

# JNE 4 (2) (2018)

# **Journal of Nonformal Education**



http://journal.unnes.ac.id/nju/index.php/jne

# Model of Collaborative Learning to Improve Student's Learning Ability in Nonformal Education Departement

Tristanti<sup>⊠</sup>, RB Suharta

Department of Nonformal Education, Faculty of Education, Universitas Negeri Yogyakarta, Indonesia

DOI: http://dx.doi.org/10.15294/jne.v4i2.16007

#### **Articles Info**

# **History Articles:**

Received 15 July 2018 Approved 29 July 2018 Published 30 August 2018

#### Keywords:

collaborative learning, students, communication

### **Abstract**

The implementation of collaborative learning model in Nonformal Education is based on the condition of learning in classroom that not optimal. It can be seen from the activities of students are passive. The purpose of this model is to improve student's ability in course of Life Skills Education Nonformal Education Department. The improving of student's learning ability can be indicate by; (a) the improving of student motivation in contend, (b) the reducing of fear and shame of students in ideas, (c) the improving of interaction in communication among students. This study used Lesson Study method that includes three cycles. Each cycle is consisting of planning, implementation and evaluation or plan-do-see. The implementation of this study is focusing in the first cycle on the planning. The second cycle is based on the result from the cycle one. The last cycle is result of the evaluation from the cycle two. Data are analyzed by qualitative model to explain comprehensive result. The result of this study shows that the students have done three positive activities in the classroom. Firstly, the students are active in convey the ideas. This situation can be seen from the activities of students that appreciate each other's. Secondly, the students areestablished positive interaction among students. The students are not shame in communication each other and the students have high confidence in communication. Lastly, students in the group discussion can evaluation each other and make conclusion from the result of discussion. The success of learning of life skills education is supported on various things; a) the participation active of student that trigger other students to communicate, b) the provision of equal opportunities for every student to argue so that no individual differences, c) feedback from educators to the students so that the students gain meaningful experience.

© 2018 PLS PPs UNNES

⊠Address correspondence:

Departmen of Nonformal Education, Graduate Program, Universitas NegeriYogyakarta Street Colombo No.1, Karang Malang, Caturtunggal, Kec. Depok, Kabupaten Sleman, Daerah Istimewa Yogyakarta, Indonesia

E-mail: tristanti@unv.ac.id

p-ISSN 2442-532X e-ISSN 2528-4541

#### INTRODUCTION

The subject of Life Skills Education given the explanation to students abaout the job condition in Nonformal Education. Therefore, students of Nonformal Education (NFE) must following the subject of Nonformal Education with optimal. This condition based on the fact in field that implementation of Nonformal Education not optimal. The implementation of NFE not yet attention of the demand and need society. One of the causes of that condition are qualification and backround of the education that teacher owned are variation, so it make influence the competence of educator and educators of NFE.

The succesfull of institution depend on human resources management so that the institution believes that it has good labor and responsif to discrepancy that happenend. Therefore, the major of Nonformal Education Faculty of Education State University of Yogyakarta be expected to manage well the candidat of educator and educators NFE. The manage of NFE inlude capability of need assessment, improving of continue education, carier development, performance assessment, and improving of students softkills. Students need to improve their competence and professionalism to be a profesional educator and aducators NFE.

The condition of students in major of Life Skills education shows that students are lack of confidence to convey their idea. Students are difficult to analysis of need assessment and planning program life skills education in society. Based on that situation, the activity of learning must involve the students to be active and having good idea that convey in grupdisscussion. Therefore, Lesson Study is appropriate to applied in lectures of life skills eduation and job training. Lesson study is one effective way teachers to obtain and increase the ability of students (Susilo, et al, 2011). The importance of lesson study in learning according to Joko 2007 are: to obtain a better understanding of how students and teachers teach, obtain certain useful values, improve learning systematically through

collaborative inquiry, build a pedagogical knowledge.

Bill Cerbin& Bryan Kopp (Akhmad, 2008) said that lesson study have four main purpose that is; 1) gain a better understanding of how students learn and teachers teach, 2) gain the results which can be used by other teachers, outside participants lesson study, 3) increasing the learning sistematically through collaborative inquiry, 4) build a pedagogical knowledge that a teacher can gain knowledge from ather teachers. The Lesson approach involves the design of the research lesson as part of an extended sequenceof lessons to teach a particular topic, the implementation of the research lessonfollowed by evaluation and analysis, then refining of the lesson. Observation of theresearch lesson by colleagues and other interested persons is an essential part of thisapproach (Baba, 2007).

The other opinion about lesson Study Catherine lewis (2004) is essential characteristic from Lesson Study obtainable based on results of observation to some schools in Japan that are; a) a common goal for the long term, Lesson Study preceded from the deal between the teachers about common goal that want enhanched in long term with wider purpose. For example, kognitif development of of students, development of individual skills of students, fulfillment of students' learning needs, development of learning wich please, development of skills of students, etc. b) the material is important. Lesson study have focus on material that considered important in students learning also very difficult to be learn, c) Study about students carefully. The most important focus of the Lesson Study is the development and learning of the students, for example, whether students show interest and motivation in learning, how students work in small groups, how students perform tasks assigned by teachers, as well as other related matters with the activity, participation, and condition of each student in following the learning process. Thus, the center of attention is no longer solely focused on how the teacher in teaching is as usual in a classroom supervision

conducted by the principal or school supervisor, d) Direct learning observation. Direct observation may be said to be the heart of the Lesson Study.

Perry et, al 2009, explain that lesson study is one model of the approach to professional development through learning from practice. To assess the student's development and learning activities is not enough to do just by looking at the Lesson Plan or just viewing from the video, but also to observe the learning process directly. By doing a direct observation, the data obtained about the learning process will be much more accurate and intact, even to the details that once can be extracted. The use of video tape or recording can be used only as a complement, and not as a substitute.

Lesson Study is a collaborative form, the basis for developing schools to obtain improvements in learning and teaching through professional sharing methods (David Burghes, 2009). Lesson Study is not a strategy or method in learning but is one of the coaching efforts to improve the learning process conducted by a group of teachers in a collaborative and sustainable, in planning, implementing, observing and reporting learning outcomes. Therefore, in lesson study activities required learning model so that what the goal can be achieved. In this case lesson study activity using collaborative learning model. Lesson study as drive reform school, always increase student learning (Sato, 2012). Masaaki (2012) explain that the nature of learning children in school don't just get knowledge of teacher but also through interaction and learning together with friends. One stragtegy that can be applied to realizing is a strategy learning collaborative.

Collaborative learning is a situation where there are two or more people learning or trying to learn something together, unlike learning alone, people involved in collaborative learning utilize resources and skills with one another (asking for information from one another, ideas for each other, monitor the work of each other (wikipedia, 2013). Asmawati (2013) affirms that collaborative learning can provide learners with the opportunity to

participate actively and they can learn from each other to build their own knowledge. Masaaki (2012) explains that in realizing collaborative learning activities there are several things that need to be considered include: 1) providing tasks that encourage exploration, 2) implemented by group, 3) student layout plan shaped "U" to facilitate dialogue and sharing, 4) doing reflection to ensure what has been Characteristics of collaborative learned. learning based on behavioristic psychology (Jacob, et al, 1996), 1) emphasizing extrinsic motivation, 2) low cognitive tasks, 3) looking at all learners uniformly, 4) not emphasizing attitudes, learning achievements is objective and measured by objective testing, 5) resultsoriented, 6) the educator decides what to learn and provides information for the learners to learn. Stepanek, 2003a explains that Lesson Study is a collaborative process in which a group of teachers identify a learning problem and design a learning problem (plan), teach students according to a scenario by one teacher while others observe (do), reflect and evaluate (see) and revise learning scenario.

Successful learning in Life Skills Education and Work courses should be supported by: 1) active student participation, student activeness in a group will encourage other students to take an active role as well. 2) Practice, practical activities to the field is very helpful for students to understand directly life skills educatioan and work practice programs organized various institutions ranging from planning to evaluation. 3) Giving equal opportunity to each learner, so that there is no individual difference in any context. 4) Feedback, learners will gain meaningful experience when the educator provides feedback from each task or opinions either right or less relevant. In this case learners have the spirit and motivation to keep learning better. 5) Realistic contexts, learners will be easy to understand when faced with real things, so in learning more often to group discussion activities. 6) Social interaction, inter-group communication is very helpful for students to solve various problems. In addition, learners are used more confidence when communicating with peers or group friends than with educators. Based on the above conditions, collaborative learning will greatly assist learners in gaining learning experience.

Lesson Study provides many opportunities for lecturers to collaborate with peers in the field of science, so that creativity in the learning process can change the perspective of lecturers about learning and to learn to see the teaching process conducted by lecturers from the perspective of students. Lesson Study is carried out through three stages: Plan, Do, and See (Reflection). These three stages represent one learning cycle.

Stage of plan is the design of learning so that students can learn from the learning materials actively. This activity can be done collaboratively with peers so that learning can be successful. At this stage it is determined who will act as model lecturer and will produce Plan (Learning Plan/ Course) as well as teaching materials such as learning media and Student Worksheet.

Stage of Do is an implementation of learning that has been designed in the Plan stage. Before the learning begins, there is a meeting between model lecturers and other lecturers acting as observers to inform the learning activities based on the Lesson Plans/ Lectures. Other lecturers act as observers (observers) of learning. During the learning the observer does not interfere with learning activities, such as telling or asking students, talking to each other between observers, blocking the views of learners, and so forth. Nevertheless, observers make observations for all students and focus on student activities. During the Do stage basically, the observer can learn from the ongoing learning.

At the reflection stage, the observer must use the Observation Sheet and record the learning activities with a video camera or digital photo as documentation material. After the learning is done immediately held a meeting between model and observer lecturers. In this meeting the model lecturer conveys the impression in implementing the learning. Furthermore, the observer is given an opportunity to talk about the learning process

that has just been going on primarily related to student activities. Criticism and suggestions wisely conveyed can also be addressed for improved learning. Everyone involved in Lesson Study can learn from learning because it is a shared learning. Lesson Study is intended to: a) all students can participate in the learning without exception, b) the lecturer applies the results obtained from the learning reflection.

#### **METHODS**

Lesson Study activities were conducted in F12.105 Room of UPP 1 Campus, Kapas street. Time of implementation activity is 3 cycles of activities in which each cycle is implemented with plan, do, and see. The goal of lesson study is the students of Life Skills Education and Training courses and observer lecturers as the second important target to engage in cultivating the spirit of collaboration and cooperating with the open and mutual giving and receiving principles. The subject of research are students of nonformal education. Data are analyzed by qualitative model to explain comprehensive result. Data collected by observation, observation sheet and documentation.

### RESULTSAND DISCUSSIONS

# Implementation of Cycle I Description of Activities of Cycle I

Action in cycle I begins with application of Collaborative Learning learning by using group method. The implementation of this lesson aims to improve discipline and teamwork. Cycle I am held during a one-on-one meeting or 2 hours of lesson.

Implementation of this learning is done by one lecturer model who is assigned to teach and become a learning facilitator and one observer who served to observe the learning process. In the first cycle the application of learning is done by colaborative method that is in group discussion activities.

## The stage of plan

The initia1 phase which implemented in the first cycle is the plan or planning phase which is implemented on October 14, 2015. The plan phase begins by arranging the learning plan which will be implemented based on the initial data of the student condition delivered by the lecturer of the subjects of Life Skills Education and Job Training who will also serve as model lecturers in the implementation of this lesson study activity. The design of learning is made by focusing on the importance of teamwork and student discipline. Based on the design, the lesson study activity for do in cycle I does not require learning equipment, because the learning will be more done in the group discussion. The implementer only needs to prepare an observation sheet to observe the activities and performance of each group.

## Stage of do

Phase do or phase of learning implementation in cycle I was held on October 15, 2015, where learning activities opened by model lecturers with praying activities together. In addition to opening learning activities, model lecturers also convey related learning activities that will be done. After that the activity continued with the formation of small groups consisting of 5 people each group. Model lecturers share worksheets that should be discussed with their respective groups. Each group received different material. Thus, the role of each member greatly affects the outcome of the discussion. This is done to foster a positive attitude of cooperation.

Each group discussed the material provided by the model lecturer, noting the key points that would later be presented as a result of the group discussion. In the course of discussion lecturers model to facilitate students if there are questions, so that the interaction between lecturers and students. At the end of the lecturer's activity the model explains the related form of report of the results that will be presented next meeting,

that is by presenting the result of discussion using power point and collecting the result of discussion in the form of hand out. After that the model lecturer ends the Do activity at stage 1.

# Stage of See

The learning phase or learning evaluation is done immediately after the completion stage, ie on October 15, 2015. In the see phase, the lesson study implementing team discusses all activities that have been carried out at the stage of do. Based on observations made by the observer, stage do that has been implemented still has some shortcomings, among others: a) There are still students who are not disciplined in following the lecture, this is seen from some students who come late. During the course of the lectures there were still 3 students late in the course of the course, b) Group collaboration still not seen maximally, when the discussion in the group was not all serious in the discussion, there were some students in the group who seemed busy with his own affairs and did not follow the course of discussion well. Based on the results of the discussion of the lesson study implementation team, it is necessary to make a more rigorous planning and learning for cycle II, so that the implementation of this lesson study can run well and able to achieve the planned goals.

# Implementation of Cycle II Description of activity cycle II

Implementation of cycle II activities is more focused on improving student discipline in the presence of lectures and readiness in presenting the results of the discussion. Cycle II is held during a one-on-one meeting and is carried out by a model lecturer who is assigned to teach and become a facilitator during the lecture. In the second cycle, the application of learning is done by conducting discussion between groups, one of the groups presented the results of the discussion and responded by another group.

Stage of plan

Planning phase in cycle II is done on October 15, 2015. This stage begins with the improvement and preparation of RPP that will be implemented based on reflection cycle I. RPP cycle II is focused on improving students' discipline and activeness in discussions and convey ideas in the classroom. Based on the designs made in cycle II, planned attendance of model lecturers and lesson study teams five minutes earlier than the lecture schedule took place. This is intended to build imagery that Lecturers are ready to give lectures on time, so that when students present lecturers model was ready in the classroom. It is also intended to discipline student attendance in a timely manner.

#### Stage of do

Implementation phase of cycle II is implemented on October 22, 2015. In accordance with the planning in cycle II, Lecturers model was prepared 5 minutes before the lecture took place which then followed by the presence of students. Lecture activities begin by opening lectures with prayers together with the purpose of lectures to be achieved during the lecture took place. Furthermore, the model lecturer gives direction related to the presentation activities that will be done.

According to the mutual agreement between the student and the model lecturer that at the October 22 meeting, group 1 got the turn to advance first. In the presentation, one of the students became a moderator and the other became a presenter. After the presentation finished with responses and question and answer by other participants. The model lecturer provides additional explanation if the answer from the presenter has not been addressed to the questioner. The prescribed schedule of minngu then turned out to be a constraint, ie there was a meeting that coincided with a national holiday, so the model lecturer offered the students to add lectures or presentation of the results of the discussion with two groups at once. From the discussion, it turns out that group 2 is ready to perform, so the lecture planning can run smoothly. At the end of the lecture, the model lecturer concludes the related material that has been presented. Followed by giving motivation to the students so that they can apply the knowledge that has been obtained.

#### Stage of see

The reflection stage of the implementation of cycle II is carried out after the implementation of the cycle ends. At the reflection stage, the implementing team discusses all the implementation that has been carried out at the stage of do. Based on observations made by the observer of the attendance of students, all students present in the lecture. This is indicated by the impact of the motivation given by the model lecturer. The presentation of the discussion in the presentation has also been going pretty well. Antusiame students in asking quite a lot.

Nevertheless, there are still students who never ask at all. Therefore, the model lecturer should still provide motivation to increase student self-confidence. Based on the results of the discussion of the implementing team of lesson study, it is necessary to make corrections and planning more mature learning for cycle III, so that the implementation of this lesson study can run well and able to achieve the planned goals.

# Implementation of Cycle III

# **Description of Activities Cycle III**

Implementation of activity of cycle II is more focused on increasing student activeness in giving idea or question when presentation activity in class. Cycle II is held during a one-on-one meeting and is carried out by a model lecturer who is assigned to teach and become a facilitator during the lecture. In the second cycle, the application of learning is done by conducting discussion between groups, one of the groups presented the results of the discussion and responded by another group. Stage of plan

Planning phase in cycle III is done on October 22, 2015. This stage begins with improvement and preparation of RPP which will be implemented based on cycle II reflection. RPP cycle III focuses on improving students' discipline and activeness in discussions and conveying ideas in the classroom. Based on the designs made in cycle III, planned attendance of model lecturers and lesson study teams five minutes earlier than the lecture schedule took place. This is intended to build imagery that Lecturers are ready to give lectures on time, so that when students present lecturers model was ready in the classroom. It is also intended to discipline student attendance in a timely manner.

### Stage of do

Implementation phase of cycle III is done on October 29, 2015. In accordance with the planning in cycle III, the model lecturer was prepared 5 minutes before the lecture took place which then followed by the presence of students. Lecture activities begin by opening lectures with prayers together with the purpose of lectures to be achieved during the lecture took place. Furthermore, the model lecturer gives direction related to the presentation activities that will be done. At this meeting, group 3 will present the results of discussion with the theme of apprenticeship Training. After the presentation is over, there are many students who are enthusiastic about asking questions. The answer from the presenter is more interesting so the more inviting questions the participants. Therefore, the question and answer session is open up to 3 sessions because many students want to ask questions. This is because the lecturer model also provides various pengalamnnya. At the end of the lecture, the model lecturer concludes the related material that has been presented. Followed by giving motivation to students so that they can apply the knowledge that has been obtained especially in planning life skills program. The material presented here is a continuation of Life Skills education materials, in which Work Training materials are more focused on vocational skills.

### Stage of see

The reflection stage of the implementation of cycle III is carried out after the implementation of the cycle ends. At the

reflection stage, the implementing team discusses all the implementation that has been carried out at the stage of do. Based on observations made by the observer of the attendance of students, all students present in the lecture. This is indicated by the impact of the motivation given by the model lecturer. Implementation of the discussion in the presentation has also been running smoothly. The student enthusiasm in questioning is increasing and already entrusting to the students. Model lecturers have succeeded in motivating students to be confident in conveying ideas or questions. It is also a personal skill and social skill that students must master in Life Skills Education and Work Training courses. Nevertheless, there are still some students who have not maximally in following the lecture activities. When the lectures take place, they like to chat alone so that sometimes interfere with lectures. The student's habits are already known by many other lecturers and other friends.

The result of reflection from each stage of Lesson Study activity shows that there is an increase of self-motivation in students by using this learning model. In the early obervation still seen the passivity of students in following the learning. This is because the motivation has not grown in students to learn in groups. Lesson Study is a program that can improve the effectiveness of collaborative learning. The teacher works together to solve learning problems in class. Communication and collaboration between teachers in lesson study can solve learning problems effectively (Trianto, 2016).

Collaborative learning model applied in this Lesson Study activity so as to increase student activity in discussion activity. Asmawati, et al. 2013 shows that collaborative learning with lesson study can improve student learning activities. The courage of students in asking questions has increased followed by the ability to argue. In line with the motivational theory of Piaget and Vigotsky that student motivation will grow through collaborative learning because in

collaborative learning it provides a conductive learning environment and fosters the courage of members to argue thus creating a mutual need situation among members within the group. This condition can be seen in any the attitude of discipline in learning. At the beginning of the learning there are some students who come late, but after the learning of collaborative levels of student delays are not there, even many students who come before the learning activities began.

Study activities Lesson through collaborative learning are able to direct students to think critically. This is because in learning activities there are always problemsolving discussions, so that students have wide opportunities to express ideas Utomo, 2011 explained that through collaborative learning sharing knowledge provides opportunities for students to engage in discussion, responsibility for the success of self-study so that it accumulates itself into critical thinking. Further explained by Dewi, et al, 2016 in his research that collaborative learning has a significant effect on students' critical thinking.

The main idea underlying collaborative learning is the understanding of cooperation that is built up among group members as opposed to competition that prioritizes individual excellence. Through collaborative learning, student activities and learning outcomes increase because of the mutual motivation between individuals. This is in line with the results of the research of Pahala and Zulkifli, 2015 which describes collaborative learning able to improve learning activities and student learning outcomes related to student budget plans.

The success of collaborative learning in this Lesson Study is due to the absence individual differences, assuming all learners are uniform or equal. This makes students feel comfortable to learn, so activities that are not important or do not need to do such as daydreaming, playing a pencil or ruler is not done anymore. Students feel they have the same role and rights because in collaborative learning it only delivers low-level tasks that

group with the initial condition of the group that has not been able to cooperate or separate from other people long enough to adjust and give each other opinion. Motivation that grows in students will have an impact on are discussed together on a predetermined topic.

Lesson study is considered to be able to facilitate the learning process because it involves educators and students as well as observers, so that classroom learning can be quality. In addition to students being able to receive material easily, educators can also improve their teaching skills well. This is in line with the results of Dewanto research, et al, 2016 which explains that lesson study is able to improve the quality of learning. Lecturers can also collaborate with peers in an effort to improve learning.

Further explained by Joko Apriyono, 2013 in his research that collaborative learning is a strategic way of learning to realize the peace of mankind through cooperation as an aspect of his life. Students need to be given insight into collaborative work, so that they will foster souls of mutual respect, respect, tolerance, responsibility, honesty and openness. Thus, the participation of students in learning will increase with the recognition of these traits.

Thus, each member will easily convey the knowledge and experiences he or she has had to add to the discussion. The end of the discussion is oriented on the learning outcomes that students are able to understand the material that has been discussed and can understand the material submitted by other members. The success of this activity is also inseparable from the Plan that has been planned before the cycle is done. This is very important because it will affect the Do and will result in See. Therefore, Plan activities must be done well because it is very important to success of Lesson Study activity.

#### **CONCLUSION**

Lesson Study activities greatly assist the learning process in Life Skills Education and Work training courses become more meaningful by using collaborative learning methods. This is because students can experience directly the learning process that comes from peers and the surrounding environment, so the motivation to grow high.

#### REFERENCES

- Apriono, D. (2013). Pembelajaran Kolaboratif: Perry, R., Lewis, C., Friedkin, S., & Baker, E. Suatu Landasan untuk Membangun Kebersamaan dan Keterampilan. Diklus, 17(1). (2009, March). Teachers' knowledge development during lesson study: Impact
- Asmawati, A. A., Abd, M., & Mushawwir, T. A. (2013). Penerapan Pembelajaran Kolaboratif untuk Meningkatkan Aktifitas Belajar Siswa Kelas XI IPA 3 melalui Lesson study berbasis Sekolah di SMA Negeri 8 Makassar. bionature, 14(1).
- Burghes, D., & Robinson, D. (2009). Lesson study: Enhancing mathematics teaching and learning. Reading, Berkshire, United Kingdom: CfBT Education Trust.
- Baba, T. (2007). How is Lesson Study Implemented? In Japanese lesson study in mathematics: Its impact, diversity and potential for educational improvement (pp. 2-7).
- Catherine, L. (2004). Does Lesson Study Have a Future in the United States. *Online:* http://www.sowi-online.de/journal/2004-1/lesson\_lewis.htm.
- Dewi, M. R., Mudakir, I., &Murdiyah, S. (2016). Pengaruh Model Pembelajaran Kolaboratif berbasis Lesson Study terhadap Kemampuan Berpikir Kritis Siswa. *Jurnal Edukasi*, 3(2), 29-33.
- Lasidos, P. A., & Matondang, Z. (2015).

  Penerapan Model Pembelajaran
  Kolaboratif Untuk Meningkatkan
  Aktivitas dan Hasil Belajar Rencana
  Anggaran Biaya Siswa Kelas XII
  Kompetensi Keahlian Teknik Gambar
  Bangunan SMKN 2 Siatas Barita—
  Tapanuli Utara. Educational Building, 1(1).

- Perry, R., Lewis, C., Friedkin, S., & Baker, E. (2009, March). Teachers' knowledge development during lesson study: Impact of toolkit-supported lesson study on teachers' knowledge of mathematics for teaching. In annual meeting of the American Educational Research Association, San Diego.
- Sato, M. (2012). Dialog dan Kolaborasi di Sekolah Menengah Pertama: Praktek "Learning Community". *Jakarta: Penerbit Pelita, Translation*.
- Dewanto, S. A., Slamet, S., Wulandari, B., & Pranoto, P. W. (2016). Implemantasi Lesson Study untuk Meningkatkan Kualitas Pembelajaran pada Perkuliahan Keselamatan dan Kesehatan Kerja Melalui Pendekatan Cooperative Learning. Elinvo (Electronics, Informatics, and Vocational Education), 1(2), 97-103.
- Susilo. et, al. (2011). Lesson Study berbasis Sekolah. Malang: Banyumedia Publising
- Sriyanto, J. (2016). Peningkatan Kualitas Pembelajaran melalui Lesson Study. *Jurnal Pendidikan Teknologi dan Kejuruan*, 16(1), 95-116.
- Sudrajat, A. (2008). Lesson Study untukmeningkatkan Proses dan hasil Pembelajaran. *Makalah disajikan pada*, 22.
- Stepanek, J. (2003). Researches in Every Classroom. *Northwest Teacher, Spring.4*(3), 2-5.
- Trianto. (2016). Building Collaborative Learning Through Lesson Study. *ICTEE*, *1*(1), 587
- Utomo, B. T. (2011). Penerapan Pembelajaran Kolaboratif dengan Asesmen Teman Sejawat pada Mata Pelajaran Matematika SMP. *Jurnal Pendidikan*, 1(1), 55.