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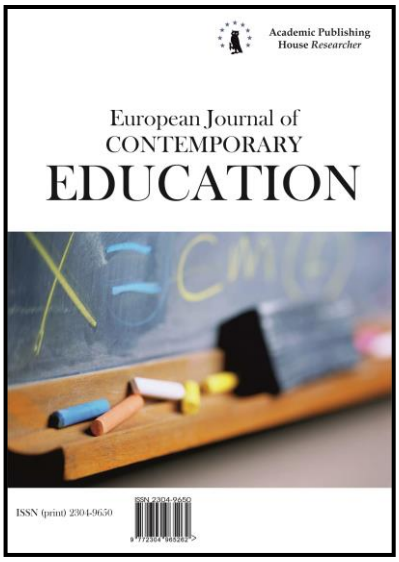

The Problems of Contemporary Education

The Innovation Blaze-Method of Development Professional Thinking Designers in the Modern Higher Education

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Abstract

This article proved the urgency of the problem of development of professional thinking of students studying design in modern conditions of higher education. The authors substantiate for the need of an innovative Blaise-method development of professional design thinking of students in higher education. "Blaise-method" named by us in accordance with the English translation of "blaze", which means flash, bright light. It aims to organize the efficient and harmonious functioning of the brain in the process of project activities and is based at the creative mental condition of the individual, which is achieved when performing exercises developed with the use of alpha-technology "BLIC". Thus, the authors emphasize the innovation of the blaze – the method of development of professional design thinking.

Keywords: innovative, blaze-the method, design, design thinking, development, professional, education, University, alpha state.

1. Introduction

The article reveals the urgency of the problem of development of professional thinking of the personality in the field of design-training in the modern University. The modern world is constantly in a permanent state by certain changes, transformations and converting. Now developing Nano technology happens evolving of innovations in the theory and practice of education. All sphere of social and public life are undergoing tremendous changes in connection with the development of IT technology and the Internet. Accordingly and the education system is

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subjected to optimization and transformation. In the current circumstances, universities need to adapt to fast-changing trends of today. Universities become a source of innovation. Modern higher education is developing rapidly. The world is changing. Go transformation in the system of Russian and foreign education. In 2015, the modern problems of education in the world are treated at the meeting of UNESCO in the Republic of Korea. In the adopted Incheon Declaration of UNESCO "Education-2030" sets out new ideas on ways to improve the quality of life of people in the world community through the development and reform of the education system (UNESCO, 2015).

Many universities recognize the need to keep up with the times. They are revising their teaching and research activities in accordance with the new requirements of society and the state, thus emphasizing the discrepancy existing, so-called traditional teaching methods. It should be noted that progressive teaching staff of universities ready to change their attitude to the introduction in educational process of pedagogical innovations. They treat innovation as something new which is based on scientific knowledge. Of innovative this activity of professors and teachers of higher education institutions is the development and the realization of this the research and application of innovations aimed at improving the effectiveness of quality training. It is a means of development and renewal of educational policy states.

There is a growing need in modern and innovative pedagogical methods of teaching and development of professional activity of students. A priority of educational systems in Russia and abroad is to train highly qualified specialist.

Accordingly, it is necessary the search and introduction of innovations directed to the effectiveness of learning processes and personality development in her professional activities, i.e., educational innovations. This underlines the importance of revising teaching methods and professional development of graduate students and identifies the relevance of this study.

In 2017, the Organization for economic cooperation and development (OECD) has developed guidelines for an innovative learning environment. The Handbook contains the results and materials of the innovative learning environment, collected by the OECD over the last decade. There reveals the principles of innovative learning and the analysis of thinking processes. Note that the OECD to recommending in the field of education set a direct connectivity of professional education and professional thought, competences, skills and abilities of graduates to enhance their mobility in the labour market, further training and career growth (OECD's, 2017).

It is obvious that in the current situation, cooperation in education, culture and economy, the question becomes more urgent the international exchange of students. It is obvious that in the current situation of interaction between States in education, culture and economy, the question becomes more urgent the international exchange of students. In the context of this study note that international exchange in the field of design is growing rapidly.

When researching this problem the authors identified a critical contradiction in the system of education, science and art not only in Russia but also in many foreign countries. On the one hand there is the social order, against the educational institutions. This ordering consists of the need to the formation and development of initiatives and enterprising personality, her self-identity. They need to master General cultural, general professional and professional competences. These people can have the following competencies: General cultural, general professional and professional. She is advised to be responsible for universal and universally valid values. It is recommended taking responsibility for the universal and universally valid values. Herewith, she should be open to constant self-education, to be ready to innovations and changes, to be able to identify freely in the cultural space of values. She should be able to use their professional, intellectual and creative abilities in life and work. And on the other hand deficient and somewhat outdated psychological and pedagogical and methodical base of development of professional thinking of the students. The elimination of the causes and the emergence of a new contradiction, according to scientists, allow the individual to rise to a higher stage of development. Only becoming a subject of design and creative activities in education, science and design person has an active life and professional position. The purpose of this article is the evidence base and rationale necessary for the use of innovative blaze-method of development professional design thinking in the context of modern higher education. In English the blaze – flash, bright light. The novelty Blaise-the method propose by the authors lies in its focus on the harmonious working of the brain in the process design activities of the designer, which is based on creative mental state of a person in the mode of the alpha rhythm of the brain and is achieved in the application technology Glare. Glare is

the flash, i.e. English blaze. Thus, the foundation of the Blaise-method is the psychological emotional alphas-state of the individual which contributes to the development of design thinking, which emphasizes the novelty of this method. Note that currently the pedagogical science does not take into account when developing main guidelines and training methods features the harmonious functioning of the brain in the process of creative activity on the basis of psychological alpha status of the individual. Hypothesis of the study was the assumption that if in the process of learning designers implement innovative blaze-the method of development of design thinking students, then this will positively affect the dynamics of the level of their professional abilities.

2. Materials and Methods

Methodology this study is a set of methods, principles and techniques of scientific analysis and experimental studies, systematic study of psycho-pedagogical phenomena of scientific excellence, activity-based and communicative approaches (S.I. Arkhangelsky, Yu.K. Babanskiy, V.V. Krayevsky, V.A. Slastenin, A.I. Shcherbakov).

This experimental study was conducted by the authors using the method of statistical observation, as well as methods of matching the two samples on the frequency of occurrence of the desired effect in the application of blaze-method in the development process of design thinking in the classroom design through the angular conversion Fischer. Applying the Fisher criterion, the authors evaluated the significance between the percentages of two samples of the experimental and control groups. In the process of statistical analysis of the results of the study, the authors translated the percentage of the value of the Central angle in accordance with the corner of the Fisher transformation, which is measured in radians. Note that the greater the angle φ corresponds to a higher percentage portion, despite the fact that correlations are not linear: $\varphi = 2*\arcsin(\sqrt{P})$, where P is the percentage part expressed in shares of unit. The greater the value φ*, the most significant differences. Working with criterion Fisher should pay attention on his hypothesis, where the proportion of students in the group in which appears the effect of the development of professional design thinking in the process of the project activities according to the established criteria, when the application of blaze-method in sample 1 does not exceed the sample 2 and is denoted as H_0. At the same time H_1 is indicated by the percentage of students who have manifested the investigated effect and sample 1 is greater than the sample 2 (Sidorenko, 2007).

The basis of this study consists of the doctrine of the unity of the abilities and thinking of a man with his active activity B.G. Ananiev, JI.C. Vygotsky, B.M. Kedrov, A.N. Leontiev, C.JI. Rubinstein etc. The problem theory and practice of professional training of designers solved foreign and domestic experts, such as Bruce Archer (England, 1968), that introduced a systematic design methods in design. He proved paramount the importance of needs, next is arise the problem and they satisfaction (Boyd Davis, Gristwood, 2016).

John.Chr. Jones (England, 1986) uncovered psychological peculiarities of the project analysis methods of artistic design and engineering design (Jones, 1986). Martin Bella, Bruce Huntington (USA, 2014) developed universal methods of design (Bell, Huntington, 2014). Donald A. Norman (USA, 2006) reveals the principles of design in his "Design of everyday things" (Norman, 2006). Lidwell William, Holden Kritinia, Butler Jill (USA, 2012) was formulated universal design principles (Lidwell et al., 2012). We note science sources which to aimed at comprehensive training and development of many abilities in vocational education, including design B.A. Efimova, B.S. Mails, V.P. Bespalko, G.K. Selevko, N.B. Arganovo etc. The theoretical base of the research Director of the design Studio IDEO Tim brown is a study of the techniques of design thinking when doing a design project, as well as in business and everyday life (USA, 2013) (Brown, 2013).

The authors conducted an analytical study of many contemporary scientific publications on innovation and innovation practices in education in different countries of the world. So in the doctrine Furst-Bowe and Julie A. Bauer Roy A. (USA 2007) «Application of the Baldrige Model for Innovation in Higher Education» presented innovative approaches in the University of as an important most significant change that is having a positive impact on improving the quality of education (Furst-Bowe, Bauer, 2007). The main criterion of innovation in the field of education Guillermo Orozco-Gomez proposed to consider specific visible good results (Mexico, 2006). (Guillermo Orozco-Gomez, 2006). Zhang Siaoway (China, 2007) investigated Chinese reform pedagogy art project. The Ju Chjaochung (China, 2014) to have studied and identified the didactic

bases of teaching fine arts to students of Russian and Chinese universities. Wei Hao (China, 2009) have developed methods of formation of professional qualities of the artist-designer. He stressed that the existing system of education in the field of design in China and other countries is outdated (Wei Hao, 2009). Bruce-Davis, M. N., Gubbins, E. J., Gilson, C. M., Villanueva, M., Foreman, J. L., & Rubenstein, L. D. (2014) in journal of advanced scientists they reveal the peculiarities of perception of leaders, teachers and students the innovative learning and educational-methodical strategies and practices (Bruce-Davis et al., 2014). The development of innovative pedagogy aimed at the formation of the creative potential in Indonesia is exploring Juha Kettunen (Indonesia 2017) (Juha Kettunen 2017). The issue of innovation pedagogy in higher education and creating a learning environment causes anxiety for scientists of the countries of Japan, the Republic of Korea and Singapore (Building 2017) Methods of developing training in innovative pedagogy reveals and offers T. Const (2017) (Konst, 2017). S. J. Renzulli (USA, 2017), C.M. Callahan, & E. J. Gubbins (USA, 2014) examined the law Javits, which is considered to be one of the cornerstones in the education system as a necessary base for the future (Gubbins et al., 2014). In 2013, T. Penttilä & A. Putkonen made a presentation at a scientific conference in Valencia (Spain 2013) about the knowledge in the context of innovation in the field of pedagogy in higher education (Penttilä, Putkonen, 2013). The problem of formation and development of abilities of the individual attracts both foreign and Russian scientists S. I. Aboimov (2010), V. Andreev (2016), Wei Hao (2009), W. S. Barber, S. L. King (2017), Seechaliao Thapanee (2017), L. Glazurina (2015), G. N. Ibragimov (2013), E. Visser (2009), E. F. Comindico (2016), D. Sherwin (2013), L.E. Shmakova (2009), M. V. Shcherbakov (2014), Cheng Xiaohua (2007), Beghetto, R.A. (2016). Beghetto, R.A., & Sriraman, B. (2016), etc (Barber, King, 2017).

For this study became relevant the scientific achievements in the field of educational psychology, academician, Dr. of psychology Cziksentmihalyi Mihai (2013). In their publications and books Cziksentmihalyi Mihai reveals the results of the introduction and then proves the necessity of inclusion in social and private life personality a special psychological state that he calls flow. The condition, which includes motivation which is aimed at the result of professional design and creative activity of personality, is the explanation of the thread state. Scientist reveals the emotional state of a person who is in flow. This feeling of joy, freedom, full satisfaction. The state of the thread unites in a single unit motivation, attention and situation, that leads to harmony and productive feedback loop, that is, to will help to achieve high results in activities (Cziksentmihalyi, 2015).

V.S. Rotenberg examined in detail the state of operation of the human brain in the alpha mode of rhythm, which has the same quality characteristics as the state of the thread. In their studies V.S. Rotenberg empirically using electroencephalograph proves that when solving creative problems electrical oscillations work of the brain of man correspond to the frequency and the amplitude of the increasing alpha rhythm (ν = 8-13 Hz, A = 50-100 mV). It is a condition scientists call a state of relaxed wakefulness. Note, that design and creativity of the designer is a very complex and lengthy process, which is often accompanied by emotional rise and burst of energy, no tiredness or fatigue. This activity state of the brain important for this study, based on it to get developed an innovative methodology of development of professional thinking (Rotenberg, Arshavsky, 2015).

This study also relies on research results of the structure of mind, Howard Gardner (2007), who developed the theory of multiple intelligences. Here we are interested in the classification of types of thinking, particularly visual-spatial (picture smart) interpersonal (people smart) types. Ability visual-spatial thinking is manifested at a high level in working with the space and its objects, to graphically Express their ideas in pictures, drawings, projects. This type of thinking is available to artists, designers, architects and other creative individuals. People with interpersonal mindset can communicate as verbally and using sign language, artistic – Imaginative and music information (Stone, 2006).

P.V. Simonov (1993) reveals the neurobiological basis of creative abilities in the study of the creative work of the brain. The results of these studies important to the development of innovative blaze-method of development of professional thinking of students in the field of design.

In General, the analysis of scientific psychological and educational research shows that scientists, referring to the study of particular aspects of problems of development of thinking, do not reveal the substantive content of the process, do not represent the ways and means of

professional development of future designers with a psycho-pedagogical point of view. This underlines the scientific-theoretical relevance of this research for the development and testing of an innovative Blaise-method of development professional thinking designers in the modern conditions of higher education.

Thus, the analysis of current scientific research suggests that the problem of development and introduction in educational process of innovative blaze-training method aimed at the development of professional thinking of students in the field of design has not been solved. Remain open questions of theoretical and practical nature that are intended to solve this study. It is urgent and requires a thorough, more in-depth study that significantly distinguishes it from modern ideas about the problem, will complement and deepen the already known approaches to it, will give a special theoretical significance and practical value.

Philosophical encyclopedic dictionary defines the term thinking as the deliberate process of mental, cognitive information processing, which is implemented in the acts of management of mental representations, is subject to specific policies that affect the emergence of new cognitive images.

In the context of this study the level of development of design thinking in solving design and creative tasks determines the quality of the professional abilities of the designer. Cutting-edge designers and scientists define design thinking as a specific way for artistic and creative and design thinking, which reveals the ability to find and create something new and creative to the already known mass.

In this case, professional design thinking is considered as an individual psychological property of the individual, which distinguishes the designer from experts in other areas, targeted to mental, cognitive, creative processing of information in consequence of which arise new project-art cognitive images.

The problem of creative thinking in artistic and creative activities in the interaction of the components of intuitive and logical researched by Russian scientists, artists and Professors N.N. Rostovtsev, N.N. Volkov, V.S. Kuzin, E.V. Shorokhov, I.V. Alekseeva and others.

It should be noted the need to include in the educational process and the method of achieving alpha status, as an innovative blaze method aimed at the development of design thinking of the individual, for to achieve the goals and progressive growth her of high professional level.

Innovation, blaze-the method of development of professional thinking of future designers is aimed at the harmonious working of the brain in the process of project activities according to the structure of design thinking, which includes figuratively-creative (imagery smart), volumetric and spatial (spatial smart) and project-creative (design smart) component.

3. The results of the study

In this article, the authors presented the results of a study of the development of professional thinking of students by means of innovative, blaze-the method of instruction in modern environment education Russian universities. Innovative blaze-the method based on the basis effective interaction of science and education.

The authors have developed a psycho-pedagogical method, using modern scientific achievements and knowledge in the field of cognitive neuroscience, neuropsychology, psychology of creativity, design and education.

The research is to built on creative mental condition of the person, on linkage harmonious to activity of the brain in learning and project activities of students in the sphere of design.

The authors conducted a pilot study to test the effectiveness of innovative blaze method of development of professional thinking of students on the lessons design and design. The choice of research methods depended on its content and processes studying the problems of development of design-thinking students. The authors used scientific methods of observation, conversation, testing, questioning, organizing, and conducting views of design projects, to identify the level of creative thinking in the control and final stages, the analysis and conclusions. Experimental research and testing was conducted at the departments of design art-industrial Academy, Krasnodar State University of culture and arts (2011–2014) and Gzhel State University (2015–2017).

Experimental work with students was organized in the following areas:

- revealed the source benchmarks the level of development of professional thinking of the students to the project activities in the field of design;
- determined features of the influence of switching of the brain when going into alpha mode- the in carrying the project activities of University students, that is, revealed the influence of the alpha state on the opportunity to see the results of the development of his professional thinking in the process design activities of the designer;
- revealed feature technology fast entry into the alpha state;
- developed an innovative method of development of professional thinking of students in the classroom design planning, which outlined as blaze method;
- researched and experimentally tested the effectiveness of an innovative Blaise-a method who is directed at the development of professional thinking of students to design activities of the designer;
- researched, analyzed and studied the results of the experiment was be determined the levels of development of professional design thinking students.

The authors in the first phase of the pilot study it revealed that most of the students has the makings of artistic abilities accentuating the presence of design thinking at the initial stage in propaedeutics activities. Were identified three groups of levels of professional thinking of students learning in the area of training design.

The experiment involved 168 people, including in the control groups - 80 persons, in experimental groups – 88. In addition, was carried out both individual and collective research. At the results of the test were formed of a control group using standard teaching methods of design, in each with of studiedan enrollment of on 20 people. The experimental group consisting of 22 people, was createdto carry out design activities using innovative blaze-method of development of professional thinking of students in the field of design. The result of the level of design thinking of students as their professional activity is developed in the classroom design project environmental object or sample of the product for industrial production.

The quality of the developed project is determined by the increase in the level of professional thinking of the designer. To identify the level of professional thinking of the students to the artistic and project activities, we have developed the criteria for the evaluation of design projects (Table 1). The authors determined to which units (B-1, B-2, B-3) conditionally to pertain parameters of assessment are consist: figuratively-creative thinking, described as block 1 (B-1); volumetric and spatial thinking - block 2 (B-2); project-creative thinking block-3 (B-3).

The second stage of the pilot study as a consequence of the first, consists in testing theoretical and practical propositions of an innovative Blaise – a method that was developed by the authors and aimed at the development of professional thinking of future designers in modern conditions of higher education and definition degree its effectiveness.

Also defined the degree of dynamics of development of design-thinking and professional skills of bachelors of design at different stages of teaching students designing when included in educational process of innovative blaze-method.

Innovative, blaze-the method of development of professional thinking of the bachelors of design lies in the application of the developed exercises for student of the University in the process of activity design project. They are aimed at the harmonious working of the brain in the alpha mode status. This is a creative mental state personality, promoting the effective development of professional thinking of future designers.

It is characterized by psychological, bio-adequate relaxation-active state of harmony and balance of the individual, as well as of positive, lightness and flight, the emergence of a variety of options to perform a professional activity in design, the emergence of a sense of satisfaction with the outcome of the research in the field of design.

Table 1. Criteria for assessing levels of development of professional design thinking of students in learning design

Evaluation criteria	Low	Medium	High
Conceptuality – the original idea and compliance the artistic, scientific, constructive intent (B-1, B-2, B-3)	Low level imaginative-creative, volume-spatial and project- creative thinking. Not compelling disclosure of the idea (conceptualization), there is no match the artistic, scientific, constructive intent. Poor knowledge of functionality and ergonomics. The lack of emotional organization of perceptual design project through tectonics, symmetry or asymmetry, metric or rhythmic ordering of the components of the design project, invoice, texture, contrast, color, form and decorative. The work is not completed, but to traced the relevance and innovativeness of design of the project detected the degree of importance at the moment and in this situation, for to solve problems of design, and to application of computer and information technology. This level is of imitative nature.	Unstable level of imagery and aesthetic expression. Convincingly proven the relevance and innovativeness – the degree of importance at the moment and in this situation, to solve problems of design, application of computer and information technology. With some of the shortcomings solved of the spatial structure of the project. The average level of decision shaping in accordance with its practical purpose and artistic-figurative characteristics. The constructive of the project and its compliance with artistic content. Not fully thought out ergonomics and functionality of the project. There is some exclusivity and novelty of the design project.	High level of conceptualization and matching the artistic, scientific, constructive intent. High degree solutions of imaginative and aesthetic expression - emotional organization of perceptual design project. The project is relevant, exclusive and has a high degree of innovation, functionality and ergonomics, sustainability, solutions, spatial structure, forming in accordance with its practical purpose and figurative characteristics. The design of the decision the project and its compliance with artistic content.
Figurative and aesthetic expressiveness – emotional perceptual organization via tectonics, the symmetry or asymmetry, metric or rhythmic ordering of the components of the design project, texture, texture, contrast, color, form and decoration. (B-1, B-2, B-3)			
Relevance and innovativeness – the degree of importance at the moment and in this situation, to solve problems of design, use of computer and information technology (B-1)			
Exclusivity and novelty (B-2, B-3)			
Functionality and ergonomics (B-2, B-3)			
Compliance with environmental friendliness (B-3)			
The decision space-spatial structure (B-2)			
The shaping in accordance with its practical purpose and artistic-shaped characteristics (B-1)			
The design solution of the project and its compliance with artistic content (B-3)			

The value and quality of this blaze-method are:

1. in absolute security for man, observed the harmony of biorhythms of the brain, underscoring its bio-adequacy.
2. the tension disappears, anxiety and stress.
3. appears emotional and physical strength when designing the object of design;
4. in the state of comfort (relaxation) and operational thinking (activity). In the most wide application and the opening of creative possibilities of the person in the course of the alpha rhythm of the brain;
5. in the opportunities dynamic development of creativity. The alpha rhythm of the brain contributes to the emergence of instant mental images after setting goals and objectives. Alpha state develops figuratively-creative thinking, volumetric and spatial and project-creative;

6. 6. in the rapid achievement of goals with minimal time and energy costs. In the alpha state is involved all the resources of the brain, which lead to enlightenment. Combined into a single unit motivation, goal-task (concentration) and activity (options and ways of solving problems). Revealed the possibilities of your own subconscious mind when in the unity are actively working of the creative potential of the right brain and the iron logic of the left hemisphere. The alpha state promotes the interaction harmony of the individual and productive feedback, i.e., uniting logic and intuition, leads to a high result of design thinking and professional activities.

Designed exercises fast entry into alpha state as the basis of innovative blaze-method of development of professional thinking the in learning designers the design appear in compliance with the harmony of biorhythms work the human brain. Member of New York Academy of Sciences Robert Stone, offers to learn four exercises of entering into the alpha state. Pay attention to the fact, to achieve a quick entry into the creative state of the personality is necessary about a month of daily workouts (Stone, 2006).

Psychologist practicing sleeper-hypnology Irina Belozerskaya, offers to apply exercise, which she calls "the Golden rule one minute." For entry into the alpha state quite one minute that the below brain began to work harmoniously in a creative and logical mode (Belozerskaya, 2016). Synthesis effective exercises for optimally fast entry into the alpha state of the above mentioned researchers, the authors took them as a basis for innovative, blaze-the method of development of professional thinking of students in project activities. First of all, before setting goals, it is recommended to relax and listen to yourself, to your rhythm of the heart. Then switch attention to what is happening in the surrounding world. It could be wind noise, dogs barking, birds singing, car horns, etc. Need to listen to the sounds and imagine what is happening in the environment. This is followed again to return his attention and to putting your mind on yourself and your inner world, on the rhythm of the heartbeat, breathing, zones of tension or relaxation in the body. And again switch back to the environment. Thus, the left analytical hemisphere, when you do not see the logic in what is happening, when there is a certain monotony, is losing interest in what is happening, it passes the control processes of the creative and intuitive right hemisphere of the brain. So there is occurs something condition which is most favorable for the perception of information, for the work imaginatively-creative, volumetric-spatial and design-creative thinking. However, obviously that there is a possibility for one minute log a creative state, the alpha stream. It is further recommended to visualize as whiskey, crown, nape, forehead, are open as the cupboard door, though the picture at everyone can has their own. The next thing it is important to perform is you must reveal yourself as if the fan is revealed or disclosed pine-cone, flower Bud, main thing is to enjoy the feel of disclosure. If this exercise is performed correctly, you turn around, you immediately take a deep breath even and begin to yawn. This breath is called "soul". It is a signal, that you have get entered in the condition alpha rhythm of the brain.

Another important point is the necessity of the awareness of being in the alpha state.

Here it is necessary to focus on the pineal gland (from the Greek. epíphysis – a growth, lump). You need to give yourself installation that you are in the pineal gland or epiphysis. For example, I am be in the epiphysis or I'm be in pineal gland. It was at this time there is a complete loss of consciousness, i.e., terminates work the left hemisphere of the brain and begins to do the job creative right hemisphere. Thus, there is another reality, as said the ancient philosopher Plato.

Since 1970-ies of dozens of research laboratories in the US, England, France, Yugoslavia, and others began to examine the function and morphology of the epiphysis as an activex neuroendocrine organ of the brain. But the epiphysis still remains poorly understood. The modern stage in the study of the epiphysis at rightly can be considered the first step in building original concepts. In Russia Professor pinelog (specialist epiphysis) A.M. Khelimskaya and a group of scientists headed by academician E.I. Chazov intensively studied the values and work of the pineal gland in the human body.

The next step in the application of blaze-method. After entering the alpha state, you must define a goal or define a specific task. In other words, give yourself a precise installation to carry out specific activities. For example, to develop the design of the lamp in five variants under to the bionic shape of the artichoke. And to this end to make a "Blik" (on I.I. Belozerskaya), that is powerful information-wave splash. In psychology, the glare is the flash that will be visualized in 3-D format emanating from the subject of visualization. Visualization can be presented in the form of bright solar flares, or fireworks. Everyone has their own individual ideas about "Blik". The main

thing is to imagine that our body is opened, for example, as scales of the cones and through them are released rays of bright light, in breadth, down, up, in different directions to infinity. Before performing flash is recommended to perform a short breath with under sigh a sharp exhale and to perform the technique "Blic". It should be remembered about the directional of your glance on the pineal gland, that is, be in the alpha state. Your goal becomes to most clearly in your consciousness, if we translate into the language of psycho-emotional state. If the exercises are performed correctly, the body will feel a light wave of resonant vibration, there comes euphoria, and with nothing incomparable bliss. Being in the relaxation-active state, quickly and effectively finder the way solutions to set tasks to achieve both creative and scientific purposes. The authors draw on research and evidence base of the effectiveness of biologically adequate, at the same time relaxation and active method of teaching students, and developed since 1999, proven I.V. Alekseev in the educational process of the University. The results were presented in the monograph and doctoral dissertation (2005) on the development of creative abilities of students to arts and crafts activities, which confirmed the efficiency of the presented method, development of creativity, based on the alpha rhythm work of the brain (Alexeeva, 2005).

An empirical study of the concluding stage of the experiment and the actual data of the comparative analysis, prepared by the authors, prove the effectiveness of the innovative blaze-method of development of professional thinking of students based on the harmonious functioning of the brain in the alpha state.

At the beginning of the experiment, the results of development of professional thinking of students in the field of design, the control group and experimental groups were mainly low level.

Only 4 people in the experimental group of 22 students and 5 of 20 in the control group had the makings to professional design thinking. Thus, using the method of angular conversion Fisher the authors came to the following conclusion that at the beginning of the experiment, the design thinking of students corresponds to the zone of insignificance, the results of the empirical values of φ*=0,537, which is located in the area indicated by shading on the axis of significance of figure 1 and H1 is rejected.

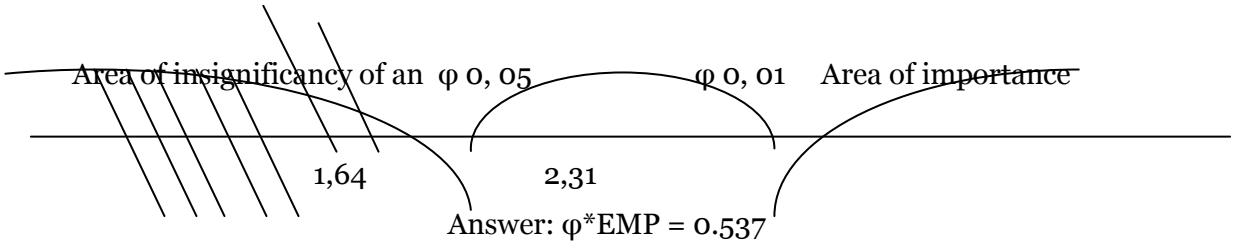

Fig. 1. The Axle of the importance of professional design thinking of students on the lesson to design at the beginning of the experiment.

A control slice in the course of the experiment at the end of the 2nd course showed the effectiveness of the innovative blaze-method in the development of professional design thinking of students. Students 14 people, and this 63.6 % of the experimental group enrolled on Blaise-method when solving the design task, which showed a good level of professionalism of the design projects.

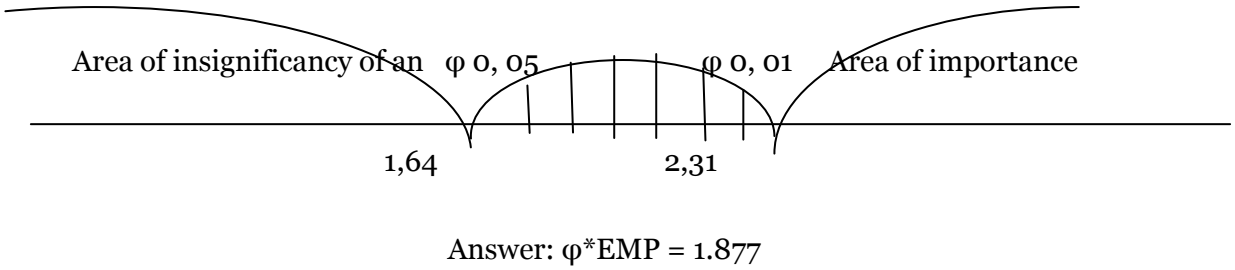

Fig. 2. The axis of the importance of professional design thinking students during the test cut of the pilot study at the lesson design.

In the control group, 7 (35 %) of the 20 who were trained by traditional methods, showed average and high results. From these figures it follows that the empirical value of φ* is in the area of uncertainty and is equal to 1,877, when H_0 is rejected, noted on the axis of significance of figure 2. At the end of the pilot study that students in the control and experimental groups performed final qualification job, to substantiate on the design concept and executed design project. The final project that was exhibited at the defence of graduation qualification work, evaluated according to the criteria noted in table 1.

Table 2. The results of the final phase of the pilot study assessing levels of development of professional design thinking of students in learning design

Group	"There is an effect": the problem is solved	"No effect": the problem is not solved
	Number of test subject	Number of test subject
1 the experimental group 22 person (100 %)	21 (95.5 %)	1 (4.5 %)
2 control group 20 people (100 %)	12 (60 %)	8 (40 %)

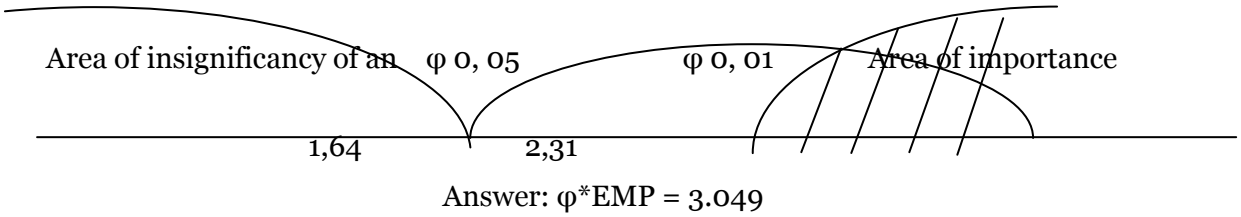

Fig. 3. The axis importance of professional design thinking of the students of the final stage of experimental research at the lesson design.

The results of the final phase of the experiment, at data processing and to identify the empirical values of angular transformation of Fisher's equal 3.049, the value of which is indicated in table 2 and presented in figure 3. Thus, the obtained empirical value of the angular conversion of Fisher's φ* is in the area of significance. In the experiment, the obvious process of the development of professional design thinking of the students, using innovative blaze-method when solving the design task showed the most pronounced qualitative and professional level of design projects.

Thus, the effectiveness of an innovative Blaise – the method of development of professional thinking of students in the field of design proposed by the authors, convincingly demonstrated, as evidenced by the data of the research results by the authors ' criteria (table 1).

The results of experimental studies of the effectiveness of an innovative Blaise – the method of development of professional thinking of students, future designers have convincingly shown in the comparative characteristics of the stages of the development process at the beginning of the experiment, the control slice at the end of the second year of study and at the conclusion of the experiment. This is clearly reflected in the figures of the axes of the significance of professional design thinking of students.

This fact additionally reveals and emphasizes the novelty of this research.

4. The discussion and conclusion

The authors' research confirmed the initial hypothesis about the need to incorporate innovative, blaze-the method of development of professional design thinking of the students in the process of University education.

The results of the study led to the following conclusions.

1. In contemporary world education is changing towards a more holistic harmonious personality, who is fluent in logical and imaginative thinking.
2. Analysing scientific works separate aspects of the problems of innovative methods of development of professional design-thinking of the students, it turned out that was not sufficiently explored of with psycho-pedagogical point of view. One of the methods of solutions presented to the question is revealed in this article that emphasizes scientific and theoretical significance and relevance of the study.
3. The authors performed scientific-theoretical justification of the features of development of professional design-thinking of students and the defined parameters of the evaluation on three main blocks corresponding figuratively-creative, volumetric and spatial, and project-creative thinking.
4. Developed and experimentally tested an innovative, blaze-the method of their development, which is the technology of the output of the personality alpha-level, achieving an alpha state, aimed at the mentality of creative, harmonious brain functioning, development of professional thinking. Determined the value and quality of this blaze-method.
5. Experimentally proved that the basis for the development of professional thinking of students are practical skills of entering the alpha state, in which the students actively the way find solutions to professional, creative and scientific tasks.
6. In the process of solving scientific problems were determined novelty, theoretical significance and practical value of this research, which consist needed for inclusion in the higher education system of modern innovative psycho-pedagogical Blaise-method of development of professional thinking of the individual in the field of design.
7. The results of testing prove conclusively the effectiveness of an innovative Blaise-method of development of professional thinking of the students. This stresses the novelty of the carried-out work and reiterates the confirms needs for implementation to the system of higher education of student designers the present blaze-method.
8. In General, this study has important practical significance. On its basis it is possible to develop scientific-methodical recommendations for students and teachers of universities in training future designers. This will contribute to the dynamics of qualitative growth of development of professional thinking of the students. The results, outlined in this article, can be the basis for further research in the development of professional design thinking of students.
9. In the study, solved largest pedagogical task is the development of professional thinking of the students, which is of great high social value. Contained in the article theoretical positions, conclusions and practical recommendations create the preconditions for the pedagogical of scientific support for improving the professional thinking of future designers in modern conditions of higher education.

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