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TEENAGER'S TENDENCIES TO GADGET ADDICTION IN LEARNING ENVIRONMENTS WITH DIFFERENT ACCOUNTABILITY RATINGS

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Abstract

According to cross-cultural studies the popularization of gadgets creates psychological dependence on the individual. Moreover, information pressure on a teenager's psyche leads to changes in his/her learning environment. It is assumed that a high accountability rating (measured by the federal standardized exam) of learning environment is an indirect indicator of teenagers' involvement in educational activities. The aim of the study is to identify teenager's tendencies to gadget addiction in the learning environments with different accountability ratings. Data sources included demographic survey and the tendency for gadget addiction scale. Data analysis is performed by IBM SPSS Statistics Base 22.0 using measures of descriptive statistics, Mann-Whitney U-test, point-biserial correlation. The results show the variability of gadget addiction in learning environments with high ratings and homogeneity in learning environments with low ratings. Differences between the tendency to gadget addiction and learning environments were not set. Association between the "tendency to gadget addiction" and male students were set. The revealed features of teenager's gadget addiction in learning environments with different accountability ratings are of practical interest for teachers, parents, educational psychologists and practicing psychologists. Further research should focus on identifying macro- and micro factors of the learning environments that make conditions for gadget-addiction and in-depth study of substantial factors that determine the tendencies for this phenomenon in the group of boys and girls, taking into their GPA.

Keywords: Digital technologies, gadget addiction, psychological addiction, learning environment, gender.

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1. Introduction

Digital technologies play an important role in the development of personality in the modern world. According to Russian studies (Maslova, 2013) 89% of adolescents aged 12 to 17 use Internet and gadgets daily. The most common consumers of digital technologies are teenagers. They are susceptible category who is impacted with information flow. Since this kind of impact can be positive or negative, various behaviours are created, one of which is a tendency to gadget addiction (Hale & Guan, 2015).

Researchers highlight the main predictors of gadget addiction: the need for prestige and self-esteem; the need for risk; the presence of artificial needs; emotional instability; the presence of character accentuation (the "risk group" includes hyperthymic, hysteroid, schizoid and emotionally labile type of accentuation); deviations in mental development; low self-esteem etc.

Teenager's inclination to gadget addiction is characterized by aggressiveness and anxiety, a desire to search for new sensations, asocial strategies to deal with stressful situations, emotional estrangement, and low communication skills (Malygin, Khomeriki, & Antonenko 2015).

In a substantive aspect, such teenagers are often online, spend time aimlessly searching unnecessary information ("surfing") to protect themselves from everyday problems, get out of depression and escape from feelings of anxiety; communicate on social networks with virtual friends; exchange various kinds of information in instant messengers; play (including network games); make purchases without the knowledge of their parents; visit prohibited sites etc. (Choliz, Echeburua, & Labrador, 2012).

The analysis of the studies showed that, the relationship between enthusiasm for computer games, as an option to gadget addiction and social conditions (Yurov, Aliyeva, & Kuminova, 2018); conditions of family education (Baumgarten, 2003); communicative skills (Wu et al., 2016); the general structure of personality orientation (Wegmann & Brand, 2016); the presence of motivation for learning activities (Othman, Lee, & Kueh, 1994); level of claims and self-esteem of students (Demir & Kutlu, 2018); features of cognitive and emotional-volitional sphere (Błachnio & Przepiórka, 2016) are fixed.

2. Problem Statement

In general, the learning environment is seen as:

- a set of conditions that affect the formation of personality (Hanrahan, 1998); an opportunity for its development and self-realization (Savenkov, 2006);

- a subsystem of the sociocultural environment, including various types of means and content of education, capable of ensuring the productive activity of the students (Patricia, van Tryon, & Bishop, 2009).

In this work the learning environment is a subsystem of the sociocultural environment when social norms and rules influence the subject in connection with the development of socio-logical thinking (Urmeneta, 2014), where the school plays the most important role.

The didactic structure of the modern learning environment includes the following elements: "teacher", "student", "content" and "technology" (Tchoshanov, 2013). The ratio of these elements determines different forms of learning in the digital age; reflects the interaction between teachers and

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students, going beyond the domain through the application of information and communication technologies.

The psychological and pedagogical component of learning environment contains specially organized conditions for the formation of personality; development opportunities included in the social and spatial-objective environment; a set of activity and relationships of participants in the educational process (Graetz, 2006; Baeva, 2017).

Researchers agree that learning environment affects the development of students according to the activity approach, and the fundamental principle of unity of consciousness. The effectiveness of modern educational organizations is largely determined by the level of formation of the learning environment, one of the important indicators of which is accountability rating.

According to Yasvin (2001), learning environment is a system of influence and conditions for the formation of personality, as well as opportunities for its development, contained in the social and spatial-objective environment. Slobodchikov (1997) includes learning environment into the mechanisms of personality development, thereby determining its purpose and functional purpose, and also highlights its origins in the culture objectivity of society. “These two poles of culture objectivity and the inner world, the essential forces of man in their mutual position in the educational process, set the boundaries of the content of learning environment and its composition” (Slobodchikov, 1997, p. 24).

Learning environment in terms of the exam is characterized by the quality of academic results, the acquisition of general educational, specific and social competencies. Demographic, social and economic characteristics act as factors determining the learning achievements of students, their further educational and life trajectories, and determine the difference in learning achievements (Pinskaya, Kosaretsky, & Frumin, 2011) which related to the use of digital technologies since the mid-80s, when computer began to be created software tools for visualization of dynamic processes.

Digital technologies, from a psychological point of view in the context of Vygotsky’s cultural-historical concept, represent the modern stage of the symbolic (semiotic) mediation of activity. This kind of weapon mediation is one of the most essential conditions and, at the same time, characteristics of the development of the psyche, complicates the quantitative and transforms the qualitative indicators of traditional sign systems. At the same time, the direct and indirect influence of information technology on mental activity should be differentiated. The direct influence is associated with the “transformation effect” - the transformation of information technology-mediated activities in a meaningful and structural aspect compared to the traditional one, with the emergence of new forms of this activity (Papert, 1989). Indirect influence extends to non-computerized activities, as well as to the personality as a whole.

As a result, “higher mental functions” develop and transform. Scientists (Latchem, 2013; Yilmaz & Goken, 2016) believe that learning environment of a school cannot exist and function without the use of digital technologies, including the Internet but digital devices can have a negative effect on a person (Aslan, 2016), and lead to gadget addiction (Nogueira & Moreira, 2013; Rodgers, Melioli, Laconi, Bui, & Chabrol, 2013).

The main consumers of modern digital devices and technologies, according to Sorokina (2015) are teenagers. The studies found that teenagers with tendency to gadget addiction are ahead of their peers in

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mental development, but they learn harder and are unsure of their knowledge. All these negative affects to the educational indicators that determine the subsequent rating of learning environment in the exam.

In accordance with the aim of the study, it was suggested that there is a relationship between teenagers tendency to gadget addiction in learning environments with different accountability ratings.

3. Research Questions

Adhering to the activity approach the tendency of teenagers gadget addiction leads to deviant behaviour and occurs itself when studying in educational institutions. As a result, the desire to escape from reality is formed by artificially changing one's mental state in the process of unfolding the activity of a teenager in the information space, focusing on its various forms for the development of intense emotions.

Thus, there are many studies related to the tendency of gadget - addiction and its options in conjunction with mental phenomena, however, studies of this phenomenon in the teenager's learning environment have not been found. In this regard, the research problem is as follows: what are the teenager's tendencies to gadget addiction in learning environment with different accountability ratings.

4. Purpose of the Study

The aim of the study is to identify teenager's tendencies to gadget addiction in the learning environments with different accountability ratings.

5. Research Methods

Sample: 178 teenagers aged 12-15 years: 99 students are in learning environment with high accountability rating, and 79 students are in learning environment with low accountability rating; 91 boys and 87 girls.

A high-rated learning environment, according to the Ministry of Education and Science of the Republic of Tatarstan, means those schools in which students received 80 or more points in the USE. Low-rated learning environments are schools in which students have not passed the minimum exam threshold.

The sample of respondents in learning environment with high accountability rating is concentrated at the 8th grade students' classes and characterized by a predominance of boys with low tendency to gadget addiction (Table 1).

The sample of respondents in learning environment with low accountability is distributed among students in grades 6 to 9. It is characterized by a predominance of girls; the tendency to gadget addiction is on the medium level (Table 1).

Following psychodiagnostic methods were used in this study: demographic questionnaire, "Methodological complex for identifying probabilistic predictors of possible involvement in drug use"; mathematical and statistical methods of data processing and interpretation (measures of descriptive statistics, Mann-Whitney U-test, point-bisserial correlation).

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The methodological complex for identifying probabilistic predictors of the possible involvement of schoolchildren in drug use was used in connection with one of the objectives of the project of the Russian Foundation for Basic Research “Integrated model for assessing the risks of the school’s socio-cultural environment” (No. 17-29-02092) to identify indicators characterizing the factors of socio-cultural environment in conjunction with the problem of safe behaviour of teenagers in learning environment.

The questionnaire consists of three blocks and contains personality characteristics associated with potential risky behaviour; features of strategies in solving life problems; features of relations with parents or other close people. In this study, the “tendency to gadget addiction” scale was diagnosed as a form of unsafe behaviour of students in learning environment and one of the important predictors of the possible involvement of adolescents in the overuse of digital devices. The levels of gadget addiction were distinguished on the basis of a statistical criterion for standard deviation: low level - 0 - 7 points, average level - 8 - 13 points, from 14 points and above - a high level.

6. Findings

In learning environment with high accountability rating, low values on the gadget addiction tendency scale are found in the group of boys, high values in equal proportions were found in both groups (Table 1). According to the revealed criterion to gadget addiction, it was found that 35 teenagers are characterised by low level of gadget addiction, 55 teenagers have an average level and 9 teenagers have high level of the tendency to gadget addiction. A sample of teenagers studying in learning environments with low accountability rating is characterized by homogeneity. The tendency to gadget addiction in this sample is on the medium level.

Table 01. Data base (respondents) of learning environments with different accountability ratings

	Sex		**Grade**				**Tendency to gadget addiction**		
	Boys	**Girls**	**6**	**7**	**8**	**9**	**Low**	**Medium**	**High**
Learning environment with high accountability rating	57	42	24	25	25	25	35	55	9
Learning environment with low accountability rating	34	45	25	16	20	18	0	79	0

A sample with high indicators is characterized by homogeneity in the category "grade". A variation was found from lack to gadget addiction, showing the variability of attitude to gadgets in learning environments with high accountability rating. In the sample with low accountability rating, there is a scatter in the category "grade", but homogeneity is shown in relation to the indicator "tendency to gadget addiction." This indicates a stable and averaged attitude to gadgets in this sample. These data indicate lack of specificity regarding the tendency to gadget addiction in low-rated learning environments.

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To compare the performance of both samples, the Mann-Whitney U-test was performed. As a result, statistically insignificant differences between the samples were established.

The lowest values, as well as the highest, are observed in the 8 grade. Gadget addiction is observed at the age of 14 years. Low values on the gadget addiction scale are found in a sample of boys, and high values are found in equal proportions in groups of boys and girls.

As a result of the correlation analysis, the relationship between the tendency to gadget addiction scale and the sex of teenagers ($r = 0.28$ in the sample of boys at $p \leq 0.05$) was established and is not related to the learning environment with high accountability rating.

7. Conclusion

Learning environment is a subsystem of the sociocultural environment and creates productive conditions for the development of personality. However, digital devices, which occupy a leading position in the system of teenagers values (Sorokina, 2015) in the learning environments with high and low accountability rating, increase the interest in activities related to spending time on the Internet or “surfing”. Therefore, teenagers do not always have time to complete educational tasks.

The research hypothesis was partially confirmed:

1. In learning environments with a high and low accountability rating, the tendency to gadget addiction is on the medium level, while in the first group there are teenagers with a low and high clarity to gadget addiction.

2. No differences were found between gadget addiction and learning environments.

3. The established correlation of the tendency to gadget addiction is not related to the learning environment with accountability rating.

These data are consistent with previously obtained research results (Gubanova, 2013) and in a substantial aspect are as follows: boys are interested in computer games, as a rule, in online mode, while girls are interested in the Internet and communication in social networks.

The formation of an adequate attitude to digital technologies in general, and gadgets in particular, in learning environment, is possible with the interaction of a teacher and student. I is necessary to develop the design type of thinking among teachers (Tchoshanov, 2013; Dym, Agogino, Eris, Frey, & Leifer, 2005) using a result-oriented learning environment equipped with technology that will allow students to set their own learning goals, track and evaluate their own progress in learning using gadgets; to develop educational and creative activities through digital tools and resources, etc.

Further areas of research can be focused on identifying macro- and microfactors of the environment that create the conditions for the formation of gadget addiction; determining the effect of gadget addiction on performance in groups of boys and girls.

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