Intensification of students' creative activity in educational environment of higher educational institutions

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Abstract. The process of intensification of creative activity can rightfully be considered as a means of engaging students into intense creative activity, presenting purpose-modeled training cases and tasks by performing which trainees can increase the level of their creativity. Educational environment aimed at intensification of students' creative activity and based on interactive educational forms, methods, means and techniques, encourage students to improve their knowledge and skills to work with sources of information, wisely arrange communication with participants of pedagogical process and form an ability to solve various problems.

Introduction

During the age of post-industrial society shift from the professing model (conveying information) to the training one (conveying expertise, i.e. incentive to action) is the most important mission. The modern society creates the social need for a generation which is able to live and develop oneself among intellect, science and information intensive technologies. It requires forming an ability to feel confident and act in ever changing world of production, business and social and political life. The new educational model means that a trainee is provided both with an amount of knowledge and with key expertises which allow him to flexibly adjust to dynamic socio-economic environment and apply his knowledge in creating new competitive products and services. The current situation requires looking for special educational forms which are necessary for training effective, commercially successful specialists with particular personal properties. In modern education the problem of obtaining key expertise (informational, communicative, problem-solving) becomes actual. Obtaining the informational expertise involves necessity to solve the problems of creative consideration and activation of cognitive potential of a trainee. The communicative expertise requires such educational environment where, in process of communication trainees shall learn to improve communication skills and develop properties for interrelation culture. Aspects of problem-solving expertise are aimed at obtaining by trainees knowledge and skills to flexibly solve complex problems which often require joint actions, vigorous mental activity and creative approach.

The aim of modern education is to provide development of trainees' abilities to perceive, creatively apply received knowledge to any case study and real life situation, readily develop and manage oneself by improving the key expertise. Active involvement of trainees in the pedagogical process results from teacher's activity, therefore students' creativity can be activated in case of their regular involvement in various types of educational and extra-curricular activities.

In different spheres of material and spiritual culture (science, technology, production, art or politics) creative activity is carried out in different ways. For instance, in natural sciences the most significant result of creative activity is a discovery. Contradiction in contents of a task for research is crucial for stimulation of creative thought. Contradictory requirements cause a problem, to solve which creative approach associated with searching a new (original) design concept is required.

C.Bernard, a French scientist, says: "One should not be afraid of contradictions: each one holds the beginning of a discovery» [1]. Creating something new is inevitably associated with disclaiming something that has previously existed. Therein lies the essence of dialectic of ideas development. The great majority of discoveries and inventions are the results of wearing down contradictions. Discoveries often are made when paradoxes let science develop swifter than strictly consistent reasoning. The essence of creative activity is specifically associated with creation of some product (material or spiritual), that is original and unusual and in form and in contents differs from other products of similar purpose.

Improvement of intensity and efficiency of creative activity requires proper scientific

understanding of the mechanism (the essence) of creative thinking.

The process of meeting creative challenges is mostly defined by internal condition of an inventor which can be affected by intensification of psycho-heuristic processes, motivation, perception, will and memory training [2].

The history is rich with examples when one has become a scientist due to some chance. This is the peculiar consistency and psychology of creative activity: it embraces an opportunity to take what is required. Ch.Goodyear, the father of curing, has met a man in his dream who has prompted him to add sulphur in rubber, D.Mendeleev has seen the Periodic table of elements in his dream, I.Newton has discovered the law of gravitation after he has experienced a blow on his head when sitting under an apple tree. This kind of creative discoveries are used to be referred to some chance [3]. But there is no chance here. This is an objective law at work, the law of the particular mental activity. "A chance" won't lead to the desired result if one's mind is not in constant creative search, if it doesn't obtain efficient imaginative power. A man can't explain where and when he has painstakingly gained the experience which has become "a launchpad" for his intuition, his creative insight. The key feature of intuition is the ability to notice some laws, something essential, by watching their subtle displays. It is possible that Newton has not been the only one on whose head an apple has fallen, but he has been the only one who has inferred a law out of this event.

The cognitive and creative process requires mobilization of all one's spiritual strength and is impossible without imagination. By its nature imagination is closely related with thinking. Thinking process is not always detailed or logical reasoning. An ability to get a grip of the truth without direct perception and proving by discussion is called intuition. Intuition is not a separate learning style, but its essentially particular type when certain links of a logic chain remain at unconscious level. This is a sort of concealed logic of thought. Both logic and intuition are important and both are inevitable. Heuristic power of the unconscious is in its freedom from stereotypes. There are more degrees of freedom in it to form associative links, while logical thinking complies with traditional, long-standing standards, conventional train of thought. Though, logical thinking also involves a certain degree of freedom. It should be noted that the conscious closely cooperates with the intuitive within creative process, when after some information has been accumulated, an insight comes, i.e. mind is suddenly brightened, sudden understanding or seeing the elements of a situation appears, which provides solution of a problem [4:

601]. Creative inspiration is a special mental condition when intuition is displayed. Inspiration is a condition which is hard to attain, a sort of obsession, intensive display of emotions, excitement, intellectual enthusiasm, which is able to anticipate the result of thinking process by prompt passing and skipping over certain links of a thinking chain. According to V.A.Mozart, in such moments a composer hears all unwritten music.

But it appears that however powerful are imagination and intuitive insight, they can't be opposed to conscious and reasonable actions in cognition and creative activity. All these spiritual strengths of a man work only when they are united and only in each specific act of creativity some feature may prevail [1: 302]. Intuition of an experienced designer, engineer or teacher is not magic but the result of creative search, accumulation of information, experience, understanding of a problem, creative actions, diverse and rich practical experience. Solutions suggested by intuition only seems to be unexpected while as a matter of fact are the results and the complex consequence of mental work and deep thoughts [5, 6].

That said, we can suppose that first of all intensification of creative activity shall involve a set of methods directing students' mental activity in the process of perception the material recounted by a teacher. It is also necessary to understand clearly what methods of explanation provide more profoundly master the material and make for all-round development of trainees' thinking. Methods of explanation depend upon students' level of development and the nature of explained material.

The process of creative activity intensification can be considered a means of involving students into intense creative activity, that acts as specially modeled cases and tasks by fulfilling which trainees improve the level of their creative activity. Fulfilling various tasks students understand the aim, structure and contents of a task and predict the result. Thus, with each task students accumulate experience and master skills of creative understanding a task [7].

Reasonable cooperation of the parties of a pedagogical process means that a teacher knows and is able to measure and direct independence which is given to trainees and which finally leads to defining aims and intensification of parties' creative activity. In the course of training the most qualitative perception and mastering teaching material result from interpersonal cognitive communication and interrelation of all parties of a pedagogical process. Such interrelation is based on the interaction mechanism, which means teaching relying on interaction, influence. The essence of interaction is in

interaction, direct interpersonal communication, the main feature of which is an ability of a man to accept the role of another person, imagine how his communication partner or a group perceives him.

Interactive training (derived from "interaction") is training based on trainee's interaction with educational surroundings, educational environment which are the sphere of the mastering experience [8]. It is based on direct interaction of trainees and exchange of experience. New knowledge is developed upon such experience, a trainee becomes a full participant of educational process and his experience serves as one of the main sources of cognition [9, 10]. In the course of such training a teacher doesn't give definitive knowledge, but he makes students to search by themselves, to develop an ability to analyze each act, each step.

Conventional forms, methods and means of training presuppose mainly teacher's activity associated with conveying information. When analyzing a lesson, attention is focused on a teacher, while the key aspect, i.e. the fact that the success of mastering teaching material depends on a trainee himself, is often missed. In the course of the person oriented training knowledge is generated. That is why such training is creative, productive activity in the course of which a student not only masters knowledge but also generate knowledge, personal experience of creative activity himself. As compared with conventional training, in the course of interactive training educational activity of all parties of pedagogical process is intensified, favourable conditions for initiative and creativity are created.

Interactive methods include the following: a method of problem defining; a method of presentation, of discussion, work in groups, a brainstorming method, methods of critical thinking development, mini research, business simulation, role-playing, a method of interviewing and others. Creating interactive educational environment is also one of the methods of arranging students creative activity.

Forms of intensification of creative activity include the following: lectures and seminars dedicated to a certain problem, self-guided works with the use of interactive training methods, excursion lesions, round table discussions, practical and laboratory lesions with interactive training elements. Forms and methods of students' creative activity may differ (a student-a student, a teacher-a student, work in pairs, work in groups and etc.), but in all cases it is crucial that the parties of pedagogical process interact, cooperate and support each other.

Methods and forms of interactive training closely interact with each other and their interaction presents the educational environment which intensifies students' creative activity [11]. Applying forms, methods and conditions for interactive training causes appearance of the whole system of interaction that allows to unite educational activity and interpersonal cognitive communication: a student – a student, a teacher – a student, a teacher – a group of students, between groups of students.

It is known that in the personal and activity theory, environment is defined as a crucial factor for personality formation and development. It is the environment (macro-, micro- and etc.) that influences cultivation in trainees of such crucial qualities among which one should particularly note a skill to establish relations, communicate with strangers, be a good company and etc. Educational environment in a higher educational institution is a rather dynamic structure. According to Slobodchickov, environment is the result of human contribution, when it is used both as an object of joint activity and a resource. So, educational environment consists of multiple components, it is many-sided. We can constantly add new components developing it, but following certain criteria and factors [12].

In the course of interactive training students' creative activity is intensified under the following conditions: stimulation of motives for intense creative activity; creation of educational environment; supplying visual and didactic materials for pedagogical process; use of educational technologies; application of techniques of person oriented training; reliance of the principles of pedagogy of cooperation; encouragement of self-sufficiency; development of new ideas when fulfilling case studies.

Experience has shown that applying intense and interactive training methods allows a teacher to arrange collective mental activity so that a trainee becomes a researcher who can find a creative approach to fulfillment of case studies and reflect his actions. Relying on applying pedagogical technologies of interactive training it is possible to change the role of a teacher making him not only a knowledge medium, but also a leader, an initiator of independent creative work of a student, allowing him to act as a guide in the world of information, encouraging a student to work out criteria and methods of orientation and search of something rational in an information flow. Changing the student's role (from passive contemplating and perceiving educational material to active participation in educational process) is no less important an issue. It is particularly noticeable in discussing educational topics, making one's own judgements, in analyzing, evaluating, in developing tolerance in the course of communication, responsibility for decisions made.

One of the means for stimulating and maintaining interest is to use interactive methods in

training and with their help to start up active research. When creating problem cases, a teacher opposes new facts and observations to the established system of knowledge in provocative, contradictory manner. Contradictions revealed serve as a powerful incentive for educational activity. They encourage trainees to get to the bottom of a problem and solve a contradiction. In this case intense research activity is supported by the direct, deep, internal interest. At this it is important to teach students to discuss, find the maximum amount of reasons and facts, thus directing trainees to studying publications and other sources of information. Using the problem-defining method a lecture relies on active dialogue and simulates research process. This technique allows arousing student's interest and engaging him in educational process. Contradictions in scientific knowledge are revealed by defining a problem. The objective of this method is to make audience to look for solution of the problem. Efficiency of this method lies in the fact that students themselves may define certain problems.

Relationship between trainees and a teacher which are established in the course of interactive training is the crucial condition for intensification of students creative activity. If a teacher skillfully arranges the process of interactive training, he can create a microgroup where a student feels himself responsible for achieving a common purpose and tries to contribute to joint work.

There are a lot of possibilities to apply interactive methods, for example, in the course of educational activities a supervising advisor has to teach students to use various interactive methods on their own (topical advisor hours, debates, quiz contests and etc.), i.e. to involve students into independent creative activity. Application of interactive methods allows: making joint decisions in case of interaction of the parties of pedagogical process; working out an algorithm of decision-making; mastering skills of researching a situation; developing a plan of action; putting a theory into practice; according one's own opinion with others and take into account others' point of view.

Students' creative activity should be intensified in the course of joint cognitive activity, cooperation, interaction, mutual education and development. First of all, effectiveness of group activity depends on teacher's skill, his ability to spread his attention so that each group and each its member feels his care, concern in the success and effective interpersonal relations. Teacher should show concern in success of both strong and weak students, display respect to all parties of pedagogical process.

Creative activity is productive only when ideas can freely compete with each other, encouraging the opponents and thus intensifying thinking and research activity, mobilizing emothional and motivational aspects of mental activity. Competition of ideas creates particular creative atmosphere when "air is full of ideas". It is due to creative activity that a personality appears. Creativity and a personality are united and inseparable.

A teacher's ability to reveal internal resources of a student by using interactive forms of training can provide for structural changes in educational process, help a student to evaluate his abilities and possibilities, properly determine his place in life and open a gate for full-scale professional growth.

Intensification of trainee's creative activity results in a self-sufficient, initiative personality obtaining professional knowledge of the matter, a personality able to apply and make use of the latest scientific and modern technical achievements, a personality filled with positive, creative energy.

Psychological comfort which is specific for educational environment exercise a decisive influence on development of self-esteem. Psychological comfort of educational environment of higher educational institution is a set of facilities which provide tranquility, emotional relaxation, conditions for intensification of students' creative activity. Psychological comfort encourages trainees for joint creative activity, improves thinking processes, enhances satisfaction from training, educates according to traditions of interactive communication and increases readiness for mastering knowledge. Thoroughly developed system of psychological impact is a favorable emotional background for proper direction of the cognitive process, since emotions have impact on sensation, perception, imagination, memory and thinking.

In summary, it can be said, that in educational environment in higher educational institutions intensification of students' creative activity is a specially arranged process where operation of systems "a student – a student", "a teacher – a student", "a student – a group of students" is characterized by interactivity of the parties of pedagogical process which encourages joint cognitive activity, responsible approach to learning, creative approach to case studies, reflection, willingness to achieve positive results in the course of training.

Introducing a complex of interactive methods in pedagogical process helps to increase the part of active self-guided students' work in educational structure, develop interest and motivation for intensive educational activity, as well as to improve students' performance which is

characterized by active wakefulness and selective attention. All in all, the following should be noted:

1. We are bringing up a creative, i.e. socially minded person. A person can be socially minded only in case he feels emotionally secure. That is why it is necessary to keep in mind that creative imagination is active only in case there is positive emotional background, therefore, it is necessary to provide amiable atmosphere in educational interactive environment.

2. First of all, pedagogy of creativity is pedagogy of relationship. A dialogue between personalities is considered to be efficient only in case of favorable psychological climate, in atmosphere of confidence, joint research for the truth, open-mindedness for new problems and new ways of their solution.

3. The main mission of a teacher is to master trainee's ability to work in a selected professional field. The experience gains is ever renewed and used selectively according to new creative tasks.

Conclusion

Modern realia in a certain way correct understanding of educational forms and methods in a higher educational institution. In educational environment of higher educational institutions a special part in the complex of educational techniques and means is assigned to modern technologies, particularly, using techniques, ways and means aimed at active involvement and engagement of a student in educational process, i.e. using interactive methods in the course of training.

Educational environment focused at intensification of students' creative activity by using interactive educational forms, methods, means and techniques encourages development of students' knowledge and skills to work with sources of information, communication with the parties of pedagogical process, mastering an ability to solve problems.

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