

THE QUALITY IMPROVEMENT OF LEARNING PROCESSES AND ACHIEVEMENTS THROUGH THE READ-ANSWER-DISCUSS-EXPLAIN-AND CREATE LEARNING MODEL IMPLEMENTATION

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ABSTRAK

By using lecture method, course materials stated in curriculum can be normally delivered to students in a specified time. However, the use of this method everyday in classrooms does not support the development of students' competences which are beneficial for their future. This paper discusses Read-Answer-Discuss-Explain-Create (RADEC), as a new alternative learning model aimed to help students gain many beneficial competencies. This paper also shows that the pilot projects of the RADEC model implementation conducted in some elementary schools and a senior high school can improve the quality of learning processes and learning achievements.

Keywords: reading, pre-teaching question, learning process, learning achievement, RADEC

INTRODUCTION

In accordance with the contents of Article 3 of the Law of the Republic of Indonesia Number 20 Year 2003 on National Education System, education conducted in schools aims to develop the potential of students to become human beings who believe in God, noble, healthy, knowledgeable, capable, creative, independent, and become a democratic and responsible citizen (Government of the Republic of Indonesia, 2003). This law provides the basis for the obligation of all educators in the school, regardless of the field of study they attend, to organize learning that facilitates the development of the (spiritual and social) attitudes, knowledge, and creativity of the students. Social and spiritual attitudes and good knowledge and skills are indispensable both for the students themselves and the community, both for the present and for the future.

The facts show that there are still a lot of learning dominated by lecture activities. Interaction in the classroom is more dominated by teacher presentations. Many questions were posed by a teacher in classroom. But the questions were dominated by many questions with low-order thinking skills (Anggraini, 2011). Another thing observed is much of time used to help students gain understanding of subject matter. Little time spent developing interactions among students. Though this interaction is needed to form a social character in the students themselves. In addition, the time for the development of high-level thinking skills including creativity is also minimal. Whereas both of these things, the development of the character and creativity of students, is emphasized in the implementation of the curriculum 2013 (Kemendikbud Republik Indonesia, 2016).

Given all above, here are three possible causes. First, teachers tend to teach in ways in which they were taught (Cox, 2014). Once when learning resources in the form of books rarely owned by students, teachers should lecture what is in the book presented. As the times change, where learning resources such as books and even other sources from the Internet are numerous and accessible to students, there are still many teachers who lecture the content of the book as their teachers did.

Second, the tendency of standardized exams such as the national exam only emphasizes the cognitive aspect. This also makes things worse, learning in the classroom becomes focused on the success of students within the exam alone. Thus for some teachers who do not understand well the essence of education, the national exam has led to the reduction of the meaning of the education. In addition, students are also learning more focused on subjects that exist in the national exam and ignore other subjects (National Council of Teachers of English, 2014).

Third, another possible cause is the lack of competence (knowledge, skills and attitudes) of teachers to perform their roles efficiently and effectively. There is a lot of knowledge that a teacher should know

about how to act according to the curriculum's demands (objectives, materials, processes, and learning evaluations), both regarding plans, implementation and evaluation of learning). Similarly, many skills must be mastered in order to skillfully act as a teacher. And another important think is the need for a teacher's attitude to eager to apply the knowledge and skills he has mastered in conducting his duties as a teacher. Thus efforts to improve the learning process should also be done with efforts to increase the competence of teachers who reach the three areas. According to Andreas Schleicher, Director of Education Organization for Economic Co-operation and Development (OECD), improving the quality of educators is important for the creation of quality learning (Mohamad, 2015).

As the result of lecture method dominating in classrooms led students to tend to read textbooks just before exams (Sopandi, et al, 2014). The tendency to explain all the subject matter materials through this method is that learning becomes less focused on things that are difficult for students. And the students themselves do not know which material is easy and which is difficult because they have not studied it first independently. Thus students think that all material needs to be explained by their teacher. And if they try to learn teaching materials independently first, it may not necessarily all the materials should be explained by their teachers. This is evident from research by Sopandi et al. (2014) indicating that from a number of lesson materials, there are materials that most students can master independently, a small percentage of students. And there are also materials that can not be mastered by any learner independently.

Another disadvantage of lecture method dominating in the classroom is the lack of interaction among students. This lack of interaction leads to a lack of development of the various skills necessary to live in the 21st century. Skills such as creative thinking, critical thinking, problem solving, decision making, communication and collaboration, information and communication technology literacy, and skills to live in society both nationally and internationally (Schleicher, 2012). The dominance of teacher lecture activities will also limit the development of beneficial attitudes in social life such as learning to argue, learning to respect differences of opinion, courage to express opinions, and tolerance. Sufficient time for learning to deliver information also leads to a lack of activities that train the creativity of students. Lack of activities that facilitate students to think high level including creative thinking causes the students less able to think in this area.

The low quality of learning that has been happening is evident from the low achievement of our students compared to students from other countries in the world. In several comparative studies, the achievements of our students in reading, mathematics, and science compared to students from other countries who are members of the OECD are always in the lower group, or the average score is below the average of the participant score Educated (Schleicher, 2012). The consistency of the results not satisfactory shows that in general the efforts to improve the quality of education in Indonesia has not been able to equalize the ability of our students to students from other countries who have advanced in the education. If the condition of learning is not overcome continuously it can cause harm to students themselves, society, nation and state, both for the present and the future. For these reasons the development of learning models in accordance with the context of Indonesia is needed. This is necessary because the learning models that has appeared from abroad not necessarily in accordance with the context of Indonesia.

Given all above, this paper describes a new alternative learning model that can improve the quality of learning processes and achievements suitable for Indonesian context and may also other countries with the conditions similar to Indonesia. Learning model in question is the Read-Answer, Discuss, Explain, and Create (RADEC) learning model. The name is adjusted to the sequence of the learning stage (syntax). This naming is given so that teachers easily remember the syntax of this model. The names of other learning models often do not reflect the syntax of learning. And even for the same model the syntax of learning can vary. The discussion of the learning model starts from the foundations of RADEC model development, learning syntax, results of pilot projects, and obstacles and support the RADEC model implementation in Indonesia context.

DISCUSSION

1. The foundations of the RADEC learning model development

This model is developed on the basis of the following points. First, the purpose of national education, as already stated above, aims to develop the potential of students to become human beings who believe in God, noble, healthy, knowledgeable, capable, creative, independent, and become citizens of a democratic and responsible (Government of the Republic of Indonesia, 2003). Thus the efforts of education practices conducted in schools should cover all those aspects (attitude, knowledge and skills). It is inappropriate when learning in the classroom is only intended for the achievement of cognitive aspects only. Teaching and learning processes should be planned and conducted in such a way that the development of attitudes, knowledge and skills can be facilitated. The description of the existing knowledge materials in the curriculum should be learned by the students in ways that enable students to have the various attitudes and skills necessary for their current and future life, both for themselves and for others.

Second, a fact shows that nowadays, sources of learning both in the form of books and other sources such as internet easily obtained by students. Thus, for schools that already have other sources of information other than teachers, students can gain independently information prior to classroom activities. Another fact also indicates that often the models that come from other countries are not in accordance with the conditions in Indonesia. For example, although these models prove to be good at improving the quality of learning processes and achievements but often require more time than the available time allocation. For this we need a model that can improve the quality of the process and learning outcomes but the learning can be implemented according to the available time allocation. As mentioned above, another fact also showed the low quality of student achievement in Indonesia compared to students from other countries based on International Comparative Studies in math, science, and reading (Schleicher, 2012). This low achievement showed something wrong in the learning process. We should believe that it is not because of the students themselves. Thus if the quality of learning is improved then the quality of student achievement in Indonesia will increase. This is evident from the high achievements of Indonesian students in various events that are individual, as in the Olympics of various subjects.

Third, according to Vygotsky's theory of social constructivism, the development of cognitive abilities in children occurs because of interaction with the social environment. In this theory are known terms, actual development level, potential development level and Zone of Proximal Development (ZPD). Actual ability is the ability of students to complete the task without the help of others. Potential ability is the ability of students to complete the task with the help of others (teachers or peers). While ZPD is an area between the actual ability and potential ability. Based on the theory of Vygotsky then the learning should be done in the area (Lui, 2012; Vygotsky, 1962).

Fourth, at first and second grades elementary school students learn to read letters, words, sentences, and paragraphs of texts. Next at third grade they learn to gain understanding (comprehension) from the texts. By often practicing to read students will be more skilled in the reading comprehension skill. This reading skill will thrive in a literacy-based learning setting such RADEC learning model. In literacy-based learning, core activities in the classroom include reading-thinking-writing (Suyono, 2009). Thinking activities can be trained when students answer questions and tasks also when discussing with friends. While writing skills can be trained when students propose ideas or write research reports, problem solvings or projects that have been done.

2. Learning model syntax and its' pedagogical analysis

The following is presented the syntax of the RADEC learning model.

Step 1: Read (R)

At this step, students read information from various sources including books, other sources of printed information and electronic information sources such as the internet. In order to guide students in comprehending the information students are provided with the pre-teaching questions. The pre-teaching questions are questions related to teaching materials. The answers of the questions are essential cognitive aspects that must be mastered by students after they finish the teaching materials.

The pre-teaching questions should include vary questions, from low order thinking (LOT) to high order thinking (HOT) skills. The questions are started from just memorizing information to formulating productive questions, problem, and project plans which can be created.

Pre-teaching questions are posed before a teacher conducts teaching and learning processes of the teaching materials. Students should answer the questions after their reading activity. Their reading activity is done independently by students outside classroom. This is based on the idea that some information can be mastered by students themselves without the help of others. Teaching materials that can not be mastered by students can be asked to other students (peer) or explained by their teacher during classroom sessions. By this way classroom sessions can be more focused both on developing other aspects (especially social characters) whose development requires interaction with others and teaching materials that are found difficult by all students.

Step 2: Answer (A)

At this step students answer the pre-teaching questions based on the knowledge gained in the Read (R) step. The pre-teaching questions are arranged in the form of Work Sheets (WS). They answers the questions outside the classroom or at home independently before classroom sessions are conducted. By this way it is possible for the students to identify independently which parts of the teaching materials they find to be easy or difficult. In addition, students themselves can be aware of themselves whether they belong to students who are lazy or diligent to read, easy or difficult to comprehend written teaching materials, like or do not like to read text books, and others. Besides, by observing students' assignments and posing few questions, a teacher can know about all students' circumstances. It is likely that a teacher will find out that each student needs different assistance of their teacher. Based on these data, teachers can give appropriate assistances for every student.

Step 3: Discuss (D)

At this step students learn in groups to discuss their answers of pre-teaching questions. Teachers motivate successful students in doing certain tasks from WS to provide guidance to friends who have not mastered them. Teachers also motivated students who have not mastered to ask their friends. This step provides students with activities to discuss their answers with other members in one group. At this step the teacher should ensure that there is communication among students in each group in order to get right answers or jobs. By looking at the activities of the entire groups, a teacher can also determine which group or who has mastered the teaching materials being studied. In this way the teacher can also know which group or who have already had creative ideas as a form of application of concepts that have been mastered. Based on the results of this observation, teachers can determine who can be appointed as tutor at the next step, (Explain (E)). At this step, the teacher can also identify which parts of the teaching materials cannot be mastered by all students independently. These parts are further explained by the teacher classically for all groups at the explain step (E). Discussion stage (D) ends when students finish discussing the task, or students are no longer able to continue their work because they find difficulties.

Step 4: Explain (E)

At this step, classical presentation is conducted. The teaching materials presented cover all the learning indicators of the cognitive aspects that have been formulated in the lesson plan. The order of the presentation is adjusted to the order of the learning indicator formulated in the lesson plan. At this step the students's representatives who have mastered learning indicators to explain the essential concepts in front of the classroom. In this activity too, the teacher ensures that what the presenters explain is scientifically correct and other students understand the explanation. In this activity the teacher also encourages other students to ask, refute, or add to what has been presented by his friend from other groups. At this step can also be used by a teacher to explain the essential concepts that can not be mastered by all students as observed at step discussion (D). When explaining, the teacher may provide explanations with demonstrations, video, power point or other things that are expected to overcome the difficulties of students.

Step 5: Create (C)

At this step, the teacher inspires the students to learn to use the knowledge he or she has mastered to generate creative ideas or thoughts. Creative thinking can be formulated as productive questions,

problems, or thoughts of making other creative works. As mentioned earlier, the task of creating creative ideas or thoughts is already covered in the pre-teaching questions. Students also have discussed it in step D. So at this step just discusses it in a classical way because students have previously been assigned to do it independently. And they have also discussed it at stage D. When teachers find all students have difficulty to generate creative ideas, teachers need to inspire the students. The source of inspiration given by the teacher can be in the form of an example of research, problem solving or other work that have been done by people. And then students classically discuss other creative ideas that can be planned and realized.

As another inspiration for students, a teacher can provide examples of a creative plan that have never been realized either by himself or others. In the circumstances students have not had their own ideas so they can work on the teacher's idea. The realization of the idea can be done independently or in groups depending on the characters that will be developed. This work is theoretically more challenging to students because the idea is original. And the idea can be realized either successfully or unsuccessfully. In addition, The realization of the idea can be in the classroom or outside the classroom, can be briefly or can also be long. This step trains students dominantly to think, cooperate, communicate. They learn to find creative ideas, take the ideas that will be realized, plan for realization, implement the plan, report the realization and then present the results of the realization in various forms.

3. The results of the RADEC learning model pilot projects

This model has not been fully tested, from R to C. Stage Create (R) has not been done because it requires habituation of the previous steps. The pilot projects of this model has been done by a number of primary school student teachers at schools where they conducted field experiences (FE). They did FE in elementary schools around Universitas Pendidikan Indonesia (Bandung, West Java). One of the research results shows that model can increase the number of students who read science textbook before they learn in the classroom, improves the ability of students to understand the teaching materials through reading science textbook, and improves their science learning achievements (Mujiyati, 2010).

Othe pilot studies of this model also show that learning outcomes based on problem-based learning (PBL) implemented in an elementary school can be optimized through reading science textbook (R) and answering pre-teaching questions (A) at home, discussing (D) with peers facilitated by teacher, Explain/get explanations (E), then implement the PBL steps (Sopandi and Sutinah, 2016). Students who learn at home by reading independently have better knowledge than students who do not read when teaching-learning processes in classroom begin. Furthermore, students who read prior PBL classroom sessions get higher learning achievements than the group of students who learn with PBL without prior reading activity.

Another research done in chemistry course, grade XI, at a senior high school in Bandung district shows another success of the RADEC model pilot project (Sopandi et al., 2014). The results show that the majority of students involved in this study during class X did not read teaching materials that have not been taught by teachers in the classroom from the chemistry textbook. Some of them read the book after their teacher explained the material. The majority of them read the textbook just prior the exam. This condition changed after 6 months of the RADEC model pilot project was conducted. After the pilot project, the majority of students read teaching materials from chemistry textbook even though the materials have not been taught. What needs to be noted here is that their reading motivation is due to their teacher always giving the test before the lesson begins. Another result of this study is the increasing ability of students to understand the teaching materials from the reading of the chemistry textbook. Or in other words the actual development level of students in learning new teaching materials always increases in line with the frequent practice of reading chemistry textbook. The results of this study also indicate that the potential development level of students also increased in line with the increase of students' actual development level.

4. Inhibiting and supporting factors for the RADEC learning model implementation

Supporting factors

Some of the factors that support the implementation of RADEC learning model are as follows: First, the current curriculum requires a learning process that enables the development of all students' potencies that are necessary for their better lives (spiritual and social attitudes, knowledge, and skills). How the learning processes must be planned and conducted are clearly described in the national standard of learning processes. How the learning processes must be evaluated is also clearly described in the national standard of learning evaluation. And there are some other national standards that can be used as guide to create the qualified teaching and learning processes.

Secondly, information sources are nowadays widely available in the forms of textbooks, suplemen books and other available information sources such as video, compact disk, and internet. Thus, nowadays teacher is not the only source of information for students. What is required nowadays is that teacher should believe that students can understand the teaching materials from textbooks or other sources if they are given opportunities and are trained to read continuously.

Inhibiting factors

Some of the obstacles that may apply to the implementation of the RADEC learning model are as follows. First, the possibility of the teachers' habit which used to use the lecture method, the teacher felt not teaching yet before they explain all teaching materials. They are confused, what should be taught if their students come to the class and they have already understood all teaching materials. Actually, this does not need to worry. There are still many other things that have been neglected in the classroom due to time spent in the classroom used for lectures. What is meant here is to learn to discuss, to have different opinions, to present somethings in front of classroom, to think creatively by applying teaching materials that have been mastered. Thinking creatively is very important. Here students can be creative in generating research ideas, creative in finding problems to be solved, and creative to make other creative projects.

Second, teachers used to find that by using lecture method students still have difficulties to understand teaching materials. Teachers may think that, so it will be more difficult for students to masters teaching materials by learn independently through reading activities. So in this case the teacher has underestimated students' capabilities to learn independently. In this case, it is possible that students do not understand teaching materials because they are lazy to learn, not because the teaching materials are difficult. Thus, the use of lecture method all the time can cause students to be lazy and underachievements. By implementing RADEC model, both teachers' underestimation of students' potencies to learn independently and students' laziness to read can be reduced.

Third, the learner is familiar with the routine in the classroom, start from hearing explanations, asking if not understand, doing the exercises and reading the notes or books prior the exam. The existence of this routine can lead to rejection when students have to do the reading task (R) and answering (A) before the teaching materials are taught in class. The students may demand that the teacher's job is explained and their task is to understand the teacher's explanation, do the task well and then prepare well for the test. In this case students do not yet know what is best for themselves, society and nation, both for the present and for the future. Facing this possibility, teachers as adults in the class are obliged to make them have what they should. The possibility of this rejection should be anticipated by explicitly explaining the good intention of applying this model. In addition, it can also be supported by always giving a pretest prior discussion (D). The results of a pilot study at a school in Bandung district showed that this pretest activity can motivate students to read textbook.

Fourth, the possibility of a teacher's perspective which is still narrowing the meaning of education. Education may be only seen as an activity to make students master teaching materials and can pass the standarized tests with good scores. This may be because the teacher does not understand the purpose of education, lacks the skills to plan and conduct qualified teaching-learning processes, and lacks the idealism to do a good job. To overcome this fourth barrier, efforts will be needed including the improvement of teachers knowledge about national educational goals, practices to implement the RADEC model and positive attitudes toward their job as teacher.

CONCLUSION, IMPLICATION AND RECOMMENDATION

The RADEC learning model is developed because of the need for an alternative learning model to improve the quality of learning processes and achievements. In contrast to other learning models emerging from abroad, this model emerges with regard to the juridical, philosophical, factual and theoretical foundations that fit the Indonesia context. Through the implementation of the RADEC learning model the increase of students' reading motivation will be supported, the students' reading comprehension skills will be trained, the development of social character will be facilitated, and the students' learning achievement will also increase. Through the implementation of the RADEC learning model students' creativity in creating research ideas, problem solving, and other creative works will be also improved. All those are expected to be achieved in available time allocation stated in curriculum.

The implementation of the RADEC learning model implies the need to change the habits of both teachers and students. Teachers need to fully master teaching materials, have skills in carrying out their duties, and able to inspire students to generate creative ideas or thought as application the knowledge they have mastered. Similarly, it takes awareness and willingness of students to be even harder in learning in order to obtain various good things for themselves and others, both for the present and the future.

The success of the RADEC learning model pilot projects occurred just in few schools. It is still needed to socialize the learning model in other schools, subject matters and teachers. Socialization in the form of workshops and trainings of this model needs to be done so that all parties have the knowledge, skills and attitudes that support the implementation of this model. In addition, the results of researches on this model are still very limited, both in terms of school, subject matters and teachers involved, and also from the aspects investigated. Therefore, further researches are needed to validate and test this model. Their results may help to improve and refine the implementation of the model. Research can be in the forms of the textbook development, the development of reading skill training models, analysis of actual and potential development level of students, the development of WS that support the implementation of RADEC and so on.

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