PROBLEM-SOLVING IN EDUCATION: TEACHING STUDENTS TO THINK LIKE INNOVATORS

Yomg'irova Durdona Begzod qizi
Student, Chirchik State Pedagogical University
yomgirovadurdona@gmail.com
+998886721406
Scientific adviser: ***Komiljonova Mavluda Abduvaliyevna***
Teacher, Chirchik State Pedagogical University
komiljonovamavluda4@gmail.com

ABSTRACT

Problem-solving is a critical skill that empowers students to face challenges, make informed decisions, and adapt to the complexities of the modern world. Teaching students to think like innovators involves fostering creativity, critical thinking, and adaptability—skills essential for academic success, personal growth, and future career readiness. This article explores the significance of problem-solving in education and examines strategies educators can employ to nurture innovative thinking among students. Key strategies include implementing inquiry-based learning, teaching design thinking, promoting collaborative group work, and incorporating real-world challenges into the learning process. Furthermore, the article emphasizes the importance of cultivating a growth mindset and integrating technology as a tool for creative problem-solving. Through these strategies, educators can prepare students to not only solve problems but also approach them with innovative and flexible solutions. This shift from traditional rote learning to innovative problem-solving paradigms equips students with the tools to navigate an increasingly complex and rapidly changing world.

KEY WORDS: critical thinking, problem-solving, innovative thinking, adaptability, growth mindset, design thinking, technology integration.

INTRODUCTION

Problem-solving is an essential skill in the 21st-century education system. It equips students with the ability to analyze challenges, think critically, and find creative solutions to real-world situations. Teaching students to think like innovators involves fostering creativity, adaptability, and critical thinking, which are vital for success in academic settings and future careers. This article explores strategies educators can use to enhance problem-solving skills in students by teaching them to think innovatively. Creative thinking and problem-solving abilities are adaptable tools used for handling a variety of unfamiliar situations in a flexible way that strengthens adaptive and constructive behavior. The effort of combining problem solving approach and

positive problem solving is made to create an approach called as appreciative problem solving. Appreciative problem solving is an approach to find the best things, to analyze the problem and to create innovation. The 21st century is characterized by rapid technological advancements, globalization, and a highly dynamic and complex environment. These changes have created a need for learners to develop a set of skills that enable them to adapt to new challenges and opportunities. Innovation and creativity are two essential skills that learners need to thrive in the 21st century. However, promoting innovation and creativity among learners is a complex process that requires educators to prioritize problem-solving skills. Problem-solving is more than finding solutions to academic challenges; it is about addressing everyday issues, making decisions, and developing strategies. In today's fast-changing world, traditional rote learning is no longer sufficient. Instead, educators must empower students to navigate ambiguity, think critically, and develop problem-solving skills that foster lifelong learning.

Why Problem-Solving Matters

Adaptability to Change: As industries evolve and technology changes, students must adapt to new situations and challenges. Problem-solving helps them manage change effectively.

Real-World Application: Learning how to approach challenges in various contexts allows students to apply knowledge to solve real-world problems.

Future Careers: Many modern careers demand innovation, creativity, and the ability to analyze complex situations. Problem-solving prepares students for these demands.

Teaching Strategies to Foster Problem-Solving and Innovative Thinking

Educators can implement numerous strategies to teach students how to think like innovators. The following strategies have proven effective in enhancing critical thinking and innovation:

Encourage Inquiry-Based Learning

Inquiry-based learning focuses on active exploration and discovery. Instead of simply delivering facts, educators should ask open-ended questions that encourage curiosity and exploration.

Benefits: Encourages students to investigate their questions and find creative solutions independently.

Teach Design Thinking

Design thinking is a problem-solving framework that focuses on empathy, ideation, and prototyping. It is a creative and systematic approach to problem-solving used by innovators worldwide.

Design Thinking Stages:

Empathize: Understand the problem from the user’s perspective.

Define: Clearly identify the problem based on insights.

Ideate: Generate a variety of solutions through brainstorming.

Prototype: Create simple models of solutions to test.

Test: Evaluate the solutions and refine them.

Using design thinking empowers students to approach problems from multiple perspectives, fostering creativity and resilience.

Utilize Collaborative Group Work

Collaborative group work is a powerful tool to foster teamwork, problem-solving, creativity, and adaptability—all of which align with a growth mindset. When groups work together to tackle real-world challenges, individuals learn the value of shared effort, diverse perspectives, and collective learning. Collaboration enables students to learn from each other, build on different perspectives, and strengthen teamwork—key elements in innovation. Group discussions can foster creativity by combining diverse ideas and approaches.

Activity Example: Assign students a group project to solve a local or hypothetical problem.

Incorporate Real-World Challenges

Connecting learning to real-world challenges helps students see the practical value of problem-solving. When students tackle real-life issues, they are more engaged and motivated to find innovative solutions.

Example: Ask students to design a business plan for a small environmental initiative or create a solution to address bullying in schools.

Promote a Growth Mindset

A growth mindset is the belief that intelligence and abilities can grow with effort, learning, and persistence. Teachers can cultivate this mindset by praising effort over outcomes, teaching students that failure is a learning opportunity, and emphasizing resilience. Fostering this perspective can lead to personal growth, resilience, and a passion for lifelong learning.

Use Technology as a Problem-Solving Tool

Technology offers endless opportunities for students to engage in innovation. Tools like coding, programming, robotics, and design software can empower students to create solutions using hands-on learning and experimentation.

Teachers play an important role in integrating technology into the classroom. They should be able to successfully use technology in the classroom. Teachers who are highly motivated utilize technology in the classroom more frequently than teachers who are lowly motivated. Teachers' educational practices will be enhanced if they grasp how different technologies may be used to communicate material. The success of students' learning with modern technology is heavily influenced by how much teachers use it and how motivated they are to include it into the educational

process. Teachers who use modern technology in the classroom are so at ease and confident with it that their desire to learn more about it improves their confidence in using it. The use of modern technology in education represents a method that enhances the educational process and transforms it from an imitation stage to one of creativity, interaction, and skill development.

The instructional strategies usually based on design-based learning, problem solving, creative problem solving, creative thinking, research-based learning, problem-based learning, project-based learning, science, or innovative teaching process could lead to learning outcomes that support creation of creative and innovative education in these courses. These results are similar to the strategies to develop students' characteristics according to learning outcomes which were mostly concern student-centered learning using active learning. The active learning strategies were: case study, problem-based learning, and project-based learning. Two teaching strategies mostly used were role model and service learning. These strategies were highly recommended for classroom teaching. Learners can create innovation creatively as long as they follow the proper instructional strategies. The instructional strategies include three crucial instructional components: planning a guideline to conduct instruction, evaluation, and achieving learning objectives. Specifically, developing instructional strategies needs to analyze many common instructional components, such as learners, learning objectives, contents, learning context, overall context, conditions, lecturers' skills in selecting learning principles, and techniques to accomplish learning objectives. Designing instructional strategies focuses on lecturers' teaching skills and learners' learning styles. The model used to develop creativity of undergraduate students in a design course was consisted of principles, objective, instructional process, and evaluation. The principles emphasized the design problem solving activities and challenging tasks for learners. The model was to develop pre-service teachers' creative thinking that consisted of 6 components: Learning Management System (LMS) on virtual classroom, collaboration and communication tools, learning contents, media and resources, roles of learners and instructors, learning activities, and assessment. These instructional strategies have common elements and processes: problems in the beginning, solutions findings, testing, and evaluation. Also, using a variety of stimulating ideas to find possible solutions to the problems can facilitate brainstorming and help learners think about new ideas. These results are similar to some studies which indicated common process of creating educational innovation. Therefore, designing instruction strategy would use social media and mobile devices as learning tools. It could support learning styles of digital learners and motivate their learning that is more suitable for 21st Century Learning.

CONCLUSION

Instructional strategies that support learners to create innovation in learning creatively aim to create a thinking process, especially the creativity in thinking something new and different. Instructional strategies for learners to have innovative education should come from groups or teams, shared knowledge, team solutions, and consensus ideas. In addition, there are two parts of teaching. First is theories, and second is practices that are assigned for students to conduct projects. Instructional strategies should focus on student learning and should be implemented in lessons gradually particularly when discussing with the experts. Lastly, instructing students to be able to create innovation in learning creatively can be taught at every level. The difficulties of the ideas could be varied, depending on the contexts and the instructional designs by instructors. Although developing creativity and innovation in education is challenging, it is important and necessary to facilitate learners to obtain these abilities which also prepare them to success in their future complex work environments. Teaching students to think like innovators and problem-solvers is vital in preparing them for the demands of the modern world. Strategies such as inquiry-based learning, design thinking, collaborative group work, and reflection can equip students with skills necessary to address challenges and generate creative solutions. Education must shift its focus from rote memorization to fostering innovative thinking, creativity, and adaptability to prepare students not just for academic success, but for life itself.

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