

FORMATION OF UNIVERSITY PROFESSORS AS A MECHANISM FOR IMPROVING TEACHING CREATIVITY

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Abstract

In the contemporary era, university education stands as a prominent pillar of teacher professional development. In this regard, the concept of shaping university professors emerges as a pivotal mechanism aimed at fostering their creative capacities and delivering optimum teaching methodologies, thereby ensuring heightened quality and efficacy in educational efficacy. This growing concept has glowed a surge in scientific investigation, prompting a careful examination of its effectiveness. Hence, this paper delves into the extent to which this pedagogical approach contributes to enhancing and refining the teaching creativity within the degree of university professors.

Keywords: Professor, Teaching Creativity, Composition, University. Higher education

Introduction

The university is considered a cornerstone of civilization due to its significance to society. It serves medium to qualify and develop competent individuals, both academically and practically, to achieve economic prosperity, cultural and technological development. It is the foundation of advancement and refinement, a pillar of a sound society. One of the university's primary objectives is to complete the cognitive and cultural aspects during the university stage, to establish proper learning curricula and teaching methods, fostering creativity and innovation among the faculty to fulfill their educational and formative roles effectively. Furthermore, it aims to cultivate scientific and technical expertise across various fields and disciplines.

Therefore, one of the most important tasks of the university is to certify its affiliates, provide them with the necessary skills, and equip them with knowledge to be employed in the service of society's progress and development. Training is one of cutting-edge of the effective scientific methods to afford all the requirements for conducting scientific research in all areas of life. Continuous training for the teachers keeps abreast of global events, enabling them to stay abreast of scientific advancements in a variety of interest areas and further their professional development. especially considering the variety of instructional strategies a teacher can use to accomplish learning objectives. Hence, any teaching method can be effective in a specific educational-learning situation and ineffective in another, but this depends on the teacher's experience and creativity in choosing what suits the planned educational-learning situation. based on the aforementioned details this study examines the following axes:

First university

The concept of the university

The word "university" comes from the Latin word "universitas," which means the union or assembly that includes the most influential families in the political field in the city to exercise power (Mersi, 2002, p. 09).

Originally, the masculine noun "jamie," the feminine noun "university" refers to a contemporary cultural institution that includes colleges of higher learning in a number of significant fields, including theology, philosophy, medicine, law, engineering, and literature (Maaalouf, 1986, p. 101).

As for terminology, several definitions of the university have been mentioned, including: The university is an effective entity that works to advance technological development, knowledge enrichment, and preparing competencies benefiting from the human scientific accumulation in various scientific fields; administrative and technical (Dellio, 2006, p. 79).

According to Wafa Bari, it is "the educational institution that offers theoretical, cognitive, and cultural education to its graduates who have completed high school or its equivalent, adopting ideological and humanistic foundations, along with vocational

training, aiming to prepare them for public life as productive individuals." In addition to impacting these students' diverse contacts and addressing important concerns that arise in society at different times, "(Bari, 2006, p. 290).

The Algerian legislator defines it as "a public institution with an administrative character that contributes to the dissemination, preparation, and development of knowledge, and the training of the necessary cadres for the country's development" (Official Gazette, 1999). Therefore, it has been placed under the supervision of the state to serve political, economic, and cultural objectives.

The concept of higher education

Higher education refers to the education that follows a high school diploma in colleges or universities. Study terms at these universities range from two to four years. This represents the last phase of official schooling (Global Arabic Encyclopedia, 1999, Part 7, p. 25). It includes any and all post-secondary studies, training, or guided training that takes place at a university or other accredited educational institution that is officially recognized by the state (UNESCO, 1998, p. 1).

These educational institutions vary under several names; they include academies, colleges, and universities. Although universities and their related institutions have many names, including college, institute, academy, or higher school, the university is the most well-known institution in higher education. Because these names have distinct meanings in different nations, they may cause misunderstanding. For example, while the term "college" designates an institution of higher learning, in nations with a British or Spanish heritage, the term designates a private secondary school. In a similar vein, an academy could be a school or a facility for higher learning (Global Arabic Encyclopedia, Part 8, 1999, p. 146).

The diversity of its specializations and the breadth of its curriculum set the university apart from other higher education establishments. There are numerous opportunities for students to concentrate in subjects including the humanities (history, philosophy), social sciences (psychology, sociology, education), and sciences (physics, chemistry, geology, and zoology), according to the prevalent pattern in universities. The prevalent forms of other higher education institutions, such colleges and academies, concentrate on one or

two branches of knowledge, in contrast to universities (Al-Abadi Hashim Fawzi, 2008, pp. 62-63).

Based on the aforementioned evident, universities offer their students specialized education in a range of subjects, preparing them for the labor market and their participation in all spheres of society—political, economic, and social. For this reason, nations make great efforts to ensure that there are enough educational seats available to these students, who are the backbone of the social development movement.

Functions of the Algerian University

The amendments to the university's basic law and other related regulations included a new structure for the Algerian university, as stated in Article 31 of Law 90-05, dated April 4, 1999, which incorporates the Higher Education Orientation Law. The university has three main functions:

1. **Preparing Human Resources:** Among the most significant roles that universities have undertaken since their inception. Their job is to qualify professionals for high-ranking positions by preparing them for a range of required occupations and positions at different levels. In light of this, the university can be seen as a productive and investment-worthy institution that develops managerial and competent human resources. It invests in human capital, which is equally as vital as material wealth, and generates capable, considerate people and leaders (Morsi, 2002, p. 26).
2. **Scientific Research:** The acquisition of new knowledge through inventions, innovations, and other means falls under the horizon of the university. Due to its recent founding, the Algerian university is relatively new to scientific research activities, despite the importance of this role in the country's social, economic, and cultural growth. In order to advance scientific research at the national level in a variety of fields, the Ministry of Higher Education oversaw the establishment of the National Office for Scientific Research (ONRS) in 1974. Due to its scholarly research focus, this office operated until 1983 when it was disbanded for failing to successfully close the knowledge gap between academia and the business and social sectors. It became more challenging to reconcile scientific research and

teaching due to the growing student body. Scientific research in Algeria faced difficulties, especially in finishing university research funded by sectoral bodies due to the lack of a strong relationship between the university and these bodies (Harnan, 2014, pp. 158-159). This was in contrast to French universities, which overcome this issue by establishing independent research units separate from teaching units within the university.

3. **Cultural and Intellectual Activation:** Equipping students with a diverse range of skills, knowledge, sciences, and cultures is one of the essential missions and duties of the university by:
 - Engaging in knowledge sharing, innovation, and constant information improvement and updating within the global scientific and cultural community.
 - Publicating research and studies.

The importance of the Teaching Staff in Higher Education

A member of the teaching staff is an individual entrusted with the responsibility of helping others learn and behave in new distinctive ways. They are responsible for the educational process. Parents and other non-teaching staff members are not included in this definition, though, as their primary professional responsibilities involve assisting others in their learning and development. The many responsibilities and obligations of a teaching staff member in higher education will be further explained below.

Higher Education Teaching Staff Member

A member of the teaching staff, also referred to as a university professor, lecturer, or teacher, is one of the most valuable resources in higher education institutions. This is because of their important function in the process of education. "All individuals employed in higher education institutions and programs to carry out teaching, research, engage in scientific deepening activities, and provide educational services to students or the community at large" (ILO/UNESCO, 2008, p. 48) make up the teaching staff in higher education. Below, we'll go over the responsibilities and obligations of a teaching staff member.

Role of a Teaching Staff Member

Higher education institutions require an organizational and pedagogical backdrop that is flexible, develops with them, and takes into account the human element in social interactions in order to carry out their mandate. Of all the components, the teaching staff is without a doubt the most crucial. A university needs to bring together a number of instructors and researchers in its lecture halls and laboratories in order to create competence; it cannot do so alone through its administrative structure and regulations. These people do more than only transmit pre-existing knowledge from books or convey knowledge from other nations. Rather, in order to determine the most effective ways to use, convey, reshape, and develop that material in accordance with national realities, they work in tandem with their pupils.

a member of the teaching team teaches them how to operate scientific equipment rather than imparting knowledge on students, they collaborate with the students they teach to help them grow personally in a way that impacts both their way of life and their personality.

Importance of Teaching Staff

The importance of teaching staff lies in (Mohammad Al-Arabi Ould Khalifa, 1989, pp. 197-204):

- **Linking Knowledge with Practice:** One of the primary factors contributing to intellectual and social backwardness the persistent colonial-era propensity to isolate knowledge from labor. This mindset entrenches the belief that education means merely obtaining certificates, which in turn leads to "protection" from work and licenses laziness. It suggests that knowledge is a pass to an exclusive group whose hands stay clean and who are accepted as social outcasts. Regardless of the learner's position in the production area, the practical output of the learner should be the genuine and accurate measure to rectify this problem. Following this guideline enables a university to produce more knowledgeable people nationally and give society with well-rounded citizens—those who think critically.
- **Preparing the New Generation:** Preventing conflicts and divisions between generations is crucial in preparing the next generation to take up the mantle and

carry on the journey that their predecessors began. Nothing poses a greater threat to a society that has paid a heavy price to preserve its togetherness and gone through extreme hardships to demonstrate it over its turbulent history than the generational divide. This oneness does not imply the mechanical transmission of thought and behavior patterns, nor does it force the younger generation to be a stiff clone of its predecessors. Rather, it entails assisting individuals in finding methods to serve the country that are inspired by the highest aspirations and ideals of the present as well as the best principles and values of the past.

- **Enriching Cultural Life:** Universities have a significant role in assisting in enhancing cultural life by providing education in all its forms. In addition to the university's basic and practical research, there is a third, equally significant area of study: making the arts, sciences, and literature more approachable to the general public through publications like newspapers and journals as well as talks and seminars. A university that isolates itself for the purpose of upholding standards becomes detached from the material and social realities of society and becomes an island. Therefore, the most esteemed publications take great satisfaction in exploiting the knowledge of prominent scholars who have no reservations about promoting science and culture. They assiduously labor to disseminate the benefits of their specialized knowledge in a way that is simple, easy to understand, and accessible to the broader public. This raises public awareness of current affairs and cultivates a greater thirst for information and culture, which advances civilization.

The two main functions of a faculty member in higher education are:

- **Teaching:** A faculty member's duty in education is to transfer knowledge to students. Nevertheless, this cognitive role is not the same as it was in the past. At the present time, the emphasis is on giving students the concepts, information, and facts they need to stay up to date with the field's constant flow of knowledge. In order to equip students to deal with this cognitive flow and the related technology, this involves giving them the knowledge-related skills, values, and attitudes. Instilling in students an informational culture that allows them to coexist in the

- information society—the society of the future—enables them to comprehend the present in all of its details, envisage the future, and take part in its construction.
- **Research:** Faculty members are expected to continue their careers in the field of research in addition to their teaching duties (doing their own research or overseeing student research). Publication is frequently the end goal of this research.
 - There is an association between these two roles. There is a connection between university teaching standards and research. The caliber of research conducted by academic staff is regarded as a measure of the university's standing in the scientific community relative to other universities. Faculty members at the university in question do research that can lead to revisions and modifications to the curriculum. But the question of whether research is dominated by teaching still has to be answered.

Historically, teaching was not always a full-time profession. Therefore, there was time for research. Moreover, even before the significant expansion of higher education, universities were few in number and tended to attract the best specialists in any field. Consequently, there was no actual contradiction between teaching and research. But things are not the same as they were today. Teaching is the academic role of higher education in the twenty-first century.

A. Modern Roles of Faculty Members

The most significant new and modern roles necessary to meet the requirements of the era are as follows, if the traditional roles of faculty members were limited to imparting knowledge to students from limited sources, ensuring their memorization of it, guiding them toward inherited behavioral patterns (with their positives and negatives), and conducting and guiding research.

B. Self-Learning Principle: The role of a faculty member is to achieve self-learning for students, urging them to discover information and facts by themselves, familiarizing them with various learning methods, whether from books and different sources, practical experiences, or traditional and modern educational methods, especially the ability to deal with computers, the internet,

and modern technology. This cultivates a passion of learning in the students and motivates them to seek knowledge—not only about the material being taught, but knowledge in general which helps them in their religious and secular endeavors. As a result, they ought to develop a lifelong passion of learning, reaping its benefits, and applying it to everything.

C. The Professor as a Role Model: shaping of students' character is one of the professor's most significant responsibilities. They are regarded as their ideal role model and a source of moral guidance. As a result, the professor needs to provide an example of appropriate conduct both inside and outside of the workplace. They should encourage students to follow the rules of punctuality, arrive at class promptly, and act and speak honestly. They should also keep up a respectable look, be honest in their work, control their emotions when they are upset, avoid using improper language, abstain from gossip and slander, uphold academic integrity, consider their opinions before making them, and remain modest in their knowledge. They should also know a lot about the subject they are covering.

D. The University Professor as a Guide and Expert: In most higher education institutions, a large number of students seek faculty members for assistance and guidance on both a personal and academic level. These faculty members are expected to act as mentors because of their seniority and experience. Even though some of their professors are not their actual lecturers, students nevertheless invest their trust in them when they need help or guidance with personal or academic issues.

E. The University Professor as a Consultant: Community service is one of the functions of the university. It serves as a hub for bringing experts to local and national activities. These experts are expected to provide high-quality services to society. Consequently, academics at universities may be asked to:

- Deliver lectures in public on scholarly subjects.
- • Serve as chair of community-organized committees.
- • Carry out research on matters pertaining to communities.
- Provide opinions, suggestions, and solutions to address a situation.

F. The Role of Faculty Members in the Internet Age: With the advent of the World Wide Web, students can now communicate with academics at institutions around the globe, as well as with their libraries, instructors, and even other students, sharing ideas, opinions, and research findings without the need for a teacher's presence. Faculty members now have additional responsibilities and their function has evolved as a result of these and other factors. The role of the professor has evolved beyond simply selecting teaching aids, explaining material from textbooks, disseminating subject content, and creating assessments. They are now mostly accountable for organizing, creating, and setting up the instructional process. They must also be proficient in instructional design in order to create and prepare the course materials, whether they are intended for students enrolled in traditional classroom-based education programs or those learning remotely or online. They also have to act as supervisors, guides, and assessors).

There have been substantial shifts in population, knowledge, and technology in the modern era. Computers in particular have become a part of everyday life. Double the role and benefits of computers in education, scientific program design became necessary to keep up with the rate of information generation and dissemination. As a result, instructional designers were required to carry out this duty in an efficient manner, guided by the principles of educational design, by creating successful programs, be they books, projects, courses, or curricula. There have been substantial shifts in population, knowledge, and technology in the modern era. Computers in particular have become a part of everyday life. Double the role and benefits of computers in education, scientific program design became necessary to keep up with the rate of information generation and dissemination

The Duties of Faculty Members in Higher Education:

Teaching occupies the foremost position in higher education institutions as a whole. Therefore, faculty members must be familiar with all aspects of this process, including different teaching methods and how to improve them, leading up to the evaluation process. Here is the translation of the tasks of a faculty member in higher education:

1. **Developing and implementing innovative educational curricula:** Faculty members work on designing and developing educational curricula that meet the needs of students and enhance interaction and active participation in the educational process.
2. **Using diverse and effective teaching methods:** Faculty members adopt multiple teaching methods including interactive lectures, group discussions, and hands-on teaching to enhance students' understanding and stimulate active learning.
3. **Guiding and advising students:** Faculty members guide and advise students in their academic and professional paths, providing the necessary support and guidance to help them achieve their educational and career goals.
4. **Conducting research and academic studies:** Faculty members engage in scientific research and academic studies to contribute to the advancement of knowledge in their respective fields and achieve scientific progress.
5. **Assessing student performance and providing feedback:** Faculty members assess student performance and provide feedback to improve their performance and develop their academic skills.
6. **Participating in academic and community activities:** Faculty members participate in academic, cultural, and social activities in the educational institution, and contribute to building relationships with the local community and industry.
7. **Continuous analysis and evaluation of the teaching and learning process:** Faculty members continuously analyze and evaluate the teaching and learning process to improve and develop it continuously according to the latest academic trends and practices.

Formation of the University Professor

1. **Concept of Training:** The idea of training did not emerge in administrative organizations until after World War II as an endeavor to modify human tendencies, attitudes, and behavior began to take hold in administrative organizations. Two schools of thinking on training arose with this concept. Based on the opinions of psychologists and educators, the first school regards effective

training as behavioral training. According to management academics, the second school believes that effective training is that which provides immediate, observable returns on investment. The ideas around training change depending on the viewpoints of stakeholders and scholars in various domains. Some view training as a methodical, scientific approach to improving human capacities, skill development, and knowledge provision in order to achieve the appropriate balance between training objectives and results attained. For others, it's the process of developing the right skills and routines to improve output and performance.

Some studies have shown that training is "a positive modification process of an individual's professional and occupational behavior aimed at acquiring knowledge and skills for job performance and modifying attitudes in favor of work and the organization." Others consider training to be "a planned process to modify behavioral, cognitive, or skill-related attitudes through an educational experience to achieve effective performance in an activity or field of activities and to develop individual capabilities and meet current and future organizational needs."

Some researchers see training as "a comprehensive and complex process that addresses all necessary measures to prepare an individual for a specific job and to accomplish the tasks assigned to them." Others view it as "the process of imparting knowledge and skills to a group of individuals to enhance their professional efficiency for maximum productivity."

- Training is defined by Al-Shaer (1996) as "the organized development of knowledge, skills, and attitudes for an individual to perform their duties correctly, or for a job entrusted to them, and it often integrates with increased and continuous education, i.e., it is a redefinition of an individual's and the group's thinking to move beyond narrow specialization to gain a broader understanding of situations." These ideas suggest that behaviorally speaking, training interacts with the person at three different levels: behavior and attitudes, skills and capabilities, and knowledge and capacities.

- **Training of the Professor:** This is an educational system with four inputs: general culture, academic specialization, professional specialization, and practical education. The objectives are to prepare the student to become a professor in the future. A variety of study materials with pertinent and targeted curricula are included in each of these components to prepare the student-teacher. Processes of this system are the strategies, tactics, and assessment tools that faculty members utilize under the direction of the preparatory institution's administration to accomplish the system's goals. The qualified teacher who starts work at one of the prepared educational stages is the system's output. This training could take place in two educational settings, or it could take place in one, such specialist colleges or institutions.
2. **The Importance of Pre-Service Teacher Training:**
 3. Within the educational system, teachers occupy a prominent role as key players in accomplishing learning goals and as pillars of any change or advancement in education. As a result, it is now essential to regularly evaluate the work and duties of educators in order to prepare them for the inevitable evolution of existing roles and to take on new ones. Many studies, research projects, and reports have placed a high priority on teacher preparation because, as Roy Sing once said, "No educational system can rise above the level of its teachers." (Page 27 of Higginson, 1996). Therefore, in order to address the education crisis in our modern world, UNESCO has underlined the importance of taking teacher preparation into account (Taha, 2005, p. 18).
 4. **Reasons for Pre-Service University Teacher Training:**
 - Increasing number of learners
 - Great scientific advancement
 - Progress in knowledge dissemination
 - Adoption of the scientific approach in education
 - Development of psychological and educational sciencesChanging Roles of Teachers:
 - Providing competent teachers

- Necessity of involving teachers in curriculum development
- Prioritizing education
- Collaboration with the local community (Taha, 2005, p. 22).

Conclusion:

Upon closer inspection, the state of teacher preparation at Algerian institutions is found to have serious flaws. These include a lack of proper training and a lack of scientific and pedagogical readiness for teachers in the age of globalization, which demands a unique kind of teacher. As a result, there has been a stalling of instructional strategies and a drop in students' desire to study. Due to these concerns, university professors in higher education desperately need proper training, especially since modern methods are challenging to implement and demand a lot of resources and effort. Many university professors use a method that primarily consists of lecturing, dictating, and recitation.

Concept of Teaching Methods:

The success of the educational-learning environment is influenced by the teaching methods, which are procedures in the classroom that are established by the teacher during lesson planning. They are vital and crucial in establishing the classroom and presenting the scientific subject. Effective and essential instruments for Teaching strategies are applied to achieve both general and specialized learning objectives.

A teaching method is described as a collection of recurrent behavioral models that may be used by numerous teachers to support learning and are appropriate for teaching a variety of subjects (Gage et al., 1975, pp. 443–444). According to Ridina Yousef et al. (2005), p. 54, teaching methods are a set of procedures that an educator uses to present scientific material to students. These procedures make use of resources and methods that are appropriate and in line with the nature of the scientific material, the characteristics of the students, their behavioral and psychological development, and the surrounding circumstances.

According to Abdul Salam Mustafa Abdul Salam (2006), p. 89, the term "teaching methods" also encompasses all the processes, actions, and logical sequences of linked movements that an educator employs with pupils in order to

arrange knowledge, circumstances, and learning opportunities in order to accomplish a particular educational objective or series of objectives. To impart knowledge and information to students in a way that assures interaction among them and accomplishes desired learning results, teachers prepare and implement various educational styles and classroom processes. These are referred to as teaching methods.

Types of Teaching Methods:

To accomplish educational goals, a teacher may apply a variety of teaching strategies. Depending on the teacher's experience and inventiveness in selecting what works best for the intended educational-learning scenario, any teaching approach can be beneficial in one educational-learning scenario but unsuccessful in another.

These methods can be classified into three main categories:

1. **Teacher-Centered Teaching Methods:** These are instructional strategies that teachers use to impart knowledge to students; the teacher is ultimately in charge of carrying out the teaching activity. This approach can take many different forms, all of which exclude students from participating in the activity: storytelling, presentation and demonstration, lecturing, description, and explanation. H. Broudy (1974) and Frederick H. Bell (1978) named this method the didactic teaching approach and the direct presenting approach to teaching and learning, respectively. As one of the most significant techniques for teaching psychology, Hassan Malla Osman also refers to it as the didactic approach (Hassan Malla Osman, 1983, p. 55).

Advantages:

The advantages of teacher-centered teaching methods can be summarized in the following points:

It can cover a great deal of material, is appropriate for adult learners, and can be used in large class sizes. It also draws students in, encourages creativity, and

broadens their horizons—especially when the lecture includes linguistic fluency, explanatory skills, and examples.

- Provides students practice in active listening, which is the foundation of knowledge. Additionally, it offers the material in a logical order that enables students to develop reasoning skills supported by evidence and arguments (Rachrach Abdelkhalek et al., 2007, p. 58).

Despite criticisms directed towards the presentation or lecturing method, educators acknowledge that there is no alternative to it in higher education institutions and universities. Students are more capable of continuous attention, linking elements of the subject matter, and their mature mental abilities enable them to follow the lecture and comprehend abstract ideas, complex theories, and evolving opinions. However, using this method in lower education levels involves significant risks (same reference, p. 59).

Disadvantages:

Teacher-centered teaching methods have shortcomings that can be summarized as follows:

- Rely on the explanation and lecturing of the teacher, with the silent, attentive students memorizing. In contrast to modern educational ideas, which place emphasis on making the learner the central axis from which the educational process should emanate, this places the instructor at the center of the educational process.
- Avoid encouraging learners to behave creatively; instead of emphasizing originality and authenticity, they may even punish them (Abdel Halim Mahmoud Al Sayed, 1971, p. 74).

By disputing the student and teacher opportunities for interaction, you are encouraging a personality pattern that is dependent on others and emphasizes memorization, imitation, and a lack of initiative in the classroom and in real-world settings (Ghiath Bouflaja, 1994, p. 147).

Creative Teaching Methods:

Among the creative teaching methods are the following:

1. **Problem-Solving Approach:** defined as a teaching strategy that focuses on presenting an engaging and interesting challenge to students, inspiring them to consider, analyze, and look into scientific solutions (Wahib Al Kabisi et al., 2000, p. 128). Students might acquire information and life skills by solving problems since they learn by doing and by encountering real-world scenarios (Zouqan Obaidat et al., 2005, p. 141). As dealing with difficulties and exercising the skills to solve them enables students to tackle problems they may meet in their daily lives, Ashman & Connay (1993) imply that teaching students problem-solving is one of the fundamental aims of education (Waleed Abdul Kareem Swafta, 2008, p. 57). Experts divide problem-solving techniques into two categories based on how they handle the subjects.

Problem Sensitivity

This involves an individual's awareness of situations, circumstances, and things that need improvement or modification. It includes the ability to recognize that things can be better than they currently are, along with keen observation of changes and flaws in the situation.

Seeking Information and Facts

This entails an individual's understanding of the circumstances, situations, and items that require adjustment or improvement. It involves both acute observation of changes and imperfections in the situation as well as the capacity to see that things can be better than they are at the moment

Identifying the Problem

This entails determining the causes of the problem's emergence. Lack of accurate information causes one's understanding to be distorted and incomplete, which hinders problem-solving. As such, it is imperative that multiple issues be raised at this point and that they are addressed.

Finding the Idea

This demonstrates the individual's ability to offer as many diverse and far-reaching answers as they can for a particular issue. It involves attempting to think of an idea that no one else has previously considered.

Finding the Solution

This involves the ability to evaluate the ideas presented in the previous step based on specific criteria and standards, then choosing the best of these ideas.

Accepting the Solution

This involves preparing an action plan to activate the ideas and apply them in reality, clarifying what needs to be done and how to implement this plan.

Discovery Method (Inquiry)

The purpose of the educational process is to make the student the center of attention, and the discovery method is a teaching strategy that moves the emphasis from the subject matter to the learner. This approach focuses on the student's acquisition of the material. According to Bruner, discovery encompasses all knowledge that a person can independently acquire through their intellect, not only novel discoveries that were previously unknown to humanity (Ramadan Abdul Hamid Al-Tantawi, 2008, p. 66; Zaid Al-Huwaidi, 2002, p. 187; Ezzo Afaneh and others, 2007, p. 141).

Brainstorming Method

According to Barnes (1963), brainstorming is a creative approach that is used as part of a holistic psychological process to help solve difficult problems in novel ways (Amal Al-Ahmad, 2001, p. 148). With this approach, students are urged to come up with a lot of solutions to a given problem without first assessing them; instead, all of the ideas are gathered. Following that, a conversation is had to ascertain which concepts are pertinent to solving problems (Robert Sund et al., 1985, p. 77). One of the contemporary methods to education that promotes creative problem-solving and creative thinking is this one. It develops students latent potential in a setting of independence and tolerance for dissenting viewpoints (Fakhri Rashid Khadr, 2006, p. 222).

Three crucial steps are included in a brainstorming session, and each one requires accuracy to be completed successfully (Fatima Mahmoud Al-Zayat, 2009, pp. 179–180):

- First Stage:** Clarify the problem and break it down into its primary elements, then categorize it for presentation and discussion in an idea-generation session.
1. **Second Stage:** The session leader explains the working process to the participants:
 - Avoid evaluating participants' ideas.
 - Accept any idea, even if it seems unrealistic or imaginary.
 - Present as many ideas as possible.
 - Follow and build on others' ideas, finding connections to reach creative ideas.
 2. **Third Stage:** Evaluate and test the ideas practically, which may take a long time until new useful ideas emerge.

Creative Assessment

Concept of Creative Assessment

Creative assessment measures students' performance on assignments that have purpose and are representative of real-world scenarios. Instead of being formatted like typical tests, these projects look like learning exercises that let students express opinions, make mature decisions, or work through real-world issues. This fosters the growth of their capacity for scientific, introspective, and original thought (Ali Rashid, 2005, p. 182).

The aim of creative assessment is to compare learners' performance with the creative goals set by the teacher. All facets of learners should be assessed for a thorough assessment, including their knowledge acquisition, capacity for creative thought, and application of scientific approaches to problem-solving. In order to stay up with the rapid advances in knowledge, science, and culture, creative assessment also seeks to foster an innovative environment in which teachers can foster student growth and creativity (Mahmoud Salman Al-Rubaie, 2006, p. 411).

Benefits of Creative Assessment

Using creative assessment has several advantages, such as:

- It takes into account the unique differences among students and offers interesting and difficult activities that encourage their capacity to inquire about and form opinions about their world (ibid., p. 185).
- It changes the teacher's function from imparting knowledge to that of a mentor, supporter, and facilitator of self-learning, in which the student is in charge of seeing, learning, exploring, trying, drawing conclusions, reflecting, and assessing their own work.

Means of Creative Assessment

Teachers can use various means for creative assessment, including:

1. **Practical Performance Assessment:** Through performance tests, field reports, projects, and hands-on activities in the lab or field, learners' practical performance is assessed during or after learning activities. One useful method for monitoring students' actions and evaluating their development in practical performance is direct observation.
2. **Achievement Tests:** These are assessments that the teacher has prepared and that students must finish under observation. These exams may consist of multiple-choice questions concerning a given topic that require students to provide justification for their answers, open-ended questions, and brief assessments covering particular knowledge or abilities.
3. **Affective Measures:** These measurements are employed to evaluate the values, interests, attitudes, and appreciations of students.
4. **Assessment Portfolio:** These learning and assessment records, often called work portfolios or performance records, comprise representative samples of students' accomplishments and efforts, including assignments, tests, term papers, reports, homework, projects, and other activities. These act as gauges of how well students are doing throughout the course. Through self-evaluation, which is facilitated by the assessment portfolio, students can diagnose their needs, evaluate their own performance, and analyze their own growth.

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