

THE INSTRUCTION OF SCIENCE IN RURAL JUNIOR HIGH SCHOOL

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**Wiworo Retnadi Rias Hayu^{1,2}, Anna Permanasari³,
Omay Sumarna³, Sumar Hendayana³**

¹*Department of Science Education, Universitas Pendidikan
Indonesia*

²*Department of Elementary School Teacher Education,
Universitas Djuanda*

³*Department of Chemistry Education, Universitas Pendidikan
Indonesia*

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Corresponding Author:

Wiworo Retnadi Rias Hayu

wiworo.iaz@gmail.com



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ABSTRACT

The teacher is an essential component of learning. Learning that is often focused by the government is learning in urban schools. Even though rural schools also have the same right to consider. Longer distances and access to schools that are more difficult to reach causes a lack of attention in rural areas schools. Learning in rural areas also requires attention to improve the quality of teaching. Knowing learning activities in rural schools is very important because it will understand what learning needs to be improved. The purpose of the research is to find out how teaching science in rural schools. This research uses mixed methods with the Taxonomy Development Model research design. The phase of QUAL is carried out to identify important variables. The development of a taxonomy or classification system, the development of theories that are not yet stable, and supporting it is a test in the phase of QUAN to obtain more thorough study results. The findings of this study illustrate that learning begins with answering questions, so students are enthusiastic. The next learning activity showing films about the reproduction of students was very excited about learning. The obstacle found in learning is the lack of preparation in the learning that is done so that time is wasted to condition the video playback.

1. INTRODUCTION

Teachers are an essential part of the world of education. The teacher is an agent of change that facilitates students to learn. Teacher competence is of high value in this process. Governments often tend to pay attention to urban teachers. However, teachers in rural areas are less likely to be allowed to gain advances in competency guidance. Therefore, teachers in the suburbs are also given the same opportunity to learn along the way. Teachers also need to develop and learn so that their abilities are developed and continuity. It is impossible if the development of teachers is only the responsibility of the teachers themselves; various parties concerned with education are expected to be able to support the development of teachers.

Teachers are required to have academic qualifications, competencies, educator certificates, physically and mentally healthy, and can realize national education goals. Teacher competencies include pedagogic competencies, personality competencies, social competencies, and professional competencies (Constitution Number 14 the Year 2005 Article 8 & 10 paragraph 1). The long-distance from the city center often becomes an obstacle for peers to get competency development. Therefore, there are still many teachers who have not met the teacher competency test (UKG) target results.

UKG results in Indonesia in 2015 stated the seven best provinces namely DI Yogyakarta with an average value of 62.58, Central Java with an average value of 59.10, DKI Jakarta with an average value of 58.44, East Java with an average value of 56.73, Bali with an average values of 56.13, Bangka Belitung with an average value of 55.13, and West Java with an average value of 55.06. The minimum competency standard (SKM) targeted is 55. But in fact, the national average of the 2015 UKG is 53.00. This shows that the 2015 UKG results were below the target (Kemendikbud, 2016). UKG questions include professional competence, pedagogical competence, about innovative learning models, about discussion according to the grid, about teacher professional development, and the law. The results at UKG are the results of the teacher's ability, but in the learning process the teacher has not received special attention due to difficulties in carrying out the evaluation, to minimize this the MGMP school learning community is empowered to reflect together so that it can improve the quality of teaching. Global competition requires teachers to be able to deliver students to gain 21st-century skills. Before their children are skilled, teachers are expected to master first so they can facilitate students. The development of 21st century teachers has the following characteristics: 1) uses a "bottom-up" approach that is based on the needs of teachers and schools; 2) support the development of a collaborative culture and the creation of a professional community of teachers; 3) carried out continuously that integrates and synergizes all professional learning obtained by teachers both formally and informally, both in schools and in places of training or teacher education. From the material aspect, teacher development includes not only teaching approaches and learning strategies, but also all the knowledge and skills needed by teachers to support efforts to improve the quality of learning, such as mastery of technology, emotional management, and communication skills (Andriani, 2010). The improvement in teacher performance is naturally expected to improve the quality of education. Therefore, to improve teacher performance, the professionalism of teachers needs to get more serious attention, so that teachers have high competence and can be utilized for the sake of improving the quality of education (Kurniawan et al., 2011).

Lesson Study provides a definite answer in the UK; teachers can improve their professionalism and practice abilities increase so that there is an increase in student learning outcomes (Dudley, 2012). The teacher's experience in lesson study is the process of producing knowledge, the iterative process of theory, and the uniqueness of learning problems among various groups of students is a central aspect of a particular clinical research process. Learning studies are more focused on building knowledge about learning objects as well as teaching and learning relationships (Carlgren, 2012). A "lesson study" program developed in Hong

Kong that seeks to encourage pre-service teacher learning through a new, collaborative, inquiry-based approach. This has a positive effect on the beginner teacher pedagogy (Yuk, 2012). The development of teacher professionalism in China has been criticized because it has not been maximally utilized. Therefore, through independent learning, learning videos from lesson study results are inspiring. Utilize curricular and pedagogical values from video files rich in lessons to support the continued investigation of the teacher. This can increase teacher pedagogy (Fang et al., 2012).

A group of secondary school teachers collaborates in school-based professional development called lesson study to improve student performance. This learning has had an impact, not only on student learning but also on teacher learning, and has contributed in several ways to create a culture of learning in this school (Andrew, 2012). Variation theory is used as a learning theory. Lesson study is emphasized as a structured and robust model for teacher-driven research aimed at developing praxis (Björk & Pettersson-Berggren, 2015). Use of new lesson study (LS) for assessment purposes. Assessment of the use of lesson studies can translate into practical assessment procedures (Norwich et al., 2014). Systematic identification of the educational needs (support) of students by teachers participating in lesson study (LS) meetings in the formative assessment framework (FA). AFA processes related to processes. A systematic examination of teaching practices was partially identified, but FA was often not adequately applied. Teachers tend to be in a hurry to talk about pedagogics, rather than defining the goals and educational needs (support) of students (van Halem et al., 2016).

2. METHODS

This study used mixed methods that is one of the research designs with a philosophical foundation based on the inquiry method. The cornerstone of this philosophy directs direct data collection and data analysis so that the process uses qualitative and quantitative integration (Creswell & Clark, 2017). This study uses mixed methods with a Taxonomy Development Model research design. When the QUAL phase is implemented to identify important variables, taxonomic development of classification systems, the development of an unstable theory, and its supporters is to test in the QUAN phase to get more accurate study results. Data collection steps using the Taxonomy Development Model. The results of the questionnaire data, observations, and interviews will be analyzed quantitatively descriptive. The results of the observation process will be analyzed descriptively qualitatively.

3. RESULTS AND DISCUSSION

Learning is done by praying, absent, and discussing homework assignments; then, the core learning activities are watching reproductive-themed videos and concluding learning by giving the task of retelling the video being played. The material discussed in this study is a reproduction. The students were very enthusiastic when they were told that the science lesson was watching a video this time.

Potential development of learning processes to improve pedagogy. Various learning theories can be integrated into learning so that they will actualize in real learning. This has contributed significantly to the teacher's pedagogical development (Elliott, 2012). For two years, the teacher collaborates with peers to find out the needs of student participation. Consider the students' collaborative relationships and learning content into an inseparable unity (Yamaji, 2016). The potential and challenges of theoretical variation when adopted in learning. It is recommended to classify certain theories so that they can be applied in various sciences (Gierlinger et al., 2016).

The advantages of this learning are teachers who do learning very soft, as evidenced by sound and kind gesture. Besides, teachers also give rewards in the form of "thank you" to students who come forward to reading the answers given questions. Besides, teachers who have long experience so that students justify their answers gently and always repeat and emphasize the correct answers every time students answer questions.

8.45 *"maturation or formation of ovum cells, not female cells, yes."*

8.38 *"So oogenesis is a process of formation ..."*

It is deliberately paused by the teacher so that students have the opportunity to answer further from the emphasis of the correct answer. However, the weakness of this learning is because the preparation of the lesson is less time consuming to prepare the video. The constraints of video playback encountered during the study are that the media room is used by other teachers, finding school guards who carry laboratory keys is difficult, preparing laboratories takes a long time, constraints on video playback when the sound does not come out. Crucially, in my opinion, two students are assigned to roll carpets in the laboratory so that they indirectly do not follow the discussion of the questions given. Although doing voluntary, it would be better if the task is left to the clerics who are responsible for it.

A positive point that impressed me was the caring attitude between friends. The concern is shown by girls to give cues to boys who start noisy when the teacher leaves the classroom. At 3.46 minutes, one of the students gave a signal to be quiet with a sound:

"Suttz ... suttz ... suttz ..."

Besides, there is also a caring attitude towards friends who have never advanced so that children who have advanced heartened to give back the opportunity for friends who have not progressed. In the 08.01 seconds, one of the students proposed viz

"Sopia yet"

Positive responses are also given by the teacher to provide opportunities for friends who have not come forward. In the question-answer number 4, unfortunately, it is not discussed in the future, because it is in the form of a picture.

9.18 *"number four don't need it, go on matter number five line three is not yet advanced, the back, the back was not yet forward, had you raised your hand huh?"*

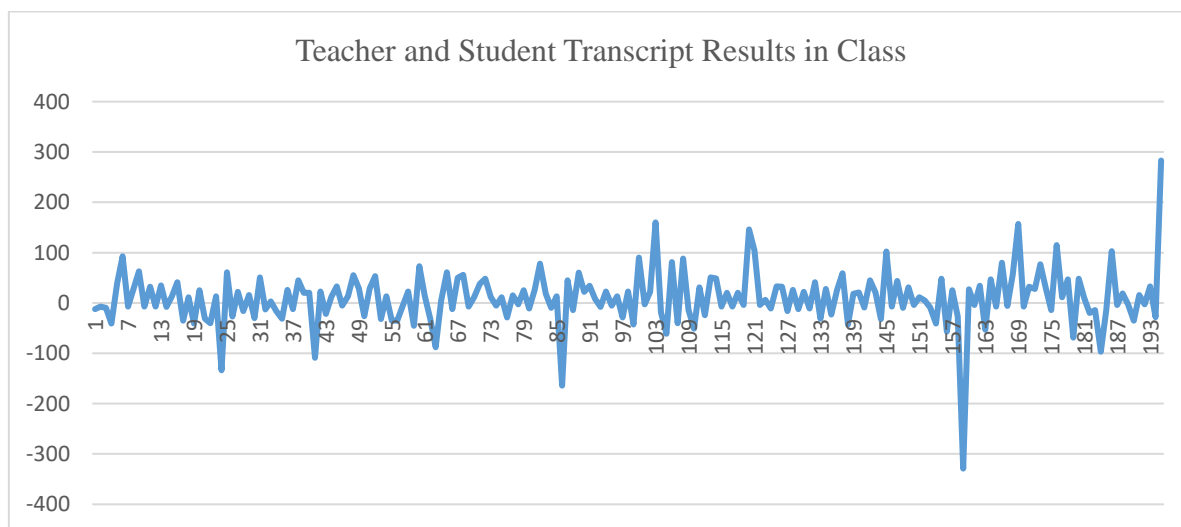


Figure 1 Results of quantitative analysis

The x-axis is an index of teacher and student conversation in one meeting. The positive Y axis is the number of words the teacher says. The negative Y axis is the number of words students say. Based on Figure 1, it can be traced to an index of 103 as many as 160 teacher words, and on index 86 as many as 186 student words. Figure 1 interprets that learning is still teacher-centered. This can be seen from the number of words the teacher is more dominant. For many years, the traditional teaching style or specifically, teacher-centered instruction has been dominant in higher education in North America. In a traditional classroom, students become passive learners, or rather just recipients of teachers' knowledge and wisdom. They have no control over their own learning. Teachers make all the decisions concerning the curriculum, teaching methods, and the different forms of assessment (Ahmed, 2013).

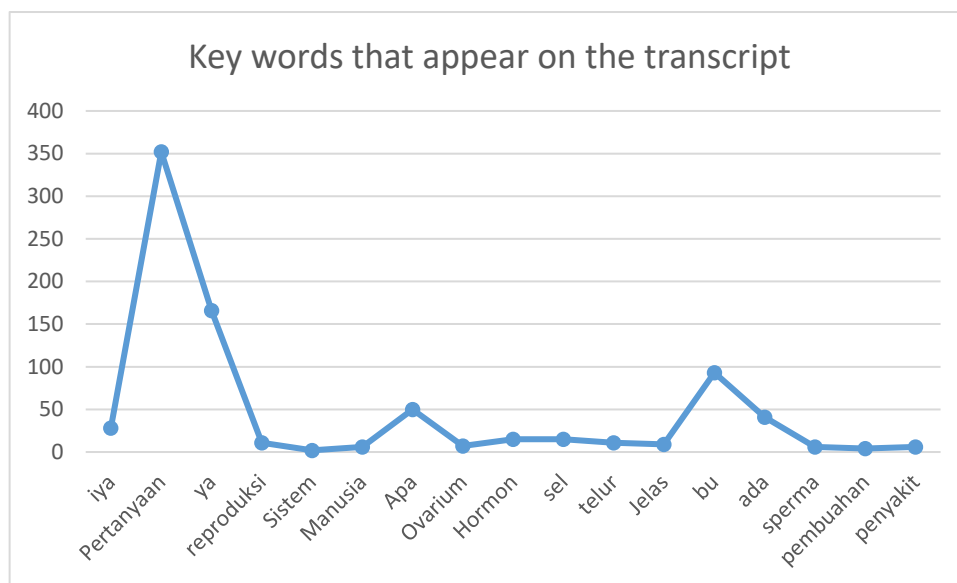


Figure 2 Keywords on the transcript

The keywords "question" that often appears indicates that critical thinking skills and curiosity are developed. Keywords "Human", "reproduction", "Ovum", "sperm", "cell", "hormone", "Healing", "ovary", and "disease" are material content. Curiosity is an aspect of intrinsic motivation that has great potential to enhance student learning. Theory and evidence describing curiosity are discussed, focusing on psychological and pedagogical literature relating to adult education. In particular, the concept of 'information gaps' as a source of academic curiosity is explored (Pluck & Johnson, 2011). Critical thinking has also been widely discussed in the popular media, and the concept has been regarded as one of the most important graduate outcomes expected of a university education (Davies, 2015).

After the discussion of the questions was finished, proceed to the laboratory room, so this time there were learning in two places — discussion of questions in the classroom and subsequent learning in the laboratory room. In the beginning, students were very enthusiastic, after a while, some began to feel sleepy, joked, some lay down but were not reprimanded by the teacher, who leaned on their friends. After the video session is over, students are asked to retell through their homework assignments and be collected at the next meeting.

4. CONCLUSION

The conclusion is that the learning activities carried out at Bogor rural schools generally consist of an introduction, core learning, and closing. The core learning consists of

two activities that first discuss homework assignments, and the second activity plays video. Students are enthusiastic when the video is played. Constraints faced in this study are time taken for technical matters. This can be tricked by careful learning planning so that it can be reduced. It is hoped that when there is a community of teachers in schools to learn from one another together to prepare for learning, it will improve the quality of teaching provided.

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