The Effectiveness of Symbolic Modeling Techniques for Students’ Emphatic Development

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Keywords: Symbolic Modeling, Empathy.

Abstract: Empathy is an important competence to be developed because empathy is the basis of social skills that can make individuals have better social interaction and be able to socialize. Symbolic modeling technique is a technique in guidance and counseling to provide assistance by observing the behavior through video, film, pictures and stories. This research’s purpose was to test the effectiveness of symbolic modeling technique in developing the empathy of students of 8th Grade of a Junior High School in Indonesia in 2015/2016 academic year. The method used was quasi experiment with nonequivalent control group research design. The data was analyzed by using nonparametric statistics through Mann-Whitney test. Based on the Mann-Whitney test in the experimental group, the significance value is 0.005. The value of significance is smaller than α = 0.05, means that there is a significant difference between the experimental group’s pre-test and post-test data. While in the control group, the significance value of Mann Whitney test result is 0.857. The value of significance is greater than α = 0.05, means that there is no significant difference between the control group’s pre-test and post-test data. Thus, show that the symbolic modeling technique is effective to develop the students’ empathy.

1 INTRODUCTION

Empathy is a very important thing in human life, because the ability of empathy will affect the social skills of a person. As Martin (2003) points out, empathy is the basis of all social skills. Individuals who have the ability of empathy can master the social skills necessarily in everyday life so that the individual will have good social interaction and be able to socialize with the environment. The importance of empathy is also explained by Hoffman (Goleman, 2000) which mentions that the root of morality is existed in empathy. The statement indicates that adolescence’s moral life will be grown if teens have the empathy.

Some experts define empathy as an affective response and cognitive response. Affective empathy is defined as a person's response to the feelings of others demonstrated by the ability to feel what others feel, whereas cognitive empathy is defined as understanding the feelings of others (Cohen and Wheelwright, 2004; Baron and Byrne, 2005). Goleman (2005) suggests that empathy is feeling the way others feel, being able to understand others’ perspectives, cultivating relationships of trust and aligning with others. McLaren (2013) states that empathy is a social and emotional skill that helps individuals to feel and understand the emotions, desires, intentions, thoughts, and needs of others.

McLaren (2013) reveals that empathy consists of six aspects: Emotion Contagion is one's capacity to feel the emotions of others and share emotions; Empathic Accuracy is the ability to identify and understand the emotional condition, thoughts, and intentions in yourself and others accurately; Emotion regulation is the ability to understand, organize, and manage your own emotions and have self-awareness; Perspective Taking (Perspective Taking) is an imaginative skill in locating oneself in other people's side, viewing the situation through others' point of view, and precisely perceiving what others feel and thinking so as to understand what they may want or need; Concern for others is to pay attention and affection to other things; Perceptive Engagement (Perceptive Engagement) is one's involvement to help others according to the person's needs.

According to Santrock (2007) in adolescence, ideally has been able to show response with empathy, but not everyone can do it. Hogan (1984)
reveals that adolescents with high empathic ability have the ability to show imaginative roles, aware of influence on others, have a sense of social understanding, have a sense of understanding and affection towards others, able to take initiative to help others both familiar and unfamiliar persons. Furthermore, someone who has high empathy tends to increase the motivation to offer support.

In the other side, teenagers who lack in empathy will lead to antisocial behavior (Santrock, 2007). Lack of empathy will lead to a cruel and violent life. Some teenagers who commit acts of violence show that teenagers are less able to understand the suffering of others, such as cases of violence that done by teenagers, juvenile delinquency, aggression, bullying both physical and verbal (mocking, cursing, etc.). The occurrence of cases of violence and juvenile delinquency such as bullying is a testament to the lack of empathy of teenagers.

A preliminary study conducted with observations of 8th Grader students of a Junior High School in Indonesia shows some attitudes that indicate the students are lack of empathy. One example is the existence of juvenile delinquency cases such as bullying that is done verbally (insulting and mocking his friends, saying harsh words to others) or nonverbal (hitting, kicking, etc.), disrespected teachers and others, And the presence of students who are less concerned about the condition of his friend who absence to school several times without any clarification.

The above situation is supported by the results of questionnaires which indicate that the empathy development of 8th Grader students of a Junior High School in Indonesia in 2015/2016 academic year in general is in the category of being moderate. The median empathy score is 139. This means that in general the students have tendency to empathize with others but still not optimal, students sometimes still cannot feel the feelings of others, tend to be confused and hesitate to understand other people's mind, sometimes less able to manage emotions, less able to position themselves based on others' perspective, lack of care for others and less desire to engage and help of others’ difficulties. From 319 students, there were 39,8% (127 students) in high category, 47,6% (152 students) were in moderate category and 12,5% (40 students) were included in low empathy category. It shows that there are some students who still have low empathy.

School as one educational institution, has an important role in the effort of fostering and development of students’ empathy, especially in the guidance and counseling domain. In comprehensive guidance and counseling students are expected to acquire important skills in contributing to culturally diverse societies (Ahman in Supriatna, 2011). According to the Ministry of National Education (2008), one of the goals of guidance and counseling is that students are expected to have the ability to adjust to the environment and have the ability to interact socially, respect and appreciate others.

One technique in guidance and counseling that is appropriate in providing assistance to develop the empathy of students is by symbolic modeling techniques. Symbolic modeling technique is one type of modeling technique in behavioral counseling approach. Through the technique of symbolic modeling students observe the behavior of models presented through written materials, audio, video, film or pictures. According to Santrock (2003) most individual behaviors are derived from learning outcomes through observations of behavior displayed by other modeled individuals. Related with the use of symbolic modeling techniques to develop the empathy of junior high school students is seen as an appropriate technique because at the age of junior high school students still have a great interest for visualization of pictures, for example with video display in such a way to attract students. In addition, through the technique of symbolic modeling, students can identify and analyze the behavior of the expected model and students can model and change behavior in accordance with the expected behavior in the social environment.

Several previous studies have observed the use of symbolic modeling techniques in the guidance and counseling field. The studies include research that observed the application of symbolic modeling techniques to improve self-efficacy (Sari, 2014; Sadewi, Sugiharto, and Nusantoro, 2012); the symbolic modeling technique can be used to improve social skills (Keller and Carlson, 1974; Eisenberg in Taufik, 2012; Gedler, 2011), the symbolic modeling technique can enhance emotional intelligences (Mandala, Dantes, and Setuti, 2013), and it can help to reduce environmental avoidance behaviors (Bandura and Menlove, 1968). This study aims to describe the use of symbolic modeling techniques to improve an aspect of social skills that have not been explored from the above studies, namely empathy aspect that appears in Indonesian adolescent students. The students who observed are 8th Grader students of a Junior High School in Indonesia in 2015/2016 academic year.

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2 METHOD

The research method used in this research is quasi experimental or quasi experiment method with nonequivalent control group design. This research provides guidance service by using symbolic modeling technique in experiment class, while control group is given counseling service according to school program.

The population of this study is students who are administratively registered and active in learning in 8th Grader of a Junior High School in Indonesia in 2015/2016 academic year. The sampling technique used in this research is purposive sampling. In this study, the researcher used an existing group, which is a class of study groups, because according to Creswell (2014) the sample used in quasi experiments is a group that has been formed naturally or existing one (such as one class, one organization or family unit). Samples taken into the experimental group and the control group are the group of students who have the lowest empathy level compared to the other classes. Based on the results of the preliminary study, the students who become experimental groups are 8th G Grader students of a Junior High School in Indonesia in 2015/2016 academic year. The students who become the control group are 8th J Grader students of a Junior High School in Indonesia in 2015/2016 academic year.

The instrument used for data collecting tool in this study is a questionnaire containing a number of written statements to reveal the level of empathy of 8th Grader students of a Junior High School in Indonesia in 2015/2016 academic year. The development of the students’ empathy instrument framework refers to the six aspects of empathy expressed by Karla McLaren (2013) namely: emotion contagion (emotion spread), empathic accuracy, emotion regulation, perspective taking, concern for other people (concern for other), and perceptive engagement (perceptive engagement).

The scoring formulation in this study was developed using Likert scoring with 5 alternative answers, which are: very suitable (SS), corresponding (S), less appropriate (KS), unsuitable (TS), and highly inappropriate (STS). The degree of reliability of the developed empathy instrument is at a very high degree of reliability with a reliability coefficient of 0.931.

The criteria for successful use of symbolic modeling techniques to develop empathy are characterized by increasing median empathy scores of experimental class students and compared with changes in median scores of control groups. In this study, the data were analyzed using non-parametric statistics through Mann Whitney test.

The formulated hypothesis is as follows:

H₀ : There is no significant difference between the pre-test score and the post-test score in the experimental group.

H₁ : There is a significant difference between the pre-test score and the post-test score in the experimental group.

With the following test criteria:
If the probability is (sig) ≥ (alpha) 0.05 then H₀ is accepted. If the probability is (sig) ≤ (alpha) 0.05 then H₀ is rejected.

Next is a hypothesis testing performed to compare pre-test scores with post-test scores in the control group through the Mann Whitney test.

The formulated hypothesis is as follows:

H₀ : There was no significant difference between the pre-test score and post-test score in the control group.

H₁ : There was a significant difference between the pre-test score and the post-test score in the control group.

With the following test criteria:
If the probability is (sig) ≥ (alpha) 0.05 then H₀ is received. If the probability is (sig) ≤ (alpha) 0.05 then H₀ is rejected.

3 RESULTS AND DISCUSSION

The development of the empathy of 8th Grader students of a Junior High School in Indonesia in 2015/2016 academic year is generally moderate. The median empathy score is 139. This means that in general the student has a tendency to empathize with others but still not optimal, students sometimes still cannot feel the feelings of others, tend to be confused and hesitate to understand other people's mind, sometimes less able to manage emotions, less able to position themselves based on the perspective of others, lack of care for others and less desire to engage and help others’ difficulties. From 319 students, there were 39.8% (127 students) in high category, 47.6% (152 students) were in moderate category and 12.5% (40 students) were included in low empathy category. It shows that there are still students who have low empathy.

Students who become experimental groups are 8th G Grader students of a Junior High School in
Indonesia in 2015/2016 academic year. Median score achievement level empathy of students in experiment group that is 131.5. The score indicates that the level of empathy of the experimental class is in moderate category. This means that students in the experimental group have not been able to show an optimal empathy or have not been able to achieve the best empathy level. The behavior of students who are in the category of moderate were shown by the attitude that sometimes still less able to feel the feelings of others, tend to be confused and hesitant to understand the minds of others, sometimes less able in managing emotions, less able to position themselves based on the viewpoint of others, caring for others and lacking the desire to engage and help the difficulties of others. In more detail, out of 30 students of the experimental group showed that 30% (9 students) were in the high category, 46.7% (14 students) were in the moderate category, and 23.3% (7 students) were in low category.

The students who become the control group are 8th J Grader students of a Junior High School in Indonesia in 2015/2016 academic year. The median score of the control group was 132.0. It shows that the median achievement of students’ empathy was in medium category. In more detail based on the results of control group data processing showed that out of 28 students 32% (8 students) were in high category, 46% (13 students) were in moderate category, and 25% (7 students) were in low category.

The results of post-test data processing in the experimental class shows that the median score obtained was 155 then the achievement of the level of students’ empathy in the experimental class was in high category which means that the students have been able to empathize with others i.e. was able to feel the feelings of others, able to understand the minds of other people appropriately, able to manage emotions, able to position themselves from the perspective of others, have a concern for others and have a tendency to engage and help others’ difficulties. Post test results showed that there was an increase in the ability of students’ empathy. This can be seen from the increasing of median achievement score of students’ empathy from pre-test result and posttest result (see Figure 1). In detail, after an intervention in the experimental class of 30 students showed that 53.3% (16 students) were in high category, 46.7% (14 students) were in moderate category, and there were no students in low category.

Based on pre-test and post test result data in experiment group, there are three things that can be concluded. First, there is an increase of median value between pre-test and post test result. The median pre-test of the experimental group was 131.5 and the post test score was 155. Secondly, there was a significant increase in the percentage of students who had high empathy categories. The percentage of students who have high empathy initially is 30% (9 students). After receiving treatment, the presentation increased to 53.3% (16 students). Third, there is a reduction of the percentage of students who have low empathy category. Before getting the treatment the percentage of students who empathize is 23.3% (7 students). Meanwhile, after receiving treatment there are no students who empathize low. Changes in these three things can illustrate the influence of the use of symbolic modeling techniques on students' empathy in the experimental group.

The post-test data median score obtained by control group was 136. It showed that students’ achievement of empathy level in the experimental class was in moderate category which means that the students’ empathy still not optimal, students sometimes still less able to feel the feelings of others, tend to be confused and hesitant to understand the thoughts of others, sometimes less able to manage emotions, less able to position themselves from the perspective of others, lack of care for others and have less desire to engage and help others’ difficulties. Post test results in the control group showed an increase in the ability of students’ empathy as indicated by increasing median score of pre-test results with post-test (see Figure 1.). However, in the control group did not show any change of category between the result of pre-test and post-test. The description of the frequency of the control group participants (post-test) of 28 students showed that 18% (5 students) were in high category, 61% (17 students) were in moderate category and 21% (6 students) were in low category.

Based on pre-test and post test results in the control group, there were no significant changes as occurred in the experimental group. The median value between the pre-test and post test results in the control group only increased by 4 points. While in the experimental group increased by 23.5 points. In addition, there are striking differences in the percentage of students who empathize. The result of pre-test shows that the percentage of students who empathize is 32% (8 students) and post test result shows the decrease percentage to 18% (5 students). In addition, despite the reduction in low-empathy student presentations, the decline was not as much as in the experimental group. These three things indicate a difference between the groups presented
symbolic modeling techniques and groups that do not get the treatment. Changes in median scores of pre-test and post test results in the experimental and control groups can be seen in Figure 1. In more detail, the median empathy score of students after guidance services provided in the experimental group and control group based on each aspect can be seen in Table 1. In Table 1, it can be seen that all aspects in the experimental group showed a higher median score than the control group. However, in the emotion contagion, emotion regulation, perspective taking, and concern for other aspects of the experimental and control groups are still in the moderate category. While the empathic accuracy and perceptive engagement aspects of the experimental group had a change of category from moderate to high. Based on these data, it shows that the experimental group has increased empathy score.

![Figure 1: Changes in median scores on the result of pre-test and post-test of the experimental group and control group.](image-url)

<table>
<thead>
<tr>
<th>No.</th>
<th>Aspects</th>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre-test</td>
<td>Post-test</td>
</tr>
<tr>
<td>1.</td>
<td>Emotion Contagion</td>
<td>17</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
<td>Empathic Accuracy</td>
<td>19</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Emotion Regulation</td>
<td>16</td>
<td>Moderate</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Perspective Taking</td>
<td>22</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Concern For Other</td>
<td>31</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Perceptive Engagement</td>
<td>27</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

In general, the control group also increased the score of empathy although not given guidance services through symbolic modeling techniques. However, on the aspects of emotion contagion, there is a decrease in median score. Further Mann Whitney test results can be seen in Table 2. From the table above it can be seen that the significance value is 0.005. The value of significance is smaller than $\alpha = 0.05$, it can be concluded that $H_0$ is accepted. This means that there is a significant difference between the pre-test data and the post-test data of the experimental group. Based on this test, it shows that there is a significant change in students’ empathy after being given intervention services through symbolic modeling techniques.

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**Table 1: Description of achievement level of each empathy aspect in experiment group and control group (post-test).**

<table>
<thead>
<tr>
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<td>Moderate</td>
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</table>
Table 2: Mann Whitney test results of pre-test and post-test data in experimental group.

<table>
<thead>
<tr>
<th>Test Statisticsa</th>
<th>Experimental Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>258,000</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>723,000</td>
</tr>
<tr>
<td>Z</td>
<td>-2.840</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.005</td>
</tr>
</tbody>
</table>

Mann Whitney test by IBM SPSS Statistics 21 software is used to analyze Pre-test and Post-Test Data in this Control Group. Mann Whitney test results are presented in Table 3. From Table 3 it can be seen that the significance value is 0.857. The value of significance is greater than α = 0.05, it can be concluded that H0 is accepted. It means that there is no significant difference between the pre-test data and post-test data of the control group.

Table 3: Mann Whitney test results of Pre-test with Post-test Data of Control Group.

<table>
<thead>
<tr>
<th>Test Statisticsa</th>
<th>Control Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>381,000</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>787,000</td>
</tr>
<tr>
<td>Z</td>
<td>-.180</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.857</td>
</tr>
</tbody>
</table>

Based on the results of hypothesis test above, it shows that there are significant differences between the pre-test score and post-test score of the experimental group. And there was no significant difference between the pre-test score and post-test score in the control group. It can be interpreted that the technique of symbolic modeling is effective to develop students’ empathy.

Symbolic modeling techniques is effective for developing students’ empathy, as also states by Bandura (Inskipp, 2012) that most human behavior is learned through model observation and people learn more easily using that way. In addition, the effectiveness of symbolic modeling techniques to develop empathy is also supported by the implementation of interventions in accordance with the procedure of execution of symbolic modeling techniques.

First, in the attention process of symbolic modeling techniques, students observed the model presented through film, video or story. By observing the model, the observer abstracts the behavior that is relevant to them and then often they adopt that behavior and perform it (Bandura in Gredler, 2011). Some experts also find that the empathy of children is also formed by seeing how others react when someone is sad; by imitating what they see, they develop a repertoire of empathetic responses mainly to help others in distress (Goleman, 2000).

Furthermore, in the implementation of intervention students retell the story line of the video, film and stories that have been observed. These activities show the retention process. In these activities, the students represent verbally about what has been observed and obtained from the results of their observations. According to Bandura (Lefrancois, 2006; Hergenhahn and Olson, 2010) model behavior will be more easily remembered by observers if visual information is changed into verbal code or described by words. After the information obtained from the observation it will be stored cognitively and the observer can retrieve, repeat and reinforce sometime after symbolic modeling occurred.

In the implementation of the intervention, the students also carry out the exercises to show the behavior demonstrated by the model, in which the students can directly feel the specific event. Students also do the exercises in the appropriate manner of disclosure or communication to do when dealing with certain situations presented through student worksheet. In symbolic modeling technique, the process shows the process of behavior configuration. According to Cormier (in Nursalim, 2013) to refine symbolic modeling technique, it is helpful for guidance and counseling teachers or counselors to test the modeled behaviors so that the students can have experience in practicing them. This experiment includes several things i.e. the use of language, the order of model behavior and feedback. In the exercise, the individual will observe and compare his or her own behavior with the behavior shown by the model so that the person can correct his or her own behavior.

In the last stage, researchers provide reinforcements to the students in order to model the positive behavior shown by the model. This activity is one of the activities that occur in the motivational process. According to Bandura (1997, p. 90) people are more likely to exhibit behaviors that are modeled when showing rewarded results than if they have unfavorable or punitive effects. As Alwisol (2011, pp.292-293) pointed out that there are three effects of symbolic modeling technique. The first one is studying new behavior. The second impact is that the behavioral model serves as a social drive to initiate the same behavior in others. The third impact is to strengthen or weaken the restraint to perform certain behaviors. The socially acceptable behavior of models can strengthen the responses that observers already have. Behavioral models that are
not socially acceptable may strengthen or weaken the observer for the behavior that is not socially acceptable. If unacceptable behavior is rewarded then the observer’s response tends to imitate the behavior, but if the unacceptable behavior is punished then the observer’s response becomes weaker.

The media used in conducting the intervention will affect the effectiveness to develop students’ empathy. In this research, videos and stories were used as the media. By observing videos or stories, students can imagine themselves on the characters that are modeled. It can train the students to feel the emotions they feel, identify the emotions and thoughts of the characters, train emotional regulation, and train the students to take perspective from the perspective of others. In addition, the empathetic values contained in a video or story can also train students to show their concern for others and observe how the actions performed by the modeled figure.

The effectiveness of guidance activities through symbolic modeling techniques is also supported by social interactions in students’ environment. As Bandura (in Gredler, 2011) notes the social environment provides many opportunities for individuals to acquire complex skills and abilities through model behavioral observations and its consequences. However, people do not passively take in everything they hear and see. Cognitive internal personal factors, affective, and biological event and external-environment operate as determinants of interactions that affect each other (Bandura, 1997).

Based on that theory, it can be said that by showing the model through group setting can also give effect because there will be stronger interaction between individuals, environment and behavior, so it is possible through group setting not only symbolic modeling that occurred but also social there is strengthening process from friends within the group.

In addition, one’s cognitive abilities may also influence the effectiveness of symbolic modeling techniques to develop empathy. With such cognitive ability, one can acquire new behaviors from observing the model. Alwisol (2011) reveals that the ability of intelligence to think symbolically becomes a powerful tool for dealing with the environment. Behavioral models that become stimuli will be transformed into mental images and verbal symbols that can be recalled in the future. This symbolic cognitive skill allows one to transform what it learns or combine what it observes in various situations into new behavioral patterns (Alwisol, 2011).

At the age of junior high school students have a cognitive ability to analyze a situation, and able to think abstractly. As Santrock (2012) has pointed out that adolescent has the ability to manipulate situations or events that are purely hypotheses or abstract proportions to reality, and try to think logically to it. Papalia, DE (2012) also revealed that at this stage the individual has had the ability to analyze, the ability to develop proportions and draw generalizations and inferences from different categories of objects, can use symbols to symbolize and can integrate what they have learned with future challenges and making plans for the future. In the retention phase students are able to analyze the meaning contained in the video or story, able to internalize it in their selves and able to correlate and apply it in everyday life reality.

This research can strengthen previous studies which reveal that modeling techniques can be used to develop empathetic students. This research shows the technique of symbolic modeling is effective to develop five aspects of empathy, namely emotion contagion, empathic accuracy, emotion regulation, concern for other and perceptive engagement. But it has not been effective yet to develop perspective taking. One of the factors causing the ineffectiveness of symbolic modeling techniques to develop perspective taking is the factor of adolescent social thinking. In adolescence develops an attitude of egocentrism in the form of logical subjective thoughts of the social problems faced in society or life in general. Teenagers’ egocentrism often appears or is shown in relation to others about their selves. Generally, teenagers give a judgment of a situation based on the principles exist in their kinship, peers and rules (Ahman in Supriatna, 2011).

The results of research indicate that empathy of a person can be obtained through learning, which can be taught to others. However, this study does not provide any description of empathy skills implementation possessed by students in their daily life. Students need support to show the ability of empathy in everyday life. Cotton (in Kurnia, 2012) states that empathy will flourish if children are encouraged to identify and express emotions, and have the opportunity to interact with others who are role models, and encourage them to be sensitive to the emotional needs of others.

4 CONCLUSIONS

Based on the results of research about the effectiveness of symbolic modeling techniques to
develop the empathy of students, it shows that the technique of symbolic modeling is effective to develop the empathy of 8th Grader Students of a Junior High School in Indonesia in 2015/2016 Academic Year. Symbolic modeling techniques are effective for developing some aspects of empathy such as emotion contagion, empathic accuracy, emotion regulation, concern for other, and perceptive engagement. However, there has not been any significant change in perspective taking aspects.

REFERENCES


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