Optimizing Junior High School Students' Career Planning Through Mind Mapping-Based Group Guidance Strategies

Desy Susanti[1]*, Dona Fitri Annisa[2], Maya Masyita Suherman[3]

[1] Universitas Jambi, Indonesia

[2,3] Institut Keguruan dan Ilmu Pendidikan Siliwangi, Cimahi, Indonesia

Abstract: This study aims to test the effectiveness of group guidance services with mind mapping techniques in improving the career planning of ninth-grade students of SMP Negeri 16 Cimahi. The research method used is a mixed method with an exploratory sequential design, combining a quantitative approach through a quasi-experimental non-equivalent control group design and a qualitative approach through interviews and observations. The study population was 189 ninth-grade students, with a sample of 17 students who had a low level of career planning, consisting of 9 students in the experimental group and 8 students in the control group. The research instrument used a career planning questionnaire that had been tested for validity and reliability (Cronbach's Alpha = 0.705), with 29 valid items out of 41 items tested. The results showed a significant increase in the experimental group, with an average pretest score of 74.9 increasing to 94.8 in the posttest. The paired sample t-test produced a significance value of 0.000 ($p < 0.05$) and a t-value of -11.370, which indicated a significant difference between before and after treatment. The N-Gain test showed an average value of 0.7908 or 79.08%, which is included in the high and effective category. Qualitative findings through interviews and observations strengthen the quantitative results, indicating that students experienced increased self-understanding, the ability to explore career options, and skills to develop concrete steps in career planning. This study concludes that group guidance services using mind mapping techniques are effective as a strategy to optimize junior high school students' career planning, particularly in helping students organize information visually, develop creativity, and improve a holistic understanding of their future planning. The practical implications of this study contribute to guidance and counseling teachers in developing services that are innovative, attractive, and appropriate to the developmental characteristics of junior high school students

Keywords: Career planning, Group guidance, Mind maps, Junior high school students

INTRODUCTION

Career planning represents a pivotal developmental milestone, especially for junior high school students navigating the transition from childhood to adolescence. During this phase, students are faced with numerous choices that can impact their future academic and professional paths. As explained by Annisa et al. (2025), this period requires students to engage in in-depth self-reflection, explore diverse opportunities, and set strategic goals to make informed decisions. Despite its importance, many students experience career uncertainty, characterized by a lack of awareness of their potential and the absence of a concrete action plan to achieve their goals.

Conceptually, Dillard (1985) defines career planning as a process in which individuals identify and implement strategic steps toward their career goals, requiring a full awareness of their personal strengths and weaknesses, and the implications of their choices. Similarly , Super (1990) argues that career planning serves as a guideline for

measuring an individual's ability to synthesize career information and work-related aspects . In the Indonesian educational setting , the importance of early career planning has been formally recognized, but the practical implementation of guidance services is still suboptimal. It is still limited in the diversity of methods, the use of engaging media, and the intensity of service provision in the school environment.

Based on initial observations and interviews with school counselors at SMP Negeri 16 Cimahi, it was revealed that most ninth-grade students experienced career uncertainty regarding their future educational paths and lacked a clear career plan . A career planning questionnaire administered to 179 students showed that 9.5 % (n=17) were in the low category, 73.2% (n=131) were in the medium category, and only 17.3% (n=31) of students showed high career planning readiness . These findings emphasize the importance of appropriate interventions to improve students' career planning competencies.

Existing literature demonstrates the efficacy of mind mapping techniques within a career guidance framework. Among them, Aprilia et al. (2023) found that mind mapping integrated with audio significantly improved career planning comprehension, with an average score increasing from 29.30 to 91.60. Similarly, research by Mushlihah et al. (2023) showed that mind mapping in a group guidance setting effectively improves career planning skills by facilitating the systematic organization of self-assessment and vocational information. Furthermore , research conducted by Rizqi et al. (2022) found a substantial increase in career planning scores, with the mean score increasing from 2.405 to 21.5 ($p = 0.000$), further strengthening the potential of this technique in educational settings.

Mind mapping Pioneered by Tony Buzan (1970) . This technique serves as an intuitive cognitive tool for encoding and retrieving information efficiently. Buzan (2005) argues that mind mapping facilitates creative thinking, information retention, and the systematic organization of ideas through the use of Visual cues, colors, and keywords. This technique aligns with neural processing by stimulating engagement of both the left and right hemispheres. It integrates the logical and linguistic functions of the left hemisphere with the spatial and imaginative capacities of the right hemisphere. Thus , mind mapping can foster an engaging and effective learning environment, particularly tailored to students' developmental needs. Within a career planning framework, mind mapping allows students to visualize diverse future orientations, including personal interests, talents, and core values, along with post-secondary educational pathways. This visual integration allows students to discern interconnections between ideas, identify their strategic priorities , and formulate focused action plans for the future . Thus, mind mapping can enhance students' creativity, motivation, and active engagement throughout the guidance process.

In using this technique, group guidance is one of the services in guidance and counseling that can be used as an intervention model to help individuals through group dynamics . As defined by Prayitno (1995), group guidance empowers students to acquire important life skills and academic insights through group dynamics . The effectiveness of this service depends on group dynamics and interpersonal interactions, which serve as catalysts for growth. Susanti et al. (2023) emphasize that group guidance is not only a teaching tool but also a preventive and curative intervention that helps students overcome obstacles that hinder their development potential . By building a supportive group, students gain the confidence necessary to identify weaknesses and accept them well . Through shared experiences and feedback between students , they can achieve a deeper and more comprehensive understanding of their career paths.

The integration of group guidance services with mind mapping techniques is hypothesized to optimize the career planning process for students. Group guidance facilitates student exchange of ideas about career choices and peer-based learning. whereas Mind maps serve as a cognitive framework that allows students to organize information systematically. This study focused on testing the effectiveness of group guidance using mind mapping techniques as a strategy to optimize career planning among students at SMP Negeri 16 Cimahi.

Theoretically, this research is expected to contribute scientifically to the development of career guidance by introducing innovative techniques tailored to the developmental characteristics of adolescents. Practically, these

findings serve as guidelines or references for schools in designing and implementing career interventions that are not only effective but also engaging and pedagogically meaningful. Ultimately, this study aims to improve the standards of counseling services in schools , empowering students to navigate their future career paths more appropriately and confidently.

METHOD

This study employed a mixed methods approach , adopting an exploratory sequential design, integrating quantitative and qualitative methodologies to gain robust insights into the research phenomenon. As Creswell and Plano Clark (2011) noted, mixed methods research involves the systematic collection, analysis, and integration of quantitative and qualitative data. In its implementation, quantitative data (surveys) are collected and analyzed first, followed by quantitative data (more in-depth interviews) to explain why these patterns occur.

For quantitative research, a quasi-experimental non-equivalent control group design was used. This design involves an experimental group and a control group without the requirement for random assignment. According to Sugiyono (2019), this approach is well-suited for educational settings where full randomization is often unattainable, yet researchers aim to evaluate the effectiveness of a particular treatment. In this study, the experimental group received group guidance services integrated with mind mapping techniques, while the control group received conventional information-based guidance. Both groups were evaluated using identical pretest and posttest instruments to measure career planning levels before and after the intervention.

This study was conducted at SMP Negeri 16 Cimahi, targeting a population of 189 ninth-grade students across five classes (IX A to IX E) during the 2024/2025 academic year. This demographic selection was based on the premise that ninth-grade students are at a critical developmental point, requiring intensive intervention for future educational and vocational transitions. A purposive sampling technique was used, as suggested by Sugiyono (2019), to identify individuals who could provide the most relevant data regarding the effectiveness of the intervention.

From an initial screening of 179 students, 17 individuals who demonstrated low career planning scores (scores <80) were selected and assigned to either an experimental group (n=9), which received mind map-integrated group guidance, or a control group (n=8), which received conventional information services. The primary instrument consisted of a 29-item career planning questionnaire measured on a 4-point Likert scale. The instrument has been previously validated and demonstrated reliable internal consistency with a Cronbach's Alpha coefficient of 0.705. To complement the quantitative results, data were also collected through structured interviews and systematic observations. Statistical analysis was performed using parametric tests via SPSS, while qualitative data were processed through thematic analysis to measure the overall effectiveness of the intervention.

RESULT AND DISCUSSION

Based on the distribution of career planning questionnaires to 179 ninth-grade students at SMP Negeri 16 Cimahi, a profile of student career planning was obtained. The respondent group consisted of 101 male students and 78 female students. Data categorization showed that the majority of students fell into the middle category (73.2%, n=131), while 17.3% (n=31) fell into the high category, and 9.5% (n=17) fell into the low category, with scores below 80. Gender distribution showed that the low category consisted of 13 males and 4 females; the middle category consisted of 61 males and 51 females; and the high category consisted of 27 males and 23 females.

Analysis across career planning dimensions revealed striking variations. Knowledge regarding further education and employment included 10 students in the low category, 149 in the middle category, and 20 in the high category. Attitudes included 10 students in the low category, 126 in the middle category, and 43 in the high category. Meanwhile, the skills aspect included 7 students in the low category, 139 in the medium category, and 33 in the high category. These findings indicate that the attitude aspect reached the highest frequency in the high category, while the knowledge aspect was mostly concentrated in the medium category. Of the 17 students in the

low category, 9 students from grade IX-A were assigned to the experimental group, and 8 students from grade IX-C formed the control group. The experimental group (initials: MZRA, SL, MNA, MIR, RA, LA, MJ, LN, and AY) had an average pretest score of 75.0 (range: 71–79). The control group (initials: DAH, KK, IW, RP, SA, AA, IN, and BR) had an average pretest score of 74.9 (range: 65–80). The absence of significant differences at the beginning of the study confirmed the homogeneity of the two groups before the intervention.

After implementing group guidance services using the mind mapping technique for three sessions, the experimental group showed significant improvement. The mean post-test score for the experimental group increased to 94.8 (range: 87–106), with 10 students reaching the high category and 7 students in the medium category. The LN participant showed the most significant improvement, increasing by 35 points (71 to 106). Other significant improvements included RP (+28 points), IW (+34 points), and SA (+24 points). Universal score improvements were observed across the experimental group, with an average increase of 19.88 points. The results of the normality test using Shapiro-Wilk showed that all data in the control and experimental groups were normally distributed. The significance value of the pretest in class A (control) was 0.191 and the posttest was 0.366, while the significance value of the pretest in class B (experimental) was 0.673 and the posttest was 0.677. Since all significance values were greater than 0.05, the assumption of data normality was met. The results of the homogeneity test using the Levene Test also showed that the pretest and posttest data from both groups had homogeneous variances. The significance value based on the average for the pretest data was 0.170 and for the posttest data was 0.731, both greater than 0.05. With the fulfillment of the assumptions of normality and homogeneity, the analysis can be continued using parametric statistics.

The results of the paired sample t-test showed that there was a very significant difference between the pretest and posttest scores in the experimental group. The t-value obtained was -11.370 with a significance value of 0.000 ($p < 0.05$), which means that H_0 is rejected and H_a is accepted. This means that there is a significant difference between the results of students' career planning before and after being given group guidance services with mind mapping techniques . The average difference (mean difference) between the pretest and posttest was -19.88 with a standard deviation of 7.210 and a standard error of 1.748. The 95% confidence interval for the mean difference is between -23.58 and -16.175, indicating that the difference is consistent and can be generalized to a wider population.

The results of the N-Gain test show the effectiveness of group guidance services with mind mapping techniques in improving students' career planning. The average N-Gain value obtained was 0.7908 or 79.08% with a standard deviation of 22.977. The minimum N-Gain value was 0.40 (40.00%) and the maximum value was 1.21 (120.69%). Based on Hake's (1998) classification, the average N-Gain value of 0.7908 is included in the high category ($g \geq 0.70$), which indicates that the intervention provided is very effective in improving students' career planning abilities. When viewed from the percentage interpretation, the average of 79.08% is also included in the effective category because it exceeds the threshold of 76%. Thus, both based on the N-Gain score and the percentage, group guidance services with mind mapping techniques are proven to be effective in optimizing junior high school students' career planning.

Qualitative data analysis from interviews and observations provided a deeper understanding of the service delivery process and the changes experienced by students. Interviews with guidance counselors indicated that mind-map-based group guidance services offer several advantages over conventional methods. Counselors stated that the mind-map technique allows students to be more active and enthusiastic in participating in the service, as they are able to express their ideas visually and creatively. Students also appear to more easily understand the relationships between various aspects of career planning, such as interests, talents, school choices, and concrete steps to take, because everything is visualized in one cohesive mind map.

Guidance counselors also revealed that the mind mapping process encourages students to engage in in-depth self-reflection. In this process, students not only identify their interests and talents but also explore personal values, future hopes, and the challenges and opportunities they may face. This differs from conventional information

delivery methods, which tend to be one-way and less likely to actively engage students in the process of thinking and planning for their future. However, guidance counselors also mentioned several challenges they face, such as limited time to provide more intensive individual guidance and the need for further training for guidance counselors in facilitating effective mind mapping.

Interviews with students in the experimental group revealed a very positive response to the services provided. Most students stated that they felt clearer about their higher education options and the steps they needed to take to achieve their career goals after participating in the mind mapping group counseling service. One student, identified as MZRA, stated that mind mapping helped her "see the big picture" of her career planning, allowing her to prioritize and plan more systematically. Another student, identified as RA, stated that the mind mapping process made her more confident in making decisions about school choices because she could more clearly see the advantages and disadvantages of each option.

Several students also mentioned that the mind mapping technique made the mentoring process more enjoyable and less boring. A student with the initials LN stated that he really enjoyed the process of drawing and coloring in creating a mind map, because it made it easier for him to remember the information that had been discussed. A student with the initials MJ said that at first he found it difficult to determine the branches of ideas in the mind map, but after receiving guidance from the facilitator, he felt more accustomed to and even enjoyed the process. A student with the initials AY stated that he felt more motivated to achieve his goals after seeing the mind map he had created, because he could see concretely the steps he needed to take.

However, several students also mentioned the obstacles they faced during the mind map creation process. A student with the initials MNA said that he felt the time given was not enough to complete the mind map in detail, so he had to continue it at home. A student with the initials SL stated that he was initially confused about how to start making a mind map, but after seeing examples from the facilitator and his friends, he began to understand how. A student with the initials MIR said that he found it difficult to determine the right keywords for each branch, because he wanted to include all the information he knew, but had to choose only the most important.

Observations during the service implementation showed that the group dynamics were running well, and students were actively involved in each stage of the guidance. During the formation stage, students appeared enthusiastic in introducing themselves and expressing their expectations for the group guidance activities. During the transition stage, students showed readiness to proceed to the activity stage after the facilitator explained the rules and steps to be taken. During the activity stage, students actively discussed with their peers, asked questions, and provided input on the ideas emerging in their respective mind maps. They also did not hesitate to ask the facilitator for help when they had difficulty defining an idea branch or choosing the right keywords.

Observations also showed that students followed the seven steps of mind map creation according to the instructions given. They started from the center of the paper with a landscape orientation, used a central image or symbol representing the theme "my career planning", used various colors to make the mind map more attractive, connected branches of ideas gradually from the center to the main branches and more specific branches, used curved lines to connect ideas, wrote one keyword for each branch, and added supporting images to some branches. The results of the mind maps created by students showed the creativity and uniqueness of each individual in expressing their career plans.

In the closing stage, students were asked to present their mind maps to the rest of the group. This presentation process provided an opportunity for students to explain their thinking, receive feedback from peers, and learn from others' experiences. Students were enthusiastic in sharing their career plans and expressed their appreciation for their peers' presentations. At the end of the session, students were asked to share their impressions and takeaways from the group guidance activity. Most students stated that they found the activity very beneficial and hoped to conduct similar activities again in the future.

Comparisons between the experimental and control groups also revealed significant differences. The control group, which received only conventional information services from guidance counselors, showed significantly

smaller improvements in scores than the experimental group. Although post-test data for the control group are not presented in detail in this document, interviews with guidance counselors revealed that students in the control group tended to be more passive in participating in services and showed less enthusiasm than students in the experimental group. This suggests that the mind mapping technique significantly increased student engagement and motivation in the career planning process.

Overall, the results of this study indicate that group guidance services using mind mapping techniques are effective in improving the career planning of ninth-grade junior high school students. This improvement is not only seen in significant quantitative values, but also in qualitative changes in students' understanding of themselves, available career options, and the concrete steps needed to achieve their career goals. Mind mapping techniques have been shown to facilitate self-reflection, organize information visually, enhance creativity, and encourage active student engagement in the guidance process. Therefore, this service can be used as an effective strategy in optimizing students' career planning at the junior high school level.

The results of this study indicate that group guidance services with mind mapping techniques are effective in improving career planning for ninth-grade junior high school students, as evidenced by a significant increase in scores from a pretest average of 75.0 to a posttest average of 94.8, with a significance value of 0.000 ($p < 0.05$) and an N-Gain value of 0.7908 (79.08%) which is included in the high category. This finding is in line with various previous studies that have proven the effectiveness of mind mapping techniques in the context of career guidance. Aprilia (2023) found that audio-based mind mapping media effectively improved understanding of career planning with a very significant increase in scores from 29.30 to 91.60. Mushlihah (2023) also proved that mind mapping techniques in group guidance services are effective in improving career planning skills because they help students organize information in a more structured way. Similarly, Rizqi (2022) showed a significant increase from an average of 2.405 to 21.5 with $p = 0.000$, and Irsu & Winingsih (2022) reported an increase from the low to medium and high categories with a significance value of $p = 0.012$.

The effectiveness of group guidance services using mind mapping techniques in improving students' career planning can be explained through several theoretical perspectives. First, from the perspective of career development theory, specifically Super's theory of self-concept and stages of career development, mind mapping techniques facilitate the process of self-exploration, which is an important developmental task in adolescence. Super (1990) emphasized that career planning is part of the career development process that involves aspects of self-concept, exploration, and implementation. Through the process of creating mind maps, students are encouraged to engage in in-depth reflection on their interests, talents, personal values, and future hopes, which are then visualized in the form of a systematic mind map. This process helps students integrate various aspects of their self-concept and see the relationship between personal characteristics and available career options. Second, from the perspective of Holland's personality-to-work-environment fit theory (RIASEC), mind mapping techniques allow students to explore various personality types and work environments that suit their characteristics. Holland (1995) stated that career planning aims to match an individual's personality type with an appropriate work environment, which is believed to increase job satisfaction and success. By creating a mind map, students can identify their personality type (Realistic, Investigative, Artistic, Social, Entrepreneurial, or Conventional) and explore various higher education or career options that align with that personality type. Visualizing a mind map makes it easier for students to see the match between personal characteristics and career choices more clearly.

Third, from the perspective of cognitive learning theory and dual coding theory, mind mapping techniques utilize both hemispheres of the brain (the left and right brain) simultaneously, thereby enhancing the process of encoding and retrieving information. Buzan (2005) states that mind mapping works in harmony with the brain's natural functions because it combines verbal elements (words, numbers, logic), which are functions of the left brain, with visual elements (images, colors, imagination), which are functions of the right brain. Windura (2013) adds that learning with mind mapping makes learning activities more interesting, less boring, and facilitates understanding and retention of material. In the context of career planning, the use of mind mapping helps students

not only understand information about career choices cognitively but also integrates it with emotional and motivational aspects through engaging and meaningful visualizations. Fourth, from the perspective of group guidance theory, the group dynamics created in group guidance services contribute significantly to the effectiveness of interventions. Prayitno (2004) states that group guidance functions to help individuals understand and develop their potential through directed group interactions. In this study, the process of discussion, sharing experiences, and providing feedback among group members during the creation of mind maps created rich collaborative learning. Students learn not only from the facilitator but also from their peers who may have different perspectives, experiences, or ideas about career planning. Corey et al. (2006) added that group guidance services aim to provide participants with opportunities to support each other, understand each other, and develop interpersonal and decision-making skills within a group context.

Analysis of the career planning aspects showed that there was an increase in all aspects measured, namely knowledge, attitudes, and skills. In the aspect of knowledge about further education and work, students showed an increase in self-understanding (strengths and weaknesses) and knowledge of the skills needed for various professions. This is in line with Parson's career planning theory (Winkel, 2004), which states that career planning includes three main aspects: self-knowledge and understanding, knowledge and understanding related to work, and the use of correct reasoning between oneself and the world of work. Through the mind mapping process, students were encouraged to identify and visualize their strengths and weaknesses, as well as explore various post-secondary education options and their requirements. In terms of attitudes toward further education and work, students showed an increase in self-confidence in achieving their goals, appreciation and positive values for the desire to continue studying, and independence in decision-making. Dillard (1985) stated that one of the goals of career planning is to achieve personal satisfaction, where through a well-planned career, individuals are expected to obtain personal satisfaction from the career they pursue. In this study, interview results showed that students felt more confident and motivated to achieve their goals after creating mind maps, as they could concretely see the steps they needed to take and felt their goals were achievable. This suggests that mind mapping techniques not only improve cognitive knowledge but also influence students' affective and motivational aspects.

In terms of skills related to further education and employment, students demonstrated improved ability to categorize their chosen majors and understand how to achieve their goals. Dillard (1985) stated that one of the goals of career planning is to manage one's efforts effectively and use one's time (efficiently and effectively), that is, to choose systematically to avoid trial and error and to use one's time efficiently. Through mind mapping, students learn to systematically plan their careers, identify priorities, determine the sequence of necessary steps, and allocate resources (time, energy, and money) effectively. This process develops planning and organizational skills, which are essential skills in career planning.

The results also showed variations in the level of improvement between individuals, with some students experiencing very high improvements (such as LN, who increased by 35 points) while others experienced more moderate improvements (such as MJ, who increased by 9 points). This variation can be explained by several factors. First, differences in students' initial level of readiness and motivation to undertake career planning. Ginzberg (1951) explained that career planning helps individuals through three stages of career choice development: fantasy, tentative, and realistic. Students at different stages may show different responses to the interventions provided. Second, differences in students' cognitive abilities and creativity in visualizing their ideas in the form of mind maps. Some students may have higher visual-spatial abilities and find it easier to create mind maps, while others require more intensive guidance.

Third, differences in the social support students receive from their families and communities. Winkel (Kumara, 2019) states that external factors such as family socioeconomic status, family influence, school education, peer influence, and job demands influence individual career planning. Students with strong family support and a conducive environment may find it easier to plan their careers than those with less support. Fourth, differences in experience and exposure to prior career information. Students with broader experience or exposure

to a variety of career options may have a better knowledge base, making it easier for them to integrate new information gained through group guidance services.

Qualitative analysis of interviews and observations provided deeper insights into the mechanisms by which mind maps facilitated improved student career planning. First, mind maps served as a self-reflection tool, helping students "see" themselves more objectively. In the mind map process, students were asked to identify and write down various aspects of themselves (interests, talents, values, strengths, weaknesses) in the form of branching ideas. The process of writing and visualizing these aspects helped students externalize their internal thoughts, allowing them to see and evaluate themselves more clearly. Some students stated that they "just realized" certain aspects about themselves after creating the mind map, suggesting that the visualization process facilitated deeper self-awareness. Second, mind maps served as an information-organizing tool, helping students organize various information about career choices systematically and hierarchically. In mind maps, information was organized from a center (main theme) to main branches (key aspects) and sub-branches (specific details), using keywords and images that facilitated comprehension. This hierarchical structure helped students see the "big picture" of their career planning while also noting important details. Budiyono (2020) stated that mind mapping is effective in improving conceptual understanding because students can organize information visually and systematically, making it easier for them to see relationships between ideas and retain material longer. Third, mind mapping serves as a creative tool that frees students to express their ideas in unique and personal ways. In creating a mind map, there are no rigid rules about how it should be created, as long as it follows the basic principles (center, branches, using keywords, adding images and colors). This freedom provides space for students to express their creativity, which in turn increases their engagement and motivation in the career planning process. Munandar (Astuti, 2019) stated that mind mapping helps stimulate individual creativity and imagination and broadens thinking horizons in a fun and creative way. Fourth, mind mapping serves as a communication tool that facilitates discussion and idea sharing among group members. In group guidance, each student is asked to present their mind map to the rest of the group. This presentation process provides an opportunity for students to explain their thinking, receive input and suggestions from peers, and learn from others' perspectives. Several students reported gaining new ideas or inspiration from their peers' mind maps, which they then integrated into their own career plans. This suggests that combining mind mapping techniques with group dynamics creates a synergy that strengthens the intervention's effectiveness.

The results of this study also identified several barriers or challenges in implementing group guidance services using the mind mapping technique. First, time constraints were the most frequently cited barrier, both by guidance counselors and students. Although the service was conducted in three sessions, each lasting approximately 90 minutes, some students still felt that the allocated time was insufficient to complete their mind maps in the desired detail. This indicates that students were enthusiastic and wanted to explore various aspects of their career planning in depth, but were limited by the limited time.

CONCLUSIONS

This study proves that group guidance services using mind mapping techniques are highly effective in improving junior high school students' career planning. This effectiveness is demonstrated by a significant increase in the average score from 75.0 to 94.8 in the experimental group, with an N-Gain value of 0.7908 (high category) and a statistical significance of 0.000. Improvements occurred in all aspects: knowledge, attitudes, and skills. Qualitative data from interviews and observations support these findings, revealing that this technique successfully facilitates self-exploration, organizes information visually, and enhances students' creativity and active involvement in their career planning process.

Based on these findings, it is recommended that guidance and counseling (BK) teachers adopt the mind mapping technique as an innovative career guidance service strategy in schools. For optimal implementation, more flexible and adequate time allocation is needed to allow students to complete the mind maps in greater detail.

Furthermore, it is recommended to hold training or workshops for BK teachers to improve their competency in facilitating and managing group guidance services using the mind mapping technique.

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