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Strategies for E-Learning for Gifted Students

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Abstract

This study aims to review the appropriate e-learning strategies for gifted students, with a focus on how to utilize technology to enhance their creative and intellectual abilities. It also seeks to provide an educational vision that helps in designing educational programs that meet the needs of this distinguished group. The importance of this research lies in addressing gifted students, who represent a valuable human resource requiring special care to develop their latent abilities. It also highlights the role of e-learning in improving the quality of education for this group, especially in light of rapid technological developments that offer new opportunities for interactive and flexible learning. The research problem centers on the main question: How can e-learning be employed to develop effective educational strategies for gifted students? The study adopts a descriptive-analytical approach to address this issue. It also reviews some supporting strategies such as problem-solving, critical thinking, creative thinking, and electronic projects, concluding that the success of these strategies requires qualified teachers and a learning environment rich in technological resources.

Keywords: E-learning, gifted students, creative thinking, critical thinking, teaching strategies, electronic projects.

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Introduction:

Teaching gifted students at all educational stages holds special significance in scientifically and technologically advanced societies. These students are provided with numerous educational resources and opportunities that focus on achieving results that contribute to scientific and technological progress across various economic and medical sectors, benefiting society and ensuring prosperity. Teaching gifted students does not only involve a set of skills and knowledge through high-level practical methods, but the educational process targeting them expands to stimulate their creative potential and provide opportunities for innovation in all fields of science. This drives improvements in the quality of education in gifted classrooms by focusing on problem-solving methods, learning through action and thought, constructivist learning applications, and teamwork.

Teaching gifted students must be suited to their specific psychological and intellectual nature. It should rely on conceptual teaching frameworks, developing higher-order thinking skills, focusing on inquiry and problem-solving, using technological tools in learning, and applying scientific processes and experimental procedures.

Definition of Gifted Students:

Educational institutions in Arab countries pay great attention to gifted students, as evidenced by the various excellence awards and programs managed by different institutions. But who is a gifted student, and how are they identified and selected?

In recent decades, many concepts and definitions of giftedness have emerged due to various debates, discussions, and theories. Many academics still believe that intelligence can be measured through IQ tests, but in the last two decades, a broader and more comprehensive definition of giftedness has become more widespread. This definition is based on comprehensive cognitive intelligence theories, such as the Theory of Multiple Intelligences, which identifies multiple types of intelligence, including linguistic intelligence, spatial intelligence, musical intelligence, bodily-kinesthetic intelligence, logical-mathematical intelligence, interpersonal intelligence, emotional intelligence, and environmental intelligence. Thus, intelligence and giftedness are no longer confined to IQ tests or academic achievement alone.

The Theory of Multiple Intelligences has gained great popularity in educational and scientific circles because it changed the concept of giftedness from a single-source to a multi-source concept. The idea of multiple giftedness is now widely recognized and adopted in most countries focused on developing different forms of intelligence. It specifically concerns children with exceptional abilities in one or more areas of creativity, and this creativity does not necessarily manifest in academic achievement. It is not mandatory for a gifted student to excel academically and achieve the highest grades in tests. A gifted student may not necessarily be outstanding in their academic performance but could possess abilities and talents that go unnoticed or undetected through conventional tests,

making it difficult for an unqualified teacher to recognize gifted students among their pupils. A gifted student is one who demonstrates any of the following abilities or potentialities, either individually or in combination: general intellectual ability, specific academic readiness, productive or creative thinking, exceptional leadership ability, visual or performance artistic talent, or sensory-motor ability.

Characteristics of the Gifted:

Gifted students possess exceptional educational abilities due to their unique psychological and intellectual nature. A gifted student is characterized by the following traits:

- Curious, inquisitive, and always asking questions.
- Has a good memory and the ability to process a vast amount of information.
- Learns quickly and retains knowledge for a long time.
- Mastery of reading skills earlier than their peers.
- Has strong and evident athletic abilities.
- Often excels academically.
- Completes classroom tasks quickly.
- Tends to participate in various activities.
- Motivated to try new things.
- Enjoys challenges.
- Self-driven and motivated.
- Independent in their thinking.
- Uses higher-order thinking skills.
- Approaches problems with unconventional methods.
- Generates original and unconventional ideas.
- Has the ability to develop and elaborate on ideas.
- Possesses analytical, evaluative, summarizing, and conceptualization skills.
- Has multiple experiential skills.
- Sensitive, emotional, highly energetic, and connected to their family and community.

There are several reasons that have led to an increased focus on mentally gifted students, one of the most important being the way advanced societies manage their needs for such human potential. The rise in living standards, the complexity of life, and the competition between various philosophies and social systems—especially in the field of science—has pushed these societies to reassess their available resources to withstand these competitions. This, in turn, has prompted psychologists to study the phenomenon of excellence, developing specialized programs for the intellectually gifted to identify the factors that lead to their success and provide the best services

for them. These services aim to develop their abilities and modify their educational programs to ensure that they receive the appropriate support to help maximize their potential.

Foundations for Teaching Gifted Students:

Given the characteristics of gifted students, their education must address their needs and abilities according to their speed of learning and intellectual potential. Teaching gifted students must be distinguished by specific traits, focusing on the following:

- Reinforcing creative and critical thinking skills.
- Offering problem-solving activities and learning through action and thought.
- Integrating them into research activities.
- Providing complex tasks of a high level.
- Presenting activities that align with their interests and inclinations.
- Focusing on open-ended questions.
- Diversifying independent tasks and non-traditional assignments.
- Reinforcing authentic and realistic assessments.
- Integrating them into team activities.
- Incorporating them into homogeneous cooperative groups for sports activities and comprehension tasks.
- Including them in heterogeneous cooperative groups for critical thinking activities and open-ended questions.

To complete the triad (student - curriculum - teacher), teachers of gifted students must possess a set of specific qualities, such as: deep and advanced knowledge in their field of specialization, intellectual courage in saying "I don't know," a strong sense of personal security, acceptance of strangeness, originality, and diversity, good organization and preparation, proactive communication and diplomacy, and fearlessness in teaching. Additionally, teachers of gifted students must possess competencies that address the unique needs of gifted students, which distinguish them from regular students. There are other skills, abilities, and characteristics that should be present in a gifted student's teacher, including:

- The ability to help gifted students discover their intellectual, skill-based, and conceptual abilities.
- Being outstanding in their profession.
- Understanding the meaning of giftedness and being trained in methods for identifying gifted students in the classroom.
- Creating an innovative, flexible, and tolerant learning environment.

- Possessing leadership and mentoring skills.
- Being able to provide opportunities for gifted students to hypothesize, question, experiment, explore, and think divergently.
- Understanding the strengths and weaknesses of various organizational models for educating gifted students.
- Paying attention to the moods, motivations, and weaknesses that gifted students may experience.
- Having the skill to develop and prepare curricula and instructional materials.
- Being highly skilled in preparing and teaching different types of intellectual abilities, with an emphasis on creativity and problem-solving.
- Encouraging gifted students to present creative ideas and using various approaches such as problem-solving or brainstorming to discover new solutions.
- Stimulating gifted students' ability to recognize problems.
- Building gifted students' confidence in their own perceptions and personal ideas.
- Encouraging gifted students to become aware of the value of information and its relevance to real-life situations.
- Being knowledgeable about educational and psychological studies related to different age stages.
- Demonstrating organization and a strong work ethic tied to achievement.

In summary, this distinguished group of students requires a distinguished curriculum, a distinguished teacher, a distinguished educational environment, and a distinguished educational management system.

Teaching Strategies for Gifted Students:

It should be noted that there is a clear distinction between teaching methods, teaching styles, and teaching strategies. A teaching style refers to the teacher's preferred approach and patterns of teaching, which are closely tied to the teacher's personal characteristics. Teaching methods, on the other hand, are the ways in which a teacher conveys the content of the curriculum to students during the learning process. Methods are more general than strategies, which typically focus on a specific objective. For example, a teacher may use one method throughout a lesson but employ different strategies for different goals. In education, a strategy is an action plan designed to achieve specific objectives. For instance, if a teacher wants to teach three goals during a lesson, each goal would require a specific strategy.

From the characteristics of gifted students mentioned earlier, it is evident that they require strategies that differ from those applied to general students.

The strategies for gifted students represent higher levels of Bloom's taxonomy, such as evaluation, synthesis, and analysis. Modern literature continues to emphasize the use of complex thinking strategies, such as problem-based learning, critical thinking, and creative problem-solving, which are suitable strategies for use in gifted student programs. These strategies require complex responses from learners and involve the use of various cognitive skills. They are widely applied when dealing with real-world problems and issues. Below are some examples:

Problem-Solving Strategy:

Problem-centered learning is a core focus in teaching gifted students. It aims to stimulate students' ability to solve problems through scientific applications and learning activities that rely on teacher-directed questions, dialogue, collaborative discussions, and individual explorations, allowing students to develop habits of mind, including skepticism, objectivity, and curiosity.

It is recommended to begin learning with an open-ended problem that requires students to find diverse solutions based on real-life problems they encounter. The teacher selects problems that require effort from students, as they are less familiar with them and do not know the solutions. The teacher encourages students to work in groups, gather information and data, assign roles, and present results in various ways.

This approach involves presenting students with a problem and then asking them to research information on their own to find a solution using the relationships between the factors involved in the problem. Students generate hypotheses that explain the problem and lead to its resolution. Afterward, they generalize the validity of the hypotheses and attempt to apply them to real-life situations.

Steps in problem-solving include:

- Identifying a meaningful problem.
- Defining the problem.
- Formulating hypotheses.
- Testing the hypotheses.
- Selecting the most suitable hypothesis.
- Reaching conclusions.
- Generalizing results to new situations

Critical Thinking Strategy:

Critical thinking is defined as examining and evaluating presented solutions. It involves solving problems, verifying, and evaluating something based on pre-agreed standards. It is reflective and rational thinking focused on deciding what to believe, what to do, or what to accept.

Critical thinking requires using the higher cognitive levels in Bloom's taxonomy (analysis, synthesis, and evaluation).

Critical thinking is used to perform various tasks, including identifying flaws and errors, questioning everything, analytical thinking, and reflective thinking. It encompasses all higher-order thinking skills in Bloom's taxonomy.

Critical thinking strategies provide gifted students with the opportunity to assess information and opinions in a systematic, effective, and meaningful way. They assist in solving complex problems and finding diverse solutions, stimulate understanding, analysis, and synthesis of information, predict outcomes, and foster self-evaluation. This requires supporting discussions between students, self-assessment, and solving real-world problems.

- **Critical Thinking Skills:**

Some researchers have summarized critical thinking skills as follows:

- Distinguishing between verifiable facts.
- Differentiating between information and claims.
- Identifying the level of accuracy of a statement.
- Determining the credibility of a source of information.
- Recognizing claims and arguments.
- Identifying unspoken assumptions.
- Evaluating the strength of evidence.
- Predicting the consequences of a decision or solution.

Creative Thinking Strategy: Creative thinking is a complex and purposeful mental activity driven by a strong desire to search for solutions or reach original results that were previously unknown. Creative thinking is characterized by its comprehensiveness and complexity, as it involves intertwined cognitive, emotional, and ethical elements, forming a unique mental state.

- **Creative Thinking Skills:**

The skills of creative thinking are as follows:

- **First: Fluency:** The ability to generate a large number of alternatives or ideas when responding to a specific stimulus, and the speed and ease with which they are generated. At its core, fluency is a process of recalling and retrieving previously learned information, experiences, or concepts.

- **Second: Flexibility:** The ability to generate diverse ideas that are not the typical, expected ones. It involves directing or shifting the course of thinking as the stimulus or the situation changes. Flexibility contrasts with mental rigidity, which means adopting fixed, predetermined thinking patterns that cannot change according to the situation's needs.

• **Third: Originality:** This refers to novelty and uniqueness, which is a common factor in most definitions that focus on creative outcomes as a measure of creativity.

• **Fourth: Elaboration:** The ability to add new and diverse details to an idea or problem-solving approach.

• **Fifth: Sensitivity to Problems:** This refers to the awareness of existing problems, needs, or weaknesses in the environment or situation.

Thus, creativity is the production of something new, rare, and useful, whether through thought or action. It relies on tangible achievement.

5.**E-learning for Gifted Students:** Educational institutions often rely on traditional methods of teaching, which emphasize memorization and rote learning, neglecting the practical, hands-on aspects of education. This is due to several factors, including limited resources, lack of professional development training for teachers, and strict adherence to rules and regulations that have transformed the educational process into a race for memorization and regurgitation.

Therefore, experts believe that it is time to focus on the practical aspects of the educational process. One such strategy is e-projects, which are considered one of the most important strategies that bridge theoretical knowledge with practical aspects, under the guidance of the teacher. This strategy helps in identifying students' abilities, interests, and tendencies, discovering the gifted ones, and helping them advance and develop.

E-projects also involve using interactive tools available in e-learning environments and allowing access to various electronic resources. This approach shifts the responsibility of learning onto the student.

Definition of the E-project Strategy: The concepts and terms related to e-projects vary, but they all agree that the project is carried out by the student independently under the teacher's guidance and supervision. This strategy is based on self-directed learning. An e-project is defined as a set of specific goals and steps arranged in a sequence that helps students go through specific experiences and execute them to reach a final product in the form of an e-project, all under the teacher's supervision and direction.

Advantages of the E-project Strategy: The advantages of the e-project strategy are numerous, and they can be summarized as follows:

• Improves learners' attitudes toward learning.

• The e-learning environment helps capture learners' attention and provides e-learning opportunities, contributing to the enhancement of the learning process.

• It gives learners more freedom to express their opinions and fosters electronic collaboration between them and their peers.

• Encourages organized research for information using network and internet technologies.

- Promotes collaborative work.
- It is one of the best strategies that consider individual differences, allowing each learner to progress with their project according to their personal abilities.
- Fosters curiosity and experimentation within the bounds of pre-established educational objectives.
- Enhances learners' sense of self-confidence and independence.
- Helps students link theoretical knowledge with practical skills related to specific educational goals.

Characteristics of E-project-based Learning: The main characteristics of e-project-based learning are as follows:

- **Meeting Students' Needs:** The project should align with the students' desires and needs.
- **Promotes Integration:** It helps link different subjects together and connects cognitive aspects with practical skills in a given subject.
- **Integration with Self-organization of Knowledge and Experiences:** This strategy aids students in organizing and sequencing the achievement of objectives through prior experiences and theoretical knowledge, aligning with the development of self-organization skills.

Types of E-projects Based on the Number of Learners: E-projects can be classified based on the number of learners involved as follows:

- **Individual Projects:** In this type of project, students work individually, preparing their own unique project or working on the same project where each student is responsible for a part. For example, each student may create an animated image for a specific lesson.
- **Group Projects:** These are projects that cannot be done individually, such as producing an educational play or creating a school radio program. In this case, the teacher can assign projects to groups of students, making it easier to track and assess the projects accurately.

Steps for Implementing the E-project Strategy:

To implement the e-project strategy, the following steps should be followed:

- **Classifying Educational Objectives:** Classify the educational objectives into individual and group projects.
- **Defining the Goal of Each Project:** Clearly define the goal of each project.
- **Assigning Projects to Students:** Distribute the projects to students based on their abilities and needs.
- **Creating a Plan for Project Implementation:** Develop a detailed plan for the implementation of the projects, with the help of the learners, and determine the duration required for each phase of the project.

• **Defining the Purpose of the Project:** Students identify the purpose of the project and introduce themselves to their peers.

• **Initiating the Project:** Each student begins working on their project individually.

• **Project Presentation:** After completing the project, each student presents their project to their peers and the teacher to exchange experiences.

• **Project Evaluation:** The teacher evaluates each project individually, based on the pre-defined educational objectives.

The strategies discussed in this article represent a sample of common strategies that are suitable for gifted students. These strategies can be easily implemented by teachers during regular lessons without requiring excessive effort. However, some strategies may demand additional effort from teachers, and there are others that are only applied when gifted students are grouped in a single class. As we have seen, most of the mentioned strategies are essentially thought patterns that have been adapted for gifted students.

Conclusion: The study emphasizes the importance of developing innovative teaching strategies that meet the needs of gifted students, particularly in light of rapid technological advancements. These strategies are characterized by their ability to foster research and collaboration skills, improve students' attitudes toward learning, and connect theoretical knowledge with practical applications. Moreover, e-learning offers significant opportunities to enhance the abilities of this group by providing interactive learning environments based on self-directed learning and teamwork. However, the success of these strategies requires well-trained teachers who can effectively utilize technology and a supportive educational environment that encourages creativity and innovation.

Recommendations: The research recommends the following:

1.**Teacher Training:** Teachers should be trained on how to effectively use e-learning strategies, focusing on their application with gifted students.

2.**Curriculum Development:** Educational curricula should be designed to address the individual differences of gifted students and integrate technology into the learning process.

3.**Resource Provision:** Necessary technological tools and educational resources should be provided to implement e-learning strategies effectively.

4.**Encouraging Scientific Research:** Further studies should be encouraged to assess the effectiveness of e-learning strategies for gifted students and identify best practices in this field.

5.**Fostering Collaboration:** Collaboration between educational institutions and research organizations should be enhanced to develop specialized educational programs for gifted students.

6.**Continuous Evaluation:** Regular assessments of e-learning programs should be conducted to ensure the achievement of educational goals and the fulfillment of the needs of gifted students.

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