

The Effectiveness of Coping Skills in Improving Critical Thinking Skills of Junior High School Students

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Abstrack

Coping skills are more widely used to address a range of problems and emotional issues. However, there is no information on the impact of improving critical thinking skills. This study examined the effectiveness of coping skills in improving the critical thinking ability of Muhammadiyah 10 Yogyakarta junior high school students. This study used a quasi-experimental design measurements were taken before and after the intervention using the California Critical Thinking Skills Test (CCTST) with a reliability of 0.883. The results of the N-Gain Score analysis showed that the average score of the experimental group was 85.97% (effective category), while the control group was 68.47% (moderately effective category). Individual scores in the experimental group ranged from 77.05% to 98.61%, while the control group ranged from 54.17% to 83.56%. These findings indicate that coping skills are significantly effective in improving students' critical thinking ability.

Keywords: critical thinking skills, coping skills, junior high school

Abstrak

Keterampilan koping lebih banyak digunakan untuk mengatasi berbagai masalah dan masalah emosional. Namun, tidak ada informasi tentang dampak peningkatan keterampilan berpikir kritis. Penelitian ini mengkaji efektivitas kemampuan koping dalam meningkatkan kemampuan berpikir kritis siswa SMP Muhammadiyah 10 Yogyakarta. Penelitian ini menggunakan desain kuasi-eksperimental yang dilakukan pengukuran sebelum dan sesudah intervensi menggunakan California Critical Thinking Skills Test (CCTST) dengan keandalan 0,883. Hasil analisis N-Gain Score menunjukkan bahwa skor rata-rata kelompok eksperimen adalah 85,97% (kategori efektif), sedangkan kelompok kontrol adalah 68,47% (kategori efektif sedang). Skor individu dalam kelompok percobaan berkisar antara 77,05% hingga 98,61%, sedangkan kelompok kontrol berkisar antara 54,17% hingga 83,56%. Temuan ini menunjukkan bahwa keterampilan koping secara signifikan efektif dalam meningkatkan kemampuan berpikir kritis siswa.

Kata kunci: keterampilan berpikir kritis, keterampilan mengatasi, SMP

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INTRODUCTION

The development of technology 5.0 is both a challenge and an opportunity for education in preparing future generations to adapt to rapid global changes. In this era, technologies such as the Internet of Things (IoT), artificial intelligence (AI), and robotics play an important role in creating smarter and more interactive systems, improving the quality of human life, and solving social problems (Fricticarani et al., 2023). Education in the 5.0 era must integrate technology into the curriculum and learning methods to develop 21st-century skills, such as critical thinking and creativity (Nastiti & Abdu, 2020). This is in line with the goals of national education, which emphasise the development of students' potential to face global challenges (Wardono & Rachmantika, 2019). Thus, the technological era 5.0 is not only about technical advances, but also about creating a more inclusive and sustainable society (Budhiman, 2017)

However, in reality, the current critical thinking skills are still not aligned with what is expected in the 5.0 era of education. This is explained by Ristiasari et al. (2012), results of the Program for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS) studies that have decreased from year to year. PISA is a study developed by several developed countries in the world that are members of the Organization for Economic Cooperation and Development (OECD) which assesses educational achievements based on a framework starting with the concept of literacy that is concerned with the capacity of students to apply knowledge and skills as well as to analyse, reason and communicate effectively when they are faced with problems, must solve and interpret problems in various situations. Indonesia's average PISA score in 2006 was ranked 50th out of 57 countries; in 2006, it was ranked 60th out of 65 countries and in 2012, Indonesia was ranked 64th out of 65 countries. The study results for TIMSS students in Indonesia ranked 32nd out of 38 countries in 1999, ranked 37th out of 46 countries in 2003, and ranked 35th out of 49 countries in 2007. Based on the results of the PISA and TIMSS studies, the average score of students in Indonesia is below the international average of 500 and falls within the Low International Benchmark. Based on these achievements, the average student in Indonesia can only recognise a number of basic facts but cannot communicate and link various science topics, let alone apply complex and abstract concepts (Pratiwi, 2019).

This is also evidenced by the results of research conducted by Nuryanti et al. (2018): the critical thinking skills of students at State Junior High School 1 Delanggu, Klaten Regency, are low. This is evidenced by the average percentage of category B, which is only 40.46%. The results of this study are also in line with the results of research conducted by Febrianti & Utomo, (2021) in class VIII State Junior High School 1 Purwoharjo in the 2020/2021 academic year that the data obtained from the results of students' critical thinking ability in the control class is only 0.21 in meetings 1 and 2, and 0.11 in meetings 2 and 3 with a low category. This is also supported by the results of Chotimah et al. (2019) at 10 State Junior High Schools Cimahi, with an average score of 7.051. The average results also indicate that students' critical thinking skills remain relatively low.

The low levels of critical thinking among students at Muhammadiyah Junior High School 10, Yogyakarta, are measured through guidance and counselling services. Observations showed that students tend to have difficulty understanding problems in depth, only see from one point of view, and accept information without questioning it. Students also experience confusion when facing complex problems and often give up without seeking alternative solutions. In addition, they lack the ability to sort out



important information, which hinders their ability to draw accurate conclusions. The counselling teacher revealed that the existing guidance services have not trained students' critical thinking skills, so they do not actively ask questions or provide answers when faced with problems, in line with Karim & Normaya's (2015) research, which confirms that the critical thinking skills of junior high school students remain low.

The importance of developing critical thinking skills for students was also emphasised by Yulianti & Gunawan (2019), who stated that critical thinking can be taught through practice. If students are given the opportunity to think at a higher level, they will be better able to distinguish between truth and lies as well as facts and opinions Kurniawati (2011). Wiyanto (2021) added that critical thinking skills need to be developed through analysing ideas and finding alternative solutions. According to Saputra, (2020), critical thinking helps students understand material by evaluating arguments in learning, making it an important competency in knowledge construction. Meaningful experiences, such as discussions and practicals, can challenge students' critical thinking skills.

The low level of critical thinking skills among students needs to be a concern for students and counseling teachers, especially in the 21st century. Ristiasari et al. (2012) argue that critical thinking is a cognitive activity that enables students to make decisions based on in-depth analysis. To overcome this problem, counselling teachers can apply guidance and counselling service strategies, including the coping skills technique. This technique is important to improve students' critical thinking skills so that they not only receive information, but are also able to analyse and solve the problems faced Septiyantoro et al (2022).

The use of coping skills can vary depending on the level of difficulty of the problems students face. Felix et al. (2019) explained that in controllable situations, problem-focused coping strategies are more effective, while in situations that are difficult to control, emotion-focused coping is more appropriate. Kresnawan et al. (2021) noted that these two types of strategies have different approaches: problem-focused coping focuses on solving problems directly, while emotion-focused coping is more focused on managing individual emotions.

In the context of guidance and counselling, coping skills techniques can help students deal with challenges and stress, and support the development of critical thinking skills. Indicators that can be optimised include students' ability to identify problems objectively, control negative emotions, and evaluate ways to solve problems Hianto & Shanti (2018). By providing the right support to meet students' needs, it is expected that their critical thinking skills will improve significantly.

With the background of the research discussed above, in accordance with the objectives of the researcher seeking to improve critical thinking skills in students, the guidance and counselling teacher can provide coping skills techniques to help junior high school students improve their critical thinking skills.

METHOD

The research approach used in this study is experimental, with variables of coping skills and critical thinking skills. The experimental research design used is a type of Quasi Experimental Design or pseudo-experiment that will test the independent variable with the dependent variable conducted on the sample. The total subjects in this study were 150 students of SMP Muhammadiyah 10 Yogyakarta who were taken by purposive sampling, namely students who had low critical thinking skills. Sampling is done randomly by



selecting students from each class, who are then assigned to the experimental and control groups, adjusted to the low level of critical thinking skills measured through a pretest. Using random samples in quantitative research means trying to minimise errors due to fatigue and boredom, reducing human bias by using correct procedures and appropriate techniques, and providing opportunities for all members of the population to be selected as samples.

The steps in this design are the same as in the pretest-posttest experimental control group design. There are two groups of subjects: 5 students in the treatment or experimental group receive group counselling coping skills techniques, and 5 other groups are the control group. The data collection tool in this study uses a Likert scale questionnaire by adapting the question grid from the California Critical Thinking Skills Test (CCTST) developed by Facione (2020) and has been standardised and published by Insight Assessment (2014), The intervention design in this study is divided into 5 sessions of counselling meetings.

1. Giving a series of pretests to the research sample, then processing and dividing the experimental and control groups. After that, provide information related to the intervention to be implemented, namely group counselling with coping skills techniques in the experimental group.
2. Session 1 to Session 3: Implementation of coping skills. The stages of the coping skills implementation process are attached in the treatment guide.
3. Giving a series of post-tests to each group (experimental and control) to obtain an overview of the achievements in implementing counselling.

This research was conducted at Muhammadiyah Junior High School 10, Yogyakarta, which is located at Jl. Sagan GK. V No.1046, Terban, Kec. Gondokusuman, Yogyakarta City, Yogyakarta Special Region. The implementation was carried out in September 2023, and data collection was carried out in June-September 2024. Furthermore, the treatment was given to the experimental group at each meeting. The details of the time of research activities that have been carried out are listed in the following table:

Table 1.
Research Time

No.	Activities	Implementation	Date
1.	Pretest	-	24 June 2024
2.	Group Counselling Session 1	Beginning Stage	1 July 2024
3.	Group Counselling Session 2	Working Stage	12 July 2024
4.	Group Counselling Session 3	Terminating Stage	20 August 2024
5.	Posttest	-	2 September 2024

The data collection tool contains a number of statements or questions that the respondent must answer. The data analysis technique in this study used the Kolmogorov-Smirnov test for normality, a homogeneity test, and hypothesis testing with the n-gain score to determine the effectiveness of coping skills in improving critical thinking skills.



RESULTS AND DISCUSSION

Results

Critical thinking score data were collected through the CCTST instrument, which was given at pre-test and post-test conditions to the experimental and control groups. Descriptively, the mean scores, standard deviations (SD), minimum scores, and maximum scores of the two groups are presented in the following table 2.

Table 2.
 Descriptive Statistics of Pre-test and Post-test Scores of Experimental and Control Groups

Group	Condition	N	Mean	SD	Min	Max
Experimental	Pre-test	5	34.20	5.12	28	40
Experimental	Post-test	5	91.00	8.22	80	99
Control	Pre-test	5	33.80	4.92	27	39
Control	Post-test	5	57.20	6.84	48	65

To measure the intervention's effectiveness, an N-Gain Score was calculated. The results of the calculation showed that the average N-Gain for the experimental group was 85.97% (effective category), while the control group averaged 68.47% (effective category). The distribution of N-Gain scores per study subject is detailed in table 3.

Table 3.
 Individual N-Gain Scores and Effectiveness Categories

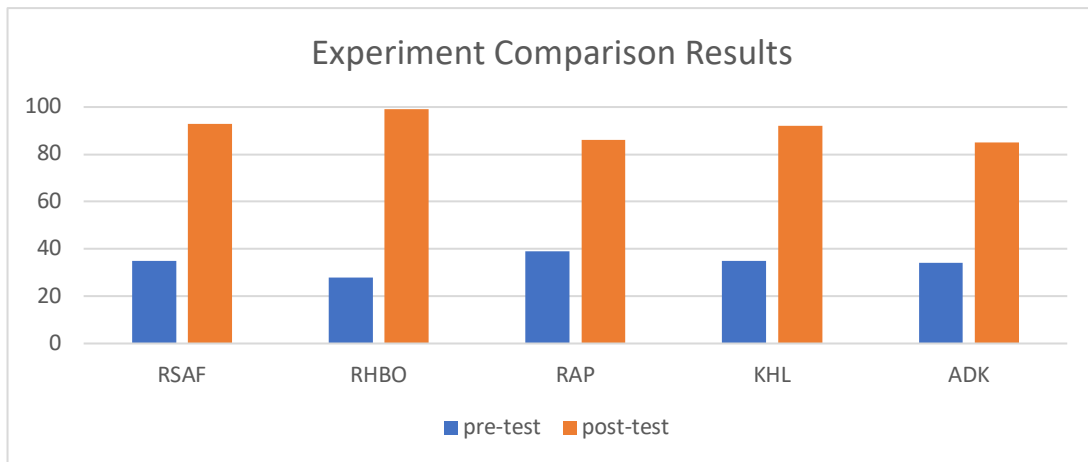
Subject	Group	Pre-test	Post-test	N-Gain (%)	Category
S1	Experimental	28	95	93.06	Very Effective
S2	Experimental	40	99	98.61	Very Effective
S3	Experimental	32	80	77.05	Effective
S4	Experimental	35	90	87.69	Effective
S5	Experimental	36	91	88.46	Effective
Mean		34.20	91.00	85.97	Effective
Subject	Group	Pre-test	Post-test	N-Gain (%)	Category
S6	Control	27	48	54.17	Moderately Effective
S7	Control	39	65	83.56	Effective
S8	Control	31	52	58.70	Moderately Effective
S9	Control	35	60	76.92	Effective
S10	Control	37	61	69.23	Moderately Effective
Mean		33.80	57.20	68.47	Moderately Effective



Comparison of the results of critical thinking skills scores in the experimental and control groups during the pre-test and post-test treatment can be seen in graph 1 and 2 below:

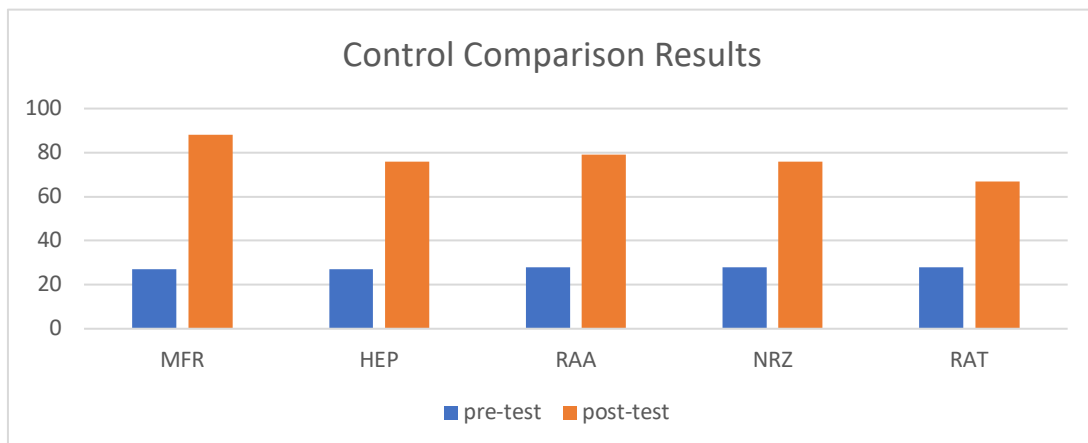
Graph 1.

Histogram of Pre-test and Post-test Comparison of Experiments



Graph 2.

Control Pre-test and Post-test Comparison Histogram



Based on graph 1 and 2 of the comparison results of pre-test and post-test measurements in the experimental class and control class, it can be concluded that the five subjects of the research experimental class experienced changes in their critical thinking skills scores, while the research control class subjects of the five research subjects also experienced changes in their critical thinking skills scores. The change in post-test scores, namely the increase in critical thinking skills among the research subjects, indicates that coping skills are effective in improving them.

Discussion

This is also in accordance with the objectives of coping skills counselling services, namely students are able to identify the problems faced clearly and objectively, students can control negative emotions such as stress, anxiety, or anger when facing problems, students can see a situation from different points of view, both from their perspective and others, students collect relevant information before making decisions and consider



existing evidence or facts, students are able to change their perspective or approach to problems, students actively evaluate the way they solve problems and are open to learning from mistakes, students have and use a variety of problem-solving strategies effectively, such as brainstorming, analysing consequences, or seeking support, students can accept that not all problems have clear solutions and are willing to deal with uncertainty and students do not hesitate to seek help from others when needed, such as friends, family, or teachers. Then there is a change in the research subjects' level of critical thinking skills.

According to Almulla, (2023), the process of finding new solutions to problems is known as 'problem solving'. Conversely, critical thinking is a cognitive process that involves reviewing and reorganising information in a person's mind map. Aein et al., (2020) have also demonstrated that critical thinking skills impact problem-solving skills. A person's ability to solve problems cannot be separated from their thought processes; thinking skills are useful for searching for and using information, estimating various possibilities, and making accurate decisions.

These skills can enhance a person's competitive behaviour. Critical thinking requires the ability to make decisions, consider facts, and draw conclusions (Maksum et al., 2021). Therefore, the results of this study indicate that the coping skills techniques provided are effective in improving students' critical thinking skills at Muhammadiyah Junior High School 10, Yogyakarta.

CONCLUSION

Research at Muhammadiyah Junior High School 10, Yogyakarta, showed that students' critical thinking skills before the intervention were in the medium-to-low category, especially in several key aspects. The results of the statistical analysis showed a significant increase in the coping skills group after the provision of counseling, with the average score increasing from 34.20 to 91.00. The effectiveness of this program is confirmed by the N-gain test, which places it in the effective category, although its implementation has some limitations, including control over external variables and limited time. Based on these findings, it is recommended that counselors use these services as an alternative to improve students' critical thinking in school. Recommendations were also provided to school leaders to support the training of Guidance and Counseling teachers in this technique. For future research, other researchers can explore additional coping techniques across more diverse groups.

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