CHARACTERISTICS OF SELF-CONCEPT OF COMPUTER GAMERS

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Abstract

Computer games, having become widespread, are a powerful cultural factor of present days that affects various aspects of a player's personality. This article discusses such influence on user's self-concept. The self-concept peculiarities of people who overindulge in computer games are highlighted. Interrelation between favorite game genres, chosen by players, and changes in their self-concept is revealed.

Keywords: self-concept, computer game, gamers, Big Five personality traits.

Introduction

According to the modern views, self-concept is a core formation of person's ontogenetic development, a central link of consciousness; it is a relatively stable, but at the same time dynamic, and to some extent reportable system of person's representations about him/herself, a comprehensive self-image. Yvaschenko, Agapov & Baryshnikova (2002), having analyzed modern approaches to self-concept studies, show that self-concept is understood as a system of person's ideas about him/herself, including plurality of self-images, that covers different aspects and is developed in the process of self-actualization based on positive attitude to the person from others.

Petrovsky & Yaroshevsky (1998) believe that "self-concept is included into the structure of personality. As an upmost personality formation, it resonates with person's essence, his/her selfhood and spirituality. Self-concept is a result of personal development. This is a system of self-perception, understanding and determination of him/herself as a subject that is formed on the basis of interactions with his/her environment. This is a relatively stable system of expression of multiple "Self", a system of attitudes aimed at him/herself that includes, at different levels of its manifestation, cognitive, emotional, volitional, behavioral mechanisms."

Awareness of one's own existential integrity, generalization and systematization of knowledge about oneself and the world form the basis for self-concept construction that includes not only self-images of real oneself, but a system of ideas about promising lines of self-development – self-images in the future, ideal, reference ones. So researchers determine up to six types of self-images: current (how a person sees him/herself actually at the moment);

dynamic (a goal that a person put forward as for him/herself); fantastic (a self-image based on adopted norms and relationships); possible or future (a self-image that can be achieved in person's opinion); idealized (an accepted desired self-image); a series of fictitious self-images (images and masks that a person puts on to hide any negative or unpleasant traits, painful experience, weakness of his/her current self-image) (Hjiel & Zingler, 1997).

Self-concept appears and is formed at deployment of social interaction as a result of person's cultural development; it is a relatively stable mental formation, but at the same time, it is influenced by internal fluctuations and external changes. Modern scientists are paying a lot of attention to the development and changes in self-concept under the influence of various social and cultural factors. So there are works that reveal changes in self-concept during childhood, adolescence, young adulthood (Kon, 2002; Gumeniuk, 2005). Changes in self-concept during professional training and activities are studied quite deeply (Efriushkina, 2009). However, in recent years, a completely new cultural factor has appeared and spread, namely, computer technologies of mass use, including computer games.

The newly created information society and development of new computer technologies have contributed to the appearance of a number of new sub-cultural phenomena. One of these is the subculture of gamers, based on a new world, alternative to the real one, created by people with use of modern technologies – "virtual reality." The virtual reality provides a person with freedom in creating illusions, flexibility, dynamism; it is aimed at creating of experiences that do not correspond to the experiences of real world. It helps people to perform things that cannot be achieved in reality, to return back to the past and change it (because the virtual reality can return back in time, it has unlinked temporality). Such experience will inevitably affect human life outside the virtual world. (Marijko, 2009). Such a powerful cultural factor influences various aspects of user's personality; and this article is focused on gamers' self-concept.

Issues of changing of various aspects of psychological life under the influence of computer technologies, computer games are discussed widely in contemporary psychological literature. This includes the issue of computer players' self-concept. A lot of attention is paid to personal representations (avatars) in multi-player gaming and their interference on gamers' self-concept (DiPietro & Black, 2009; Dieter, Hill., Sell, Reinhard, Vollstädt-Klein, et al, 2015). Also, comparison is widely performed of computer-dependent people's self-concepts with those people who use computer technologies with care: dependence of self-concept clarity and flow on time spent in games (Lee Ch., Aiken & Huang Chia Hung, 2012), self-image integrity and self-attitude of game addicts (Turecka, 2011) and so on were examined.

The research aim is to determine the changes in self-concept under the influence of new computer technologies, namely, computer games; to compare self-concept of persons who do not overindulge in computer games, and those who overindulge in them; to determine whether selecting of a favorite genre of computer games influence player's self-concept.

Object of the research: peculiarities of self-concept of computer gamers.

Methods

The survey was performed using a specially designed questionnaire that enabled us to identify the interests of young people in computer games as well as to portrait respondent's self-concept with personal semantic differential. 181 students of Kyiv universities (the State University of Informative and Communicative Technologies and the National Technical University "Kyiv Polytechnic Institute") participated in total.

Semantic differential as a study method is based on an adjective denoting personality traits and is focused on the evaluation of oneself or another person. In our study personal semantic differential was built using repertory items in the following categories:

- a surveyed person him/herself, real him/herself from his/her point of view, that is a real self-image;
- a surveyed person, whom he/she wants to be, that is an ideal self-image;
- a surveyed person how he/she describes him/herself during playing his/her favorite computer game, that is a role that the surveyed person undertakes in the game;
- a friend of the surveyed person who like playing computer games. This category was included basing on the following assumptions: people often transfer own characteristic traits to their friends and understand their strengths and weaknesses better than their own traits. A person liking video games, especially that who overindulges in them, is not always aware about their impact on him/herself, but can describe such an impact by the example of his/her friend;
- a gamer – a character of newspaper publishing. This category was included basing on an assumption that today the issue of computer game influence on young people is widely discussed in the media, and quite a few authors have a radical attitude to gaming (as an evil that must be destroyed, or on the contrary as a breakthrough into endless future spaces);
- a person whom the surveyed person respects. This category is close to the second category (a friend), but without emphasis on liking for computer games
- a person whom the surveyed person despises.

To build a list of adjectives used in the research with the semantic differential method, the work of Shmelev (2002) was used, where he described his psychosemantical thesaurus of adjectives that describe a person. The questionnaire asked students to assess themselves for each above category using 45 adjectives from the thesaurus that describe personality.

For further analysis the factorization of the obtained results was performed. Statistical analysis was performed using the computer program SPSS ver.21.0. The factorization was done by the principal components method followed by Varimax rotation and Kaiser normalization. The comparative analysis of samples was conducted by Student's t-test and ANOVA method for simultaneous comparison of several samples.

Results and Discussion

On the base of students' self-evaluation with proposed adjectives, five factors that describe 65% of variance were singled out. They correspond to the Big Five factors (the hierarchical model of personality including five core traits that make up human personality) (Matthews, Deary, & Whiteman, 2003):

1. *Openness to experience*, cumulative addition to cumulative dispersion is 31%. This factor includes the following adjectives describing personality traits: aesthetic, weight ratio of 0.769; elegant, 0.724; elitist, 0.684; business-minded, 0.673; gallant, 0.632; trendy, 0.619; quaint character, 0.616; highly moral, 0.590; remarkable, 0.512; demanding, 0.475; enterprising, 0.436; ambitious, 0.411; spoiled, 0.403; picking up, 0.389; experienced, 0.314; initiative, 0.337; insightful, 0.307.

2. *Extraversion*, cumulative addition to cumulative dispersion is 42%. This factor includes the following adjectives: agile, weight ratio is 0.697; lively, 0.694; mobile, 0.687;

fearless, 0.605; willed, 0.529; remarkable, 0.511; having education, 0.474; quaint character, 0.474; one that defends their own, 0.461; initiative, 0.459; unusual, 0.457; unselfconscious, 0.389; self-reliant, 0.386; demanding, 0.332.

3. *Agreeableness*, cumulative addition to cumulative dispersion is 49%. This factor includes the following adjectives: responsive, weight ratio is 0.699; merciful, 0.658; compliant, 0.645; kind, 0.577; polite, 0.559; truthful, 0.483; willed, 0.457; diligent, 0.428; incorruptible, 0.427.

4. *Conscientiousness*, cumulative addition to cumulative dispersion is 56%. This factor includes the following adjectives: responsible, weight ratio is 0.737; prudent, 0.630; diligent, 0.596; organized, 0.566; thinking, 0.540; balanced, 0.428; truthful, 0.373; business-minded, 0.349; peaceable, 0.340; having education, 0.336; polite, 0.294.

5. *Neuroticism*, or in our case it is better to name "*emotional stability*" because we estimate the positive pole of such a treat. This factor includes the following adjectives: peaceable, weight ratio is 0.614; unselfconscious, 0.607; cheerful, 0.562; cunning, 0.538; direct, 0.520; self-reliant, 0.487; picking up, 0.393; unusual, 0.335; spoiled, 0.315; demanding, 0.313.

Further processing of the empirical data was carried out using these *Big Five factors*.

The sample of the respondents was divided into subgroups by two different methods.

At the first stage, a group of students who overindulge in computer games was singled out. It includes those students who play computer games for more than 17 hours per week (a value obtained as an average game time plus standard deviation for the sample). These students were compared with all the other students of the sample.

The results for these two groups did not differ as for most factors for almost all descriptions, except the description of persons whom the surveyed students respect. Further analysis by the Student's t-test shows that there are significant differences with statistical uncertainty ≤0.05 only for description of a respected person for the first factor (openness for experience), the second one (extraversion), the third (agreeableness) and fourth (conscientiousness) factors; also the difference exists for the description of a despised person for the fifth factor (emotional stability).

As for psychological composition, an image of a respected person coincides with one's own ideal image. It means that the respondents, describing ideal themselves and persons whom they respect, in reality describe the character traits that they consider important for improving self-esteem, to develop themselves. However, at description of ideal themselves, the respondents, at non-cooperative attitude to the survey (which cannot be ruled out), can present not descriptions that are really important for them, but the ones that fit their ideas "how to match the right", how the society demands in general, or how a surveying person may expect. At the same time, at description of persons whom they respect, the respondents feel less pressure from social norms and guidelines, and can respond more freely, revealing those personality traits that are really important for them. Also, at description of persons whom they despise, the respondents pay attention to those personality traits which they want to get rid of.

Basing on these considerations, the following conclusions are made: the students, overindulging in computer games, show less than average values for all the factors that show significant differences for two groups. It means, they are less occupied by improving of their cultural level, less active, friendly, have worse self-control, they are less concerned with their emotional stability. In other words, they are more indifferent to themselves, their growth as personality.

Then for each surveyed student for each previously determined Big Five factor, we determined the differences between factor values obtained at descriptions of ideal self-images and self-images in a favorite computer game. Then the average values of the differences were calculated for both groups of students. These averages are presented in Table 1.

Table 1. Average of differences between Big Five factor values obtained at descriptions of ideal self-images and self-images in a favorite computer game

Differences at descriptions of ideal self-image and self-image in a favorite computer game	Students who overuse computer games	The other students
Factor 1	-7.66	-1.82
Factor 2	-6.23	-1.70
Factor 3	7.045	6.46
Factor 4	0.64	2.58
Factor 5	1.81	0.62

Note: factor 1 – openness to experience, factor 2 – extraversion, factor 3 – agreeableness, factor 4 – conscientiousness, factor 5 – emotional stability

Let us note that the difference for factors 1 and 2 has the "-" sign. It means that the respondents describe themselves in games higher concerning these factors. That is they describe themselves as favorite computer game characters more open to experience and more active compared to the real world. On the other hand, factor 3 (agreeableness) in both groups has a positive sign and is significantly different from zero. This means that computer games players feel much less friendly, selfish and aggressive in the virtual world than in reality.

Student's t-test shows that there are statistically significant differences with statistical uncertainty ≤0.1 between the groups for factors 1 and 2. During the game, students overindulging in computer games feel more intellectual and more active compared with real life and with players who do not overuse games. Perhaps, namely, feeling of activity, focus on outside, into the world, albeit virtual, combined with a sense of own wisdom, intelligence, foresight are the secret of interest to computer games.

At the second analytic stage, all surveyed students were divided into groups depending on what genre of video games they like the most. The first group include students who choose active aggressive games (33 respondents); the second group: students preferring active but not aggressive games (59 respondents); the third one: students liking logic/strategic games (55 respondents); the fourth one: students playing role-playing games (13 people); and the fifth group: people who do not play computer games, it included 20 students.

Table 2 shows the average values of calculated Big Five factors for each group.

Table 2. Average values of calculated Big Five factors for each group

		Students choosing aggressive games	Students choosing active non-aggressive games	Students choosing logical games	Students choosing role-playing games	Students not liking computer games
Real self	Factor 1	54.6	58.23	54.69	57.98	59.75
	Factor 2	54.34	56.31	53.07	56.58	54.95
	Factor 3	38.46	39.14	39.32	39.08	40.66
	Factor 4	38.54	39.27	38.46	40.06	38.93
	Factor 5	31.65	31.74	30.13	33.60	32.32
Ideal self	Factor 1	70.31	73.65	72.00	73.93	72.47
	Factor 2	65.22	66.25	66.26	68.56	66.24
	Factor 3	43.83	45.02	46.53	45.72	43.59
	Factor 4	56.17	56.12	57.40	57.18	55.62
	Factor 5	34.02	33.63	32.78	35.36	32.86
Self as a character in a favorite game	Factor 1	54.67	64.68	55.67	66.14	56.33
	Factor 2	56.67	60.95	53.93	62.28	54.73
	Factor 3	29.54	35.38	31.25	32.31	33.71
	Factor 4	37.34	38.21	34.38	37.51	36.87
	Factor 5	29.33	32.30	29.23	33.73	29.23
Friend – a game fan	Factor 1	55.00	63.80	56.65	54.18	58.79
	Factor 2	52.33	60.29	51.64	50.47	57.30
	Factor 3	33.50	36.46	31.56	28.81	36.16
	Factor 4	35.72	36.99	32.68	28.13	36.49
	Factor 5	29.31	33.72	29.03	28.45	31.04
A game fan – a publication character	Factor 1	56.28	60.68	54.77	53.17	57.84
	Factor 2	49.98	49.07	44.79	41.49	46.00
	Factor 3	33.11	34.33	32.13	26.18	31.96
	Factor 4	35.24	34.07	32.00	29.23	31.77
	Factor 5	30.78	31.87	28.78	28.42	30.98
A respected person	Factor 1	63.39	70.60	69.87	69.30	69.39
	Factor 2	57.93	60.60	59.12	59.82	60.11
	Factor 3	41.60	45.41	43,65	43.95	44.16
	Factor 4	58.29	62.09	58,79	60.11	61.54
	Factor 5	34.10	35.23	33,48	35.54	34.65
A despised person	Factor 1	31.93	37.36	38,04	20.57	40.50
	Factor 2	26.19	32.22	33,84	17.39	34.96
	Factor 3	15.20	18.79	16,03	10.67	20.24
	Factor 4	13.03	15.92	15,35	8.59	18.59
	Factor 5	18.61	22.88	25,84	13.98	22.9

Note: factor 1 – openness to experience, factor 2 – extraversion, factor 3 – agreeableness, factor 4 – conscientiousness, factor 5 – emotional stability

Before the analysis of the data from the proposed table, we calculated how much time is spent by the representatives of different groups for computer games on average. The results are the following:

- students choosing active aggressive games play 13.8 hours a week on average;
- students choosing not aggressive active games or logical games play 6 hours per week;

- students choosing role-playing games do 12 hours per week;
- students who do not like playing do about one hour per week.

It is seen that students choosing active aggressive or role-playing games spend much more time playing than any other respondents and therefore they are more inclined to problem gaming.

Statistical calculation with ANOVA test was performed for further analysis. The calculation shows significant differences between the groups at significance level α≤0.1 for the following factors: 1) description of oneself as a character of a favorite video game: factors 1 (openness to experience) and 2 (extraversion); 2) description of a friend – a game fan: all factors; 3) description of a despised person: all factors.

As for psychological composition, the image of a friend coincides with one's own real self-image. Describing a friend, a respondent in the proposed study condition comes largely from his/her own features, but treats them more thoroughly, gives a clear unvarnished description. Describing real self-image, he/she is more inclined to respond the way the society demands, he/she is not always honest. Also at description of a despised person, a respondent focuses mainly on personality traits that he/she does not like in him/herself. In other words, description of a despised person is a kind of a self-image that is opposite to the ideal one.

The representatives of the groups who choose non-aggressive active games and role playing games at description of themselves as a game character estimate themselves well higher for the first (openness to experience) and second (extraversion) factors compared to the representatives of the other groups. However, gamer picture is somewhat different in the description of a friend. For these two factors the highest self-estimations are shown, as in the previous case, by the students who choose active non-aggressive games. However, students who choose role-playing games esteem themselves the lowest of the entire sample. This result may indicate that students choosing active non-aggressive games feel active, energetic, extravert in life and they behave in games just like in real life. But the students choosing role-playing games do not feel sufficiently active in reality; they do not see possible places to apply their energy in real life, and throw out it in computer games. The same approach can be applied to "openness to experience" factor. The students choosing role-playing computer games describe themselves as game characters as for factor 4 (conscientiousness) like representatives of the other groups. But at description with this factor of a friend (in other words real themselves), they evaluate their level of self-control as much lower compared to the other studied groups. They also estimate real self-images for the factor 3 (agreeableness) very low, lower than the other groups. It should be noted that these differences do not appear at description of real themselves, but at description of a friend. At description of real themselves, students choosing role-playing computer games do not differ from the sample in general. In other words, at description of real themselves they rely mainly on positive social norms, on their ideas about "right" answers, but do not actually create real self-images.

Describing a despised person, the students choosing role-playing games, gives such a person the lowest ratings in comparison to the other student groups for all five Big Five factors. Such a painful attitude to a despised person can indicate both awareness of the existence of a large number of own negative features, and intolerance to vices of others, which in turn can lead to difficulties in communications.

These results may indicate that the students choosing role-playing computer games do not perceive the real world as a comfortable place. They do not see ways in everyday live to apply own activity and energy of youth. They also describe themselves fairly low in terms

of friendliness and self-control. They are even unsatisfied by their openness to experience, a cultural level (all the respondents were students, belonged to the most cultured stratum of the society). Their reliance on positive social norms is formal, it does not come from the internal beliefs. Thus, the overuse of role-playing games is a sign of certain psychological disorders of personality. In this case, the virtual world is a way to escape from the real world, to solve existing problems, an attempt to relax, dive into the world of wonderful dreams or fairy tales.

Let us continue the analysis of the responses provided by the students choosing not active aggressive games. It has already been indicated that they esteem themselves as highly cultured and highly active people, both in games and in real life. In addition, they feel friendly in reality and in games. They are also confident in self-control and own emotional stability. These are the most psychologically adapted respondents who are open to the real world. In addition, the average time they spend for computer games shows that there are no students with game addiction among them. Computer games for these students are just one of the sides of the multi-sided world; these games do not influence them negatively.

For further analysis, the following calculations were conducted: for each respondent, we calculated the differences of values of the Big Five factors for the following pairs: a factor describing an ideal self-image – a factor describing a real self-image; a factor describing an ideal self-image – a factor describing a self-image in a game; a factor describing a real self-image – a factor describing a self-image in a game. Table 3 shows the average differences in the groups (factor 1 – openness to experience, factor 2 – extraversion, factor 3 – agreeableness, factor 4 – conscientiousness, factor 5 – emotional stability).

Table 3. Average differences between factors for respondents of different groups

	Students choosing aggressive games	Students choosing active non-aggressive games	Students choosing logical games	Students choosing role-playing games	Students not liking computer games
Differences between ideal and real self-images					
Factor 1	15.69	15.32	16.90	14.92	11.98
Factor 2	10.58	9.94	13.18	10.99	11.28
Factor 3	5.18	5.87	7.21	5.80	2.92
Factor 4	17.62	16.84	18.94	16.19	16.69
Factor 5	2.37	1.89	2.63	1.41	1.54
Differences between ideal self-image and self-image of a game character					
Factor 1	17.89	9.0768	15.944	11.21	14.64
Factor 2	10.34	5.009	11.98	10.50	10.75
Factor 3	14.89	9.73	15.23	15.26	9.63
Factor 4	20.46	17.80	22.81	21.30	18.56
Factor 5	5.37	1.24	3.73	3.03	3.02
Differences between real self-image and self-image of a game character					
Factor 1	0.69	-6.44	-2.07	-6.22	4.00
Factor 2	-3.18	-3.97	-1.11	-3.87	1.12
Factor 3	8.63	3.92	7.78	8.51	7.08
Factor 4	1.04	1.08	3.84	3.83	2.77
Factor 5	2.35	-0.855	0.98	0.54	3.35

Note: factor 1 – openness to experience, factor 2 – extraversion, factor 3 – agreeableness, factor 4 – conscientiousness, factor 5 – emotional stability

The obtained differences were compared with zero by Student's t-test. If a difference is not equal to zero it means that the corresponding factors for the pair are different. Otherwise, there is not distinction between them.

For all the groups, the differences for the pairs of Big Five factors that describe ideal and real self-images are different from zero and average values of the differences are positive. This means that for all the groups their ideas about ideal themselves differ from real self-images. Moreover, as our questionnaire included personal adjectives describing positive qualities, such result shows that students want to improve themselves. This is a perfectly normal response, because our respondents are students, i.e. young people open for searching of their places in life and in the society. This openness requires constant analysis of themselves, own actions, achievements and failures, permanent comparison of themselves with requirements of the society, and therefore continuous improvement.

Also for all the groups, the differences for the pairs of Big Five factors that describe ideal self-image and self-image as a game character are not equal to zero and average values of the differences are positive. This indicates that students do not tend to identify themselves in games with an ideal, and moreover they see ideal themselves in colors much more positive than themselves in games. So, we can argue that while people during game playing do not always show the best characteristic traits, in real life they do not choose computer games characters as a model.

Statistical analysis by ANOVA-test shows that differences exist between the studied groups for factors 2 (extraversion) and 3 (agreeableness) with error $\alpha \leq 0.1$ For these two factors, the smallest distinction between ideal self-image and self-image as a game character is shown by the students preferring active non-aggressive games. This fact corresponds to the previous findings that these students feel active, and want to be even more active, and computer game playing is for them one of the many ways to manifest their desire for activities. Their friendship attitude to their environment and the world in general leads to the fact that they choose non-aggressive games, and do not perceive themselves in games as a kind of an angry, hostile character.

As for comparison of real self-image and self-image as a game character, coincidence is observed for some Big Five factors in responses of all groups. Table 4 has marks * for those factors for which differences between real self-image and self-image as a game character are zero on average.

Table 4. Differences between real self-image and self-image as a game character are zero for different Big Five factor for the studied groups

	Students choosing aggressive games	Students choosing active non-aggressive games	Students choosing logical games	Students choosing role-playing games	Students not liking computer games
Factor 1	*		*	*	*
Factor 2	*		*	*	*
Factor 3					
Factor 4	*	*		*	*
Factor 5	*	*	*	*	*

Note: factor 1 – openness to experience, factor 2 – extraversion, factor 3 – agreeableness, factor 4 – conscientiousness, factor 5 – emotional stability

According to these data, it can be argued that at description of themselves as a game character, the students rely largely on description of themselves corresponding to their real self-images. The only exception is factor 3 (agreeableness). Average values of differences for all surveyed groups are positive for this factor, in other words, the respondents describe real themselves much kinder than themselves as a game character. Two conclusions can be made from this fact: first, many games offer gamers to throw out the worst emotions, show the worst traits such as anger, hostility, aggressiveness; second, students are quite conscious about such game features and do not tend to move them to real life.

Conclusions

Students who overindulge in computer games and ordinary students give similar evaluations, descriptions of real themselves. But there are differences in ideal self-descriptions, descriptions of who they would like to become. The students overindulging in computer games aspire less to improve themselves, to raise their cultural level, to develop friendly relations with others, to improve their self-control. So it can be argued that such students for now are not different from other students; but speaking about their perspective, long-term computer game abuse can lead to stagnation in self-development. This is especially dangerous in young years, when a person assesses their capabilities and puts forward aims for future life. Lack of such plans, lack of desire to improve themselves for implementation of these plans may lead to failure later in life.

The preferred choice by a student of a computer game of a specific genre can be used as the basis for evaluating of certain personality traits. Those who choose active non-aggressive games feel active, energetic in real life, open to the world and everything new. They feel friendly with their environment, so that they are able to control themselves and their lives. This is the group of students who are the most socially adapted. The students preferring role-playing computer games give the greatest concern. They do not feel sufficiently active in life and are forced take out their energy in games. They are not satisfied with their cultural level. These students evaluate their self-control rather low; they do not have a desire for friendly relations. Excessive use of role-playing games is a sign of some psychological problems for such gamers. In this case, games become a form of escaping from problems of the real world, an attempt to forget them.

In general, students clearly distinguish between real and virtual worlds. Playing, they can choose characters behaving not the best way, commit antisocial, violent deeds. However, players do not identify themselves as a game character with real or ideal themselves, game characters are not models for real life.

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CHARACTERISTICS OF SELF-CONCEPT OF COMPUTER GAMERS

Summary

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According to the modern views, self-concept is a core formation of person's ontogenetic development, a central link of consciousness; it is a relatively stable, but at the same time dynamic, and to some extent reportable system of person's representations about him/herself, a comprehensive self-image. Self-concept appears and is formed at deployment of social interaction as a result of person's cultural development; it is a relatively stable mental formation, but ant the same time, it is influenced by internal fluctuations and external changes.

The newly created information society and development of new computer technologies have contributed to the appearance of a number of new sub-cultural phenomena. The research purpose is to determine the changes in self-concept under influence of new computer technologies, namely, computer games; to compare self-concept of persons who do not overindulge in computer games, and those who overindulge in them; to determine whether selecting of a favorite genre of computer games influence player's self-concept. 181 students of Kyiv universities (the State University of Informative and Communicative Technologies and the National Technical University "Kyiv Polytechnic Institute") participated in the survey based on the author's questionnaire and the method of semantic differential.

Experimental and fuser analytical study leads to the following conclusions. Students who overindulge in computer games and ordinary students give similar evaluations, descriptions of real themselves. But there are differences in ideal self-descriptions, descriptions of who they would like to become. The students overindulging in computer games aspire less to improve themselves, to raise their cultural level, to develop friendly relations with others, to improve their self-control. So it can be argued

that such students for now are not different from other students; but speaking about their perspective, long-term computer game abuse can lead to stagnation in self-development.

The preferred choice by a student of a computer game of a specific genre can be used as the basis for evaluating of certain personality traits. Those who choose active non-aggressive games feel active, energetic in real life, open to the world and everything new. They feel friendly with their environment, so that they are able to control themselves and their lives. The students preferring role-playing computer games give the greatest concern. They do not feel sufficiently active in life and are forced take out their energy in games. They are not satisfied with their cultural level. These students evaluate their self-control rather low; they do not have a desire for friendly relations. Excessive use of role-playing games is a sign of some psychological problems for such gamers.

In general, students clearly distinguish between real and virtual worlds. Playing, they can choose characters behaving not the best way, commit antisocial, violent deeds. However, players do not identify themselves as a game character with real or ideal themselves, game characters are not models for real life.