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Analysis of the Science Learning Process through TBLA-Based Lesson Study (Transcript Based Lesson Analysis)

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Abstrak

Penelitian ini merupakan penelitian yang bertujuan untuk menganalisis proses pembelajaran IPA melalui lesson study berbasis transcript-based lesson analysis. Ada 3 tahapan utama dalam penelitian ini yaitu tahap perencanaan (plan), pelaksanaan (do), dan refleksi (see) yang dilakukan dalam 2 siklus. penelitian ini dilakukan mulai tanggal 18 Januari 2021 sampai dengan 22 Februari 2021. Penelitian ini dilakukan dikelas VIII.3 SMP Islam Al-Falah Kota Jambi yang berjumlah 32 orang siswa. Pengumpulan data dalam penelitian ini menggunakan rekaman video/audio selama pelaksanaan pembelajaran berlangsung dan lembar catatan lapangan pengamatan untuk membantu memperkuat analisis data. Data penelitian kemudian dianalisis dengan menggunakan teknik analisis TBLA (Transcript Based Lesson Analysis). Temuan dari analisis TBLA ini adalah pembelajaran yang terjadi tidak hanya didominasikan oleh guru tetapi siswa juga cukup mendominasi dalam proses pembelajaran. Hal itu terlihat dari adanya beberapa siswa yang tidak aktif dalam pembelajaran pada siklus 1 menjadi aktif pada pembelajaran siklus 2. Dari hasil penelitian ini disarankan agar guru dapat menerapkan lesson study berbasis TBLA ini untuk memperbaiki pembelajaran agar menjadi lebih efektif, yaitu untuk membuat siswa lebih banyak berbicara dalam proses pembelajaran dari pada guru. Pembelajaran yang seperti itu disebut dengan student centered learning.

Kata Kunci: Transcript Based Lesson Analysis, Lesson Study, Proses Pembelajaran

Abstract

This study is a study that aims to analyze the science learning process through transcript-based lesson study based on lesson analysis. There are 3 main stages in this research, namely the planning stage (plan), implementation (do), and reflection (see) which are carried out in 2 cycles. This research was conducted from January 18, 2021, to February 22, 2021. This research was conducted in class VIII.3 of Al-Falah Islamic Junior High School, Jambi City, totaling 32 students. Data collection in this study used video/audio recordings during the learning process and observation field notes sheets to help strengthen data analysis. The research data were then analyzed using the TBLA analysis technique (Transcript Based Lesson Analysis). The findings from this TBLA analysis are that learning that occurs is not only dominated by the teacher but students also quite dominant in the learning process. This can be seen from the existence of some students who were not active in learning in cycle 1 to become active in learning cycle 2. From the results of this study, it is suggested that teachers can apply this TBLA-based lesson study to improve learning to be more effective, namely to make more students speak in the learning process than the teacher. Such learning is called student-centered learning.

Keywords: Transcript Based Lesson Analysis, Lesson Study, Learning Process

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INTRODUCTION

Education is a conscious effort to develop the potential of human resources, especially students, which is done by guiding and facilitating their learning activities. Education always changes according to the needs and developments of the times. Learning in the 21st century is different from learning in the past. In the past, learning was carried out without paying attention to standards, whereas now it requires standards as a reference for achieving learning objectives (Pratiwi et al., 2019). Learning in the era of the industrial revolution 4.0 has objectives with 4C characteristics, namely critical thinking, collaboration, creativity, and communication (Marlina & Jayanti, 2019).

This demands that learning should be student-centered. Student-centered learning applies to all subjects taught in schools, one of which is Science (Natural Sciences). In science learning, learning activities in class, especially dialogue in discussions, are activities that encourage students to participate in building knowledge together and evaluate ideas through explanations given by the teacher, to encourage social interaction between teachers and students and between other students (Rahayu, 2019).

Based on the explanation above that learning must be student-centered while in reality learning is still teacher-centered, it must be made improvements in the learning process. One way to improve the learning process so that it is student-centered can be done with lesson study. The term lesson study was first coined by Matoko Yoshida, an education expert in Japan in his doctoral dissertation at the University of Chicago, by translating jugyou kenkyuu as Lesson Study (Prihantoro, 2011). and Science Teacher Education Project) at three universities in Indonesia, namely IKIP Bandung (UPI), IKIP Yogyakarta (UNY), and IKIP Malang (UM) with JICA (Japan Cooperation Agency) with the aim of improving the quality of mathematics and science education in Indonesia (Nuryanta, 2016).

According to (In'am, 2009) lesson study is a model of classroom-based teaching profession development through collaborative learning assessment and carried out continuously based on the principles of peer cooperation and reciprocal learning to build study groups. According to (Supriatna, 2018) through lesson study activities teachers can find out how students learn and think and how teachers facilitate so that students learn optimally to fulfill their life needs in a better future. Students need to have the ability to think at high levels, create or look for opportunities, innovate, collaborate, and have the ability to communicate well. Lesson study is a concrete step to form a learning community (learning society). Lesson study aims to produce good learning, build capacity, expertise, and knowledge to improve teaching and learning processes in a broad spectrum of disciplines and fields (Cerbin & Kopp, 2006). The characteristic of lesson study is to keep students at the core of teacher professional development activities (Amir, 2013).

According to (Rozhana, K. M., & Harnanik, 2019) lesson study activities consist of three stages, namely: First, Planning (Plan) where at this stage, learning focuses on the cognitive domain, namely the formulation of this stage is contained in the learning design that adapts to the limited allocation of learning time in schools. According to (Parmin, 2009) this planning stage aims to design student-centered learning. Of course, this planning is not done alone by the teacher but is done jointly by teachers, lecturers, and observers in a collaborative manner. Second, Implementation (Do) where at the implementation stage, a model teacher implements the learning design that has been compiled in the planning stage (plan). Another teacher served as an observer by using the prepared sheets and other necessary tools. These observers noted positive and negative things in the learning process, especially in terms of student behavior. Besides, photo and video recordings are recorded regarding special incidents (to the teacher or students) during the learning process. The results of this recording are used as evidence to be discussed in the reflection stage. Last, Reflection (See) where at this reflection stage, the model teacher appeared and the observers discussed the learning that had just been carried out. First, the model teacher expressed his impression during the learning process, both for himself and for the students he faced. Furthermore, the observer delivered the results of his observation data analysis, especially those concerning student activities during the learning process. Then the model teacher responded to the observers' comments. The results of this reflection stage are then used to reconsider the learning plan that has been prepared as a basis for improving the next learning plan (Nuryanto, 2017).

For learning with this lesson study to be achieved, it is necessary to carry out an in-depth analysis of learning through observation and recording, making learning transcripts, and then analyzing them. Learning analysis in lesson study is known as TBLA (Transcript Based Lesson Analysis). According to (Sarkar Arani et al., 2019) transcript-based learning analysis is an analysis of evidence-based learning, which is democratic and focuses on the actions of teachers in teaching as a social justice mission not only as professional practice. With this transcript-based analysis, every student is seen as equally important in learning and has the same opportunity to present their ideas. This is because the purpose of teaching is holistic, namely to mature students, become humane, and become better human beings.TBLA (Transcript Based Lesson Analysis) or transcript-based learning analysis is a learning model from lesson study. The TBLA technique provides analysis for learning input through transcripts of learning dialogues. In the TBLA technique, a camera is needed that functions to record all teacher and student activities so that it helps analyze events during dialogue transcripts. The TBLA technique is believed to be able to open up problems that occur during learning so that teachers get in-depth input based on the dialogue that occurs (Mutiani et al., 2020).

According to (Sarkar Arani, 2017) the transcript-based learning analysis process is characterized by the following three things: First, to understand the characteristics of the lessons that stand out during one hour of lessons. Second, establishing several focal points as a basis or reference which is then carried out in detail analysis and meta-analysis of various settings in the teaching and learning process based on this analytic perspective. Third, using the traditional learning analysis formula conducted by a researcher on a cross-cultural analysis and discussion involving different cultural lenses. According to (Matsubara, 2010) in (Supriatna, 2018) the stages of activities in analyzing learning transcripts are recording, transcripts, word protocols, word protocol articulations, and articulation relationships.

Learning that has not been centered on students is an important problem to fix because if the problem is not resolved it will result in educational goals not being achieved and students not being able to develop their potential optimally. Therefore, this study aims to analyze the science learning process through a TBLA-based lesson study (Transcript Based Lesson Analysis) at Al-Falah Islamic Junior High School, Jambi City.

METHODS

This research was conducted at Al-Falah Islamic Junior High School in Jambi City. When this research was conducted in the even semester of the 2020/2021 school year. The research approach used is qualitative research with the type of case study research. According to (Rukajat, 2018) The qualitative approach is a research procedure that produces descriptive data in the form of written and spoken words from people and observed behavior. This type of research is a case study, a case study is a type of in-depth qualitative research about individuals, groups, institutions, and so on within a certain time. The purpose of a case study is to try to find meaning, investigate meaning, investigate processes, and obtain a complete understanding and deep understanding of a particular individual, group, or institution. Case study data were obtained from observing and studying various documents related to the topic under study (Sugiarto, 2015).

The data in this qualitative research are learning dialogues, actions, and data obtained from video/audio recordings during the learning process which are then presented in the form of learning transcripts. The learning transcripts are in the form of dialogues and actions that occur between

teachers and students as well as dialogues between students and other students. This study uses a non-probability sampling technique with a quota sampling type, namely the number of samples as much as the number determined by the researcher, so only a few people from the population are the research samples (Sugiyono, 2017). The population in this study were all grade VIII students of Al-Falah Islamic Junior High School in Jambi City, while the sample of this study was 5 grade VIII students of Al-Falah Islamic Junior High School in Jambi City.

The data collection techniques in this study are in the form of observation and documentation. The type of observation used is participatory observation, in which the researcher is directly involved in the activities being observed. Observations made in this study were to observe the application of lesson study during the learning process. Meanwhile, documentation is data collection using the help of tools or records of past events, documentation can be in the form of writing, graphics, audio recordings, videos, and so on. In this study, the documentation data was in the form of photos and video / audio recordings when implementing lesson study during the learning process (Prasetyo, 2015)

The data analysis technique used in this research is descriptive analysis. The data in this study are qualitative data obtained from video / audio recordings during the learning process which are then transcribed and analyzed using the TBLA (Transcript Based Lesson Analysis) technique. The TBLA model provides analysis for learning input through learning dialogue transcripts. This learning analysis system developed focuses on student responses during classroom learning, reflecting how teaching practices and student involvement (Apriani, et. Al, 2020)

This research was conducted in 2 cycles of lesson study activities consisting of 3 stages in each cycle, namely the plan (planning) stage, the do (implementation) stage, and they see (reflection) stage. In this study, researchers collaborated with science subject teachers who taught at Al-Falah Islamic Junior High School in Jambi City, supervisor lecturers, and a team of observers. The scheme for the implementation of this research activity is described below

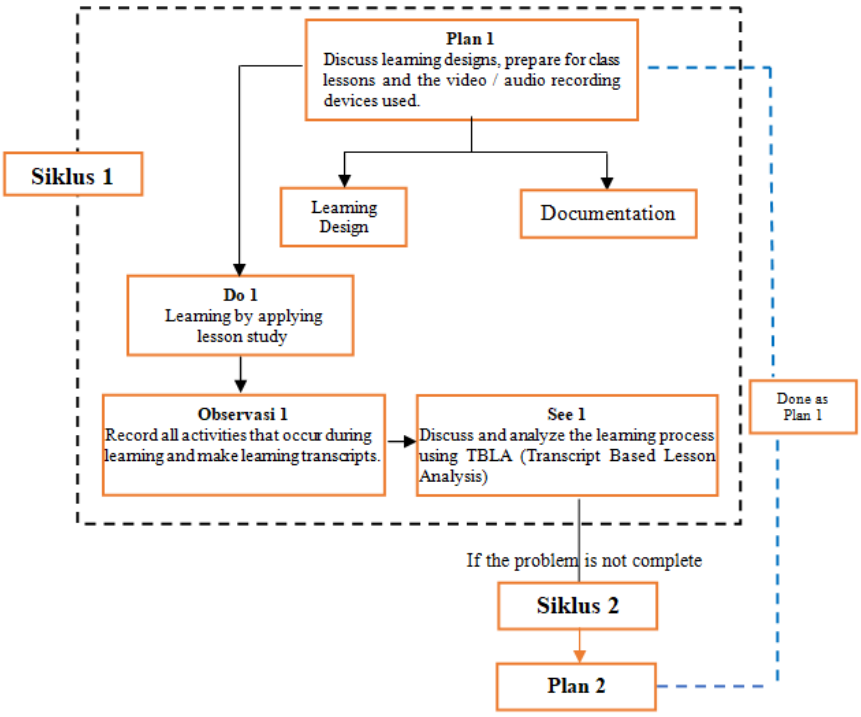


Figure 1. Lesson study research procedures (Susanti, Desmalwan, & Basuki, 2016)

RESULTS AND DISCUSSION

Analysis of the science learning process through TBLA-based lesson study (Transcript Based Lesson Analysis) conducted in class VIII.3 of Al-Falah Islamic Junior High School, Jambi City from January 18 to February 22, 2021, with 2 research cycles. Each cycle is carried out in 3 stages, namely planning (plan), implementation (do), and reflection (see). At the planning stage (plan), the researcher prepares learning tools in the form of instructional designs and instructional media which are then discussed with class teachers, supervisors, and observers. After discussing the learning tools that will be used, a teaching simulation is carried out so that at the implementation stage (do) it becomes more effective and can be following the allocation of learning time.

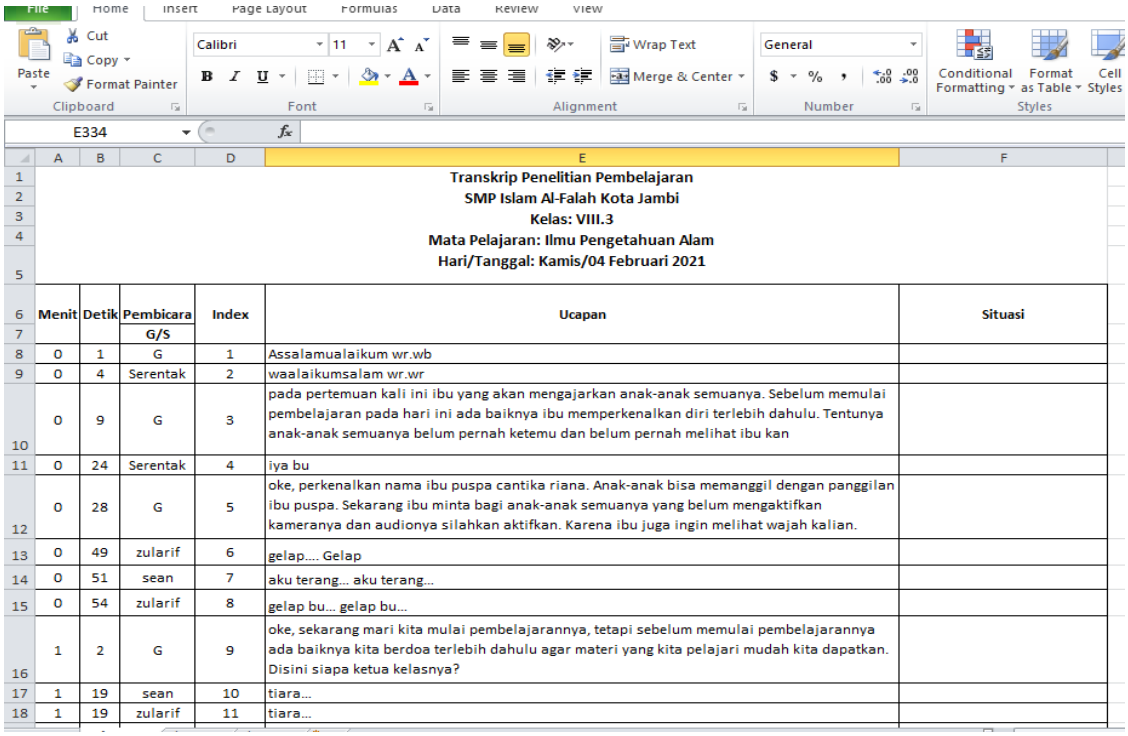
During the Covid-19 pandemic, the learning process was carried out online through the Google Meet application, therefore researchers conducted online research using similar applications to be able to adjust to learning that was taking place in schools. The Google Meet application was chosen because it makes it easier for model teachers to deliver learning material face-to-face even though it is in virtual form and makes it easier for model teachers to share learning materials by displaying learning media in the form of power points and learning videos. The Google Meet application also has weaknesses, namely that it must have a good internet network to join in learning and it consumes a lot of internet quota so it requires a large enough capital to take part in learning.

Furthermore, in the implementation stage (doo), at the implementation stage, the researcher acts directly as a model teacher in implementing virtual learning through Google Meet with students. At this stage, the model teacher conveys and explains the learning material under the planning stage (plan) which is adjusted to the allocation of learning time for 30 minutes. Whereas the observer has the duty of observing, namely observing everything that happens to students and observing the findings that occur during the learning process. Then the findings obtained by the observer are poured into a research field note, this research note serves to strengthen the results of the analysis of the research data obtained.

Finally, in the reflection stage (see), at this stage of reflection researchers, class teachers, lecturers, and observers hold discussions to discuss the research results obtained at the implementation stage (do). The results of the discussion at this stage are used as a reference for improvement for cycle 2. Cycle 2 is carried out to improve learning activities in cycle 1. The results obtained in cycle 1 and cycle 2 are as follows.

Result of TBLA Cycle 1

Data collection in cycle 1 was carried out on February 4, 2021, assisted by science subject teachers, lecturers, and an observer team who were tasked with recording all activities during the learning process and observing students who had been determined in advance, then the results of the observations were poured into the observation field note sheet. Figure 2 is an illustration of the transcript analysis process according to a predetermined format.



Transkrip Penelitian Pembelajaran
SMP Islam Al-Falah Kota Jambi
Kelas: VIII.3
Mata Pelajaran: Ilmu Pengetahuan Alam
Hari/Tanggal: Kamis/04 Februari 2021

Menit	Detik	Pembicara G/S	Index	Ucapan	Situasi
0	1	G	1	Assalamualaikum wr.wb	
0	4	Serentak	2	waalaikumsalam wr.wr	
0	9	G	3	pada pertemuan kali ini ibu yang akan mengajarkan anak-anak semuanya. Sebelum memulai pembelajaran pada hari ini ada baiknya ibu memperkenalkan diri terlebih dahulu. Tentunya anak-anak semuanya belum pernah ketemu dan belum pernah melihat ibu kan	
0	24	Serentak	4	iya bu	
0	28	G	5	oke, perkenalkan nama ibu puspa cantika riana. Anak-anak bisa memanggil dengan panggilan ibu puspa. Sekarang ibu minta bagi anak-anak semuanya yang belum mengaktifkan kameranya dan audionya silahkan aktifkan. Karena ibu juga ingin melihat wajah kalian.	
0	49	zularif	6	gelap.... Gelap	
0	51	sean	7	aku terang... aku terang...	
0	54	zularif	8	gelap bu... gelap bu...	
1	2	G	9	oke, sekarang mari kita mulai pembelajarannya, tetapi sebelum memulai pembelajarannya ada baiknya kita berdoa terlebih dahulu agar materi yang kita pelajari mudah kita dapatkan. Disini siapa ketua kelasnya?	
1	19	sean	10	tiara...	
1	19	zularif	11	tiara...	

Figure 2. Screenshot of research transcript format

Based on the analysis of the learning transcripts as a whole, a graph of the number of words during the implementation of cycle 1 is obtained, namely, Figure 3. The graphs shown in Figures 3 and 4 show that the top part is a conversation session conducted by the model teacher, while the bottom is a conversation session conducted by students. The horizontal line that limits the conversation sessions of the model teacher and students on the graph is the conversation index recorded on the transcript as a whole. This index is also the sequence during the learning process.

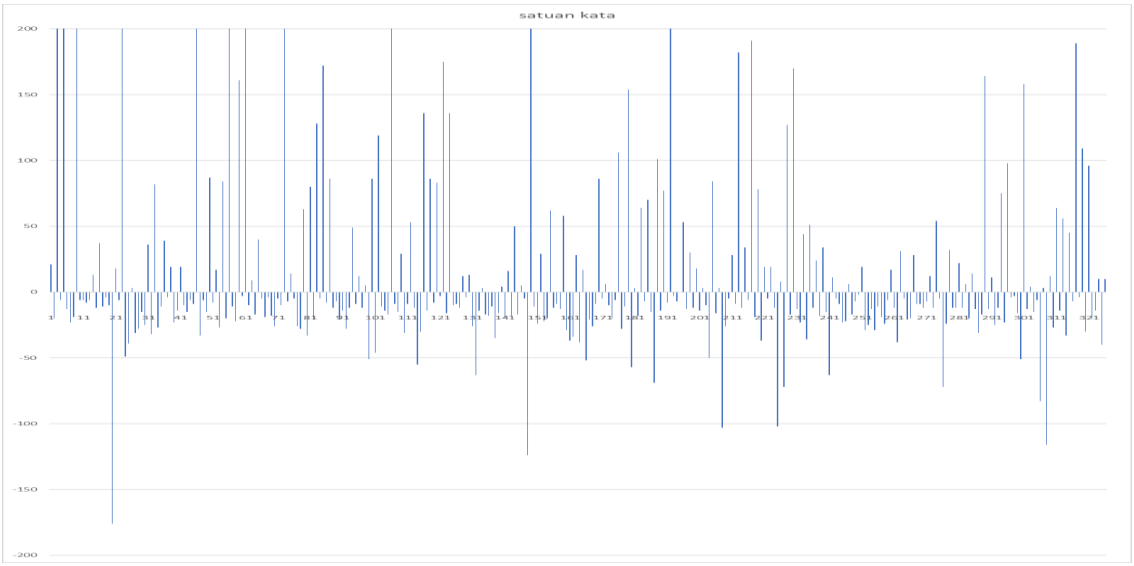


Figure 3. Graph of number of words cycle 1

Learning in cycle 1 has been well prepared, such as the learning design and learning media used so that learning can be dominated by students. Based on communication at the planning stage (plan) together with the science subject teacher, there is quite a lot of grade VIII.3 students at Al-Falah Islamic Junior High School who are active in learning.

During the implementation stage (do), students seemed very active and enthusiastic in learning, but some students did not respond during the learning process. At the beginning of the model, teacher learning motivates so that students remain enthusiastic in learning even though learning is done online. Then the model teacher stimulates students by displaying photos/videos of learning related to the learning material. Then the model teacher enters the core stage of learning, namely explaining the material, giving examples of questions, and inviting students to connect the learning material with what happens in everyday life. The learning core ends with the model teacher giving practice questions to students which are then discussed together. From the practice questions given by the teacher, it can be seen that students understand the learning material well and students even ask for additional practice questions to be done. At the end of learning the model, the teacher asks students to conclude learning, several students conclude learning. The learning conclusions given by the students are certainly reinforced by the model teacher to believe that the conclusions given by the students are correct.

In the reflection stage (see), namely the discussion conducted by researchers, science subject teachers, lecturers, and the observer team that during the learning process carried out online, many students did not activate the camera and only a few students activated the microphone. This of course raises the question of whether the student is taking part in the lesson or not. The teacher explained these findings that this often happens because learning is done online using Google Meet and of course, requires a large internet quota.

Overall, this learning process goes well when viewed from the learning objectives, namely when the teacher focuses the learning material and invites students to find out the application of learning material with what happens in everyday life. And in terms of student responses who are active during the learning process. However, there are important notes as a reflection to improve in cycle 2, namely by dividing students into several groups so that all students are active in group learning and discussion.

Result of TBLA Cycle 2

Data collection in cycle 2 was carried out on February 18, 2021, assisted by science subject teachers, lecturers, and observer teams who were tasked with recording all activities during the learning process and observing students who had been determined in advance, then the results of the observations were poured into the observation field note sheet.

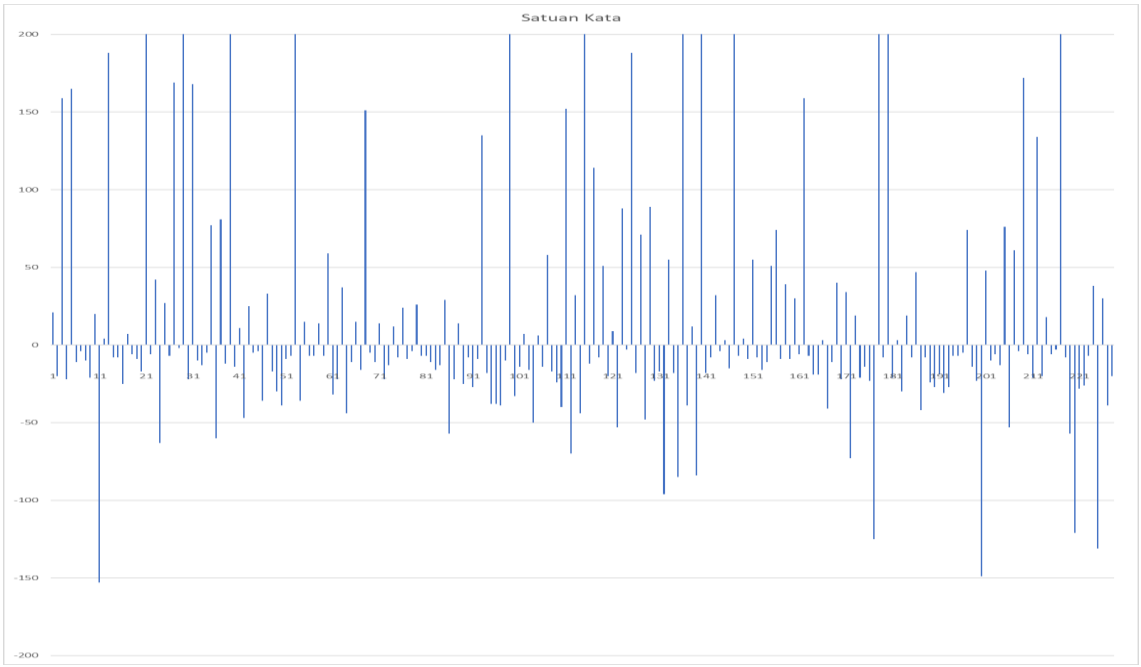


Figure 4. Graph of number of words cycle 2

The learning process carried out in cycle 2 is the same as that carried out in cycle 1, the only difference lies in the division of group assignments during learning so that students can actively discuss in groups. The results obtained in this second cycle were the addition of students who were active in learning, this can be seen from the overall transcript results that there were several names of students who were just active in this second cycle.

However, in cycle 2, there are obstacles in its implementation, namely the learning videos that suddenly cannot be displayed and there is a lack of time in giving each group rations to present the results of the discussion. However, overall the learning process in cycle 2 can be said to be successful because it can invite students who are not active in learning cycle 1 to become active in learning in cycle 2.

Overall, the results of the analysis of the learning transcripts carried out in cycle 1 and cycle 2 show that during the learning process, it is not only dominated by teachers, but also by students. This can be seen from the number of students who respond during the learning process and from the number of conversations that occur, both conversations that occur between teachers and students and students and other students. In cycle 2, it was also found that some students were not active in the learning carried out in cycle 1 to become active in learning carried out in cycle 2. Therefore, it can be concluded that learning carried out in cycle 2 succeeded in improving learning in cycle 1 per the results of the discussion. which has been done at the reflection stage in cycle 1.

CONCLUSION

Based on the results and discussion that has been described, it can be concluded that following the stages of the Lesson Study that has been carried out, namely the planning (plan), implementation (do), reflection (see) stages in 2 cycles. Based on the results of the Transcript Based Lesson Analysis (TBLA) cycles 1 and 2, it can be seen that the tendency of conversation transcripts is still dominated by the model teacher in the learning process, but students also dominate the learning

process seen from the responses and conversations that occur during the learning process and seen from the transcript. overall. The obstacle in the implementation of lesson study based on Transcript Based Lesson Analysis (TBLA) is the relatively short implementation so that it has not been able to optimize the results of reflection properly.

The positive impact of analyzing the learning process through lesson study based on transcript-based lesson analysis can help teachers criticize the learning they have done based on reflective results. Can assist teachers in monitoring student activities in more detail by observer assistance. Able to improve the quality of learning that has been done and will be used as a guideline that must be improved for the next cycle. As well as learning with this lesson study can add teacher collaboration in team teaching.

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