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Teacher's Rejected Promote Action (R-PA) for Mathematics Teaching Practice in Class

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***Abstract*:** *A good teaching process is to make students active and be independently. Teachers have a lot of efforts to meet the process. Their promoted action should leads the students to get new things. It is sometimes, however, rejected by the students. Using Valsiner's theory, zone of promoted action (ZPA), we described which condition the students rejected teacher's promote action. This study used a novice teacher as the subject with high, moderate, and lower intelligent students response. We considered teacher's promote action based on students' responses in teaching process. Data of this study was collected by observation and interview assisted by teaching recording. This recent study found that R-PA happened since the students were unable to do their teacher's instructions. They were not brave to express their problem. They thought they had mastered the material taught, making them not feel necessary to ask, and, furthermore, they felt much more convenient having discussion with their classmates.*

Keywords: *ZPA, R-PA, teacher, students' response, mathematics teaching*

I. Introduction

Various strategies have been applied to make teaching and learning process interactive. Teachers no longer fully explain the material, neither students do listen. The teachers, in fact, need to make the teaching process more interactive. They need to shift their teaching approach from teacher-centered to student-centered ([1] Walle, 2002). Social perspective could be useful, both to understand the teaching and to improve their teaching skills ([2] Goos, 2012). In this view, learning referred to individual participation in social environment which surroundings' interaction needed to construct in teaching process, and those people are teachers and students.

Class teaching implementation has characteristics that correspond with students', teachers', and materials' characteristics ([3] Lui, 2012). Every student has their own learning speed and style, determined and managed by themselves based on their expected target. It will be a very difficult challenge for teachers in implementing their teaching method. Hence, they need to set the teaching process in a possible way to make all students reach the expected teaching objectives.

The idea of Zone of Proximal Development (ZPD) theory was developed by Vygotsky studying on the gap existed between the level of students' actual skills and the level of their potential or their independent and dependent skills could assist the teachers to identify the teaching process. Valsiner developed Vigotsky's theory which one of the results is Zone of Promoted Action (ZPA). The idea of ZPA referred to a set of activities students need to do under particular instructions provided by teacher ([4] Blanton, 2005). ZPA is not compulsive, which students may accept or even reject.

Teachers' various actions would bring out students' various responses as well. The responses could be used as feedback for their teaching process. Hence, it could be useful to revise the implemented teaching process. Previous studies had found students' failures in receiving their teachers' actions ([4] Blanton, 2005; [5] Bansilal, 2011). Therefore, this current study would describe condition on which students rejected teachers' actions, namely *rejected promote action* (R-PA). We focused on *rejected promote action* for it referred to an interesting issue which needed alternatives and further actions for revising teaching process.

II. Theoritical Review

2.1 Mathematics Teaching

Teaching is an interaction process among learners, educator, and materials in a teaching and learning environment. In this case, the learners are students and the educators are teachers. Hence, mathematics teaching is an interaction process between teachers and students involving a mindset development and logical proceeding in a learning environment teachers intended to create with various methods in order to develop mathematics teaching program optimally so that students could do their learning activities in effective and efficient manner ([6] Undang-undang Sisdiknas, 2003).

A professional standard for teaching mathematics mentioned that a teacher needed to shift his teaching approach from teacher-centered to student-centered. Five primary alterations in teaching mathematics needed to

make students improve their mathematics skills were: 1) transform the class from merely a group of students to a mathematics community; 2) make mathematical reasoning and proof a means of justification and avoiding teacher's authority in determining a truth; 3) prioritize understanding rather than remembering procedures; 4) make it priority in having hypothesis, findings, and problem solving, and staying away from pressure in finding mechanical answers; 5) relate mathematics, its ideas and applications, and do not take mathematics as a set of isolated conceptions and procedures. Point two and five showed that teacher needed to involve his/her students in teaching and learning process of which involvement related to mathematics thoughts ([7] NCTM, 2000).

Some studies suggested that what teachers did in class influenced their students' learning, both in mathematics content and their chances to understand the epistemology of mathematics as a discipline ([8] Goos, 2007). It found that a teacher played an important role in teaching process, proving that not only physical environment is important, but also social one in the term of interaction between teacher and students.Teacher is a professional educator whose primary responsibilities are educating, teaching, guiding, leading, training, assessing, and evaluating learners in formal grade for early ages, primary grade, and secondary grade ([9] UU RI No. 14, 2005). A teaching process implemented by a teacher has tight relation to what it is inside his/her own. Some factors might influence a teacher's ability in delivering material, managing his/her teaching, and controlling his/her students during class. Those factors were teacher's educational background, his/her teaching experience, his/her educational qualification, and class controlling ([10 Nadeem, 2011; [11] Leong, 2013' [12] Lamb & Fullarton, 2001).

Thus, the implementation of any curriculum would be able to work if the mathematics teachers have a qualified pedagogical insight to construct a relationship between concepts within new contents. Hence, their abilities play an important role in the process of transferring knowledge under the implementation of various curriculum ([13] Kaput & Blanton, 2001; [14] Ma, 1999). Analysis of this study showed a positive relationship in the term of interaction among teacher and students and motivation, as well as students' achievements, ([15] Nugent, 2009). This could be defined that if the interaction between teacher and students worked properly, it would reach students' motivation and achievement as well. On the contrary, if the interaction did not properly work, the motivation and achievement would not be optimally reached. Thus, good teaching is a teaching that shows a good interaction between teacher and students which would meet achievement in maximal way.

2.2 Valsiner Theory

Valsiner Theory derived from the development of Vigotsky's theory. Vigotsky found a gab between the level of actual development which included the level of solving problems independently and the potential development level which included the level of solving problems with assistance ([16] Vigotsky, 1978). This gap brought a chance for teachers and students to interact that would make the students meet the more advanced grade. They could solve problems with adults assistance or by collaborating with their friends in order to solve difficult problems they could not do by their own.

Valsiner suggested that two additional zones existed to explain the development in the term of the relationship between children and their social environment. Those zones are *zone of free movement* (ZFM) and *zone of promoted action* (ZPA). ZFM is stipulating the boundary condition of which behaviors that might be accepted by adults. If the action is in a given ZFM (in the term of action), adults do not need to intervene by leading the children onto different direction. Whereas, ZPA is a set of activities, things, or surroundings in which someone's action promoted. ZPA draws on what adults promote, without any compulsion for children to accept. Children do not have to do what adults or teacher order. This might consider their limitation in doing so.

Valsiner stated that the main characteristic of ZPA was its non-compulsory in nature. When ZPA had been set up but children did not take adults' order and precisely did some actions with other objects and manner in ZFM, it indicated that they rejected the ZPA or they were out of expected ZPA. Teacher could revise the condition by determining a new ZPA. Furthermore, if the promote was not in individual ZPD, an optimal development would no happen.ZPA is a set of activities promoted by adults and orientated to the promotion of new skills ([17] Goos, 2005). An implemented teaching process by teacher has some phases but not all of those phases include in ZPA. Those which belong to ZPA are all activities that make students do or act to get new skill.Some studies had discussed about teachers' ZPA. Based on those studies and by collaborating teaching components that included teaching objectives, teaching methods, teaching media, and teaching evaluation, we, in this study, brought out some indicators in the form of teachers' promote action.

A.	Introductory activities		
No	***Teacher's Promote action***	**No**	***Teacher's Promote action***
1	Teacher asked the students to correlate the given example with materials that would be discussed.	3	With introductory description of the material, teacher asked the students to identify its scope.
2	Teacher asked the students to explore their insight through questions related to prerequisite/previous material	4	Teacher asked the students to prepare some mean needed for learning, such as ruler, dividers, protractor
B.	Main activities		

5	Teachers asked the students to copy and explore the presented materials.	10	Teacher gave the students chances to ask
6	Teacher asked the students to construct the conception discussed with provided instruction	11	Teacher asked the students to complete all given tasks
7	With provided information, teacher asked the students to represent mathematics object and concept in the form of variables, equation, scheme, graph, diagram, geometry	12	Teacher asked the students to utilize teaching media such as task sheets, models, and other mathematic means.
8	Teacher asked the students to keep the concept learned.	13	Teacher facilitated the students in discussing the task given,
9	Teacher asked the students to implement/make use the concept they had learned	14	Teacher asked the students to correct their answers together
C.	Final activity		
15	Teacher asked the students to conclude the material learned by asking some questions related to the material learned in that day.		

([18] SPK,2007; [19] SPK 2013; [8] Goos, 2007; [20] Hussein 2001; [21] Winkel, 2007; [17] Goos 2005; [22] Goos, 2013; [2] goos, 2012; [7] NCTM, 2000; [4] Blanton, 2005; [23] Goos, 2009; [2] Goos, 2012)

Teacher Promote action, as previously described, would result in students' various responses. those responses included attention, internal process toward learning activities like relating between concepts, solving problems, answering teacher's questions, manipulating mathematics models, representing mathematical objects and concluding information obtained. The students, sometimes, accepted, responded with pseudo, or even rejected the teacher's promote action ([24] Iffah, 2016). In this article, we focused on identifying condition of which students might reject teacher's promote action.

III. Research Method

This study is qualitative descriptive research. It described which promote action student rejected and in which condition it was rejected. The primary instrument of this study was the researchers selves with recording aids assistance for field documentation. We would analyze the recording after conducting data collection. Secondary instrument used in this study was an observation sheet and interview manual. The subject of this study was a novice teacher with 1-5 year experience tenure and three students with high, moderate, and low mathematics skill, respectively. The students were in eighth grade of junior high school in Jombang, East Java.

IV. Result And Discussion

In interview conducted before teaching, the subject said that the implemented teaching process by the subject discussed was about identifying the elements of two-dimensional figures. In classical manner, the subject had the students identify the elements of two-dimensional figure utilizing HVS as media. The object initially identified was a rectangle, and the subject asked the students to identify other figures as their task. We recorded the teaching process and focused on the three students we had selected based on their mathematical skills.

During the teaching process, the subject utilized HVS sheet as a media to make the students easier in identifying objects since they really saw the object. The elements needed to identify included its definition, sides, angles, fold symmetry, rotational symmetry, diagonal, rectangle circumference, and rectangle area. After identifying the elements of rectangle, the subject divide the class into groups for task. The students were asked to identify, by their own group, the elements of other two-dimensional figures, such as square, parallelogram, rhombus, trapezoid, and kite. In the process of identifying the objects, they needed to follow the subject's predetermined instructions.

During observation, we indicated some promote actions on indicators the subject did not apply. Overall, the promote actions applied were on 1, 2, 5, 6, 8, 10, and 12. We, then, analyzed the video recording corresponded with the observation sheet. The result was used to set questions for interview. Based on the interview, we categorized the subject's promote action based on the students' responses. Those were accepting, responding with pseudo, and rejecting. We focused on the promote action the students rejected. Here, the rejected promote action (R-PA) were on 1, 10, and 12.

The following presented the data of rejected promote action (R-PA) with SU as subject, ST as a student with high mathematical skill, SS as a student with moderate mathematical skill, and SR as a student with low mathematical skill. Promote action 1 presented that the subject asked the students to correlate the example with the material that would be discussed. It was as follows.

SU: This is for a two-dimensional figure. Here is the object, ok. The first step, you need to initially find this out. Then, identify the characteristics you seek. Next, we seek its circumference and area. For instance, I have this paper. It is ABCD. So, how many are the sides?

SR : (kept on silent)

Figure IV.1. The subject gave instruction toward students

Figure IV.2. SR's response toward the subject's instruction

Those two figures showed that the subject gave some instructions toward the students to seek the sides of rectangle using a piece of paper as media. However, the student kept on silent and did not answer the subject's question. Based on the recording, it showed how silent the student was. she did not even correlate the example with the material that would be discussed. On interview after teaching conducted, she could answer our questions, but, then, she finally admitted that she had the answer from her mates. This showed that the student rejected the promote action. it included in the category of rejected promote action (R-PA). In this case, she rejected the promoted action due to her lack in correlating and this happened on the student with low mathematical skill.Promote action 10 was the subject gave chance for students to ask some questions. This promote action was rejected by the three students. The review of the student with high mathematical skill was as follows.

Teaching recording:

Su : do you get this?

ST : (kept on silent)

Interview after learning process:

P: You did not ask any question during class yesterday, did you? May i know why?

ST: I was affraid the time was out, although actually i felt confused in some parts of the material

P: So, whom did you ask when you got trouble on it?

ST: I asked my friend

Figure IV.3. The subject asked the students whether or not they understood the material

Figure IV.4. ST's response toward the subject's instructions

Figure IV.3 showed how the subject gave chance for the students to ask, however, she kept on silent. Next, based on the recording in teaching and interview, it showed that the subject gave time for the student to ask but she asked nothing since she was afraid the time would be up and could not complete the task, which made her fail in score. The student decided not to ask anything to the subject, however, she precisely asked her friends. She tended to think that it was more important to get score rather than anything else. This showed that she would rather keep silent and ask her friend although she did not fully get the material since she was afraid of not having scored.

Promote action 10 was the subject gave chance for the students to ask some questions. This was also rejected by the student with moderate mathematical skill. The review of the student with moderate mathematical skill was as follows.

Teaching recording:

Su: do you get this?

ST: (kept on silent)

Interview after learning process:

P : Do you understand all the elements from its sides, etc?

SS: Yes, I do

P : So, you don't have any question to ask, do you?

SS: No, I don't

Figure IV.5. The subject asked whether or not the students understood the maerial
Figure IV.6. SS'response toward the subject's instruction

The recording during teaching and interview showed that the subject gave chance for the students to ask, however, she did not ask any question since she thought she understood all the material. Thus, she did not feel necessary to ask any question. This showed that the student rejected the promote action and, furthermore, she did not ask because she had mastered the material. *Promote action* 10 was the subject gave chance for the students to ask some questions. This was also rejected by the student low mathematical skill. The review of the student with low mathematical skill was as follows.

Teaching recording:

Su: do you get this?

ST: (kept on silent)

Interview after learning process:

P: Whenever you get confused on material taught, you never ask, do you?

SR: Yes, i do never ask since i feel afraid of asking

P: May I know why?

SR: Because when i all friends understood the material, then I asked some questions dealing with that, the material would be repeated and they would feel disturbed.

Figure IV.7. The subject asked whether or not the students understood the material
Figure IV.8. SR's respose toward the subject's instruction

Figure IV.7. showed how the subject gave chance for the students to ask, however, she kept on silent. The recording during teaching and interview showed that the subject gave chance for the student to ask, however, she did not ask any question since she felt afraid of asking. She was afraid of the subject and also her friends, in case, they would complain why the material should be repeated. She decided to keep silent and, sometimes, she sought to see the subject outside the class, but she was afraid of doing so. Thus, she tended to ask her close friends. This showed that she rejected the promote action of the subject because she did not feel skillful and brave enough to express what she wanted to do.

Promote action 12 was the subject asked the students to utilize teaching media such as task sheet, models, and other means in mathematics. This promote action was rejected by the student with low mathematical skill. The following was a part of the script during the teaching recording:

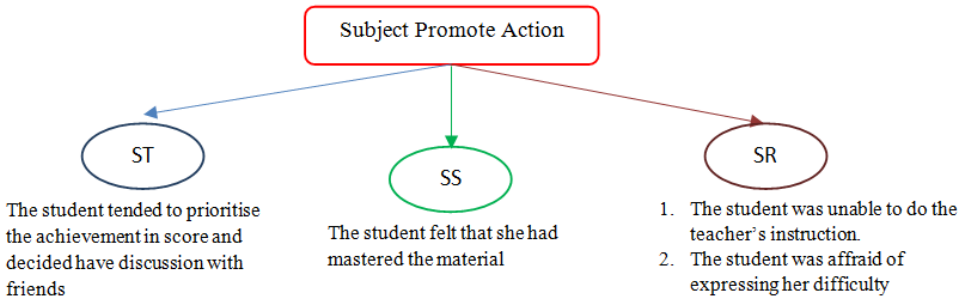
Su : For instance, I have this (holding a piece of paper), this is ABCD. If it is a rectangle, and i put this on the initial position, here is the initial position, this becomes ABCD. I will draw it. It is ABCD, however, for instance, the initial position becomes this, and I fold it like this, the initial position will be here. I will fold it vertically (she models it). So, where angle A would be?

SR : (kept on silent)

Figure IV.9. The subject asked whether or not the students understood the material
Figure IV.10. SR's response toward the subject's instruction

Based on the transcript of teaching recording above, it showed that the student kept on silent and did not respond the subject in utilizing media. The student could not follow and understood what the subject explained. She got blanked and did not focus. During interview, she did not answer the question well. She only followed her friends' answer. This showed that she rejected the promote action due to her lack of utilizing HVS paper as learning media.

Some condition causing *rejected promote action* (R-PA) were students' fear of asking questions, feeling that the time would not be enough to ask questions. This would make them more difficult to understand the subsequent material. During interview, the subject stated that alternative actions would be needed for that type of students such as giving extra time outside the class for student counseling. Hence, the student could ask the subject outside the class without disturbing the teaching and learning process. The following was the scheme showing the condition of R-PA that happened on the three types of subjects above.



The subject let the students free to learn with anyone, and have a teaching and learning with friends. The students could be free to ask their friends whenever they felt afraid or shy of asking the subject. The students acceptance dealing with teacher's and friend's explanation may vary depending on the language used. Some students might feel more convenient discussing with friends since they were in similar ages.

V. Conclusion

Based on the interview and observation conducted in this study, it found that teaching mathematics with identifying the elements of two-dimensional figures especially a rectangle as media showed that all *promote action* on indicator emerged toward the subject. Then, we decided to select and focus on *rejected promote action* (R-PA) to be identified. The result showed that the condition of R-PA happened since the students were unable to do their teacher's instruction. They were not brave enough to express what they did not understand yet dealing with material taught. They thought they had mastered the material, hence, the given chance for asking questions was not well-used. They tended to have score rather than deeply understanding the material. Furthermore, they felt more convenient to have peer discussion whenever they felt confused on the material taught or problem solving.

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