

Guidance and Counseling Program for Problem Solving Skills Development: A Literature Review

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Abstract

The aim of learning to solve problems is to cultivate students' cognitive processes by presenting them with problem-solving tasks. Depending on the nature of the problem introduced in the classroom, problem-solving techniques may be applied either collaboratively in groups or individually. The guidance and counseling program contributes to the development of problem-solving skills by incorporating instructional methods that train students to address a range of challenges—both personal and group-related—whether tackling them independently or in collaboration. This research adopts a library research method, following the steps outlined by Zed (2014): a) formulating a general understanding of the research topic, b) seeking supporting information, c) refining the research focus, d) locating and organizing relevant reading materials, e) reading and annotating research notes, f) revisiting and augmenting reading materials, and g) reorganizing materials for the writing phase. Data sources, obtained through offline and online means such as books, journals, and articles, are systematically collected to establish a comprehensive reference database focused on studies investigating the application of guidance and counseling in the digital era. The selected timeframe for inclusion spans the last 5 years, encompassing studies in both Indonesian and English. The chosen data analysis technique for this study is content analysis, providing a methodological approach to systematically examine and interpret the content of the gathered materials.

Keywords: Digital era, guidance and counseling program, problem-solving skills development

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Introduction

Education is a transformative process that nurtures the intellectual, emotional, and social well-being of individuals, enabling them to reach their full potential and contribute meaningfully to society. Bimo Walgito (2010) defines guidance and counseling as a specialized field that provides tailored support to individuals to help them navigate the challenges of life and achieve their personal goals. While guidance focuses on preventative measures to foster positive development, counseling emphasizes remedial interventions to address existing problems and promote healing.

Effective guidance and counseling programs play a crucial role in the academic and personal growth of students. As Abu Ahmadi (1991) aptly states, guidance services in schools are essential in assisting students in overcoming learning obstacles, personal difficulties, and making informed decisions about their future endeavors. A robust guidance program should be

grounded in strong principles and integrated into the school's overall curriculum, ensuring that it aligns with the institution's educational goals and values.

One of the key competencies that students must develop is the ability to solve problems effectively. Problem-solving, as defined by Anderson (2009), is a multifaceted skill that encompasses critical thinking, analytical reasoning, and decision-making capabilities. It involves applying existing knowledge to novel situations, employing higher-order cognitive processes to identify and resolve problems.

Research has consistently demonstrated the positive correlation between creativity, learning motivation, and problem-solving abilities. Muzaki's (2010) study revealed that students with higher levels of creativity and learning motivation exhibited enhanced problem-solving skills. Similarly, Agustin, Wijayanti, and Winarti (2014) found that motivation and engaging learning activities significantly influenced students' problem-solving competencies.

Building on these findings, this study delves into the relationship between students' learning motivation and their problem-solving abilities within the framework of the IDEAL Problem-Solving model. The IDEAL model, an acronym for Identify, Define, Explore, Act, and Look Back, provides a structured approach to problem-solving, guiding individuals through a systematic process of analyzing, evaluating, and implementing solutions.

By examining the interplay between learning motivation and problem-solving abilities within the IDEAL framework, this study aims to provide insights into the factors that contribute to students' effectiveness in navigating and resolving challenges. The findings of this research will contribute to the development of effective guidance and counseling interventions that foster students' problem-solving skills and enhance their overall academic success.

Method

This study employs a comprehensive library research methodology to gather and synthesize information from various sources, including books, journals, and articles. This approach aligns with Sugiono's (2017) assertion that library research is an effective method for gaining a theoretical foundation for a research problem. Additionally, this study adheres to Zed's (2014) seven-step literature review process to ensure a rigorous and systematic approach to data collection and analysis: (1) Develop a General Understanding of the Research Topic: The initial step involved establishing a broad understanding of the research topic, encompassing the role of guidance and counseling in developing problem-solving skills. (2) Gather Supporting Information: A comprehensive search was conducted to identify relevant literature that supports the research topic. This included academic books, peer-reviewed journals, and credible online sources. (3) Refine the Research Focus: Based on the gathered information, the research focus was refined to specifically explore the effectiveness of guidance and counseling programs in enhancing students' problem-solving abilities. (4) Locate and Organize Relevant Reading Materials: A systematic search strategy was employed to identify and locate relevant reading materials. These materials were then carefully organized and categorized to facilitate efficient data extraction. (5) Read and Annotate Research Notes: Each reading material was thoroughly read and annotated to capture key concepts, findings, and supporting evidence. These annotations served as the foundation for data analysis. (6) Review and Enrich Reading Materials: The annotated reading materials were revisited and enriched with additional insights and interpretations. This iterative process ensured a comprehensive understanding of the literature. (7) Reclassify Materials and Begin Writing: The organized reading materials were reclassified based on emerging themes and patterns. This refined organization facilitated the writing phase, allowing for a cohesive presentation of the findings.

Data sources were obtained through both offline and online channels, ensuring access to a diverse range of perspectives and expertise. The selected sources were specifically focused on studies investigating the implementation of guidance and counseling in the digital era, with a timeframe spanning the last five years. This focus ensured the inclusion of current and relevant research findings.

Content analysis, as described by Sabarguna (2005), was employed as the primary data analysis technique. This method involved selecting, comparing, combining, and sorting out various understandings until relevant and consistent patterns emerged. To maintain the integrity and reliability of the analysis process, inter-library checks were conducted, and the literature was re-read with careful attention to expert comments (Sutanto, 2005). This multi-pronged approach helped to minimize potential biases and ensure the accuracy of the findings.

Results and Discussion

Problem-solving

Problem-solving is a fundamental cognitive process that involves devising strategies to overcome obstacles and achieve desired goals. It is a multifaceted skill that encompasses critical thinking, creative reasoning, and decision-making abilities. Problem-solving is not merely about finding the correct answer; it is also about understanding the problem, formulating effective solutions, and evaluating their outcomes.

Definitions of Problem-solving

Several prominent theorists have provided their perspectives on problem-solving: (1) Newell and Simon: "One is faced with a problem (problem) when wanting something dialogue and does not know immediately what set of actions the diameter must perform to obtain it." (2) Martinez: "Problem-solving is the process of moving towards a goal when the path to the goal is uncertain." (3) Pólya: "Problem-solving is the search for some appropriate course of action to achieve a goal that is clearly understood, but not immediately achieved. Where there is no difficulty, then there is no problem." (4) Michaelis: "It is an activity/process that is carried out for individuals to find solutions to a problem." (5) Fisher: "Problem-solving is a process by which children can learn to use their knowledge, based on the concept of skill processes that exist in children. The skills that must be possessed by children are critical, creative strategic processes such as observing, designing, decision making, group cooperation, expressing opinions, applying the process of evaluating process solutions so on."

Role of Problem-solving in Learning

Problem-solving plays a crucial role in the learning process. When faced with a problem, individuals must engage in active learning by applying their existing knowledge and skills to seek solutions. This process promotes deeper understanding, critical thinking, and the development of effective problem-solving strategies.

Characteristics of Problem-solving

Effective problem-solving is characterized by several key elements: (1) Question or Problem Identification: Clearly defining the problem and its underlying factors is essential for effective problem-solving. (2) Interdisciplinary Linkages: Drawing connections between various disciplines and fields of knowledge can broaden the scope of potential solutions. (3) Collaborative Work: Teamwork and collaboration can foster diverse perspectives and enhance the problem-solving process. (4) Demonstration of Processes: Effectively communicating and demonstrating problem-solving strategies to others is crucial for knowledge sharing and replication.

Higher-order Thinking Skills through Problem-solving

Problem-solving is believed to be a powerful tool for developing higher-order thinking skills, including: (1) Critical Thinking: Problem-solving requires evaluating information, assessing evidence, and formulating logical arguments. (2) Creative Thinking: Generating innovative solutions and approaching problems from unconventional angles are essential aspects of problem-solving. (3) Decision-making: Problem-solving involves weighing options, considering potential consequences, and making informed decisions.

Constructivist View of Problem-solving

The constructivist view of learning emphasizes that individuals construct their own understanding of the world through personal experiences and interactions with information. Problem-solving aligns with this view by encouraging individuals to actively engage with knowledge and develop their own interpretations.

Problem-solving is a multifaceted skill that lies at the heart of effective learning and decision-making. By fostering problem-solving abilities, individuals can develop critical thinking, creativity, and resilience to navigate challenges and achieve their goals.

Stages of Problem-solving

Problem-solving is a complex cognitive process that involves multiple stages. Various experts have proposed different frameworks for understanding the problem-solving process. Here, we will discuss two prominent frameworks: George Pólya's four-stage model and the five-stage model by David Johnson and Frank Johnson.

Pólya's Four-Stage Model

George Pólya, a renowned Hungarian mathematician, outlined four fundamental stages of problem-solving in his seminal book, "How to Solve It": (1) Understanding the problem: The first step involves comprehending the problem statement, identifying the given conditions and data, and clarifying any ambiguities. Without a clear understanding of the problem, one cannot proceed effectively. (2) Making a plan: Once the problem is understood, the next step is to devise a plan for solving it. This may involve establishing relationships between known and unknown elements, considering similar problems encountered in the past, and drawing upon relevant knowledge and experience. (3) Carrying out the plan: The plan is then put into action, carefully executing each step to ensure its validity. This stage requires patience, persistence, and attention to detail. (4) Checking the answer: The final step involves verifying the solution obtained. This may involve reviewing the reasoning, checking for errors, and ensuring that the solution addresses the original problem statement.

Pólya's four-stage model, often summarized as "See (understanding the problem), Plan (making a plan), Do (carrying out the plan), and Check (testing the answers)," has become a widely recognized and applied framework for problem-solving.

Johnson and Johnson's Five-Stage Model

David Johnson and Frank Johnson, prominent educational psychologists, proposed a five-stage model for cooperative problem-solving: (1) Defining the problem: The group clearly identifies and defines the problem they intend to address. This involves clarifying the problem statement, identifying key components, and ensuring that everyone has a shared understanding. (2) Diagnosing the problem: The group collaboratively analyzes the causes and contributing factors to the problem. This may involve brainstorming potential causes, identifying underlying issues, and considering various perspectives. (3) Formulating alternative strategies: The group generates a range of possible solutions, exploring diverse approaches and considering creative options. This stage encourages open thinking, brainstorming, and building upon each other's ideas. (4) Determining and implementing a chosen strategy: The group evaluates the proposed solutions, considering their feasibility, effectiveness, and potential consequences. Through

consensus-building and discussion, they select the most appropriate strategy and implement it. (5) Conducting evaluations: The group evaluates both the process and the outcomes of their problem-solving efforts. This involves assessing the effectiveness of their strategies, identifying areas for improvement, and reflecting on their collaborative process.

Johnson and Johnson's five-stage model emphasizes the importance of teamwork, collaboration, and shared responsibility in problem-solving. It highlights the benefits of diverse perspectives, open communication, and collective decision-making in achieving successful problem resolution.

Problem-solving is a multifaceted skill that requires a combination of critical thinking, creativity, and perseverance. The various stages outlined by Pólya and Johnson and Johnson provide a structured approach to navigating problems effectively, fostering deeper understanding, and developing problem-solving proficiency.

Group and Individual Problem-solving Methods

Problem-solving is a fundamental skill that can be enhanced through both group and individual learning approaches. Each method offers distinct advantages and can be effectively employed in different educational settings.

Group Problem-solving

Group problem-solving involves collaborative efforts among students to tackle problems and achieve shared goals. This method fosters a dynamic learning environment where students can benefit from diverse perspectives, shared knowledge, and collective problem-solving strategies.

According to Syaiful Bahri Djamarah and Azwar Zain, group problem-solving is a process that emphasizes group interaction and collaboration. The teacher's role is to guide the group process, ensuring effective communication, teamwork, and task distribution among group members.

Group problem-solving offers several advantages for students, i.e., (1) Collaborative learning: Students learn from each other's strengths and perspectives, fostering deeper understanding and knowledge retention. (2) Enhanced communication skills: Students develop effective communication and interpersonal skills through active participation in discussions and debates. (3) Problem-solving strategies: Students gain exposure to diverse problem-solving approaches, expanding their repertoire of strategies for tackling challenges. (4) Mutual support: Students with higher abilities can assist those with lower abilities, promoting a supportive and inclusive learning environment.

Individual Problem-solving

Individual problem-solving focuses on independent learning where students take ownership of their learning process. This method encourages self-reliance, critical thinking, and personal responsibility for solving problems.

Martinis Yamin emphasizes that individual problem-solving promotes active and participatory learning. Students are encouraged to take initiative, seek information independently, and develop problem-solving skills without relying solely on external assistance.

Mufarakah highlights the benefits of individual problem-solving, i.e., (1) Analytical thinking: Students develop the ability to analyze problems critically and identify potential solutions. (2) Responsibility: Students cultivate a sense of responsibility for their learning and problem-solving efforts. (3) Mental endurance: Students develop mental resilience and perseverance in overcoming challenges. (4) Creativity and critical thinking: Students engage in creative and critical thinking to formulate innovative solutions. (5) Self-motivation: Students

develop intrinsic motivation for learning, driven by the knowledge they acquire through independent exploration.

Both group and individual problem-solving methods offer unique benefits for students. Group problem-solving fosters collaboration, communication, and shared learning, while individual problem-solving promotes independence, critical thinking, and self-reliance. The choice of method depends on the specific learning objectives, student needs, and the nature of the problem at hand. Effective educators strategically incorporate both group and individual problem-solving activities to create a holistic and engaging learning experience for their students.

Conclusion

Problem-solving learning offers numerous advantages for students, contributing to a holistic educational experience. Actively participating in problem-solving activities enables students to develop a profound understanding of the concepts and skills being taught, promoting a more comprehensive grasp of the material. These tasks not only intellectually challenge students but also provide a sense of accomplishment when they successfully navigate and overcome obstacles, making the learning process both stimulating and rewarding. Moreover, problem-solving activities foster increased motivation among students, igniting curiosity and intrinsic motivation for learning as they actively seek knowledge and solutions.

An essential aspect of problem-solving learning lies in its application to real-world problems. By engaging in these activities, students learn to apply their acquired knowledge and skills to tackle practical challenges, thereby fostering critical thinking and the transfer of learning to diverse situations. The development of critical thinking skills is a key outcome of problem-solving activities, demanding analytical reasoning and decision-making capabilities that are crucial for academic and personal success.

Furthermore, problem-solving learning cultivates adaptability and resilience in students. The challenges posed by problem-solving tasks equip them with the ability to navigate difficulties and adjust to new situations, contributing to their overall personal and academic growth. The practical application of knowledge is another notable advantage, as problem-solving scenarios provide opportunities for students to bridge the gap between theoretical understanding and practical application, reinforcing their learning and enhancing its relevance to real-world contexts.

However, it is essential to acknowledge the potential disadvantages associated with problem-solving learning. Ineffective implementation may occur if teachers are not adequately prepared or trained to facilitate collaborative problem-solving activities. The planning, preparation, and execution of such activities can also be time-intensive for both teachers and students, posing a logistical challenge. Additionally, student motivation plays a pivotal role; if students lack interest or confidence, they may be resistant to engaging in problem-solving activities.

Therefore, effective implementation of problem-solving learning demands a balanced consideration of its advantages and limitations. Educators can address potential challenges by ensuring proper teacher preparation, managing time constraints, and fostering student motivation. By maximizing the benefits of problem-solving learning, educators create engaging and enriching learning experiences that contribute to students' critical thinking, problem-solving skills, and overall academic success.

Conflict of interests

The author declares that he has no conflict of interest.

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