

PSYCHOLOGICAL IMPACT OF DISTANCE EDUCATION TECHNOLOGIES IN STUDENTS' PERSONAL DEVELOPMENT

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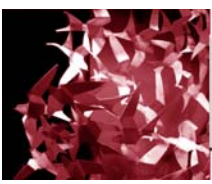
ABSTRACT

Higher education has experienced significant developments for the last few decades, especially distance higher education. This rapid growth is based on the use of modern information and communication technologies (ICTs). There are a good number of studies on psychological and educational aspects of the development and use of ICTs in higher education. Moreover, there are other studies on psychological and pedagogical aspects of the educational process at the university through the use of distance learning technologies. This article is focused on the analysis of relationship between distance education technologies and the necessity of students' subjective learning process. A research has been conducted, and some personality traits of students are discussed on the background of distance education.

Keywords: distance education, Internet technologies, psychological and pedagogical aspects of ICTs, self-regulation, self-actualization, and achievement motivation

It is more than evident that the world community is passing through an important historical period of transition from the industrial to the post-industrial society, which is often considered as an information age. As we are living in the age of Information and technology, every sphere of our modern life has been affected by it. The concept of education has changed dramatically for the last couple of decades and information and communication technologies (ICTs) have played an active role in the rapid development of higher education, more specifically distance education.

The paradigm shift of education in the information society is connected to free access to information by the majority of the population in developed countries and the increasing role of the per-



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sonality traits of individuals in the process of acquiring a certain social status. This new paradigm of development of information and communication technologies has established entirely new conditions for the handling of information in the education system.

Distance education is dedicated to the creation of favorable conditions for students acquiring knowledge corresponding to their chosen profession for the development and manifestation of creative individuality, moral and intellectual qualities.

The necessity of implementation of distance education is now widely recognized in almost all universities in Russia and the world. Majority of the Russian universities have already completed the first stage of equipping with computers, creating local area network, and connecting to the global information network after that they are facing the question of how to apply these in distance education and which available educational materials should still be integrated. These questions are answered differently by different institutions, which are due to the lack of a unified pedagogical approach to distance education.

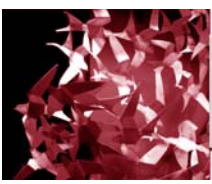
Distance education (DE) - is an integrated form of education based on self-regulation of students to study specially designed learning materials by the use of modern and traditional information technologies. Distance education can be characterized in the following ways:

- existence of teacher and student, and at least, the existence of an agreement between them;
- spatial separation of teacher and the student;
- spatial separation of the student and the institution;
- continuous learning;
- interaction of student and learning materials;
- specially designed learning materials (Андреев [Andreyev], Солдаткин [Soldatkin], 1999)

The analysis of the literature on the subject matter has shown that the psychological foundations of development and implementation of information and communication technologies including distance learning technologies are not yet developed and still in the process of formation. Several decades ago experts have started to pay more attention to this subject, but only individual aspects of the issue were examined in their study: psycho-pedagogical problems of computerization, inter-relationship between the participants of the educational process, new aspects of "human-machine"; psychological problems arising in the process of distance education, especially perception, motivation sphere of educational activities of students and the use of copyrighted tests of Jackson, Garbuzova, Senin; the problem of psycho-cognitive barriers; cognitive approach to learning; emotional factor of perception about the educational material.

The widespread implementation of computer technology in our lives has many psychological consequences. Russian and foreign literatures distinguish the following psychological phenomena related to human learning of new information technologies: personification, "computer animation", when the computer is considered as a living organism, the need for "communication" with the computer and the unique features of such communication, for example, the need for anthropomorphic interface and emotive logic, various forms of computer anxiety, responsibility of the creators of software for the consequences of it's use. Several researchers consider computer technology as an invasion into the inner world of a person, giving rise to some existential crisis for users which are accompanied by cognitive and emotional disorders. This can lead to review of one's value system, attitude towards the universe and one's position in it.

Among the positive psychological characteristics of people with many years of contact with the computer are persistence, persistence in achieving goals, independence, a tendency to make decisions based on their own criteria, disregard social norms, high intellect, inclination to creativity, the preference of the process of the results. On the other hand, introversion, immersion of self-anxiety, frigidity and emotional detachment in communication, lack of empathy, a tendency to conflict, self-centeredness, and lack of responsibility can be observed among people with high interactivity with computer technologies.



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Vasilyeva, Osipova and Petrova in their literature review investigate the psychological aspects of information technology which covers 71 bibliographic sources. They consider the problem of computer anxiety and the factors influencing it, describes the specificity of online communication. Syndrome of computer addiction and Internet addiction is analyzed in their review. Moreover, the uses of information technology in the education system are also discussed (Васильева и др. [Vasilyeva, et. al.], 2002).

The authors rightly ask the question: "It remains unclear whether a computer has attracted people with certain traits, or we are dealing with changes of personality in the long i.e., long-term contact with the computer" (Васильева и др. [Vasilyeva, et. al.], 2002, . 81).

Minakov in his article "Psychological characteristics of a person prone to Internet addiction", which is based on the fundamental concepts of cultural-historical theory of development of the mind of Vygotsky, according to which, instrument of mediation action, realized by a person promotes his mind, makes the assumption that a person can reach a new level, with the definition of psychological characteristics. This contributes to initiation of a new generation to modern information technology from an early age. Dissemination of computer games, use of computer as a learning tool to attract students to work on the Internet, as part of the educational process, the emergence of new modes of communication, the development of distance education as a technology based on the new learning method, and computer-based telecommunications - all these have an effect on the psyche and personality traits of individuals.

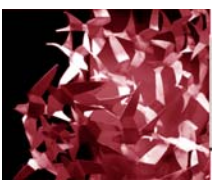
In addition to that, the author pays special attention to the emergence of a number of psychological phenomena and its effects in human caused by exposure to the new information environment and specific interaction with it. Regarding the problems of information, Minakov gave negative examples, for example, side effects of using information technology, which psychologists and therapists have to face nowadays. These include: techno-stress, computer phobia, addiction to computer games (individual, group, role-playing), Internet addiction, hacking, narrowing of the range of interests, autism, transformation of identity, lack of development of social intelligence, degradation of social component in communication, and others (Минаков [Minakov]).

Now we are going to review some of the studies relating to various psycho-pedagogical aspects of distance education.

Bondarkova developed a pedagogical model for self-development of management students, which integrates process and result of self-development of management professionals in technical universities and it also includes: pedagogical conditions of self-development of students in distance education (such as the formation of the basic level of knowledge, skills and experience required to study on distance); inclusions of personality-oriented technologies in the learning process, self-study (with mediated pedagogical support); interactive assistance; practical computer training; the process of professional self-development of students, aimed at continuous development of creative thinking; approaches to forming professional knowledge (e.g., in economics); structural components of self-development of professionals; formation of the learning environment among the CIS-M (Computer Interactive Support based on mobile communications (Бондарькова [Bondarkova], 2010).

Several authors note that distance education technologies, originally initiated as a means of free creative self-development of a person and effective self-organization which intend to provide a high level of subjectivity in the educational process, currently it brings the danger of being too formal, devoid of personalized meanings, attitude to learning, "devaluation" of knowledge and its alienation, danger of "dehumanization".

In terms of higher education, successful implementations of distance education technologies require a high level of subjective quality of students which is indeed quite difficult. At the same time, the specificity of distance learning is so that the conditions of subjective formation of learners, above



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all, the possibility of the subject to subject interaction between participants of the educational process are limited, and with a low initial level of subjectivity the students' further development as a subject of learning and professional work is quite problematic.

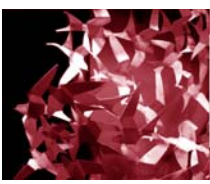
Gorbunova in her PhD research proposes a comprehensive and scientific pedagogical provision directed towards the development of subjectivity of students in the university who are studying with the help of distance education technologies. It is scientifically based on the need for special design of complex pedagogical provision aimed at the development of subjectivity of students in distance education, more over, complex pedagogical provision are developed which allows to create the condition for optimal realization of subjective functions of students studying on distance based on the progress achieved by the level of subjective maturity (Горбунова [Gorbunova], 2006).

Dubrovskaya considers that a backbone factor for didactic system of distance education is pedagogical support as a controlling actions oriented towards the development of cognitive- practical independence of students (Дубровская [Dubrovskaya], 2005).

Morahovskaya has formulated and theoretically grounded fundamentally new idea: the information structure of didactic materials for developing distance education should be a priori - based on the explanatory and theoretical rather than descriptive-empirical approach to the intellectual difficulties of students - to consider and adjust which give rise to ordinary consciousness of students which is truly unproductive cognitive strategies, patterns of misunderstanding arising from the assimilation and application of scientific knowledge. In her view, systematic analysis contradicts with the modern distance technologies which led to new theories for distance education by theoretical presentation about the system of psycho-cognitive barrier, which is created by the existing practice of distance education. The most common example psycho-cognitive barriers (PCB technical way of thinking, PCB logical thinking, PCB convolution thinking, etc.) it has been demonstrated by the adaptation of theory of psycho-cognitive barriers to distance education technology (Map [Morahovskaya], 2003).

The study of the effect of distance education on cognitive and personality development of students has received a significant importance among the researchers. Balashova's PhD research can be considered as a good example in this field (Балашова [Balashova], 2011). The aim was to study the level of differentiation, integration and hierarchy of cognitive structures of full-time and distance education students and the identification of their intellectual and personality characteristics. For the first time in a comprehensive study of the psychological characteristics of university students enrolled in full-time and distance has revealed the following features of the intellectual and personality development: full-time students have the trend of advanced development in intellectual performance, efficiency, endurance, noise immunity, strong nervous system, students of both forms of education have a level, not lower than the average; fatigue hardly comes, the nature and the will of the entire sample of students considered being sufficiently firm and active, mostly realistic and balanced; achievement motivation of students among the sample dominated by the desire to avoid failure, the level of anxiety among full-time students is low, on the other hand, distance students shows the tendency to high; in terms of self-evaluation, majority of the students are not anxious and have an average level of aggressiveness and rigidity. The study also reveals the pace of learning by considering the uniqueness of cognitive differentiation, intellectual and personality development of students in the distance and full-time education: full-time students have higher rates of learning acquisition. Full-time students have shorter time differentiation of objects of all types than distance students, as for the group as a whole and when divided by the best and worst achievers.

A study was carried out at the distance education faculty of the Moscow State University of Psychology and Education (DEF MSUPE) in 2012. The learning process of students at the faculty based on a combination of classroom and independent work of students and classes with the use of Internet technology which are taking places in an interactive mode. Face to face classroom lec-



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tures and lessons are organized for students of the faculty which are regularly held in the weekend evenings especially on Saturdays. For those who can not attend physically can participate online through faculty webinar site. Audio recordings of all online broadcasts are uploaded immediately on the faculty website which is available for students all time. In addition to that, online broadcasts, Internet seminars are widely used in the educational process. Internet consultation with teachers are regularly arranged to clarify any specific issues of the discipline studied at the faculty. The educational process is organized and conducted with the help of electronic dean, where every student has a virtual private room in which his individual learning plan for the current semester is available, and where s/he usually receives control tests and exams. Moreover, s/he can send his completed work to the respective teacher by using the system and know the results of their tests. Finally, it facilitates communication with the dean's office and students receive a variety of information related to the educational process.

Students of the faculty are fully provided with the necessary learning materials in all academic disciplines: electronic textbooks, textbook, multimedia, I&R, online interactive tests (as a simulator for self-testing and self-monitoring) and other materials.

The essence of this study was to investigate some personal characteristics of students who use distance education technologies. 50 students of distance education faculty were interviewed in five different psychological tests and 98 students answered the questionnaire relating to various aspects of distance education in the faculty.

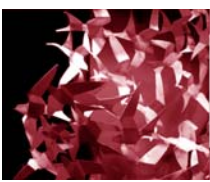
To study students' personal characteristics we used the following methodology.

Despite the theoretical and practical significance, the problem of self-actualization is poorly developed at such an important stage as in students' life. Contemporary researches explore various aspects of self-actualization of individual personality, its specific features. The purpose of our study is to thoroughly investigate the characteristics of self-actualization among students, and their structure. To study the characteristics of the self-actualization among students we used the technique of "Self-actualization Test" (SAT) developed and Gozmana and Kroza.

As we have repeatedly mentioned above, the use of distance technologies requires a high level of autonomy and self-organization of students. On the other hand, these technologies significantly influence the formation of personality traits among students. For the analysis of self-development and self-regulation and its individual profiles, we have used a questionnaire "Style of self-regulated behavior" Marasanova and methodology "level of subjective control". This methodology is modified a modified version of the questionnaire of the American psychologist J. Rotter. It helps us to assess the level of subjective control over a variety of situations, in other words, to determine the degree of human responsibility for their actions and their lives. People differ in the way how they explain the reasons for significant events in their life and why they behave in such a way indicates their locus of control. There are two types of such polar localization externality (external locus of control) and internality (internal locus of control).

To study the motivational aspects of students we have used two methods: Motivation for success and fear of failure (Rean) and a questionnaire for the analysis of learning motivation of students (Rean, Yakunin, modification Badmaeva).

In this part, the outcomes of the survey will be discussed thoroughly. We can start with an analysis of the results obtained by the SAT methodology (Table 1).

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Nº	SAT scales	Degree of manifestation (mean score)
1	Time orientation	9,47
2	Support	49,82
3	Value orientation	12,21
4	Behavioral flexibility	13,65
5	Sensitivity	6,43
6	Spontaneity	7,58
7	Self-esteem	9,58
8	Self-acceptance	12,03
9	notion of human nature	5,79
10	Synergy	3,76
11	Aggression acceptance	7,46
12	Sociability	11,06
13	Cognitive need	5,53
14	Creativity	7,39

Table 1. Results of the research according to SAT

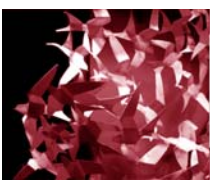
The following results are obtained about the characteristics of self-actualization of students. In the characteristic "Effective perception of reality" Maslow distinguishes properties such as self-actualization as emotional stability, objective perception, which is expressed completely in the results obtained from the SAT scales: time orientation (9.47 points) and support (49.82 points). This indicates that the students studied sufficiently well oriented with time, emotionally stable, objectively perceive reality. This allows them to live in the present but in cohesion with the past and future also to set realistic goals. A sense of productivity and understanding of the past makes sense of the future. An efficient perception of reality contributes to the high performance; students will learn for the sake of knowledge, solve complex tasks that require creativity as long-term programs (employment, a prestigious job, etc.) directly related to the current activities (acquisition of knowledge, completion of education, etc.). With the help of obtained results, we can explain the fact that in student life professional and personal self-determination become a central point, which is associated with a new perception of time - the correlation of past and future, the perception of the present for the future. The tendency of future beneficial of a person depends on current satisfaction. Under favorable conditions of students' development tend to be future oriented, not because it is bad at the present time, but because they expect a better future.

As the results of the questionnaire "Motivation for success and fear of failure" (Rean) revealed that only 4.08% of the students have fear of failure, at 36.73% of the students surveyed not clearly expressed their will, and at 59.18% aspired to success. Such a high rate of motivation for success proved that distance education technologies significantly affect the formation of a model for success.

As for the structure of educational motives, the most appreciated by the students are professional motive and creative self-realization motive (4.27 and 4.04 points correspondingly) (Table 2).

Nº	Type of motives	Degree of manifestation
1	Avoidance motive	2,27
2	Prestige motive	2,69
3	Social motive	3,23
4	Communicative motive	3,68
5	Cognitive motive	3,76
6	Creative self-realization motive	4,04
7	Professional motive	4,27

Table 2. Indicators of the structure of students' learning motivation



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As the table 2 shows use the avoidance motive is the least stimulating for students.

Nº п/п	Scales of self-regulation	Indicators
1	Planning	4,84
2	Modeling	5,88
3	Programming	5,88
4	Evaluation	5,75
5	Flexibility	6,27
6	Self-dependence	5,35
7	General level of self-regulation	28,37

Table 3. Indicators of structural components of self-regulation in learning activities of students on the basis of distance technologies (based on Style of self-regulated behavior)

The highest rates of indicators are obtained by the following scales of self-regulation: flexibility (6.27), modeling (5.88) and programming (5.88). Students with high levels of flexibility show the plasticity of regulatory processes. In unforeseen circumstances, such a person can easily reconstruct plans and performing actions and behavior, and they are able to quickly assess the condition of significant change and restructure the action program. When a deviation occurs, the results obtain with the accepted view to timely evaluate the fact of the error and make the necessary correction. Flexibility of regulatory mechanisms allows adequately responding to the rapid change of events and successfully solving the task at risk.

The highest indicator on a scale of programming says about the formation of a student needs to think up how their actions and behaviors in order to achieve goals, the detailed and developed programs of expansion. The programs are developed independently and changed flexibly in the new circumstances and resistant to interference. If there are inconsistent results, it sets the alternative action program in order to obtain an acceptable result for that person.

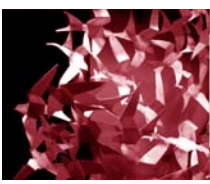
The study examined the effect of distance education on various aspects of personal development, and with the help of specially designed questionnaire by us with the dean of distance education faculty Aysmontas B. B.

On the question: "How do you think, distance education has influenced the development of your personal potential?" 70% of the 40 students surveyed responded "influenced significantly" and only 12.5% said they "influenced slightly" (Table 4).

Nº п/п	Characteristics of distance education influence on personal development	Percentage (%)
1	No impact	2,5
2	Influenced very little	2,5
3	Influenced slightly	12,5
4	Influenced significantly	70,0
5	Distance education does not affect the development of individual potential	2,5
6	Difficult to answer	10,0

Table 4. Influence of distance education (DE) on the development of personality developments of students

According to students, distance education significantly influenced the planning process of a distance education, organization of independent work, skills with the learning material (classification, organization, analysis, synthesis, the order of the discipline), the ability to articulate ideas in writing, development of cognitive activity, development of creative thinking, etc. (Table 5).



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Nº π/π		Study affected for the worse (%)	Study influenced rather worse than better (%)	Study has not influenced my personal development (%)	Study influenced rather better than worse (%)	study influenced for the better (%)
1	Planning process of distance learning	0	2,7	12	45,3	42,9
2	Organization of autonomous work	0	1,4	18,9	32,4	47,3
3	Systematic work on an individual plan	0	2,8	2,7	32,4	39,4
4	Skills to work learning materials (classification, organization, analysis, synthesis, the order of the discipline)	0	1,4	20,3	41,9	36,5
5	Ability to formulate thoughts in writing	0	1,4	27	31,1	40,5
6	Ability to formulate thoughts orally	0	0	39,2	24,3	37,8
7	Development of creative thinking	0	1,4	33,8	28,4	36,5
8	Development of cognitive activity	1,4	1,4	15,1	32,9	49,3

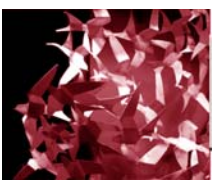
Table 5. The results of the survey on the impact of distance learning on various personality

On the question of “how distance education promote your autonomy?”, 40% of students responded that it has contributed sufficiently, and 23.8% said that significantly (Table 6).

Nº π/π	Characteristics of influence of distance education in developing learner autonomy	Indicators (%)
1	Significantly contributed in the development of autonomy	23,8%
2	Sufficiently contributed in the development of autonomy	40,0%
3	Slightly promoted	17,5%
4	No contribution in the development of autonomy	13,8%
5	Difficult to answer	5,0%
6	Other (specify)	

Table 6. The influence of distance education in developing learner autonomy

Distance education has significant influence on the development of time management skill as most of the respondents simultaneously combine study and work. 53.9% of students have reported that they have learned to manage their time in comparison with the previous period. However, 31.6% of respondents still have difficult in planning their time (Table 7).



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№ п/п	Characteristics of influence of distance education on the formation of skills in planning of personal time	Percentage (%)
1	I learned well and exactly how to manage time	3,9
2	I learned how to manage time better than before	53,9
3	I still find it difficult to manage time	31,6
4	I did not learn how to manage time	2,6
5	Difficult to answer	7,9
6	Other (specify)	0

Table 7. The influence of distance education on the formation of skills in planning of personal time

As our research has shown professional and personal development of future specialists in higher education, which has become inconceivable without its formation as a subject of learning and professional activities. At the same time, the educational support mechanisms, with the help of distance education provide students with the most complete realization of subjective features in the educational process, in our view, not yet fully developed scientific-pedagogical literature.

Question of the influence of distance education technologies in developing students' personality is almost not studied. What we believe is that it is of a great interest to the students and educators of distance education and is very important to improve the quality of the development and application of distance education technologies in higher educational institutions.

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