



TBLA (TRANSCRIPT BASED LESSON ANALYSIS) TO ANALYZE STUDENTS' KNOWLEDGE CONSTRUCTION ON MATERIAL QUANTITY AND MEASUREMENT

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Abstract :

This research is about how the concept of students' knowledge construction in learning. This research used TBLA (Transcript Based Lesson Analysis) to improve learning at Senior high school 7 Jambi City. The TBLA model provides an analysis for learning input through learning dialog transcripts. The steps in this research are the planning stage (plan), the implementation stage (do), and the reflection stage (see). This research was conducted at Senior high school 7 Jambi City. Constructing students' knowledge during learning is interrogative (Q), asking for opinions, information, suggestions, or assistance. The responsive indicator (A) is answering questions or giving rejection. The suggestive indicator (S) gives suggestions related to the topic of discussion. On the informative indicator (I), which provides information related to the topic of discussion. The exemplification indicator (EX) gives concrete/real examples. On elaborative indicators (EL), namely developing further information, suggestions, or examples. The justification indicator (JT) is an allegation of information, suggestions, or examples.

Keywords: Construction of Student Knowledge; Lesson Study; Students

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INTRODUCTION

Education has an important role in human life. Education makes and makes human resources better and of higher quality. Education can be interpreted as a systematic conscious effort to achieve a better life (Suriadi et al., 2021). Learning is an activity that can never be separated from education. The learning process can be carried out by all students at home, school, or in the surrounding environment and learning can also be done remotely.

Basically, good learning is done by constructing knowledge. Knowledge construction is an activity or mental process of a student in finding and changing the information obtained so that an overall understanding or interpretation of a knowledge is formed. The knowledge construction process is a way or steps taken by a student to build his knowledge. Constructive learning is learning that is created by the teacher by holding that the teacher does not transfer knowledge to students, but students acquire knowledge based on reasoning, so that students understand what they are learning. Constructivism views that knowledge cannot be transmitted directly by the teacher into the minds of students, but this process

of change requires students' active construction. To construct new meanings, students must have experience in observing, guessing, doing and trying activities (Rangkuti, 2014).

Lesson study is an effort to improve learning processes and outcomes that are carried out collaboratively and continuously by a group of teachers based on the principles of collegiality and mutual learning, as well as building a learning community. Because students who have been considered as educational objects, their position as educational subjects is increased. Changing the approach from an emphasis on how teachers teach (teacher-centered) to how students learn (student-centered). Thus, it is necessary to support various parties in setting goals collaboratively, carefully collecting data on how students learn, and agreeing on implementation steps so as to enable productive discussion of difficult issues (Muntaqo & Masrurroh, 2016). Through lesson study activities we can improve our own abilities as professional teachers in fulfilling students' rights to learn and improve the quality of students (Supriatna et al., 2014) in (Manrulu & Sari, 2015).

In Lesson Study activities which consist of three steps, namely plan, do and see. Lesson study is an effort to improve learning processes and outcomes that are carried out collaboratively and continuously by a group of teachers based on the principles of collegiality and mutual learning, as well as building a learning community. Through the see stage in Lesson Study an analysis is carried out and obtains reflections on the learning activities that have been carried out. Learning analysis is a way to see, hear, describe, discuss, and understand interactions between teachers and students during learning (Romagnano et al., 2018) in (Rahayu et al., 2020).

Construction of students' knowledge in the learning process is developed through LSLC (Lesson Study for Learning Community) activities. The learning analysis framework used is TBLA analysis (Transcript Based Lesson Analysis). TBLA is a method of analyzing learning outcomes by using transcripts of students' conversations, students' teachers in learning activities, which are known by making in-depth observations. In the TBLA model, a camera is needed to function all teacher-student activities (and vice versa) so that it helps construct events during dialogue transcripts. The TBLA model is believed to be able to open up problems that occur during learning so that the teacher gets in-depth input based on the dialogue that occurs (Amintarti et al., 2020).

RESEARCH METHOD

Approach appropriate to this research is a qualitative research approach. Qualitative research is research that uses qualitative data such as interviews, participant observation data and document data to understand and explain social phenomena (Azmi et al., 2018). The type of research used in this research is a case study type. Case studies are used to provide an understanding of something that attracts attention, social processes that occur, concrete events, or experiences of people who are the background of a case. A case study is expected to be able to capture the complexity of a case and this methodology is increasingly developing in the social sciences, including in practice-oriented fields such as environmental studies, education, and business (Prihatsanti et al., 2018). Data collection techniques used in this study are observation techniques, interview techniques and documentation techniques.

Table 1. Data Collection Techniques

Data collection technique	Stages of Lesson Study	Data
Observation	-	Field notes
		Assessment results
Interview	-	Voice recording
		Video
		Video
Documentation	Design	Voice recording
		Lesson design
		Video
	Observation	Voice recording
		Observation sheet
		Video
Reflection	-	Voice recording

Documented data during the research were in the form of audio and video recordings of two cycles of learning through Lesson Study activities. The data analyzed focused on audio and video recordings at the observation stage of each learning cycle.

The transcripts obtained were then analyzed for students' knowledge construction that occurs in science learning using the Transcript Based Lesson Analysis (TBLA) method. The TBLA analysis process in this study was characterized by the following three points: First, to understand the characteristics of the learning settings within one lesson, the researcher divided the learning into several segments for analysis. The second point is that the researcher determines several focus points as the basis for the analysis referring to various analytical perspectives and learning categories. The researcher then conducted a detailed analysis and meta-analysis of various settings in the teaching and learning process from learning based on an analytical perspective. The third and final characteristic of TBLA is that in addition to using the traditional formula of learning analysis conducted by a researcher, cross-cultural analysis and discussion is formed involving different views from several observers. The analysis of learning transcripts focuses on student dialogue in learning which is then classified based on the type of response as a communicative function that represents the construction of students' knowledge according to Table 2 below.

Table 2. Classification of Response Types

Response Type	Coding	Description
Interrogative	Q	Ask for opinions, information, suggestions or clarifications
Responsive	A	Answer questions or provide clarification
Suggestive	S	Provide suggestions related to the topic of discussion
Informative	I	Provide information related to the topic of discussion
Exemplification	EX	Give concrete/real examples
Elaborative	EL	Develop further pieces of information, suggestions or examples
Justificational	JT	Verify information, suggestions or examples

Source: (Rahayu et al., 2020).

This research was carried out in several cycles of lesson study activities consisting of cycles I and II. Each cycle of lesson study learning activities begins with the planning stage then the implementation and finally the reflection stage. But if you haven't got the desired results, the activity can be added until you get the desired results, but if you have got the desired results before activity II, you can stop it until activity II. The second cycle is intended to correct deficiencies in the first cycle. In this study, researchers collaborated with class X.5 teachers at SMA Negeri 7 Jambi City. And researchers participate in every teaching and learning activity that takes place to observe the course of the learning process. The scheme for implementing this research activity is illustrated in the figure below.

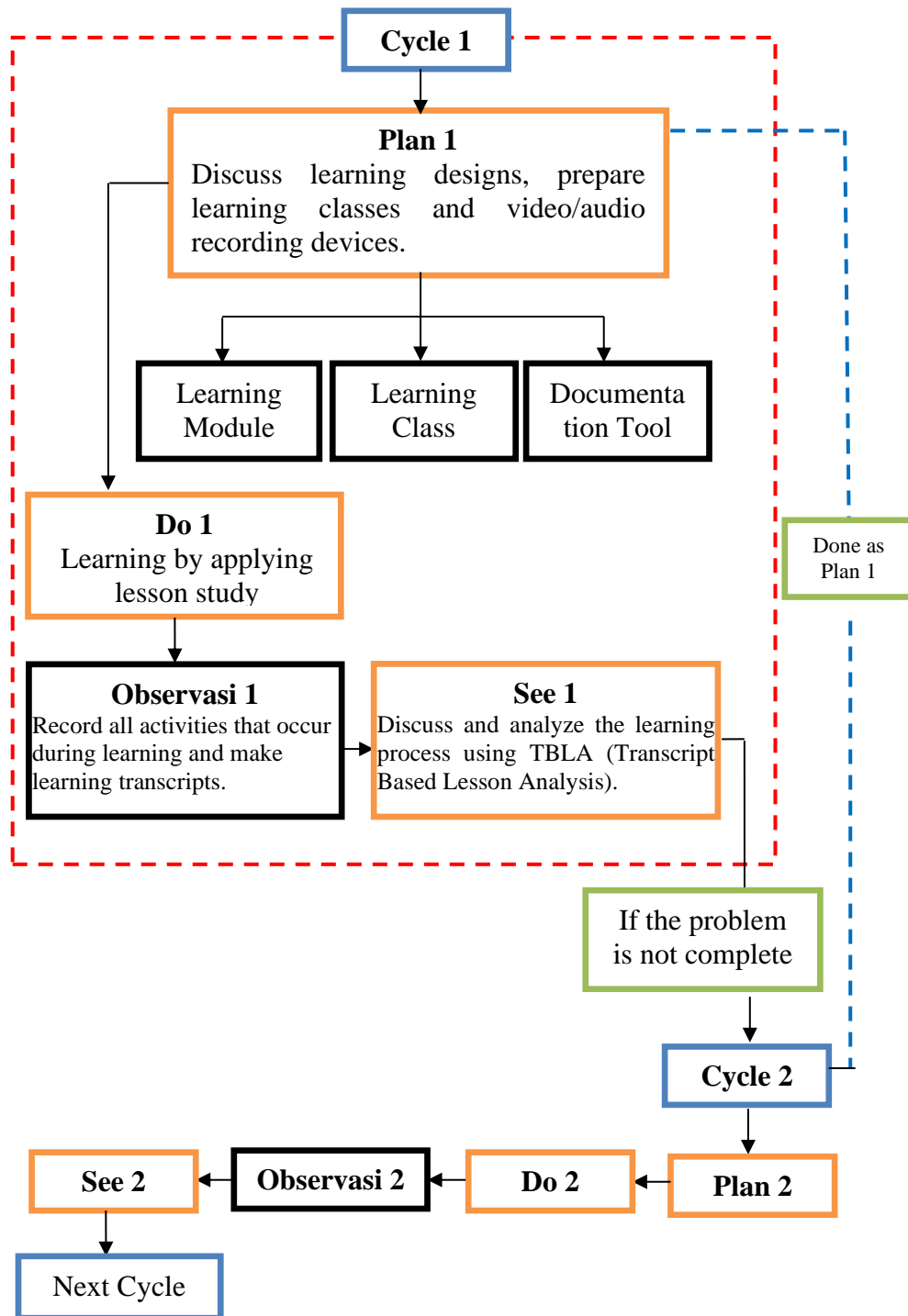


Figure 1 Schematic of Lesson Study research procedures

Whichever form of lesson study is chosen for a teacher is not a problem as long as it is carried out according to predetermined stages. According to Supranoto (2015) lesson study steps are:
 1. Plan

Planning is carried out collaboratively based on problems in class to develop a student-centered learning model through hands-on & minds-on activities, daily life, and local materials. In general, plan activities are in the form of academic exploration, lesson planning and preparation of tools. Learning planning is carried out by taking into account the learning objectives and the characteristics and development of students, which is carried out collegially and collaboratively. Planning can also be done in the following way: it is made by one of the teachers and then consulted or presented in front of other fellow teachers so that they get suggestions and input to obtain a good lesson plan.

TBLA (Transcript Based (Rizkika, et al) pp:79-86

2. Do

Do activities are activities in which a model teacher carries out learning in class, while other teachers observe all student learning activities during the learning process. Observations can also be made by other people who have concern for education, provided that the target of the observations is not directed at the teacher, but is focused on student activities in participating in the learning process. During do activities observers are not allowed to help, interfere, ask questions and disturb students during the learning process.

3. See

Reflection activities are carried out after the learning activities (do) have been completed, to see various things found in the implementation of learning, both by the model teacher and the observers. The teacher and observers discuss their findings related to student learning activities during the learning process. The observer and the model teacher learn from each other the lessons that have been observed and the results of the sharing are used to revise the lesson plan.

RESULTS AND DISCUSSION

Science learning with Lesson Study based on Transcript Based Lesson Analysis (TBLA) is carried out in two cycles. This research took place face to face which was carried out in class X.5 SMA Negeri 7 Jambi City. This research took place during 2 research cycles with each cycle carried out in 3 stages, namely the planning stage (plan), the implementation stage (do), and the reflection stage (see).

In cycle 1 the learning planning (plan) has been carried out and prepared properly. After the preparations have been made, there is the implementation stage (do), at this stage the researcher acts as a model teacher during the learning process. At the time of learning begins with preliminary activities. Preliminary activities are carried out by the teacher opening the lesson. Then enter the core activities, in this activity learning begins with providing stimulation regarding measurement material and inviting students to read books, see and observe sample pictures about measurements in books, then students respond. During the learning process one of the observers recorded the learning process which was then transcribed by the researcher as in the learning transcript table. The results of this study are presented in the following tables and graphs:

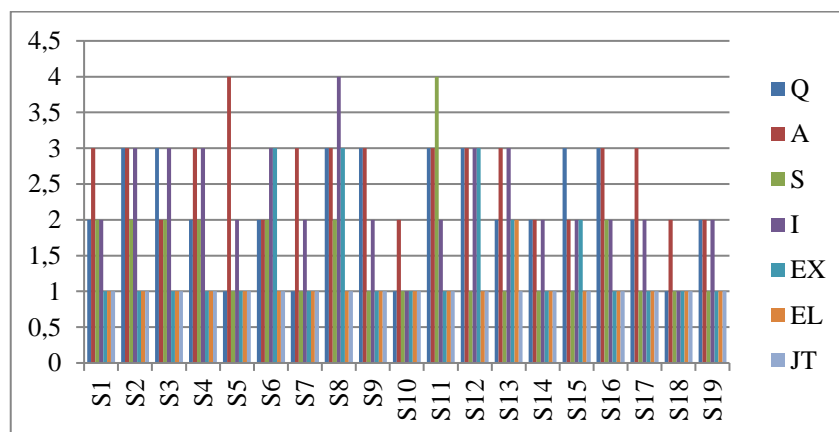


Figure 2 Graph of the results of the analysis of students' knowledge construction cycle 1

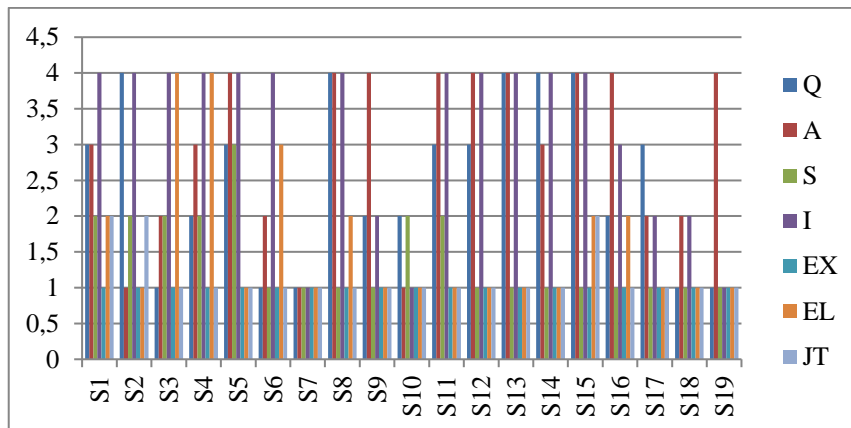


Figure 3 Graph of the results of the analysis of students' knowledge construction cycle 2

Based on the graphs of the results of the analysis of students' knowledge construction in cycle 1 and cycle 2 that there was an increase in students' knowledge construction. In the graph there is an increase in the Q indicator, namely asking for opinions, information, suggestions or clarifications of 9 students, namely at S1, S2, S5, S8, S10, S13, S14, S15, S17. In indicator A, namely answering questions or providing clarifications, there was an increase in 9 students namely S8, S9, S11, S12, S13, S14, S15, S16, S19. On the S indicator, namely providing suggestions related to the topic of discussion, there was only an increase in S5 students. In indicator I, namely providing information related to the topic of discussion, there was an increase in 12 students, namely S2, S3, S4, S5, S6, S11, S12, S13, S14, S15, S16, S18. There was no increase in the EX indicator, namely giving concrete/real examples. On the EL indicator, namely developing further information, suggestions, or examples, there was an increase in 7 students namely S1, S3, S4, S6, S8, S15, S16. On the JT indicator, namely justifying information, suggestions or examples, there was an increase in 3 students, namely S1, S2, S15.

CONCLUSION

Based on the results of research on student knowledge construction that occurs in learning on Magnitude and Measurement material, it can be concluded that lesson study based on TBLA (Transcript Based Lesson Analysis) is one of the learning innovations for designing a lesson with 3 steps, namely first planning (plan) is carried out collaboratively between researchers, teachers, and observers. The second implementation (do) model teacher activities carry out learning in class. The three reflections (see) are carried out to evaluate previous activities.

Based on the results of the analysis of students' knowledge construction reviewed from various types of responses. Construction of students' knowledge that occurs during the learning process is interrogative (Q), namely asking for opinions, information, suggestions or clarifications. The responsive indicator (A) is answering questions or providing clarifications. The suggestive indicator (S) is giving suggestions related to the topic of discussion. On the informative indicator (I), which provides information related to the topic of discussion. The exemplification indicator (EX) is giving concrete/real examples. On elaborative indicators (EL), namely developing further information, suggestions, or examples. On justificational indicators (JT), namely justifying information, suggestions or examples. The dominant student knowledge constructions that occur in the learning process are informative (I), namely providing information related to the topic of discussion, interrogative (Q), namely asking opinions, information, suggestions or clarifications, responsive (A), namely answering questions or providing clarifications, elaborative (EL) namely developing further information, suggestions, justificational (JT) namely justifying information, suggestions or examples.

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