behavior change in fulfilling the needs. Can not be denied again in every process there are many barriers to learning especially on **subjects of agribusiness of vegetable** crops. The results of preliminary observations have been made in April 2017 in state SMK 4 Gowa shows that there are still teachers who only use media boards, books and dictate or lecture as a learning method for easier reasons, practical and simple.

There is the assumption of a learner and teacher that **subjects of agribusiness of vegetable crops** tend to be boring because they use media and methods that are less varied (monotonous) so that learners are less interested, learners become drowsy, lazy on the subject. Pursuant to that matter, hence in this research applied jigsaw cooperative learning model.

Through this learning model it is expected that the cooperation between students in the group to achieve the learning objectives. This is in line with opinion Sholiha (2016) which states the method of learning can foster interaction among learners so that learners become more motivated and **more active in the learning process.**

**PURPOSES** This research aims to determine improvement of learning outcomes of students on the subject of agribusiness of vegetable crops through jigsaw type cooperative learning model in SMK state 4 Gowa. International Conference Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (APTEKINDO) 2018 I3.2 II. **METHOD** This research is the Classroom Action Research with the implementation stages include: planning, execution, observation, and reflection.

This research was conducted at SMK state 4 Gowa, Gowa Regency. The research time is held in odd semester of academic year 2017/2018. Research subject is the eleventh grade learners of Agribusiness of Food Crops and Horticulture odd semester SMK state 4 Gowa as many as 21 students. This classroom action research implemented in two cycles ie cycle I implemented in 4 meetings, as well, with cycle II which was held for 4 meetings.

The procedure used in this research including action plans, observations, and reflections. Operational research steps include action planning, action, observation stage, and reflecting (Figure 1). At the planning stage that needs to be prepared ie: (1) request permission to the school and subject teachers agribusiness of vegetable crops of class XI ATPH SMK state 4 Gowa; (2) Preview observation to get an initial picture of the teaching and learning activities especially subjects of agribusiness of vegetable crops class XI ATPH (3) identify problems in the implementation of learning that has been done.

After that, held identification of problems in class, then carried out the implementation of the research cycle Fig. 1. Class Action Research Flow Diagram (Arikunto 2010) III.

**RESULTS AND DISCUSSION** Before the researchers apply the planned action, first the researchers held pre test it is intended to know whether any of the learners who already know about the agribusiness material of vegetable crops to be taught and to determine the initial ability of learners, of results pre test then compared with the results post test (tests on each cycle) with the application of the Jigsaw Cooperative Model of learning.

The data of the test results can be seen in the table below. TABLE I. FREQUENCY DISTRIBUTION OF STUDENT LEARNING COMPLETE LEARNING AT THE EARLY TEST a. Source: Primary Data After Processing, 2017 Table 1 shows that on the initial test the percentage of learning mastery learners 4,77% ie 1 of 21 learners included in the category of complete, whereas 95,23 or 20 of 21 learners are included in the category of complete, whereas 95,23 or 20 from 21 students there are still 20 students who have not completed the learning outcomes and require repair in the first cycle of learning.

**Results of the Cycle I Test** In the first cycle tests carried out the study of students after the presentation of three meetings. The data of the test results can be seen in the table

below: TABLE II. DISTRIBUTION OF FREQUENCY OF LEARNING COMPLETED LEARNERS IN CYCLE I b. Source: Primary Data After Processing, 2017 Based on Table 2 it appears that the results of learning mastery in cycle I of 42,86% or 9 students from 21 students are in the category of complete and 57,14% or 12 students from 21 students 12 students from 21 students.

This means that there are 12 students who need improvement because they have not reached the learning completeness criteria. Based on the criteria in the classical mastery learning ie 85% of the complete number of learners. Data of research result from cycle I considered incomplete because that is complete only 42,86%.

This research needs to be continued in the next cycle because based on the goal to be achieved, increased learning outcomes have not been achieved. Score Frequency Percentage (%) Category 0-74 20 95,23 Not complete 75-100 1 4,77 Completed Total 21 100 Score Frequency Percentage (%) Category 0-74 20 57,14 Not complete 75-100 9 42,86 Completed Total 21 100 International Conference Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (APTEKINDO) 2018 I3.3

Results of the Cycle II Test In cycle II conducted test results learners learn after the presentation of three meetings. The test results data can be seen in the table below: TABLE III. DISTRIBUTION OF FREQUENCY OF LEARNING COMPLETED LEARNERS IN CYCLE II c. Source: Primary Data After Processing, 2017 Based on Table 3, shows that on the second cycle test, percentage mastery learners learn as big 95,23% ie 20 students from 21 learners included in the category of completion, while 4.77% ie 1 learner categorized not complete.

This means that this research does not need to continue in the next cycle because based on the goal to be achieved, ie an increase learning outcomes expressed based on the criteria of learning outcomes on class mastery of classical mastery, namely 85% of the complete number of learners, the data of research results in cycle II in this is considered due diligence learners who have completed have reached 95,23%. Based on the results of research that has been done.

Based on the results of research that has been done on the subject of agribusiness of vegetable crops obtained an increase in learning outcomes in class XI students ATPH 3 SMK State Gowa. Implementation of Jigsaw Cooperative Learning Model applied by a teacher is one of the factors that determine ketercapain learners learn outcomes, because the use of teaching strategies that match the material presented will affect the interests and activities of learners in following the lesson which will ultimately affect the learning outcomes. Jigsaw Type Cooperative learning model strongly supports the

results of research that has been obtained.

Improved learning outcomes of learners have reached KKM standards for the subjects of agribusiness vegetable crops namely 75,00 and achieve the classical thoroughness that is 85% of the number of existing learners. This can be seen from the learning result of class XI students ATPH 3 which shows the value of completeness obtained from the initial test results ie the number of students who are not complete 20 student or 95,23% and a complete number of 1 learner or 4,77%, then on the learning outcome of cycle I with an unfinished number of learner as many as 12 students or 57,14% and complete number of learners as many as 9 students or 42,86%.

Furthermore, on result of learning cycle II with the number of learners which is not complete as much as 1 learner or 4,77% and the number of learners who complete as much 20 learners or 95,23%. Improved learning outcomes of learners supported also by the increasing activity of learners. Basically, at the beginning of the meeting experienced obstacles in the learning process.

Learners are more likely to be passive or do not have the courage to express opinions or asked. This is caused by the learner who still shyly argue in front of other learners. Learners are also more active in playing than pay attention to teacher explanations. Improved learning outcomes of learners using the Jigsaw Type Cooperative learning model on the subject agribusiness of vegetable crops class XI Agribusiness of Food Crops and Horticulture SMK State 4 Gowa in cycle I to cycle II supported by increased learning activities of learners after going through the learning experience within a certain time which is measured using the tests given by the teacher. IV.

CONCLUSION Based on the results of the research can be concluded that after applying the jigsaw learning model which is done as much as two cycles which is done as much as two cycles SMK State 4 Gowa on the subject of agribusiness of vegetable crops, this can be seen from the increase in the average value obtained by learners during the research.

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