



INTERNATIONAL CONFERENCE ON EDUCATION, TECHNOLOGY, AND SCIENCE

**Improving The Quality of Education
To Face The Impact of Technology**

University of Muhammadiyah Purwokerto

December 28th, 2013

P R O C E E D I N G S



**International Conference on Education, Technology, and Science
NETS 2013**

Improving The Quality of Education to Face The Impact of Technology

PROCEEDINGS

**Universitas Muhammadiyah Purwokerto
Purwokerto, December 28th, 2013**

Preface
Rector of UMP

Assalamu'alaikum wr. wb.

Alhamdulillah, that UMP will carry out prestigious event namely "National Olympiad and International Conference on Education, Technology, and Science (NETS) 2013" is a very great news for me. NETS 2013 is the first event which is conducted in collaboration between UMP and PWM Central Java. It is a great event which is constructively supported by ITB, UNiSA, UTeM, and several institutions under UMP partnership to smoothen the event.

Recently, technology grows very fast. This fast growth affects on the quality of education in Indonesia. Based on this condition, UMP and PWM Central Java formulate a program which later it is formed into "NETS 2013". This event is also a contribution to Islamic Higher Education Institution to prepare candidate of future leaders who have competitive skills to compete positively in comprehending knowledge and technology.

In NETS 2013, there are some events which are arranged in a sequence such as: International Conference on Education, Technology, and Science (ICETS) with Prof. Dr. Ir. Imam Robandi, M.T., Mr. Ganjar Pranowo, Mr. Simen Lourds, and Dr. Hiroshi Takeda; Seminar (Call for Paper) including some disciplines of science covering Education, Engineering, Medicine, Science, Social, Politic, Religion, Law, Culture, Arts, Agriculture, and Technology; National Olympiad for Student and Teacher (NOST) which is joined by students, teachers, and schools; and Expo. In NETS 2013 competitions, participants are fighting over trophies, medals, certificates, and advisory fund reaching up to Rp250.000.000,- ; furthermore, there is also a fellowship to study in UMP.

As the Rector of The University of Muhammadiyah Purwokerto, I do really expect that conducting this event could encourage all of us to be more advanced nation not only on economic side, but also on social life. It is also expected that this event will increase our awareness on how important it is to develop and advance technology in education.

That is all I could deliver now, for further information you may access our website on www.ump.ac.id.

Last but not least, "Let's join and support NETS 2013 in UMP".

Wassalamu'alaikum wr. wb.

Purwokerto, 28th Decembe 2013

Rector,

Dr. H. Syamsuhadi Irsyad, M. H.

Preface

The Chairman of NETS 2013

Assalamualaikum, wr. wb.

Today is the valuable and precious milestones for education in Indonesia in general and Muhammadiyah in particular because all levels of education from elementary schools to university get together to build relationship and networking in the national Olympiad and international conference hosted by University of Muhammadiyah Purwokerto.

We deserve rejoice and pride because there are more than 1705 participants, 215 officials and 300 invited guests. This is also a great honour for University of Muhammadiyah Purwokerto to have the Governor of Central Java and the staffs, the regents from four regions and the staffs, the chief of Central Muhammadiyah Board , the Education division of Muhammadiyah Board, the directorate of higher education, Rectors of University of Muhammadiyah throughout Indonesia and rectors of universities in Purwokerto, companies and stake holders, media , travel biro as well as the colleagues, persistent fighters for Muhammadiyah in the region and territory.

As the chairman of this events, I'd like to report that there are more than 1616 teachers and students who will be joining the national Olympiad and there are more than 311 researchers, lecturers and students will be taking part in the International Conference. Again, I'd like to emphasis that this event is really a pride for us because the participants are coming representing five big islands in Indonesia, they are Sumatra, Kalimantan or Borneo, Java and Sulawesi.

This event holds thirty one types of competitions and organizing six international conferences. There are twenty five competitions for students, four competitions for teachers and three competitions for schools. The international conference covers fields of Educations, Engineering, Science and Agriculture, Health and Medicine, Culture and Arts, social, Politics, Economics, Religion and Law.

We are proud to mention that we have at least fifteen experts coming from higher education, one from high schools, two industries and one national research centre (LIPI). The experts and scholars are coming from some outstanding universities and institutes such as University of South Australia, Tottori University Japan, Institute Teknologi Melaka, Malaysia, Henderson Secondary School Singapore, Boromanjani College of Nursing Thailand, Surabaya Technology

Institute Bandung Technology Institute, Gadjah Mada University, Bogor Agriculture Institute, and University of Muhammadiyah Purwokerto.

On behalf of the committee, we'd like to express our deep gratitude and thanks to all sides for their sincere helps and supports that make this event possible to happen in UMP. Last but not least, we have tried and done our best in organizing this event, however, we realized that weaknesses and shortcomings may exist. And for that particular reason we'd like to apologize to you all. Hopefully, the next year NETS will be much better and much improved. Have a great competition and conference!

Wassalamualaikum wr.wb.

Purwokerto, 28th Decembe 2013

The Chairman

Regawa Bayu Pamungkas, ST., MT.

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Editor	: Sularso, Amd. Nur Afifah Indriyani

Keynote and Invited Speakers

Keynote Speakers

Prof. Imam Robandi (ITS, Indonesia)
Mr. Simen Lourds (Singapore)
Dr. Hiroshi Takeda (Tottori University, Japan)

Invited Speakers

Elvia Shauki, Ph.D. (University of South Australia, Australia)
Prof. Dr. Mifedwil Jandra Mohd. Janan (UTM, Malaysia)
Pananut Wisawatapnimit (Boromarajonani College of Nursing, Bangkok, Thailand)
Dr. Ir. Danu Ariono (ITB, Indonesia)
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Dr. Chairil Anwar (UGM, Indonesia)
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Prof. Dr. Sugeng Priyadi (UMP, Indonesia)
Herman Soemantri, ST., M.Si. (PT. Pertamina)

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IMPROVING LEARNING OUTCOMES THROUGH THE APPLICATION OF COLLABORATIVE LEARNING MODEL DIRECT AND COOPERATIVE TYPE STAD ON MACROECONOMIC THEORY COURSES

Luqman Hakim

Universitas Negeri Surabaya
luqmanhakimb114@gmail.com

Abstract

*The low outcome of economic education students was caused by characteristic of the substance introduction to economics which abstract, theoretic, and teacher centered. So that, the implementation direct learning and **Student Team Achievement Divisions (STAD)** can make the substance introduction to macroeconomics becomes easier to be accepted and understood by students. The purpose of this research is to describe the level of completeness student's learning outcome at introduction to macroeconomics subject. The research result of the implementation direct learning and Student Team Achievement Divisions (STAD) is student activities at each meeting have a significant escalation. The level of completeness student's learning outcome at aggregate demand and supply substance have a significant escalation from 68,6% at first cycle become 82,9% at second cycle, and then become 91,4% at post test. The student's response about the implementation direct learning and Student Team Achievement Divisions (STAD) contextual is positive.*

Keywords: STAD, direct learning, learning outcome

BACKGROUND

Learning is a process that processes input into output using the instrumental. Instrumental inputs used by lecturers will process the students as inputs into output quality. Instrumental inputs include building infrastructure, educational facilities, curriculum, instructional models, administration and other instruments.

Learning model as an instrument of education plays a role in processing students to obtain better learning results. The results of the study describe the product as a mirror learning student success in learning. Learning allows the process that allows the acquisition of good learning outcomes. Cagne (1985), the results obtained through learning events learning event.

From the background described above, the formulation of the problem in this study were : (1) How does the application of direct and collaborative learning model STAD cooperative learning for macroeconomic theory courses on Economic Education Program. (2) How does the course learning outcomes at the macro economic theory Studies Economics Education S - 1 with the direct and collaborative learning model STAD cooperative learning. (3) Are there any constraints faced by the students in the Economics of Education Program follows the use of direct and collaborative learning model STAD cooperative learning in introductory courses macroeconomic theory.

Through collaborative model of learning direct and cooperative type stad expected students could understand the concept of theory either individually, makro groups and classes. The concept of the theory makro better qualitative and quantitative will pre-sighted not only comprehends the theory by remembering, but also analyse and evaluate a meaning that is contained in perekonomian a country so as to study result of the students has risen. According to simanjuntak (1985:9) learning is own efforts having knowledge. While sudjana (1996:5) defines learning as a process that characterized by the presence of change at yourself in someone. Change as a result of a learning process can be shown in various forms as changed knowledge, understanding, the attitudes and behaviors, skill, prowess, a change of habits as well as other aspects that belonged to individuals. The definition of other about learning given garry and kingsley (1970: 15) in sudjana learning is the process of changing the original comportment through experience and trial.

Learning according to slameto (2003: 2) psychologically is "a process of change namely change comportment as the result of interactions with surroundings in meet the needs of his life or learned: a process of efforts by someone in order to gain a change comportment new overall, as the result of experience of themselves in the interaction with environment".

Skinner in dimiyati (1999:9) said, "learning is a behavior at the time of a learned person then responnya meliorate". So that by learning then they will undergo a change comportment. Learning according to azwar (2004: 164) in the most general sense is any behavioral change caused by experience or as a result of the interaction of individuals with their environment. Besides according to djamarah (1994: 20) learning is a activities performed in a conscious to get a number of an impression from the ingredients being studied.

Meanwhile, according to azwar (2004:164) learning is any behavioral change caused by experience or as a result of the interaction of individuals with their environment, hence people are openly against changes that occurred to him. Learning according to djamarah (1994:21) is "a activities performed in a conscious to get a number of an impression of material that has been studied and is a who has the goal that is the occurrence of a change in self of the individual".

Learning cooperative type stad learning cooperative type stad arranged in an attempt to improve liveliness and participation siswa, accompanying the student with experience attitude leadership and make a decision in a group, as well as provide opportunities on the kids to interact and learning together students with different backgrounds. Learning cooperative type stad could also improve the performance of students in the duties of academic, superior in helped students in translated concepts difficult, motivates students to think more deeply and critically. Learning cooperative used for melatihkan ketrampilan-ketrampilan ketrampilan-ketrampilan cooperation and integration. (trianto, 2007).

According to slavin in ratumanan (2004) the activity of learning cooperative can play a role in many lessons. In one particular subject learning cooperative can be used to three the purpose of different. For example, in both the students work as certain groups 'm trying to find something (e.g., economic cost of solving a problem acceptance and the balance aggregate with the approach of qualitative and quantitative approach) after the hour is completed, students can be employed as groups discussion. Finally students get a chance work together to ensure that all members of the group has mastered that lesson.

METHOD

A kind of this research appertain to research qualitative with the kind of research classroom action research (research the act of class) (hopkins, 1993:48), that is oriented toward the quality of

learning (improvement instruction oriented). Subjects of a course called sedangkan basic economic theory makro s-1 education program economic subjects, namely matter demand and a supply aggregate.

The Procedure of Research

According to kemmis and mc taggart (1998), the procedure of research in the act of class, include: (1) a plan of action; (2) the act of research; (3) observation; (4) the reflection and (5) of planning back.

The Cycle of Research

The research covering two breeding cycles, namely (1) first of aggregate demand, (2) a second about the offer an aggregate. Each carpel cycle use of syntax research consisting of the plan, the act of, observation and reflection.

First cycle includes: (1) of planning namely: explain material that will be presented in learning, specifically, formulated the goal of teaching give a test, prerequisite distributed to student, teaching materials assigning university students to read the material brash aggregate demand, and distributed sheet activities a student. (2) the act of. Is the implementation of the poses belajar-mengajar by using model in class. (3) observation. To observe and record comportment student when learning and observe and record comportment model. (4) reflection. Conduct a study on the implementation of the process of belajar-mengajar that has been done. (5) discuss and evaluation with an observer used as the basis of analyzing data and the result is the condition of the end.

Second cycle includes: (1) of planning namely: the things that are obtained from the cycle i and from the results of the discussion and evaluation with an observer in the cycle i. (2) the act of. Is the implementation of the poses belajar-mengajar by using model in class. (3) observation. To observe and record comportment student when learning and observe and record comportment model. (4) reflection. Conduct a study on the implementation of the process of belajar-mengajar that has been done. (5) discuss and evaluation with observers.

The technique of collecting data in this research is reducing the data is an activity selection, focusing, and simplification of the data which began on collecting data until the preparation of the report research. The data referred to covering transcript the implementation of learning macro economic theory in the lecture by the application of learning through direct and cooperative, model of

learning test result the interview the results of the poll, the observation and note the field. The activities of the simplification of the data has been accumulating intended to get information that is clear and significant so as to be accounted for. Presentation of data done by means of composing a narrative bit on information that has been obtained from the reduction that would give the withdrawal of conclusions and taking action. The data has been served furthermore made interpretation, and evaluation this can include the completion of about: (1) the difference between the design and implementation of the action; (2) the need for change of action; (3) of alternative action which is considered proper; (4) the perception of researchers, a friend peers who engages in the observation of the field of and planning for action that has been conducted; (5) the obstacles and why constraint it appears and so forth. The withdrawal of a conclusion is to give a conclusion against the result of interpretation and evaluated. The event includes the meaning of data and give an explanation. Unverified was validity of data that is inferred, next conducted activities unverified, is testing the truth solidity, and aptness makna-makna that has emerged from the data. This event be considered as adoption of intisari of cereal offering data that has been organized in the form of statements or sentence which briefly, solid, and meaningless. The technique of using analysis descriptive analysis of data by the percentage based on kriterium that is designed in the design of research. Kriterium study result of the effective if 70 % student gain in value at least 75.

RESULT AND DISCUSSION

The Cycle 1

In cycles 1, meeting 1, who be used as reference common is implementation plan of learning which is supported by an instrument observation and the instrument of learning.

Meeting 1 The stage any preliminary activity

The stage any preliminary activity carried out for 10 minutes first. The activity of learning prefixed to convey competence base and motivates students by lifting the theme "aggregate demand". Furthermore, given the questions to students about what would be the needs of the people in an economy the state and how their efforts to meet the need. Subjects of this basic generalized and directed to the theory of aggregate demand. In this case, explained that aggregate demand will impact on the economy of a country. A growing economy of a

country of them depending on how much demand aggregative in a the country.

The stage of the activities of the nucleus. Next phase which is done is to explain about the theory of aggregate demand consisting of the concept of aggregate demand (15 minutes). In any explanation each of the theory the request of the aggregate used the examples of real (contextual) to ease purport and understanding a student. Furthermore, demonstrated to student how to describe a curve demand and formulated aggregate demand on the basis of existing data (20 minutes). The next step exercise is terbimbing for college students to draw a curve demand aggregate(35 minutes).

The stage of the activities of the end

After the provision of exercise terbimbing finished, researchers together students merekapitulasi all the things that have been studied. After that, given the opportunity to students to ask me questions about some things into their problem. The next step is with students conclude material that has been studied very associated in real life as a form of reflection of learning. Furthermore, the rest of the time employed to work on the test cycle 1.

The Cycle 2

The stage any preliminary activity. The activity of learning started by giving apersepsi about the enactment of the law of demand. Next raised the phenomena that occur in society, especially the phenomenon aggregate offering that is listed in the preaching of the mass media (editorial main newspapers), as an example the extinction of kerosene in jakarta. By associating the two things, researchers mean to explain that there is some factor influence offer aggregate (5 minutes).

The Core Activities

Next phase is provides a description of factors that affects the offer an aggregate. (15 minutes). Furthermore, students organized in small groups. Each group consists of 4-5 students and heterogeneous. Any of a group of negotiating to work on worksheets student (mfi). Micro financial institution mfi that we use is micro financial institution mfi offer an aggregate. The process of learning that takes place is: (1) any group of allotted time for 20 minutes to work on third part in mfi. (2) a group who are selected randomly presented the results of diskusinya for 10 minutes. (3) 15 minutes latter is used for questions. In this part of scientists participate as an observer and emend the results of an answer student if there is a mistake.

The stage of the activities of the end. After a discussion finished, with students all the results of the discussion direkapitulasi. After that, given the

opportunity to students to ask me questions about some things that will be a problem them in the exercise that discussion. Furthermore, the results of the discussion is inferred by associated in real life closer to more material that they ve learnt with the environment a student. Thus, what have they learn useful for them (10 minutes). Furthermore, the remaining time for 25 minutes used to work on the test cycle 2.

Based on presentation of data the research has been mentioned and in this part be raised discussion research results that have done, as follows:

The implementation of learning

The cycle 1.

The main obstacles facing difficulties observation activity is the performance of a student. This is due to the number of students who too much crowded and a rowdy because the turn of the hour is just finished. Hence, observation of just devoted to fifteen students chosen at random.

Besides problems or other obstacle appears on cycle i can diidentifikasi as follows: (1) student not used scientific analyses are required to think and solve problems found in mfi. (2), in discussion with student not used to express his opinion individually. (3) the voice sounded researchers relatively less clear. Kendala-kendala to resolve the efforts among others: (1) providing positive strengthening to students. (2) is strengthening the positive improved confidence student (3) in the cycle lecturer initiative to to use wireless to sound lecturer can reach to the class.

The cycle 2.

In the implementation of the cycle ii, relatively does not appear constraints that have been significant enough. So that learning process runs more effective and efficient. This condition is much caused by more students ready and terkondisikan to receive matter. In addition, students also no longer lumpish or more bold to convey them their opinions. Observation activities in the performance of students also elected five belash student at random. Progress has been achieved on a cycle ii is as follows: (1) student has been able to develop their own scientific way of thinking and mengkonstruk understanding of their own. (2) student has been able to declare their aspirations individually in the discussion together. An atmosphere of discussion together into more evenly and not dominated by certain groups. Student participation in the process of learning is getting higher. (3) student can predict against a couple of things probable to happen in the solution

of every case with looked at the problem from a different angle.

The activity of a student

Observation of the activity of students performed in implementing the cycle. The activity of a student who observed covering the activity of performance and cooperative. Based on the result analysis above then can be inferred that does not happen increasing the activity of students significantly. A diagram 1 showing you averages appraisement performance of a student for worksheets student 1 and 2 especially on the formulated function.

Skill cooperative student

Every student cycle cooperative observation activity carried on different groups. In cycles 1 and 2 observation deftness cooperative carried on 5 group that has determined at random. Overall cooperative skills and lowest siklusnya is tending to decline in every skills are not in duty was to average. Not residing in duty mean the group members are silent or execute activity. Low percentage exuded high activity of student so that discussion seems more lively and active.

Nor is the low skills are not in duty, deftness taking a turn and share duty is craftsmanship with average highest luminance siklusnya. It shows that most students ve been brave to declare his opinion and mutual cooperate through the distribution of duty. So that the discussion luminance group not only dominated by members of a particular group course. Deftness cooperative other which tended to rise in every siklusnya is the capacity really appreciate others, heard actively and ability ask. Third skills this had made the process of discussion be more dynamic.

While skills invite other people to speak declined in any siklusnya. The decrease in skills it indicates that every student has been bold to give his opinion without having to be prompted by a friend diskusinya. While skills examine exactness tended to be stable at each siklusnya which means the results of the discussion and a report of work remains focused and comprehensive.

Response student against of learning. Based on the results of study of a student assume learning process on any material by using approach langsungl aggregate demand is nothing new. It was proven by about 34,29 % say yes, the remaining 65,71 % answer no. It was because the model of learning directly they have got before. However about 57,14 % student said that the way of teaching teachers new one. The rest of 42,86 % say no. Referring to the results of an interview with some

students obtained data, that learning process and the manner of university professors teach tending to new so far they learned the science of economics in teoritik and teacher tends to uses the method of talks in conveying matter. So far they regard the science of economics as the science which teoritik and abstract. And so that in learning process often arising boredom.

Student response improvement seen in cycle 2 it is because of the way includes a new teaching for students, so students are enthusiastic in following the teaching-learning activities are high. According to them by implementing approaches STAD by lecturer makes economics as the science of real or tangible and practical teoritik not impressed. In addition to this way of teaching faculty also provides its own color in economic studies. The feelings of students for coursework and classroom atmosphere was fun. This statement is supported by about 82,86% of students stated that they felt happy for coursework and 91,43% stating the class atmosphere of fun. This indicates that the application of the model is able to create a climate that STAD conducive to learning, especially in introductory economics courses were so far known by some students as subjects that are relatively difficult to grasp. The remaining about 17,14 % said that they do not feel happy in following perkuliahan and 8,57 % said the class less pleasing. However, in the aspect of time given professors, allocation about 85,71 % said that students allocation of time given enough to solve any matter. The rest 14,29 % claimed that time allotted inadequate. Enough time given is also supported by the use of language internal mfi understandable. Some students 88,57 % said mfi compiled by using approach lecturer stad more easily understood.

Student Learning Outcomes

Based on analysis of data above known that increase level ketuntasan learning klasikal of 68,6 % in cycles i into 82,9 % in cycles ii, then increased to 91,4 % in posttest. Increasing ketuntasan learn in klasikal from the cycle i to cycle ii due for about evaluation cycle ii arranged based on worksheet student who has discussed joint between faculty and students. While repair ketuntasan class on cycle II caused by allocation time given adapted to complexity difference. Meanwhile, the rising ketuntasan klasikal from the cycle ii to posttest much caused by posttest given on another day after cycle II ended. Allowing students to learn lessons before.

CONCLUSION

Based on analysis of data derived from observation management of learning, activity students, response students, and study result of the students, then inconclusive some things as follows: (1) the application of learning direct and cooperative type stad in college course economic theory makro, especially on any material demand and a supply aggregate in general can way it planned. Several problems there repairable in the next round. Besides this approach can improve activity student. (2) study result of the on any material demand and a supply increased productivity of 68,6 % in cycles i into 82,9 % in cycles ii, then increased to 91,4 % in posttest. (3) response against the implementation of students learning direct and stad in college course macro economic theory appertain positive.

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Jl. Raya Dukuwaluh, PO BOX 202 Kembaran, Purwokerto, Jawa Tengah 53182
Telp. (0281) 636751, 634424 | Fax. (0281) 637239
www.ump.ac.id

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