Creative Problem Solving Training to Enhance Students Problem Solving Skills on Career Issues

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Abstract— **This study aims to describe the application of creative problem solving to improve career problem solving skills and describe improvement in career problem solving skills with creative problem solving for grades nine students in Public Junior High School. Research conducted using the type of Counseling and Guidance Action Research conducted on a cyclical basis. In each cycle consists of planning, action, observation, and reflection. Data collection techniques used include: questionnaire, rating scale, observation of teacher and student activities and interviews. The data analysis technique used is quantitative descriptive analysis. The subjects in this study amounted to 32 students consisting of 11 male students and 21 female students. From the results of the questionnaire analysis in the first cycle, scores obtained from career problem solving skills changed from the classical average number of 44% to 69%. Cycle II experienced a change in classical completeness in scores on career problem solving skills from 69% to 84%. Furthermore, from the data analysis of the rating scale, the average score of career problem solving skills has increased from 22% to 69%. Cycle II has increased from 69% to 94%. Comparison of classical completeness between cycles of questionnaire instruments and rating scales which indicate a change in positive signs of 15% and 25%. The results of teacher activity observation reached 80%, and observation of student activities reached 80%. The results of the interviews showed an increase in aspects of being happy with the training, instructions given, the course of the training, the need for techniques to be used and the decreasing barriers to training in using the technique.**

Keywords— *skills, creative problem solving, career, problem solving*

I. INTRODUCTION

Problems are conditions that must be experienced by every individual. Differences in experience and learning processes make the individual's point of view on problems diverse [1]. According to Polya [2], problem solving is an effort to find a way out of a difficulty to achieve a goal that is not immediately achievable. Moreover, problem solving can also be defined as a planned process that needs to be implemented in order to obtain certain solutions to a problem that may not be immediately obtained [3]. Furthermore, problem solving is the process of resolving differences between what happened with expectations [4].

Students experience various problems, one of them is a career problem. Career problems need to be found the right solution so as not to interfere with optimal development [5,

6]. Therefore, students need skills in solving all career problems faced. Career problem solving skills are skills needed in a planned process in order to get a way out of a career problem with the following steps of gathering facts, analyzing information, arranging various alternative solutions and choosing the most effective solution.

Individual career development has begun since childhood [7]. Early career recognition will help children plan their careers carefully so as to minimize mistakes in career decision making. Career guidance can be provided to help middle school students plan their careers. According to Winkel [8] career guidance is guidance in preparing themselves to face the world of work, in choosing jobs or certain positions / professions and equip themselves to be ready to assume that position, and in adjusting to the various demands of the jobs entered. Career guidance and counselling for junior high school students (is the process of providing guidance and counselling teachers or counselors to students or counselees to experience growth, development, exploration, aspiration and career decision making as long as its life span is rational and realistic based on information on the potential of themselves and the opportunities available in their environment so as to achieve success in their lives [9,10,11]).

The number of students who have not completed their career problem solving skills was quite high. The researcher has conducted a preliminary study in one public junior high school in Indonesia which shows that 78% of 32 students in one class lacking skill in solving career problems. The rationale is when solving a problem, not through the process of thinking according to the stages of problem solving, but, directly towards the stage of finding alternative solutions so that the chosen alternative is not appropriate. Furthermore, data from 25 students who were less skilled in solving career problems, 10 children complained about the difficulty to the counselling and guidance teacher that they did not understand the potential they had because they did not understand their talents and interests; do not know how to choose a study because they pay less attention to the information provided; students choose jobs not based on mature considerations because they are based on fantasy or prestige, following trends; doubt and confusion in determining which further study is suitable for him because he lacks information about further studies available, further studies chosen are not appropriate between abilities and

desires because of differences in school choice and work with parents; choose a course that parents ask for; unable to explain the demands and requirements of the work/ profession that are in demand because of lack of information, just following friends and others. These career problems must be solved. If left unchecked it can result in psychological developments that appear in behavior, such as lack of enthusiasm in learning, not confident, feeling confused, incompatible career planning with self-potential that will make students unhappy [12,13].

Coaching must be improved so that career problem solving skills increase. Career solving skills that are still lacking can prevent students from making career decisions appropriately [14,15]. However, if career problems faced by students can be resolved will help the process of planning studies and careers, take responsible decisions, choose the right direction, choose the right ideals and so on. One way that can be done is the application of creative problem solving. Creative problem solving was developed by Alex Osborn and Sidney Parnes [1] emphasizing that to be able to find various alternatives, problem solving ideas are emphasized to be creative. Students are said to be skilled if they use the thinking process in accordance with the steps of solving the problem as follows: describe the problem, the suitability of the core problem, sharpness determine the approximate cause, sharpness determines the alternative problem solving, The explanation above raises questions about how the application of creative problem solving can improve career problem solving skills. Thus this research aimed at knowing the effect of creative problem solving in improving career problem solving skills.

II. METHOD

Research was conducted using the type of Counseling Guidance Action Research on a cyclical basis. In each cycle consists of planning, action, observation, and reflection. The subjects in this class action research were 32 students from the grade nine of the Public Junior High School in Indonesia consisting of 11 boys and 21 girls. The research instrument was applied by providing a data collection tool that contained a skill test statement that was used to compare the results of career problem solving skills possessed by students. Indicators of problem solving skills according to Sukarno [1]are as follows: translation of the problem at hand, suitability of core problems, sharpness determines the approximate cause, sharpness determines alternative solutions to problems, alternative compatibility with the alternative support, suitability of alternatives with these alternative barriers, choice of alternative problem solving.

Data collection to answer the research problem formulation was as follows: questionnaire, rating scale, observation of teacher and student activities, and interviews. This study applied quantitative descriptive analysis techniques. Analysis in the form of a sentence that provides an explanation of the application of creative problem solving and improvement of career problem solving skills.

The validity of this study was tested using content validity with the help of professional judgment to obtain indicators and items as presented in the research instrument. This validity is used because the instrument includes enough topics that have been defined as dimensions and elements that describe the concept. Professional assessment is used to see whether the items in the research instrument are in accordance with the objectives and measurements and write the principles of good and right scale. Input from experts is needed to find out the content validity in this study. experts, in this case, are someone who meets the following criteria: (a) able to see the relevance between the definition of dimensions with items that have been made, (b) can see the criteria for writing the right item. Validation includes RPL test, film media test and instrument test (questionnaire, rating scale, observation of teacher and student activities, and interviews).

III. RESULT AND DISCUSSION

Result

Creative problem solving training to improve career problem solving skills among grade nine students in two cycles, each meeting three times, each meeting having a specific purpose and strategy. Increasing career problem solving skills carried out by implementing steps include; understanding problems, developing ideas, reviewing ideas, and building acceptance. The creative problem solving steps are internalized by the steps in making mind mapping. So that the product of this training is in the form of problem solving mapping.

The creative problem solving training is carried out in two cycles. Each cycle has four stages, namely planning, implementation, observation and reflection. The first cycle was conducted in three meetings. Following is the translation carried out at each meeting.

The first meeting was held and lasted for 2 x 40 minutes. The first meeting begins with greetings and motivates students with excited sentences. Delivered the training objectives. To foster good relations with students, given ice breaking activities in the form of the game "Boom, Buzz, Dorr, Duerr". After doing ice breaking, the initial material was given around creative problem solving for solving career problems. Furthermore, the scale of the assessment of career problem solving skills is given, then students are invited to watch the Front of the Class movie calmly, review the film, then the teacher gives an example of the steps in using creative problem solving and is imitated by students.

The second meeting began with greeting and building a rapport. To foster good relations with students, ice breaking activities are given in the form of "Tiger" games. After doing ice breaking, then proceed by explaining the purpose of the activity at the meeting that day and asking about the readiness of the subject to carry out the activity on that day. Then the students were invited to watch the Taare Zameen Par movie calmly, review the film by reading a brief synopsis about the film to be aired. After watching the film, the research subject was asked to make career problem solving in the film using creative problem solving steps independently without an example from the teacher. Next, students are asked to fill out a reflection sheet.

The third meeting was carried out in the classroom. At the third meeting, the research subjects carried out individual planning practices in career decision making. The meeting consists of three preliminary stages, contents and closing. In the preliminary stage begins with greetings to students and motivational sentences to be enthusiastic in participating in the activity, delivered the purpose of the activity, fostering good relations with light ice breaking namely "BK Says", an explanation of the steps of activities, tasks and responsibilities of students, explanations about the topic of individual planning practice is career decision making, asking the readiness of students to carry out activities, and starting into the core stage.

Entering the core phase which is 65 minutes long, students are formed by a small group of three people, to hold discussions about individual planning, acting as counselors, counselees and observers in turn. The counselling and guidance teacher shares a sheet of career decision making, the scale of assessment of career problem solving skills and questionnaires. Small groups fill the career decision-making sheets, the scale of assessment of career problem solving skills and questionnaires within 30 minutes. Furthermore, each group member alternates in a small group to convey the results of the planning carried out on the career decision making sheet and on the scale of the assessment of career problem solving skills. The counselling and guidance teacher goes around observing the discussion activities of each group. After the discussion, students were invited to conclude the results of the meeting, conveying reflections and further hopes. And followed by an interview at the end of cycle I. The meeting ends with a prayer and greeting.

The implementation of the second cycle of action, the same as the first cycle consists of three meetings. However, the difference in group division at the third meeting was determined by the even distribution of students whose career problem solving skills were not yet completed in groups with students who were completed.

In this study according to the established success indicators, it can be fulfilled in cycle II. So the research was stopped in cycle II. This can be seen in the results of questionnaires and rating scales that meet the indicators of success. Learners achieve success of ≥ 80% with a percentage of 80%, classical completeness of career problem solving skills of IX-L students at Public Junior High School 1 Taman on the cognitive aspects obtained from the questionnaire obtained percentage of 84%, on the performance test aspects seen from the rating scale obtained percentage of 94%.

By looking at the data from the comparison of data collection between cycles. There is a change in career problem solving skills. The direction of change shows a sign (+). From the questionnaire data, the change in completeness rate is 15%, the rating scale is 25%, in the activities of student activities 8%. So this change shows an increase in career problem solving skills. The final results of career problem solving skills possessed by IX-L class students at Public Junior High School 1 Taman experienced positive changes, namely completed students as much as 84% of questionnaires and 94% of rating scales.

Discussion

This research aims to describe the application of creative problem solving techniques with film media to improve career problem solving skills and describe the improvement of career problem solving skills with creative media film techniques. The application of creative problem solving techniques with film media is written in detail in the guide for guidance and counselling teachers. The use of creative problem solving techniques using film uses the following steps: finding the main problem by analyzing various facts with the help of developing answers to the 5W 1 H questions (what, where, who, when, why and how), finding the main causes, determining ideas of solving problems as much as possible by taking into account the factors of support and obstacles, continued decision making by paying attention to alternative solutions to problems that have a lot of support and strengths. The reflections from each cycle are as follows: The results of the data show the teacher has explained the objectives to be achieved and begins with prayer. The teacher's instructions are not clear when instructing to watch a film. Students seem less active when asked to conclude. The discussion is dominated by certain students, teachers need to approach students who are using techniques on their respective problems.

Readiness of students to follow the service seems less serious. The understanding of creative problem solving techniques with film media is not descriptive yet, how to make conclusions is still in doubt, but has the courage to convey answers to teacher questions. Students have not been able to use these techniques, are less active in discussions dominated by certain children, have difficulty mentioning the career problems they face. Learners have not been able to make problem solving and are still looking at a friend's work. The scale scores for career problem solving skills obtained have not yet reached the indicators of success, so improvements were made in the second cycle.

The skill scale score obtained reaches an indicator of success. The results of the data show that students can use the steps of creative problem solving with film media well. Students are able to make problem solving. Make serious reflections and conclusions, have dared to convey answers to questions. Have done the training process well, learning experiences and praying. The instructions given by the teacher are quite clear when watching a film related to the task that must be done by students, namely finding the main problem, the causes of problems and solutions in the film. In discussion groups are able to take turns becoming counselee, counselor and observer.

In this study according to the established success indicators, it can be fulfilled in the second cycle. So the research was stopped in cycle II. This is evident in the results of the questionnaire and rating scale that meets the indicators of success. Participants achieved success with a percentage of 80%, by examining data from comparisons of data collection between cycles. Obtained a change in career problem solving skills. The direction of change shows a (+) sign. From the questionnaire data, the change in completeness was 15%, the rating scale was 25%, in the student activity activities 8%. So this change shows an increase in career problem solving skills. The final results of

career problem solving skills possessed by students experienced positive changes, namely students who completed 84% of the questionnaires and 94% of the rating scale.

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In this study according to the established success indicators, it can be fulfilled in the second cycle. So the research was stopped in cycle II. This is evident in the results of the questionnaire and rating scale that meets the indicators of success. Classical completeness of career problem solving skills in students achieved ≥80% success, grade IX-L students of SMP Negeri 1 Taman on the cognitive aspect obtained from the classical completeness questionnaire of all students by 84%, on the performance test aspects seen from the scale assessment obtained a percentage of 94%. This research shows the activities of students achieving 80% success.

By looking at the data from the comparison of data collection between cycles. Obtained a change in career problem solving skills. The direction of change shows a (+) sign. From the scale of assessment data by 25% and the activities of students 8%. So this change shows an increase in career problem solving skills. The final results of career problem solving skills possessed by students experienced positive changes, namely students who completed 84% of the questionnaires and 94% of the rating scale with criteria including: 56% very good and 44% good .

The results of observations of teacher activities reached 80%, and observations of student activities reached 80%. The results of the interviews showed an increase in the aspects of being happy with the training, the instructions given, the course of the training, the need for the technique to be used and the decreasing obstacles in the training for the use of the technique. From these data shows that there is an increase in career problem solving skills among students after training on creative problem solving with film media.

Changes in cognition that appear from the previous condition of students do not understand the potential that they have because they do not understand the talents and interests possessed to understand what is known when the interview mentions about their own potential; do not know how to choose a study because they do not pay attention to the information provided to know how to choose a study; choosing a job is not based on careful consideration because it is based on fantasy or prestige becomes based on self-potential. Furthermore, psychological developments that appear in the behavior after training with creative problem solving techniques with media films, become more enthusiastic in learning and confident [16,17,18].

After using creative problem solving techniques with media films career problem solving skills increase. This activity needs to be trained and carried out repeatedly in order to master the stages well. As a result there is a change in students that is becoming skilled when faced with problems, both when interacting with the environment, friends, teachers or the surrounding community.

Mitchel and Kowalik [19] state that creative problem solving is a process, method, or system for approaching a problem in an imaginative way and resulting in effective action. This method is also interpreted as a process, method, or system approach to problems that uses imaginative paths and produces effective action [20,21]. Through practice and the application of processes on an ongoing basis, students can strengthen their creative techniques and learn to apply them in new situations. The steps are gathering facts, analyzing information, compiling various alternative solutions, and choosing the most effective solution.

The advantages of this study are using new techniques used in Public Junior High School 1 Taman in improving career problem solving skills. Creative problem solving techniques using film help students find a variety of alternative ideas for solving career problems. Optimizing the thought process in responding to a career problem faced, so that the right choice of solution is obtained. And in the end they can develop optimally. In addition, other researchers can be a foothold who want to research about career problem solving skills. In addition, creative problem solving techniques with film media can be disseminated to fellow guidance and counselling teachers in Public Junior High School 1 Taman so that performance can be improved as well.

IV. CONCLUSION

Based on the results of the research and discussion of the results it can be concluded that the training of creative problem solving techniques in the media of the film was carried out in two cycles. Each cycle was conducted three times, the first meeting using creative problem solving techniques in the media film that was exemplified by the teacher, the second meeting of students using techniques independently and the third meeting of individual planning practices in career decision making using creative problem solving techniques. The film chosen is a film that contains career problems that will be trained to find a solution. Overall, the final results of career problem solving skills possessed by the students were positive changes, namely students as much as 84% of questionnaires and 94% of rating scales were completed by students.

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