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Enhancing Student Understanding Through Education on Educational and Career Planning

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ABSTRACT
Adolescence is a critical period for educational and career planning. However, many junior high school students experience disorientation, anxiety, and limited understanding of career and further education pathways. This study aimed to examine differences in students' understanding before and after educational and career planning education at SMP Negeri 1 Patumbak, Deli Serdang. This quantitative study used a pre-experimental one-group pretest-posttest design. The population consisted of eighth-grade students, with 124 students selected through simple random sampling. Data were collected using a 20-item educational and career planning understanding questionnaire administered before and after a 60-minute educational intervention. Data were analyzed using the Paired Sample t-Test. The mean understanding score increased from 58.65 at pretest to 84.72 at posttest. The analysis showed a statistically significant difference in students' understanding ($p < 0.001$), reflecting a notable increase in students' understanding scores following the educational intervention. Despite adequate self-potential understanding (74%), students showed limited understanding of occupational information (62%) and action plan implementation (55%). Schools are recommended to integrate this program through regular career counseling to reduce students' anxiety about future decision-making.

Keywords : Career Education, Career Understanding, Educational Planning, Adolescents, Junior High School Students.

INTRODUCTION

Adolescence is a crucial developmental period in an individual's life, as it involves various physical, cognitive, emotional, and social changes that shape self-identity. A key developmental task for adolescents is preparing for the future, which includes determining their educational and career paths. The ability to plan for education and careers early on helps adolescents understand their potential, recognize available opportunities, and make informed decisions about their future. Therefore, education and career planning should be introduced at the junior high school level to ensure students are better prepared for the next stage of their education (Lent, R. W., 2020).

Educational and career planning is a systematic process involving self-understanding, the exploration of educational and vocational options, goal setting, and the formulation of steps to achieve those goals. Individuals with sound educational and career plans tend to possess higher learning motivation, more mature decision-making skills, and greater readiness to face the challenges of the educational and professional worlds in the future (Lent, Brown, &

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Hackett, 2019a). Conversely, a lack of understanding regarding education and career planning can lead to confusion when choosing further studies, low learning motivation, and a mismatch between interests, aptitudes, and the educational path selected. (Brown & Lent, 2021)**.**

In the era of globalization and rapid technological advancement, the demand for competent human resources is becoming increasingly high (Brown & Lent, 2021). The worlds of education and work are undergoing rapid change, requiring the younger generation to possess strong adaptability, planning, and decision-making skills (Lent, R. W., 2020). Adolescents are not only expected to achieve good academic results but must also be capable of realistically planning their futures in alignment with their interests, talents, and available opportunities (Kementrian Pendidikan, Kebudayaan, 2022).

Data from Statistics Indonesia (BPS) indicates that the number of Indonesian youths in 2024 reached approximately 64.22 million, representing around 20% of the country's total population. The majority of these young people are of working age and are poised to enter higher education or the workforce in the coming years. This situation highlights the importance of preparing for and planning education and careers from adolescence, serving as an investment in Indonesia's future human resources (Badan Pusat Statistik, 2024).

Furthermore, 2024 data from BPS indicates that approximately 7.95% of Indonesian youth remain unemployed. This phenomenon reflects the low level of workforce readiness among millions of young people today. A lack of career planning and appropriate educational pathways during their school years is believed to be a contributing factor to this issue (Badan Pusat Statistik, 2024).

A lack of understanding regarding education and careers is also frequently observed among junior high school students. Many students do not yet grasp the connection between their current education and the career opportunities available to them in the future (Santrock, 2019). Some students still determine their career aspirations based on trends, peer influence, or fleeting desires, without considering their abilities, interests, and talents, or the relevant educational and career prospects (Kementrian Pendidikan, Kebudayaan, 2022). As a result, upon entering higher education, students often experience confusion in choosing a major or field of study that suits them (Gati & Kulcsár, 2021).

Research by (Wang et al., 2023) explains that career planning among junior high school students is a crucial aspect of individual development, as it helps students understand themselves, identify career options, and prepare for future educational and vocational decisions. Effective career planning during adolescence enhances an individual's readiness to navigate the various social and economic changes occurring in society (Wang et al., 2023).

A study conducted by (Sedyawati and Muslihati, 2025) also indicates that the junior high school years constitute a critical period for career planning development. At this stage, students begin to develop their self-concept, identify their interests and talents, and form educational and vocational aspirations that will influence their future choices. Therefore, interventions in the form of career education and guidance are essential to help students develop a better understanding of their future (Sedyawati & Muslihati, 2025).

Research by (Handaka et al., 2025) indicates that the level of readiness and responsibility among adolescents in determining their career and educational paths is determined by how

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well they are able to plan for the future. This demonstrates the close interrelationship between these two variables and underscores the urgent need to implement career and educational guidance programs for this age group (Handaka et al., 2025).

Education on educational and career planning is a form of mental health promotion and adolescent potential development aimed at enhancing students' knowledge, attitudes, and skills in planning their futures (American Psychological Association, 2020). Such education can be delivered through outreach sessions, seminars, group discussions, or school-based guidance and counseling services. (Whiston et al., 2017). Through structured education, students can gain information regarding educational pathways, career options, the identification of interests and talents, and strategies for achieving their desired goals (Sampson et al., 2023).

SMP Negeri 1 Patumbak in Deli Serdang Regency is a school with a student body characterized by diverse social, economic, and cultural backgrounds. Preliminary observations indicate that some students lack an adequate understanding of the importance of educational and career planning. A number of students are unable to articulate the connection between their current education and their future career goals. This situation highlights the need for educational initiatives designed to enhance students' understanding of educational and career planning during their adolescent years.

Although various studies have addressed career planning among adolescents, most have focused on high school or vocational school students and emphasized the relationship between psychological factors and career maturity. Research regarding the effectiveness of education on educational and career planning for junior high school students—particularly through brief educational interventions evaluated using a one-group pretest-posttest design—remains limited (Hughes et al., 2016). In addition to measuring the improvement in students' understanding following the intervention, this study also identifies aspects of understanding that still require reinforcement, such as knowledge of the world of work and the development of action plans (Diemer & Blustein, 2016). These findings are expected to serve as a basis for developing more effective career guidance programs at the junior high school level (Turner & Lapan, 2016).

Based on the preceding explanation, this study aimed to examine “Enhancing Student Understanding Through Education on Educational and Career Planning” among eighth-grade students at SMP Negeri 1 Patumbak, Deli Serdang Regency.

Research Objective

The purpose of this study is to determine the impact of education on education and career planning provided since adolescence on the understanding of students at SMP Negeri 1 Patumbak, Deli Serdang Regency.

Hypotheses

H_0 (Null Hypothesis): There is no significant difference in the level of understanding regarding education and career planning among junior high school students between the pre-intervention (pretest) and post-intervention (posttest) stages.

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Ha (Alternative Hypothesis): There is a significant difference in the level of understanding regarding education and career planning among junior high school students between the pre-intervention (pretest) and post-intervention (posttest) stages.

METHODS

This study employs a quantitative method using a pre-experimental one-group pretest-posttest design. This approach was selected to evaluate students' levels of understanding regarding career and educational planning before and after an educational intervention; the study was conducted at SMP Negeri 1 Patumbak in Deli Serdang Regency.

The study population consisted of all 180 eighth-grade students at SMP Negeri 1 Patumbak. Sample size determination utilized Slovin's formula with a 5% margin of error (\(n = 180/[1 + 180(0.05)^2]\)), resulting in a calculated sample size of 124.14, which was rounded to 124 respondents. Subsequently, the sample was selected using a simple random sampling technique by assigning a unique number to each student on the attendance list and drawing 124 numbers at random using a lottery method.

Data collection was conducted using a questionnaire consisting of 20 statements regarding the understanding of educational and career planning. This instrument was developed by the researchers, drawing upon the Cognitive Information Processing (CIP) theory as framed by Sampson et al. and the work of Wang et al. (2023) concerning the development of a career planning scale for junior high school students based on CIP theory.

The instrument measures four key indicators: (1) understanding of one's own potential (self-knowledge), encompassing interests, talents, abilities, and personal values (items 1–5); (2) knowledge regarding educational and occupational information (occupational knowledge), covering educational options, fields of study, requirements, and job-related information (items 6–10); (3) career decision-making skills (decision-making skills), involving the ability to identify problems, consider alternatives, and make choices regarding education and career paths (items 11–15); and (4) metacognitive thinking abilities (metacognitions), which include the capacity for self-initiation, identifying obstacles, and developing strategies for educational and career planning (items 16–20).

Each statement is designed to assess the students' level of understanding regarding educational and career planning. Scores are assigned based on the respondents' answers, in accordance with the instrument's scoring guidelines.

Instrument Blueprint

Table 1. Instrument Blueprint

NO	Indicator	Item Number	Quantity
1	Understanding one's own potential	1–5	5
2	Knowledge regarding education and employment information	6–10	5
3	Career decision-making skills	11–15	5
4	*Metacognitive Skills*	16–20	5
	Total	1–20	20

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RESULTS

Table 2. Distribution of Respondents by Gender

Gender	n	%
Male	56	45,2
Female	68	54,8
Total	124	100

Table 3. Level of Understanding Before and After Education

Variabel	Mean	SD
Pretest	58,65	10,43
Posttest	84,72	8,52

Table 4. Hasil Uji Paired Sample t-Test

Variabel	Mean Difference	t	p-value
Pretest-Posttest	-26,07	-21,843	0,000

Table 5. Students' Understanding of Educational and Career Planning Based on Assessment Aspects

NO	Aspect of Understanding	Average Aspect Score (%)	Understanding Category
1	Understanding Personal Potential (Self-Knowledge) (Items 1–5)	74%	Adequately Understands
2	Knowledge of Educational and Occupational Information (Occupational Knowledge) (Items 6–10)	62%	Not Yet Adequate
3	Career Decision-Making Skills (Decision-Making Skills) (Items 11–15)	68%	Adequately Understands
4	Metacognitive Skills (Metacognitions) (Items 16–20)	55%	Not Yet Adequate

Based on the data, students generally demonstrate an adequate understanding of their personal potential (74%) and career decision-making skills (68%). However, their

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understanding of educational and occupational information remains insufficient (62%). Furthermore, students have not yet developed adequate concrete action plans for their future educational and career pathways (55%). These findings indicate that students need further guidance in exploring educational and occupational opportunities, strengthening career decision-making skills, and developing concrete action plans for their future.

When the total scores across all items (ranging from 20 to 80 points) are grouped into three categories, the distribution among the 124 students is as follows:

a. High Category (Score 61–80): 18 students (14.5%)
b. Description: Students are highly prepared; they understand their potential, are knowledgeable about career options, and have a backup plan.
c. Medium Category (Score 41–60): 76 students (61.3%)
d. Description: Students have a reasonable understanding of their preferences but remain uncertain about making concrete choices or hesitate due to a lack of information.
e. Low Category (Score 20–40): 30 students (24.2%)

An analysis of the 124-student sample revealed several interesting dynamics regarding specific items:

a. 82% of students responded "Agree/Strongly Agree" that they wish to choose their field of study independently.
b. Lowest Score/Primary Issue (Item 9 – Lack of Knowledge Regarding Professional Profiles): Since Item 9 is a negatively worded statement (e.g., "I do not know the actual duties and profiles associated with my aspired career"), selecting "Agree" or "Strongly Agree" indicates a lack of career knowledge rather than a positive outcome. Specifically, 68% of the total respondents (n = 124) selected "Agree" or "Strongly Agree" on this item, reflecting the highest level of agreement with a negative indicator. After applying reverse-scoring rules for negative items, this high agreement translates into the lowest overall score for this aspect.
c. Career Decision-Making Apprehension (Item 14 – Fear of Wrong Decisions): Rather than measuring clinical or generalized anxiety, this single item specifically captures students' apprehension toward making mistakes in their future choices ("[isi bunyi asli pernyataan Item 14]"). Data shows that 72 out of 124 students (58%) agreed with this statement, indicating a prevalent concern regarding potential missteps in career planning.

DISCUSSION

The findings showed an increase in students' understanding of educational and career planning at SMP Negeri 1 Patumbak following the educational session. The mean score increased from 58.65 on the pretest to 84.72 on the posttest, and the difference was statistically significant ($p < 0.001$). These results indicate that students demonstrated greater understanding after participating in the 60-minute session, which used PowerPoint presentations and leaflets to provide information about future educational and career pathways.

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A closer examination of individual items revealed several areas in which students may need additional support. Although 74% of students demonstrated a reasonably good understanding of their own potential, 62% lacked information about the realities of the workforce or pathways to further education, and 55% had not yet developed a clear action plan. Responses to item 9 also indicated that 68% of students were unfamiliar with the actual duties associated with their desired careers. Separately, 58% of students reported concerns about making inappropriate decisions regarding their future. These findings highlight both informational needs and concerns about future decision-making. However, the study did not examine whether these factors were associated; therefore, no causal relationship between information gaps and students' concerns can be inferred.

This aligns with Cognitive Information Processing (CIP) theory, which posits that the effectiveness of an individual's career decision-making depends heavily on the extent to which they have successfully integrated self-knowledge and occupational knowledge (Sampson et al., 2023). Structured educational interventions can help address these informational and cognitive gaps in career planning.

The results of this study support the findings of (Wang et al., 2023) as well as (Sedyawati and Muslihati, 2025), which affirm that the junior high school years constitute a critical period for the formation of career planning (Sedyawati & Muslihati, 2025). From a developmental psychology perspective, junior high school-aged adolescents begin to develop the ability for formal abstract thinking. They are capable of considering the long-term consequences of their current actions. Therefore, career education interventions at this stage are highly strategic for preventing future disorientation or the tendency to simply follow peers when choosing a field of study for further education. (Sedyawati & Muslihati, 2025).

The improvement in students' comprehension scores following the educational session demonstrates that the intervention successfully enhanced their knowledge and awareness regarding the importance of early educational and career planning. Delivering the material through lectures, discussions, and the use of PowerPoint presentations and leaflets enabled students to acquire information in a systematic and easily understandable manner. Beyond merely increasing knowledge, the discussion process allowed students to connect the information they received with their own experiences, interests, and aspirations, thereby fostering a more meaningful shift in understanding. These results indicate that structured education can serve as an effective strategy for enhancing students' readiness to make decisions regarding their education and careers.

Nevertheless, the analysis regarding the aspect of understanding reveals that students still possess limited information about the world of work and options for further education. This lack of understanding indicates that the majority of students have not yet obtained adequate information concerning various professions, required competencies, or the educational pathways necessary to achieve specific career goals. This situation may be attributed to the limited availability of career information services at the junior high school level, leading students to rely more on information from family, peers, or social media—sources that are not necessarily accurate or comprehensive.

The finding regarding students' limited ability to formulate action plans is also a matter of significant concern. While many students have aspirations, they often struggle to translate

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these goals into concrete, actionable steps. This indicates that career understanding requires more than just knowledge of professions; it also entails the ability to set goals, devise strategies, evaluate progress, and prepare alternatives should the initial plan prove unfeasible. Therefore, school-based career education programs should go beyond merely providing information and incorporate activities for developing career plans in a step-by-step manner, supported by guidance and counseling teachers.

The results of this study can be explained through Social Cognitive Career Theory (SCCT), developed by Lent, Brown, and Hackett (2019). This theory posits that career decision-making is shaped by the interaction among self-efficacy, outcome expectations, and career goals (Lent, Brown, & Hackett, 2019). Within this framework, the educational intervention serves as a structured learning experience that broadens students' perspectives on academic and professional pathways. Consequently, it directly enhances their factual understanding of educational and career planning, as reflected in the significant increase in post-test scores, which forms an essential cognitive foundation for formulating future career goals (Lent & Brown, 2019).

The better the information students possess, the greater their confidence in making educational and career choices that align with their potential. (Lent & Brown, 2019).

Furthermore, the findings of this study align with Cognitive Information Processing (CIP) Theory, which posits that the quality of career decisions is significantly influenced by an individual's ability to integrate self-knowledge with knowledge regarding various educational and occupational alternatives.(Sampson et al., 2023). Research findings indicate that students possess a reasonably good understanding of their own potential but still face limitations in accessing information about the world of work. This situation explains why many students remain hesitant or anxious when deciding on their further education. Career education serves as a means to bridge this information gap, enabling a more rational and focused decision-making process.

When viewed through the lens of Donald Super's career development theory, junior high school students are in the "growth" stage phase during which individuals begin to recognize their interests, values, and abilities, and start to form a self-concept that will serve as the foundation for future career choices. (Savickas, 2020). At this stage, providing career education is crucial, as it helps students develop a more realistic self-concept and understand the relationship between their abilities and future educational and career choices. (Savickas, 2020). Thus, intervention starting at the junior high school level constitutes a long-term investment in shaping students' career readiness.

The findings of this study also hold practical implications for schools. Career guidance programs should not be implemented merely on an ad-hoc basis but rather integrated continuously into guidance and counseling services. Guidance counselors can develop various activities—ranging from interest and aptitude assessments, career exploration, and industry visits to inviting guest speakers from diverse professional fields and conducting training on creating career action plans. Parental involvement is also crucial in providing consistent support, motivation, and information regarding educational and career choices, thereby ensuring students have an environment that fosters the decision-making process.

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CONCLUSION

Based on the findings and discussion, it can be concluded that students' understanding of educational and career planning improved significantly following the educational intervention at SMP Negeri 1 Patumbak, Deli Serdang Regency. This improvement was reflected in the increase in the students' mean understanding scores from 58.65 in the pretest to 84.72 in the posttest. The statistical analysis also indicated a significant difference between pretest and posttest scores ($p < 0.001$). These findings suggest that structured educational activities on educational and career planning may serve as a valuable learning experience in enhancing students' understanding, broadening their knowledge of educational and occupational opportunities, and supporting their preparedness to make future educational and career decisions.

Nevertheless, these findings should be interpreted in light of several methodological limitations. First, the use of a one-group pretest-posttest design without a control group limits the ability to establish a causal relationship between the educational intervention and the observed improvement. Other factors, including external influences, students' maturation, and experiences during the research period, may also have contributed to the changes in their understanding. Second, the study was conducted at only one junior high school, namely SMP Negeri 1 Patumbak, which limits the generalizability of the findings to students in other schools and geographical settings. Third, the evaluation was conducted immediately after the intervention; therefore, the study could not determine whether the improvement in students' understanding was maintained over a longer period. Fourth, the use of the same instrument for both pretest and posttest assessments may have introduced a testing effect, as students could have become more familiar with the questions during the initial assessment. Fifth, the use of a questionnaire as the primary data collection instrument may have introduced response bias, including the possibility of socially desirable answers. Finally, the relatively brief duration of the educational intervention may have limited opportunities to accommodate students' diverse learning preferences and provide more varied learning experiences through visual, auditory, and kinesthetic activities.

Future research is therefore recommended to employ a controlled research design, involve students from multiple schools, and incorporate follow-up assessments to examine the sustainability of learning outcomes. In addition, the use of varied instructional methods and learning media may provide more comprehensive educational experiences and better accommodate students' diverse learning needs. Such improvements would strengthen the evidence regarding the contribution of educational interventions to students' understanding and readiness for educational and career planning.

Recommendations

As a follow-up measure to optimize adolescent career guidance services, the following strategic recommendations are proposed:

a. For Schools: It is recommended that schools facilitate and integrate this educational program on education and career planning into their institutional agendas, ensuring it is implemented on a regular basis.

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b. For Guidance and Counseling (BK) Teachers: It is suggested that these intervention materials be transformed into a more systematic, targeted, and sustainable career guidance service module. Furthermore, the content should be presented using a variety of interactive multimedia formats to accommodate students' diverse learning styles.
c. For Parents: It is essential to establish supportive, two-way communication to assist children in identifying their potential, interests, and talents from an early age within the home environment.
d. For Future Researchers: It is highly recommended to strengthen research methodology by employing true or quasi-experimental designs that include a control group to account for external factors and maturation effects. Additionally, future researchers should expand the sample scope to a multi-site approach involving various schools to enhance generalizability, incorporate follow-up methods (long-term periodic measurements) to assess the consistency of the intervention's impact, and utilize data triangulation techniques (such as in-depth interviews or behavioral observations) to minimize self-report bias and testing effects.

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