American Journal Of Applied Science And Technology
(ISSN – 2771-2745)
VOLUME 03 ISSUE 02 Pages: 26-39
SJIF IMPACT FACTOR (2021: 5. 705) (2022: 5. 705) (2023: 7.063)
OCLC – 1121105677
Crossref doi Google Scholar WorldCat MENDELEY
Publisher: Oscar Publishing Services

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Journal Website: https://theusajournals.com/index.php/ajast

Research Article

THE ROLE AND IMPORTANCE OF SPECIALTY SUBJECTS IN THE DEVELOPMENT OF CREATIVE ABILITIES OF STUDENTS

Submission Date: February 11, 2023, **Accepted Date:** February 16, 2023,
Published Date: February 21, 2023
Crossref doi: https://doi.org/10.37547/ajast/Volume03Issue02-04

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ABSTRACT

The article discusses various approaches to determining the qualities of creativity. Technical higher educational institutions road engineering the main ways and methods of developing the creativity of students of the educational direction are thoroughly covered.

KEYWORDS

Higher, educational, innovative, creative, interactive thinking, creative research.

INTRODUCTION

In modern society, in various spheres of professional activity, creativity serves as one of the leading factors of human success. Creativity becomes a quality that allows a person to adapt to rapidly changing living conditions and is the key to a person's success in professional activities. Creativity is an important factor in the development of a person and determines his willingness to change stereotypes and leave.

Currently, there are many approaches, directions and theories of creativity, as there is no single and clear definition of the meaning of creativity. Creative thinking takes away from simple ideas and a boring, familiar view of events and phenomena, and gives rise to original solutions.

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The study of the problem of creativity in modern psychology was studied in the work of foreign and domestic researchers: D. Gilford, E.P. Torrensa, S.A. Mednik, R. Dilts, K. Rogers, V.N. Drucinina, V.S. Yurkevich, A.M. Matyushkina, Ya.A. Ponomareva, A.N. Leon T'eva, S.L. Rubinstein, D.B. Bogoyavlenskaya, T.A. Barysheva, L.S. Vygotsky, B.M. Teplova, P. Edwards and others [1].

All research devoted to the study of creativity can be divided into two areas [1, 2]:

1) the first direction is focused on measuring the cognitive processes related to questioning, whether or not creativity depends on intelligence and in relation to creativity. Representatives of the" cognitive " direction study the relationship between creativity, intelligence, cognitive abilities and real achievements. The most prominent representatives of this direction are J. Gilford, S. Taylor, E. Torrens. Their research work shows the impact of mainly intellectual cognitive properties on the ability to produce new ideas;

2) the other direction deals with determining the dimension that a person with his psychological characteristics is an important aspect of creativity and is characterized by paying attention to personality and motivational characteristics. Many experimental studies are devoted to the creation of a" portrait of a creative person", the identification of its distinctive features, the identification of the personal, motivational and socio-cultural interconnection of creativity. The most prominent representatives of this trend are F. Barron, A. Maslow, D.B. Epiphany.

J.Guildford believes that creativity is divergent thinking and manifests itself when the problem has not yet been identified or opened and there is no predetermined, established solution. Thus, Guildford showed a fundamental difference between two types of mental operations: convergence and divergence.

E.Torrens defines creativity as the ability to raise deficiencies, gaps in knowledge, missing elements, awareness of problems, search for solutions and assumptions that are lacking to find a solution, formulate, test and re-examine hypotheses. This is a change in hypotheses, as well as reporting on the results. S.When considering the concept of creativity, Mednik believes that the division of the cognitive process into convergent and divergent components is not enough. Mednik believes that in the creative process there are both convergent and divergent elements. Mednik believes that the more elements of the problem are taken from remote areas, the more creative the solution process will be. Thus, divergence is replaced by actualization from distant zones of semantic space.In the new test, the synthesis of elements is possible. Being a non-creative stereotype, for example: the combination of the signs of a horse and a person actualizes not the image of a horse-headed person, but the image of a centaur.

He wrote numerous studies on creativity in the" personal " direction and F. Barron should be distinguished among them, it is necessary to study the role of motivation in the creative process, as well as the influence of various factors of the social environment on the development of creativity. F.Barron defines the main parameters of social micromohit that contribute to the formation of creativity: low validity of behavior, high degree of uncertainty, the presence of a model of creative risks, the creation of conditions for imitation of creative risks, social strengthening. creative behavior. F.Barron believes that creativity is creative intellectual abilities, including the ability to bring something new to experience.

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A.Maslow views the ability to be creative as an individual's attitude towards self-realization. The main role in determining creative behavior here is played by motivation, values and personality traits. The creative process is associated with self-expression, complete and free realization of one's own abilities and life opportunities. In his opinion, freedom, self-acceptance and other characteristics allow. allows individuals to realize their full potential.

D.B.Bogoyavlenskaya considers the concept of creative activity of a person to be conditioned by a certain psychic structure inherent in the creative type of personality. From the point of view of Bogoyavlenskaya, creativity is an activity that is not triggered depending on the situation manifested in the desire to go beyond the limits of a particular problem. Creativity is usually inherent in all innovators, regardless of the type of activity: test pilots, artists, musicians, inventors.

Thus, there is no single point of view on the characteristics of creativity. According to one point of view, a creative person tries to realize himself in the best possible way, to adapt to his capabilities as much as possible, to carry out new, unusual activities for him, to apply new methods of activity. According to another point of view, the motivation of creative abilities is based on the desire to take risks, to test the limit of one's capabilities. The development of creativity in a person is largely determined by the environment in which a person developed and how much this environment contributed to the development of creativity, applied individuality and developed. The development of creativity is a subjective and rather deep process.

We conducted an experimental study in order to determine the pedagogical conditions for the development of creativity in the study of the subject "improvement and equipment of highways" of students of a technical higher educational institution. The hypothesis of the study is that the most successful is the development of creative thinking of students when a creative educational environment is created[6].

In accordance with the purpose of the study, the following tasks were set:

1) determination of pedagogical conditions, development of creative abilities of students in the study of the discipline" improvement and equipment of highways;

2) Methodology for the development of methodological recommendations and the formation of creative abilities of students in the study of the discipline "improvement and equipment of highways;

3) experimental verification of efficiency.

The development of creativity in each student is individual. A systemic factor in the development of creativity is the humanization of Education. It is believed that creativity at first is inherent in every person. But the influence of the environment in which it grows, learns, is brought up, the presence of many prohibitions, social patterns helps to block creative abilities. Therefore, it is necessary to give everyone a positive motivation to develop creativity.

The development of creative thinking means the formation and improvement of mental operations: analysis, synthesis, comparison and generalization, classification, planning, abstraction, as well as the acquisition of such properties of thinking as criticality, depth, flexibility, breadth, speed, variability, as well as the development of imagination. and has knowledge of different content.

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For students of technical specialties, future engineers, the development of such qualities as flexibility and speed is of the greatest importance. It is the presence of these qualities that allows students to more easily master the disciplines, and at the same time it is necessary to establish their future professional activity. Solving creative problems allows students to develop such qualities as the ability to establish skills, contacts and solve possible conflict situations in professional activity without loss, quickly respond to changing conditions and find adequate ways out of certain professional activities.

In addition to the selection of special tasks that allow you to develop speed, flexibility, originality and accuracy of thinking, the teacher can apply a number of proven general approaches to stimulate and develop creative activity:

1) provide a comfortable environment;

2) time enrichment of the educational environment various new objects;

3) cognitive asset promotion student information;

4) creative nature of interaction "teacher – student", creating conditions for imitation of creative behavior.

The experimental part of the study was carried out in three stages. At the first stage, tests were carried out to determine the level of primary creativity of students, and an experimental group was formed from students. At the second stage, in the process of training in the discipline "obdonization and equipment of highways", students are provided with psychological tools that provide an opportunity to show openness, ingenuity, originality and flexibility of thinking, as well as to form skills. At the third stage, a repeated diagnosis of student creativity was carried out, aimed at studying the dynamics of the development of this process. Also, two modules were used to track changes in students in the study of the discipline" obdonization and equipment of highways". The following methods were used to develop creativity in the study of the discipline" obdonization and equipment of highways": the method of brainstorming, the method of keys, problem lecture and other methods. Consider examples of the use of brainstorming technologies and practical situations in the study of the science of" obdoning and equipping highways". Brainstorming method. Lesson topic: placement of short-term recreation areas on the road. For brainstorming, the group is divided into 3 subgroups. In each group, the roles of the participants are clearly defined. From among the entire group, a person ("moderator") is selected who at all stages follows the rules of brainstorming, writes ideas, offers his own, and the teacher can also be a moderator. Information is provided about the task facing the brainstorming participants. You can also report the features of brainstorming, but this is not necessary. Task: to teach students to design, based on regulatory documents, the placement of short recreation areas on highways according to the given tashshirik.

When equipping short-term recreation areas, at least a roadside toilet, devices with protection from precipitation, a table, seats, urns for garbage, containers for garbage, communications, information are recommended[7].Short-term stops take two regions to include:

- parking spaces for cars and trucks;

- it is necessary to place heavy trucks and buses in the cargo region.

It is recommended to place short-term parking and recreation areas on the correct plot of the road or in pairs of curves with a radius of not less than 1000 m,

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ensuring that at the time of crossing the first curve it meets the traffic flow on the right side.

Job performance information

The equally equipped two-way lockers base the traffic flow by calculating how many cars pass through this section of the road in 1 hour, the location and size of the short rest areas. The average speed of most cars is usually 0.8 ur, in this place ur indicates the speed of movement calculated in km/h. The number of places on the recreation area on the same plot is equated with the number of cars using it:

$$\frac{0{,}8\upsilon}{\chi_{cp}} q = \frac{e}{t} N_{ч} \quad (1)$$

in this place is the xsr-the average interval between places of short rest, km;

q – average number of places on the recreation area;

ye – share of cars using recreation areas;

t – exchange rate of cars at the place of laying (i=l/b);

Nch- intensity of movement in an hour, avt./ hour.

From this, the total number of places intended for cars will be released in the places of laying the recreation area:

$$q = \frac{eN_{ч}\ \chi_{cp}}{0{,}8\upsilon_{\text{P}}} (2)$$

in this place is the f-the indicator of how long passengers and drivers will be on average at the enterprise. In practice, however, when drawing up a project, a different way is taken – the average spacing between the number of places on the laying site and the squares is determined:

$$\chi_{\text{CP}} = \frac{0{,}8\upsilon_{\text{P}}\ q}{eNч} \quad (3)$$

The Formula (2) can be simplified if the places of laying on the recreation areas are calculated mainly for passenger cars. For this, road statistics information is used. The number of cars in need of a recreation area is taken in relation to the speed of movement on the road and is usually 0.2 parts of the total passenger cars in the traffic flow. We subtract the average distance between short resting places using this dependence, which often does not change:

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$$\chi_{CP} = \frac{66{,}4\, q \upsilon_{P}}{\int N_{cym}} \quad (4)$$

By putting the known values q and℃, one can simplify the above formula even more. When the scenery is used in relation to the viewing platforms, their minimum capacity will be as follows according to ShNK 02.05.02-07:

Table 1 lists the calculation pointers that can be used when the location of the recreation areas and the scenery to be watched is calculated.

The landscape is beautiful, there is drinking water, a toilet is built, a buffet, a point of sale, playgrounds with the possibility of washing are fully used. Toilets are installed with an interval of at least 15-20 km. If service enterprises, Ayaqsh, restaurant, etc. if this condition is not met at the expense of, they should be provided for in the recreation areas.

When structures are built, when used, various service system elements will be correctly positioned along the roadway only when they meet the requirements of comfort, Traffic Safety, Road architecture and economy.

Table 1

Local conditions Group	Share of cars using the same service			Time to be average on the landing, ye			Time when the resting place will be the maximum rush
	ye_d	ye_a	ye_r	f_l	f_a	f_r	
Recreation Area							
1	0,10	0,03	0,20	0,03	0,06	0,03	4
2	0,06	0,05	0,10	0,03	0,5	0,05	5

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3	0,20	0,02	0,40	0,03	0,5	0,05	5
Landscape viewing area							
1	0,30	0,15	0,40	0,5	1,0	0,5	5
2	0,15	0,10	0,10	0,5	0,8	0,5	5
3	0,20	0,05	0,10	0,5	0,8	0,5	6

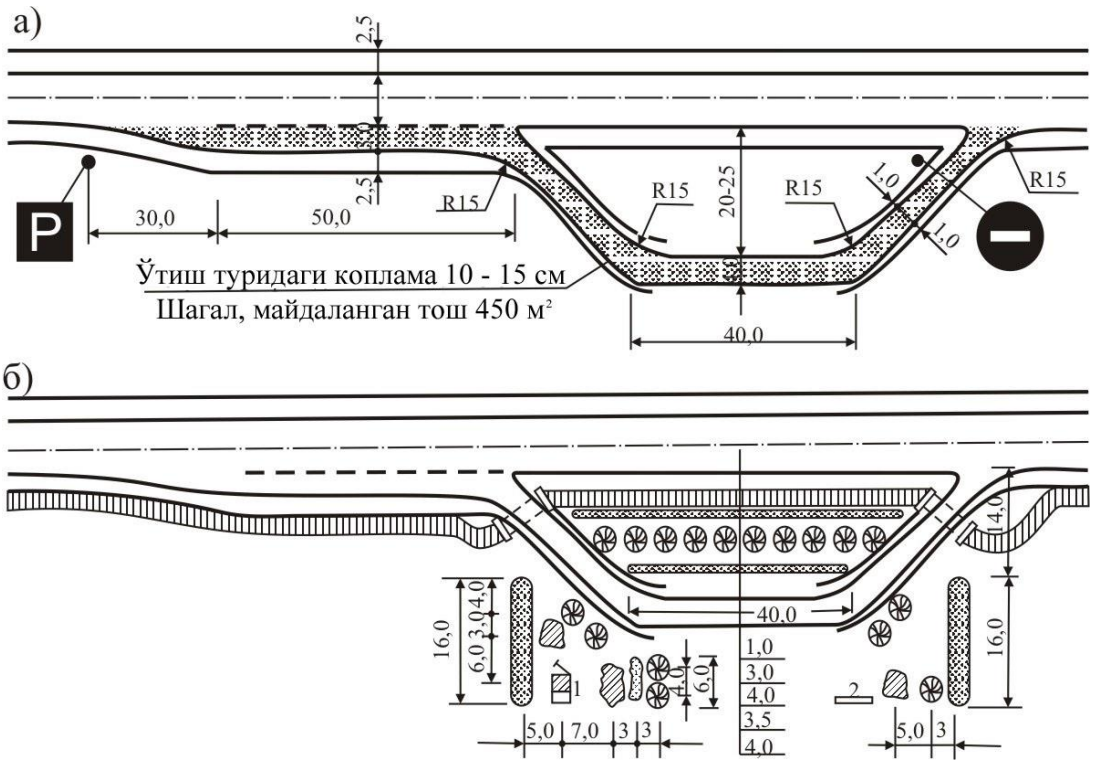

Figure 1. An example of the structure of a recreation area for 5 passenger cars. a-recreation area structure template; b – floor Greening drawing; 1st toilet; 2nd seat.

Thus, creativity is the creative abilities of an individual, characterized by a willingness to create fundamentally new unusual ideas that deviate from traditional or accepted forms of thinking, as well as the ability to

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solve problems that arise within static systems. Creativity is one of the important characteristics of a person's self-realization.

In the study of the discipline" obdonization and equipment of highways", a specially created environment was created for the development of students ' creativity. We recommend using technological methods for the formation of creativity as personal property, such as brainstorming, keys-stadi, problem lecture, lecture discussion, etc., which ensure the multilateral systematic interaction of students and teachers. The introduction of tasks with creative attention the educational process contributes to the self-opening of students, the rejection of established stereotypes not only in solving the tasks provided for in the curriculum, but also in solving problems associated with non-standard professionally oriented situations. Educational technologies of creative importance are a way to change the initial and basic environment of professional education, since a creative approach to the problem of education involves the creation, creative formation and development of Ideas, Ideas and projects, and not the solution of ready-made didactic tasks.

The development of creativity in the educational process is possible with the cooperation of the student and the teacher. The student has the right to choose the necessary information for himself, to determine its need on the basis of the project Project. The teacher should only help him with this. With the creative technology of education, the main condition for traditionally understood education changes - the presence of ready-made, systematized knowledge that needs to be mastered.

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