

The use of modern ICT to provide students' self-realization in russian higher school

Uso de las TIC para proporcionar la autorrealización de estudiantes de la escuela superior rusa

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ABSTRACT:

This article examines the psychological and educational role of information-communication technologies (ICT) in teaching students in Russian higher school. It establishes resources of these technologies in the possibility to stimulate the manifestation of various forms of students' self-realization in the educational process. The authors reveal a subjective-significant conditions of successful self-realization in university learning. From a phenomenological perspective, the research revealed attributive signs and modalities of students' self-realization. Summarizing the obtained data, the authors disclosed specific functions of modern ICT in the framework of a two-contour model, which activate these conditions and modalities in the course of learning. The first contour includes the actual functions ICT aimed at activating the students' learning opportunities. The second contour of latent functions ICT hides a more psychological content and stimulates the internal opportunities for self-realization in learning. Together both contours of ICT functions form the holistic informational-educational environment for self-realizations of students in the learning process.

Keywords: higher education informatization, students' self-realization, conditions and modalities of

RESUMEN:

Este artículo examina el papel psicológico y educativo de las tecnologías de información y comunicación (TIC) en la enseñanza de estudiantes en la escuela superior rusa. Establece los recursos de estas tecnologías en la posibilidad de estimular la manifestación de diversas formas de autorrealización de los estudiantes en el proceso educativo. Los autores revelan unas condiciones subjetivas significativas de autorrealización exitosa en el aprendizaje universitario. Desde una perspectiva fenomenológica, la investigación reveló signos atributivos y modalidades de autorrealización de los estudiantes. Resumiendo los datos obtenidos, los autores revelaron funciones específicas de las TIC modernas en el marco de un modelo de dos contornos, que activan estas condiciones y modalidades en el curso del aprendizaje. El primer contorno incluye las funciones actuales TIC destinadas a activar las oportunidades de aprendizaje de los estudiantes. El segundo contorno de las funciones latentes de las TIC oculta un contenido más psicológico y estimula las oportunidades internas de autorrealización en el aprendizaje. Juntos, ambos contornos de funciones de las TIC forman el entorno holístico informativo-educativo para la autorrealización de los estudiantes en el proceso de

1. Introduction

The widespread and global penetration of new generation of information and communication technologies (ICT) has become today the leading mainstream in the development of modern society, including higher education (Bowen, 2013). More and more teachers and scientists clearly realize that reliance on digital tools and technologies in teaching gives more chances for broadening the horizons of student development and improving the effectiveness of education, teaching and training than all the previously available teaching technologies, from a blackboard to TV (Daniel, 2012; Thomas, 2011).

Therefore, it is no coincidence that the use of ICT in various areas of higher education is now very deep and large-scale. As a consequence, however, a number of new humanitarian problems arise that have been for a long time warned by prominent modern thinkers (Castells, 1998). And first of all, these are issues that concern the transformation of consciousness and the entire structure of cognitive activity of students under the influence of modern ICT (Phillips, 2005).

The education potential of modern ICTs, like other teaching tools, are fully disclosed and implemented when they use as organic support for the development of students' learning opportunities and their personal resources (Jonassen & Driscoll, 2004).

These technologies themselves are not universal means of solving all problems in education, and there are specific difficulties related to their implementation in the higher school (Rab, 2009). As experts note, these technologies can generate various risks in the training of students. The majority of these risks are caused by the mechanical application of the latest ICTs in the learning practice without it didactic adaptation, on the one hand, and philosophical rethinking of the educational process itself on the other hand (Becker, 2000; Bowen, 2013; Cox, et al., 2003). It is obvious that if digital technologies and resources are used in education along the lines of the traditional explanatory-illustrative methodology, then all the flaws in this methodology will grow exponentially, and the education process will be truncated to information loading of consciousness without development of thought structures and creative activity of the personality (Shutenko, 2011). Besides, there is also a danger of depreciating the teacher's activity, whose work can be reduced to banal maintenance of modern ICT during classes (Scheuermann & Pedró, 2009).

One of the key problems of traditional teaching is that the teacher needs to form a non-stop educational process in discrete and time-limited classes he must fully involve the personality of a student who would be able to find the best way of professional and life self-actualization (Sitarov & Shutenko, 2015). Various innovations and educational reforms sought to expand didactic space and time in order to release the learning process from the narrow boundaries of classes into the sphere of self-sustained work of students for better organization their academic development outside the curriculum. However, these attempts used to have very modest results (Jonassen & Driscoll, 2004).

Now we have a real opportunity to solve this problem by attracting a new generation of ICT and online-learning based on the use of Internet network resources (Bartley & Golek, 2004; Hoic-Bozic, Mornar, & Boticki, 2009; Osguthorpe & Graham, 2003; Gratton-Lavoie & Stanley, 2009; Lorenzetti, 2013). The main excellence of the newest ICT is that they open the opportunity to remotely manage the education process, provide a student with all necessary teaching information, tutorials, communications and stimulate his high personal involvement and activity of self-study (Bates, 2011; Bennett et al, 2007; Boettcher & Conrad, 2010).

In our opinion, the main task of ICT applying is to provide students' self-realization during university training (Shutenko, 2015). There is no doubt that we can assess the effectiveness of university education in terms of the scale and depth of students' realization of their personal strengths and their concern and involvement in the process of training, apart from

formal indices of academic performance and attendance (Shutenko, 2012). Therefore, modern ICT can have a significant impact both on improving the quality of higher education, and on expanding opportunities for personalization of learning and creating new conditions for revealing psychological abilities and resources of each student (Robert, 2007).

2. Methodology

2.1. Conceptual framework

The concept of self-realization is actively used and developed by scientists from different spheres of humanitarian knowledge during the last half-century. In addressing this problematic three methodological levels – philosophical, social and psychological – are clearly separated. In a broad palette of studies on the problem of self-realization, we can trace the three root domains of its initial scientific interpretation: potentiality, existential and transcendental.

Potentiality domain was given in science by humanistic psychology (A. Maslow, C. Rogers, G. Allport et al.), it considers self-realization as expression of the *self*, which develops embedded in its potencies (Maslow, 1987). The well-known theory of autopoiesis explaining the human self-reproduction by his nature 'autopoietic organization' offers the same potentiality principle (Maturana & Varela, 1980). A similar principle of preformation is largely inherent in different cognitivist and gestalt theories about the person's self-development and self-improvement.

Existential domain explains self-realization less by some essence presence than by exactly the plan of existence. The existential vector in philosophy and culture (J.-P. Sartre, R. May, M. Boss et al.) maintains the existence (Dasein) as an act of conscious choice by individual, which is thrown into the world. The existence precedes the essence, and the person is just what he does of himself (Sartre, 1946).

Transcendental domain represents self-realization as the process of one's own "Ego" overcoming, the individual's coming out (transcends) of his limitation by an actual situation bounds in the course of the moral search, the dignity and the sense of life finding (Gewirth, 1998). The self-realization understanding transcendental vector (I. Kant, G. Hegel, V. Frankl) directs it to higher, moral values and senses.

The growth of research in the sphere of self-realization was largely promoted by the ideas of M. Weber's understanding sociology, humanistic psychology (E. Fromm, G.W. Allport, K. Goldstein, A. Angyal, A. Maslow, G. Murphy, C. Rogers etc.); the theory of autopoiesis (H.R. Maturana, F. Varela), the ecological theory of human development of U. Bronfenbrenner, the field theory and concept of the life space by K. Lewin, and others.

In each of these traditions and approaches, self-realization is viewed as the most important ontological condition and attribute of a fully functioning personality (Rogers, 1961).

We carried out our research on the basis of the general provision that self-realization is result of productive socialization (Young, 2013), which is started by the internal ontological aspiration for *self-actualization* (Maslow, 1987). Being the leading life motivator in the university years, the desire for self-actualization psychologically inspires and mobilizes the young person, activates his abilities and internal resources in order to express himself, to receive a valuable life experience, to prove himself in learning, science, society, business, culture and so on (Stipek, 1993). When we are dealing with the process and the phenomenon of self-realization of students in university education, it is necessary to clearly understand that this gives us the most reliable indicator of their successful personal and professional development, and at the same time acts as a humanitarian criterion for the productivity and effectiveness of the educational process in the university in general (Tomlinson, 1993). In planning our research, we proceeded from the fact that the process of students' self-realization is caused by such a construction of educational practice in the university that ensures the full socio-cultural development of students as capable and competent personalities (Gasset, 1999).

2.2. Method

Our study was based on the *method of socio-cultural analysis*. This method allows us to study the issues of higher school informatization in terms of development and cultural growth of the student's personality. It implies using information technologies as ways to reveal and realize the essential forces of students who absorb particular historical forms of sociocultural relationships (Leontiev, 1997). Being the quintessence of knowledge, abilities, skills, talents, etc., conditioned by interests, strivings, expectations and meanings, these essential forces are formed when an individual acquires the experience of culture through the mechanisms of desobjectivation and objectivation of this experience in social practice (Shutenko, 2015).

The research object of our scientific work was the digital educational environment as the student youth's self-realization sphere. The key problem of the study was to determine students' perceptions about their capabilities and conditions for self-realization at the university and to identify the teaching functions of ICT that stimulate these circumstances.

Our general research *hypothesis* was that ensuring students' self-realization in the process of informatization education (along with the availability of teaching abilities and favorable learning circumstances) depends on the arrangement of information and communication environment of learning. In this environment, students can develop their professional and life path by mastering various practices and information technologies for self-development (Xu, et al., 2014). Obviously, successful self-realization of students largely depends now on the existence of sustainable and adequate information technology "corridor of possibilities", which is in line with basic cultural norms and values transmitted in educational process (Gewirth, 1998).

One of the important problems of higher school informatization is to connect the potentials of modern ICT with the process of students' self-realization in education. Therefore, the main goal of the research is to define the key resources of information and communication technologies that stimulate the manifestation of various forms and modalities of students' self-realization.

To solve the set goal, we have conducted a research work consisting of three stages.

The first stage has been devoted to revealing subjectively significant conditions of students' self-realization in university training.

The second stage consisted in revealing attributive and modal features of students' self-realization.

The third stage has involved the generalization of the obtained data about the conditions and forms of self-realization manifestation of students and modeling appropriate learning functions of information technologies on this basis.

During the trial pilot interview, select interviews and focus groups, the most important personality-significant conditions for self-realization of students in a modern university were identified.

The study was carried out in 2016-2017 academic year, 502 students in higher training from four different Belgorod universities took part in it: technological university, humanitarian and economic universities, the MIA higher school of law.

To collect empirical data and their conceptual generalization, we applied method of thesaurus analysis and method of modeling.

The *method of thesaurus analysis* is based on the content-analysis of students' utterances about the conditions for their self-realization with their subsequent sense-identification through focus-groups and semantic processing of data. Received answers and opinions undergo the primary content-analysis. On this basis, we received an array of thematic expressive statements that were centered around significant topics of student life. Then we applied the actual thesaurus processing of these topics. This procedure consisted in determining the personal values and contexts that hid behind these themes and appeared in its. As a result of such an analysis we have omitted insubstantial and determine stable

subjectively significant conditions for students' self-realization.

The *method of modeling* presupposed the systematization and identification of learning resources and ICT capabilities that most closely corresponded to the conditions and modalities of student self-realization in university education. As a result of this construction, a schematic model of learning functions of ICT was obtained as a program image of the competent application of ICT in the educational process.

3. Results

3.1. Subjectively significant conditions of students' self-realization

In the received array of answers, we selected units of information with significant content, which were then isolated, summarized, analyzed and grouped into related thematic clusters of similar contexts and sense estimations, which are identical in their narrative and subject line. In the result of the primary content analysis of this general array of pupils' answers, we identified nine semantic "nests" reflecting different aspects and possibilities of self-realization in learning. More advanced semantic processing and the thesaurus analysis (Lukov Val. & Lukov Vl., 2004) of received answers categories consisted in their clusterization based on more versatile coupling of related lexical and thematic-expressive constructions. This allowed us enlarging and consolidating different answers categories into three overall semantic clusters, which served as a basis for the formulation of, accordingly, three significant conditions of students' self-realization.

The *first semantic group* consisted of connotations, opinions and assessments reflecting the students' direct attitude to the educational process, academic activities at the university, and the significance of this activity for themselves. This group includes such assessments of students as: desire to study at the chosen university; satisfaction by education; personal significance and value of education; absorption of studying and education in general; desire to resemble teachers and to take a pattern by them; tendency to know and master the future profession deeper etc.

In *the second group* of estimations, we selected the statements and assessments of students in which the extent and depth of the realization of their personal potential was manifested in the course of university education (inclinations, individual features, properties, abilities, experience, talents etc.) were reflected. In this group, the following values were selected: students' inner potential activation, their abilities and talents development; intensive self-knowledge and perfection in the course of studying at the university; an increase in the personally significant level of usefulness of training at the university; the possibility of approaching cherished goals and dreams through training at the university; the presence of social lift functions in university education; support of success in learning, activation of strengths in the learning process; universal self-expression and self-manifestation in the university; stimulation of personal efforts in learning, and so on.

The structure of *the third group* was joined by assessments and opinions, which showed the importance of permanent contacts and social integration in the process of university education. According to students' answers, it is impossible to realize oneself as a person without a close, friendly attitude and joint communication. Such opinions were expressed in the following forms of answers: presence of the intensive transpersonal interaction in the university life; manifestation of mutual assistance and support in the student environment; the possibility of social affinity and solidarity in the student community; manifestation of the help and care of the university; assistance from the university in solving the problems of students; a stable atmosphere of trust and general respect; depth and strength of friendly compounds; informal functioning of student communities in university life; good leisure of students and quality of life, maintenance of care, participation, etc.

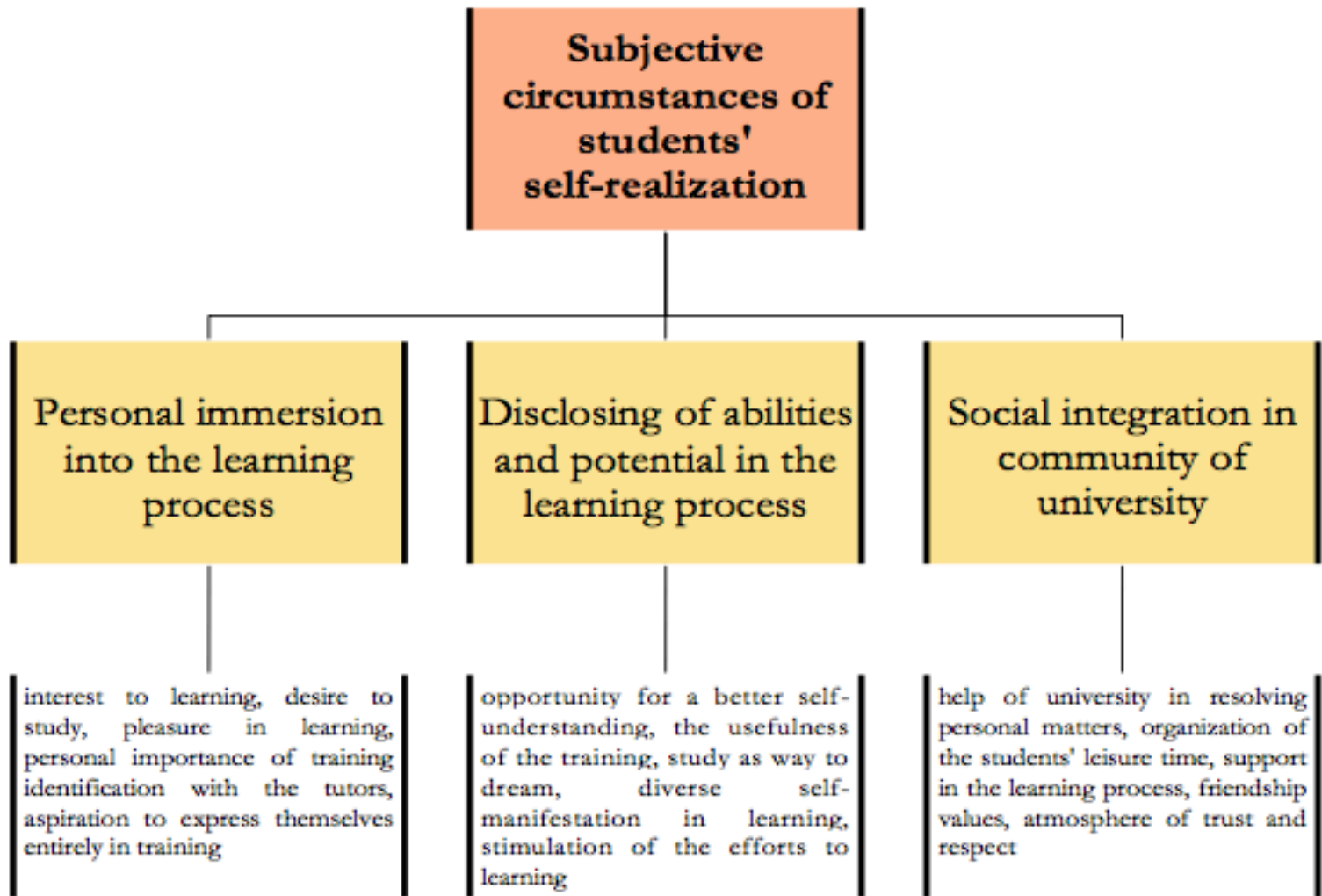
As a result of semantic clustering of the replies received the following three main conditions of students' self-realization was determined:

- 1) the personal immersion into the learning process at the university;

- 2) the disclosing of the personal capacities in the learning process;
- 3) social integration in the learning process.

In figure 1 the content of the conditions of the self-realization, which was established on the basis of the analysis of the opinion of students.

Figure 1
Educational conditions of students' self-realization in University



The first condition means *personal involvement in the course of study*, which implies an attitude toward learning and working in the university as the leading cause in the current period of the life journey. This condition is manifested as the interest and satisfaction of the training process in university by the students, as recognition of the value of the chosen specialty, as the desire to get a new career and to achieve the success in the work, as well as their high psychological involvement into the research and innovative activity. This immersion of students is also related to their desire to be like professors and professionals, with their desire to get a good career and conscientiousness, wholly mastering competences in educational, scientific and extracurricular spheres of activity.

The second condition - *the realization of capacities and internal potential* - means the disclosure of the internal forces of students, their opportunities for better self-knowledge and self-development in education, the fulfillment of the capabilities and talents. For the full self-realization of students, first of all, they need to diversify disclosure of their internal qualities and resources, it is necessary to understand themselves as successful and effective individuals, stimulating their desires and efforts in education, research and innovation work, the consciousness of the obvious usefulness of studying at the university and the possibilities for a more complete personal growth and self-expression as a productive person (Guile & Griffiths, 2001).

The third condition of the students' self-realization – *social integration into in the learning process* – means the existence of the social attention to the student, the help of university in the solving not only of the educational, research, employment problems, but also the personal ones, the impression of community in a corporate environment, the existence of the atmosphere of trust, common understanding, empathy and support, the presence of the close friendship, sympathy, respect and so on (Shutenko, 2015).

In general, in our opinion, the subjectively significant ideas of students about the

opportunities and conditions for their self-realization in education make it possible to single out the important psychological tasks of university practice. First, it is strengthening and stimulating the universal active capacities of students; secondly, it is a full-fledged activity, purposeful and reasonable actions in stimulating the educational sphere; thirdly, it is to ensure the implementation of this activity a broad social context that plays the role of a social filter, and at the same time the catalyst of this activity.

3.2. Attributive and modal signs of students' self-realization

Our studies have established clear signs and variants of manifestations of students' self-realization in the process of university training (Shutenko, 2015). We have generalized the data and, therefore, formulated some typical behavior and relationship attitudes treated as specific for the most successful students in the university by the students and professors we have interviewed. We have denoted these peculiarities and traits as *attributive signs* of self-realization and identified them as:

- the expression of personal parties in training, the ability to manifest oneself and to discover their strengths;
- independence of educational activity, self-management and emphasis on one's internal potential in training;
- achievement of subjectively significant result in studying, the desire and possibility to be successful;
- active studying, manifestation of activity in the educational process;
- meaningfulness of education actions, carrying out meaning relations in studying;
- creative element in learning, the ability to experiment, to open new knowledge, ways of cognition and activities;
- multi-faceted learning, flexibility and variability of educational forms of cognitive activity during university training;
- internal responsibility, conscious approach to classes, readiness to self-project the university training;
- ambition in studying, a life goal and its achievement through studying in the university;
- sustainable interest to study, personal interest in training, the pursuit of learning more;
- personal efforts in studying, ability to overcome difficulties and obstacles in training;
- cooperation in studying, dialogue communication, the pursuit of consent and trust, communication culture.

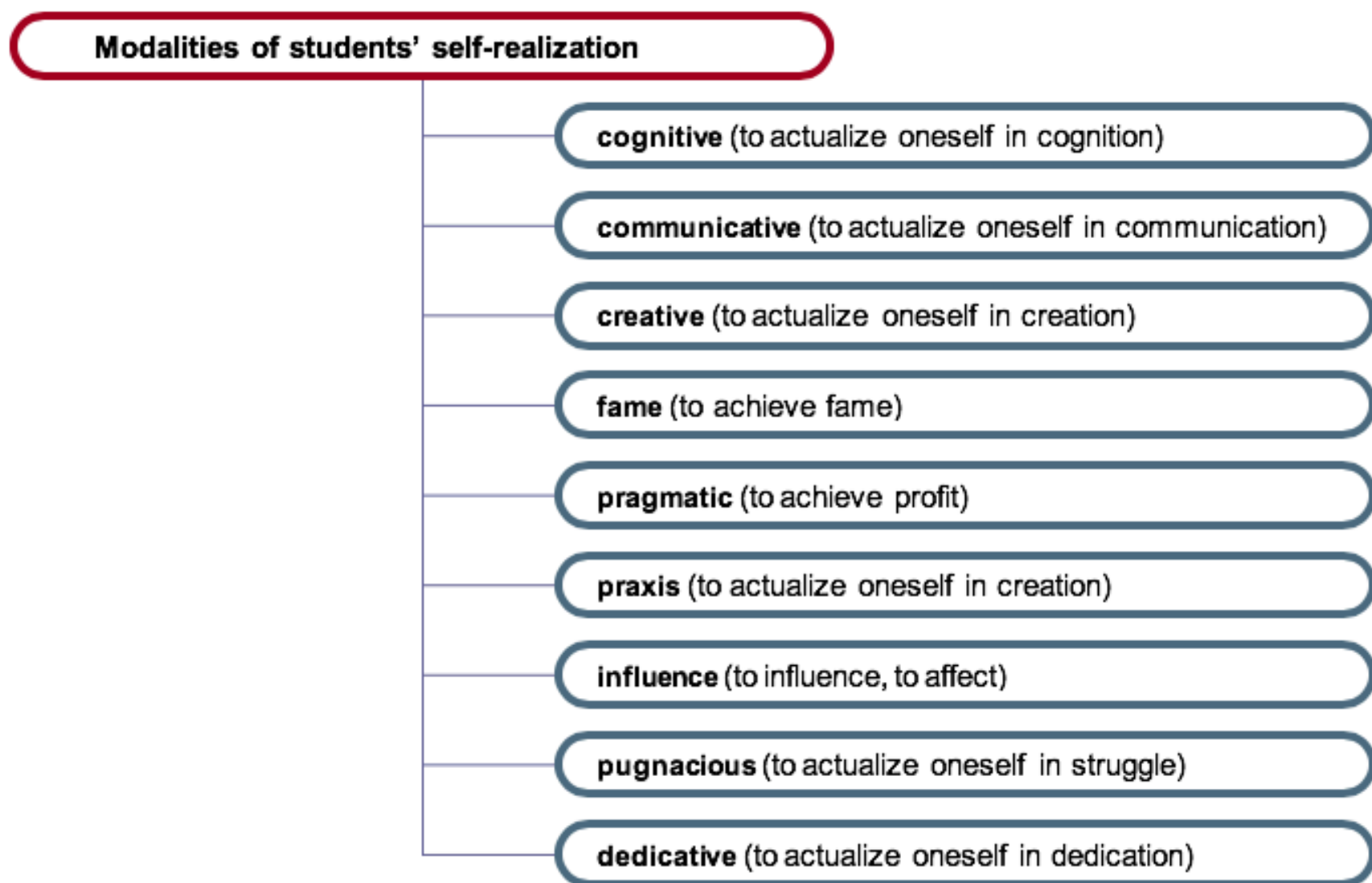
In addition to attributive properties, we also fixed some common forms of manifestation of the students' self and identified them as the modalities of self-realization. These modalities reflect sustainable intentions and ways for students to reveal themselves in various spheres of university life. The figure 2 represents the list of identified modalities.

The list included the following modalities among the most clear-cut variants of students' self-realization:

- cognitive modality is associated with the pursuit of cognition and knowledge, and cognitive activity;
- communicative modality reflects the forms of self-expression and self-manifestation in constant communications, relations, interaction;
- creative modality reflects a creative approach to the manifestation of the self, associated with sublimated and metaphorical forms of activity;
- fame modality reflects the public vector of self-realization associated with the pursuit of fame;
- pragmatic modality links self-realization to profitable and useful activity bringing some dividends;
- praxis modality expresses the actively-productive aspect of self-realization, oriented towards practical work;
- influence modality means self-realization through the provision of constant influence and pressure on others;
- pugnacious modality means to reveal oneself in struggle and overcoming difficulties;

- dedicative modality implies total self-denial, volunteer service, and devotion oneself entirely to something.

Figure 2
Modal signs of students' self-realization in university training



The study has also revealed other modalities of students' self-realization including heroic, romantic, victim etc. However, these variants are not represented in our study, since they are not associated with educational practice in students' answers and mostly related to personal life, relationships, household etc.

Introducing new ICTs in the field of education, one must understand and take into account the main attributes and modalities of student self-realization, as they conceal invisible internal tendencies of development and forms of applying ICT from the viewpoint of activation and facilitation of personal ways and methods of acquiring the content of training and cultural experience in the university education (Becker, 2000).

In general, if universities adopt the described manifestations of self-realization as conditions for ICT implementation, this will allow significantly increase the motivational resource and attractiveness of the study-practical activity among students and also to raise the level of their activity in the learning process.

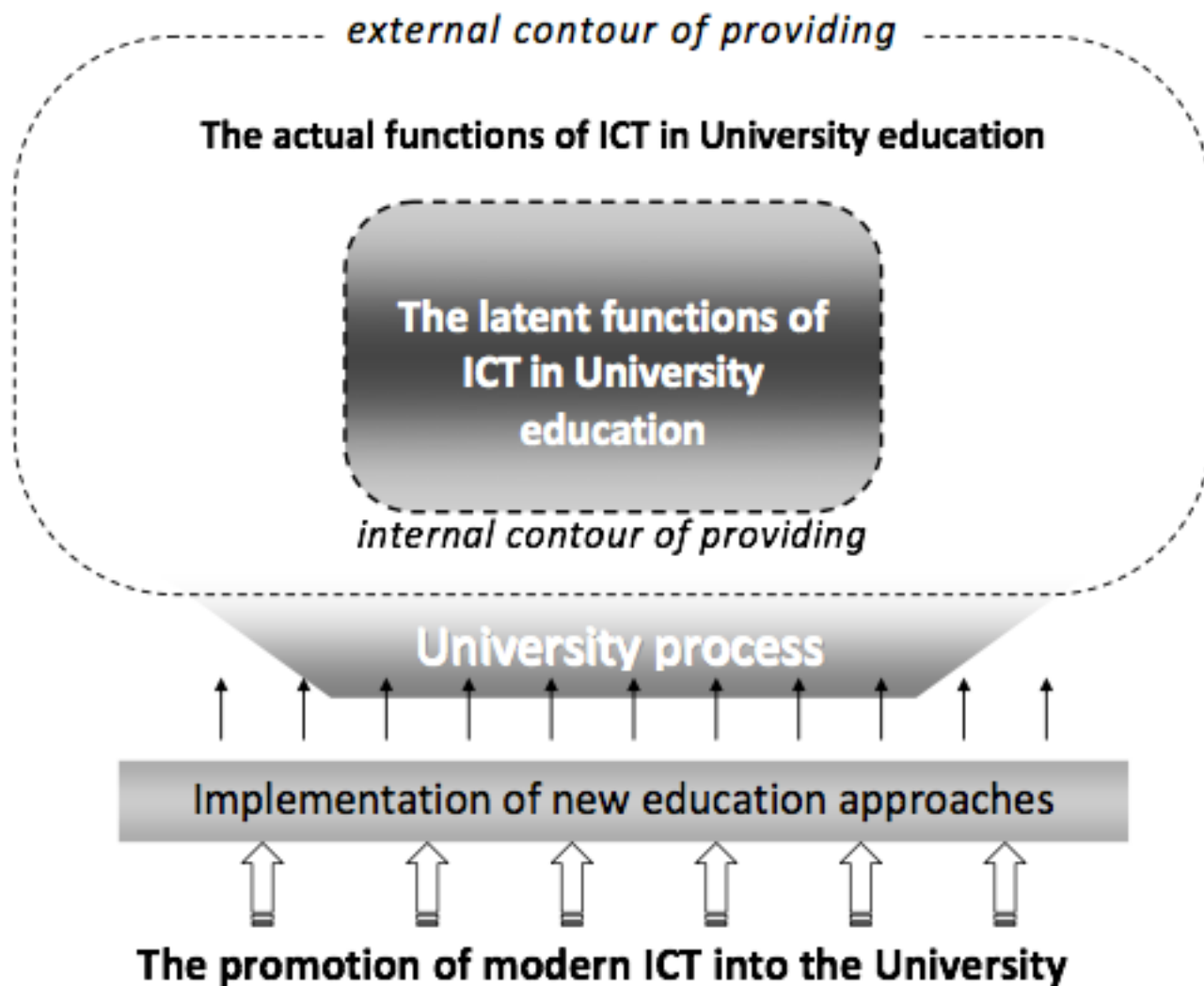
3.3. The personal-centered model of ICT learning functions

We consider the above-mentioned specifics of self-realization as important for ICT use in educational process, as implementation of these technologies should be whole and ensure the real progress of the educational system to the design of an individual trajectory of university training. To solve this task successfully, we believe it necessary to define and activate appropriate resources and functions of ICT applying in higher school.

We summarized the existing practice and different approaches to the application of new ICTs in the learning process and attempted to catalog and further classify the functions of ICT from the point of view of its impact on the most important structures of cognitive and learning activities of students. This classification is represented in the form of two-contour model schematically reflected in the figure 3.

Figure 3

Construction of a two contour model of ICT learning functions

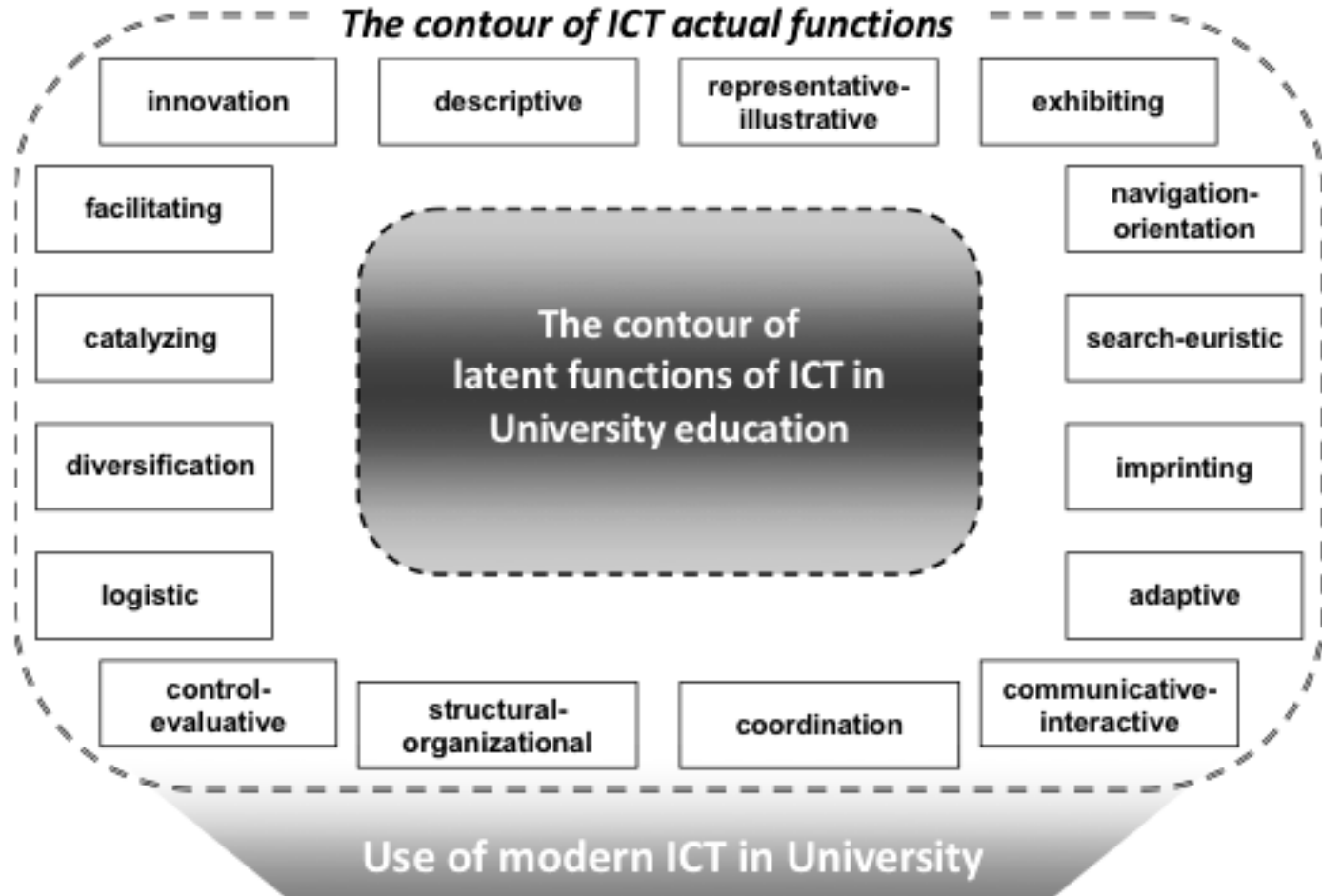


As shown at the figure 3, the possibilities of modern ICT in the development of students can be represented in the framework of two groups of it learning functions – actual and latent. Below describe briefly the external and internal contours of this model.

The first contour combines *the actual functions* of new ICTs in education. This group of ICT opportunities has an obvious, coherent character, as if lying on the surface and closely related to the influence of ICT on the increase efficiency of education process. These functions can be directly deployed and implemented in the educational process in order to improve the quality of education and self-realization of students. The external contour involves the following ICT functions (see figure 4).

Figure 4

The external contour of ICT learning functions



The descriptive function of new ICTs aims to provide a more complete, more comprehensive and diverse description of the educational material and the content of the training that will be acquired by students during the course of training. The use of ICT in teaching allows including various forms of presentation of educational material, and not only verbal, but primarily visual and dynamic.

The representative-illustrative function follows from the previous function and means advanced ways of presenting educational content in the form of various super-visual and multifaceted models that can be reproduced with the help of new ICTs and significantly increase and enlarge the ability to perceive and acquire the necessary knowledge by students, reducing the time and human costs in education.

The exhibiting function of new ICTs is directly related to descriptive and representative functions and reflects the expansion of the possibility of a complete, reliable presentation of the teaching material in the form of expositional research conducted with the help of virtual reality, 3-D technologies and other newest digital devices.

The navigation-orientation function of ICTs assumes the deployment of a full-scale orientation activity in which students build a fast access route and trajectory of advancement in information flows and networks to obtain the necessary knowledge and information for the education and cognition purposes.

The search heuristic function is obtained and related to the navigation potential of ICT and means the ability to quickly and completely search for the necessary information, discover new connections and links in the information environment using ICT, and to transfer from the unknown to the known.

The imprinting function of modern ICTs provides the opportunity to provide a coherent and comprehensive information impact on the formation of clear and stable images and structures without the initial preparation of students, when necessary information is imprinted ready-made with minimal efforts of learners.

Adaptive function is the greater flexibility and adaptability of modern ICT in customizing and adjusting their procedures, settings, options, interfaces and platforms etc. to various needs and educational requests of students.

Communicative-interactive function expresses one of the powerful advantages of the latest ICTs that offer an incredibly large and diverse range of contacts and interactions between teachers and students in the information and educational environment in various formats and modes, as well as providing different levels and ways of communicating with educational

and professional goals.

The coordination function opens the possibility of managing and coordinating the actions of information flows and strata in the logic of access to education using modern ICTs, and also to coordinate their actions in the information space with actions of other subjects within the framework of addressing educational tasks.

The structural-organizational function of ICT is linked to the previous one and is realized as an opportunity to structuring and collecting various fragmented and scattered information from different sources in an accessible educational design to learn and use it during the professional training in the university.

The control-evaluative function of modern ICTs is aimed at expanding the parameters and continuity of monitoring and evaluating the implementation of teaching, cognitive and other actions of students, as well as the possibility of their self-monitoring and tracking of the correct performance of learning tasks.

Logistic function allows to provide students educational information using the capabilities of modern ICT by creating transmission channels, delivering, transporting, storing, distributing, sorting and obtaining the necessary data, knowledge and all the information-education bulk of data in the framework of educational-professional tasks.

Diversification function of ICT presupposes providing the necessary set of methods, modes, formats, volumes and mechanisms for receiving learning services by students using new ICTs in university practice.

Catalyzing function means the overall ability of new ICTs in education, which implies strengthening and better informing about academic progress and information about students and accelerating all stages and procedures of training.

The facilitating function of ICTs summarizes the effects of the above functions and is to broadly promote and realize teaching opportunities, as well as the learning opportunities of students through using these technologies.

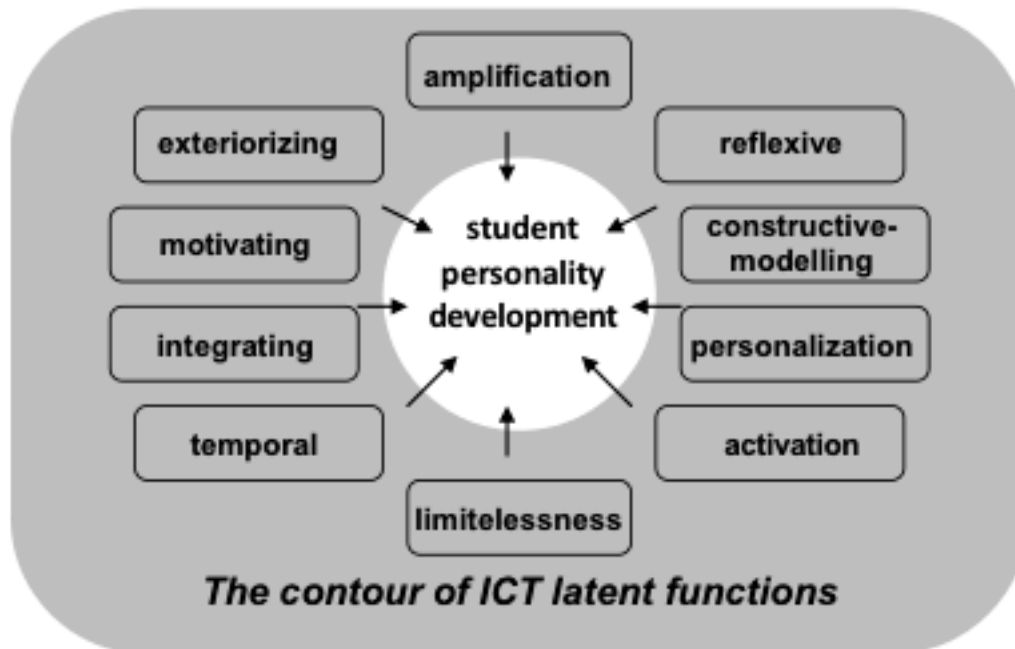
The innovative function of ICT is manifested in enriching and updating the learning process through the introduction of new approaches and methods of providing academic and vocational training, student participation in scientific and innovative activities, as well as updating the entire configuration and space of educational communications in higher school.

The group of *latent functions* of ICT in higher education is formed the second contour of represented model (see Figure 5). We are talking about hidden and unobvious opportunities of modern ICT, which require great efforts and skill from the subjects of educational activity, and which can significantly improve the quality of instruction and the opportunities for self-realization of students in the university education. This contour has a more psychological content and includes the following ICT functions.

Figure 5

The internal contour of ICT learning functions

The actual functions of ICT in University education



Use of modern ICT in University

The reflexive function of using ICT is to provide students with a wide range of different feedback on the course, the quality and effectiveness of their advancement during the acquisition of the training course and professional and scientific activities using modern ICT.

The constructive-modeling function of ICTs lies in the broader possibilities to make them the basis for constructing information models, programs, projects and other constructs that allow better to present educational content and help students more effectively perform various academic tasks and research work at the university.

The function of personification means the possibility of implementing a personal approach to learning on the basis of new ICTs, taking into account the individual characteristics of students, their capacities, preferences, inclinations and expectations; besides the application of ICT in education opens a real perspective of creating individual trajectory of student's training and providing appropriate mode, format and methods of training.

The activating function is closely related to the previous function and means the opportunity to raise the parties and aspects of the students' learning and activities at the university from the point of view of their learning and self-realization with the use of ICT, the possibility of their social self-affirmation and the perfection of individual qualities and abilities during university studies.

The limitlessness function of new ICTs in education expresses its unique power to overcome the limitations of space for the implementation of the educational process. Education based on ICT allows actually expanding the educational space and bringing the learning process beyond the limits of auditory lessons. In addition, ICTs allow teachers and students from different countries and the world to join educational communities and provide an open learning format in the context of globalization.

The temporal function of ICT application is aimed at changing the time frames of the learning process due to the intensification of the communication capabilities of new ICT for distance learning; these technologies extend time resources for more thorough and continuous training of students.

The integration function is realized as an opportunity to use new ICTs for broad involvement of students with special educational needs, including learners with disabilities in common space of vocational training at the university.

The motivational function is aimed at increasing the motivation of students to learn by using

modern ICTs and orienting ICTs to the real and potential needs of students. Masterful use of ICTs in education increases the desire to learn and inspires students who discover new perspectives for self-development and chances of self-realization in learning.

The *exteriorization function* of new ICTs in education consists in revealing the personal resources and internal forces of students, and the possibility of their multifaceted manifestation in education through technologies of personal constructing and projecting the elements of their activity during university training.

The *amplifying function* of the work of ICT in higher education means a general increase of the learning effect of university training due to the expanded range of opportunities for students to successfully master the course of study and realize themselves.

4. Conclusions

Within the framework of the research carried out, we proceeded from the assumption that the process of ICT implementation in university education should provide human significant conditions for the development of the essential forces of students, their creative abilities and intellectual resources. The results of our research strengthened our conviction that the process of self-realization of students in university education indicates, on the one hand, the main line of growth for the future personality of a specialist, one's successful development and self-determination. On the other hand, it can serve as an internal indicator of the effectiveness of university education and the existential marker of the psychological growth of students in the process of vocational training.

The presented set of relevant functions concerning modern ICT is aimed at the provision of student's self-realization, covering the main conditions for their personal development in education shown by us.

The results of the research showed that there are the following subjectively important conditions for self-realization of students in university education. First, the ego-inclusion in education, a deep immersion of students in the learning process, strong identification with the professors and a trend towards harmonious self-development in university education. Secondly, it is the realization of abilities in education. Thirdly, it is students' social integration, the confidence and respect atmosphere.

The research revealed the need to use modern ICT in university educational process as stimulators for students' self-realization. The performed researches allowed formulating the personal-focused model of ICT use at the higher school, which is built from two contours of learning functions – actual and latent. Thus, the presented model is intended to provide conditions for student self-realization by revealing the teaching and psychological functions of modern ICTs in university education. Obviously, the implementation of the new technologies in education does not guarantee that these functions will be achieved automatically and needs large efforts and competence from the participants of educational process who consciously carry out a partner subject-to-subject paradigm of training. In this case, the application of modern ICTs can lead to the progress in training, and the described functions of ICT can serve as humanitarian criteria of the efficiency of using latest technologies in the higher school.

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