

Man in the field of virtual game reality: problems of self-identification and socialization as risks for the sustainable development of society

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Abstract. The article analyzes the features of the self-identification process in the modern informational world and describes the risks of the digital space. On the example of studying representatives of different age groups, the analysis of preferred computer games is carried out and the features of virtual computer game reality are described. The article substantiates the thesis that in a situation of excessive enthusiasm for computer games the virtual reality of a computer game can be one of the factors in the transformation of the Self-image of an active user if there is an identification with the heroes of the game. The empirical results of studying the transformation of the self image of active users of computer games (using the example of junior schoolchildren) are given and destructive changes in the Self-image in a situation of excessive immersion in the field of virtual game reality are described (uncertainty in the descriptions of the physical self, weak reflection of one's own emotional experiences and bodily sensations, unrealistic level of aspirations, inadequate self-esteem).

1 Introduction

The influence of the informational world on a person becomes the subject of research by psychologists, philosophers, and sociologists. Changes in pacetechnical progress entail significant changes at the level of human evolution (changes in the structure of mental functions, characteristics of emotional-volitional, cognitive regulation, personality formation). Thus, on the one hand, the scientific forecast of current changes and analysis of the consequences and psychological risks are becoming an important task for psychology; on the other hand, it is working with the complex effects of our time, among which the most powerful is the phenomenon of stress (described by G. Selye, but acquiring new characteristics against the background of global changes). Another important task is to study the mechanisms that complicate

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or facilitate the process of human socialization in the new informational world. So, the main risks of self-identification and socialization to-day are associated with cognitive distortions, arising as a result of the amount of multidirectional information, the emergence of addictions under the influence of excessive immersion in the virtual environment, complicated variants of the course of crisis periods, information overloads, etc. Thus, global transformations of the world, the situation of experiencing uncertainty lead to natural changes at the level of an individual and largely determine the risks and new resources of a personal development.

Currently, there are studies that allow us to describe the types of experiences of subjective uncertainty, of which only one type is positive and reflects an important productive potential for a person. Among them is the type of experience, the content of which is difficult to bear anxiety, leading to confusion and blurring of consciousness, "hostility, splitting of the external and internal Other, threatening psychological survival and integrity of Self" [1]. The second type is also characterized by negative emotional states, but, at the same time, there is ambivalence, polysemy and the ability to experience negative emotions less acutely. Rather, the "fear of novelty" is expressed, in connection with which a person is more and more inclined to simplify reality. The third type of experience characterizes a person who is confused and, for this reason, dependent on the social environment. The next type is represented by the state of "transgression and chaos", the absence of any boundaries. And, finally, the last type of experiences of subjective uncertainty are positive experiences associated with over-situational activity, the generation of new meanings, and creative comprehension of reality.

Remembering M.K. Mamardashvili, we can say that the issue of overcoming the apparent life, deciphering the symbols that unfold Life itself, the person's ability to "gain experience" and accept new challenges of the time - all these tasks are becoming especially relevant today in the field of multivalued reality, where virtual space is a special space of recognition and constructing yourself [2].

Within the framework of this article, it seems interesting to analyze the influence of virtual reality gaming on the process of human self-identification and socialization. Psychological research in the field of studying the interaction of the subject with the field of virtual reality has been conducted since the beginning of the 90s of the last century, and every year their intensity is growing (V.S. Babenko, 1997; A.I. Voronov, 1999; O.I. Genisa-retsky, 1998; F.I. Girenok, 1996; V.F. Zhdanov, 1997; N.A. Nosov, 1997; V. Becker, M. Pae-tau, 1997, Soldatova G.U., Rasskazova E.I., Nestik T.A., 2017). Virtual reality is directly related to the phenomenon of games. The emergence gaming virtual reality shifted the focus of research towards studying the issues of its influence on the personality, ideas about its safety and the possibility of optimally using its potential [3].

Plunging into the "virtual reality of a computer game", the space of ideas, thoughts, and the user's imagination becomes limited by the space of the given game options, and this cannot but influence the transformation of the self image as the basic basis of person-ality, its values, self-esteem and self-acceptance features. However, it is the aspects associated with the study of the influence of computer games on the features of the transformation of the user's self-image that have been studied fragmentarily in psychological science. According to the majority of researchers (A.A. Avetisov, N.V. Bogachev, S.V. Bondarenko, Yu.D. Babaeva, A.E. Voikunsky, A.E. Mitin), the problem of human activity in cyberspace is based on the specificity virtual environment, where there is a possibility of overcoming the confrontation between the social environment,

In the work "Symbolic Exchange and Death" J. Baudrillard reflected his idea that the sensation of life takes place only when death penetrates into it, the desire to live manifests itself only during objectification through the fear of loss, the fear of death [4]. The obstacle necessary in order to feel the desire for life as an object of desire will be the fear of change, even if it is in the background. Humanity, which has long recognized the fact of its finitude, and the confirmed history of each individual subject, creates what Arthur Schopenhauer called the world will - the will inherent in each individual [5]. The world will as a collective phantasm of planetary size, having once included the subject in its system, uses it simultaneously for the purpose of its own representation and as a source of new material for constant constructing. Gaining knowledge through the objectification of the will, the subject also receives both collective experiences and fears, including the fear of death. Thus, the subject can get away from the world will, and hence from the fear of death, if he abandons the core that creates it, or delegates the qualities of his own subjectivity to a certain object, launching the mechanism of decentration.

By creating a digital construct (for example, a character in a computer game), the subject gains access to a wide range of possibilities that not only protect against the fear of death, but also contribute to fantasy construction. In this way, it can be concluded that users of computer games projecting the image of their own Self in the field of virtual reality and identifying themselves with the characters of a computer game may experience a number of intrapsychic changes that make virtual constitution really possible.

A unique feature of virtual reality is the ability to experiment with self-identification [6]. The world of the virtual game allows you to discover many new aspects, changing essences of the Self-image. When choosing a character in a computer game, the user visualizes the image (imago), which he subsequently incorporates. On the one hand, there is a splitting into external and internal: the external I - on the display, the internal I - as a subject, that is, the external distancing of the game with the virtual character is preserved. On the other hand, an on-screen character that the user creates for himself may exhibit traits and qualities that are impossible to recognize in real life. The I externalized on the display allows all representations of the ideal I to be realized, to compensate for the threatening emptiness of the real I, acting as a kind of alter ego of the subject. The virtual reality of the game, allowing to resolve the contradictions between unconscious desires and the rejection of them, conceptualizes two poles: the first as a way to play life's difficulties and failures, transferring them to the space of the game; the second is to use the virtual space of the game to identify and realize unconscious desires. The character of a computer game, acting as an alter ego, in this case, can start the process of sliding one identification to another, thereby creating difficulties in self-identification. E. Erickson presents the formation of identity as a form that is formed in childhood through alternation, self-syntheses and recrystallizations [7]. One of the basic coordinates of identity is the life cycle. In this way, The Self-image is a complex of judgments, assessments by a person of himself and all events throughout his life, changing attitudes towards them and himself in accordance with the situation.

2 Materials and Methods

Our research was aimed at studying the features of the self-identification process in a situation of excessive immersion in virtual computer reality. The study involved 450 people: students in grades 1-4 - 150 people; students of 2-4 courses of pre-form of education, different professional orientation - 150 people; adults (aged 35-42) -

150 people. The first stage of the research was associated with the study of preferred computer games in different age groups. Figure 1 shows the ratio of the types of computer games preferred by schoolchildren and students.

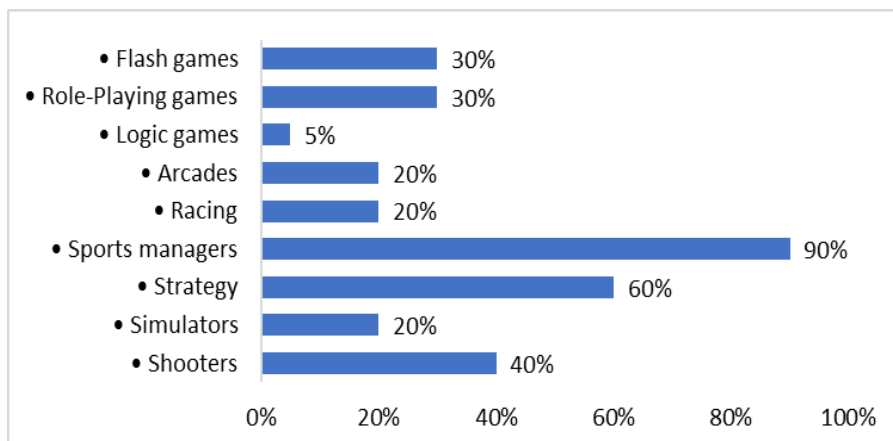


Fig. 1. Types of computer games preferred by schoolchildren and students.

As seen on Figure 1, in the first place are arcades, adventures, in the second - logic games, in the third - flash games, "shooters", games, entertainment and role-playing games. Among the respondents of the adult sample, on the basis of the questionnaire survey and non-standardized conversation, other tendencies were revealed. A significant part of active users of computer games among adults are men. Of the respondents, only 32% identified themselves as active users who spend their free time playing every day. The most popular genre is games that do not involve character development and create a virtual world with a high degree of character freedom of action. Anything that contains elements of competitive motivation is also attractive. Women in the adult sample turned out to be the least susceptible to this type of activity. Only 12% identify themselves as actively playing in their free time.

Revealing the results of the study of the peculiarities of self-identification under the influence of playful virtual reality, within the framework of this article, I would like to describe in more detail the results obtained on the example of junior schoolchildren. The empirical program included the following indicators: Attitude towards computer games and the degree of enthusiasm for them (Determination of attitudes towards computer games among junior schoolchildren); Test for identifying Internet addiction among adolescents by S.A. Kulakov; the study of the self-image and self-esteem (Dembo-Rubinstein's "Ladder" technique modified by S.G. Yakobson and V.G. Shchur); personal and social identity (Test "Who am I?" by M. Kuhn, T. McPartland, modified by T.V. Rummyantseva); and individual psychological characteristics (Projective drawing "Non-existent animal" by M.Z. Dukarevich, "Self-portrait" modified by K. Makhover; "House. Tree. Person" by J. Book).

3 Results

Analysis of data on the degree of enthusiasm for computer games in the sample and comparison of diagnostic indicators of the questionnaire "Determination of attitudes towards computer games" and the methodology of S.A. Kulakov, made it possible to distinguish two groups of younger students based on differences in indicators such as

emotional involvement, activity, regularity, duration of stay in the game (more than 1-2 hours daily); desire to be like the hero of the game; violation of self-control in game reality; changes in somatic health. This group junior schoolchildren who are overly keen on computer games (45%), and group, where the degree of enthusiasm for the virtual world of computer games can be considered acceptable (55%). In particular, 55% of junior schoolchildren characterized an interest in a computer game, which can be called adequate: there was an interest in playing activity in the virtual space of a computer game, a sufficient playing "experience". However, they were able to stop playing in a situation of necessity, did not show aggression, did not devote much time to this activity, preferring it to active live communication. Computer games were given no more than half an hour a day.

In this regard, it can be assumed that activity in the field of a computer game takes place, but it is at the level where children are able to control the time spent in the game - this can be interpreted as interest, rather than enthusiasm, and even more dependence. This group was mainly composed of girls - students from the 1st to the 4th grade and boys - students of the 1st and 2nd grades, who play computer games without the effect of "presence" and have a small playing experience, as well as 14 boys and 25 girls, pupils of the 3rd and 4th grades, who have sufficient playing "experience" and experience in games both without the effect of "presence" and with the effect of "presence". In this group of younger schoolchildren, the main objects for identification are parents, close relatives and fairy tale characters.

In the sample under study, out of 100%, 45% of students (mainly in grades 4) were identified as being at the stage of pre-addiction. These are players with extensive playing "experience", passionate about a certain type of games, where there is an element of character development. These subjects showed difficulties in social adaptation, a rather strong addiction to the game process. Objects for identification in the specified group of respondents in most cases are selected outside the family: these are characters from comics, computer games and cartoons. During the survey, their parents noted the following physiological and psychological changes in children: frequent headaches, back pain, emotional involvement; the need to be like the hero of the game; difficulties with switching attention, concentration on activities that have nothing to do with play; difficulties with self-control. That is, the parents themselves noted the presence of 6 out of 10 psychological criteria, and 3 out of 6 physiological criteria.

Based on a comparison of all diagnostic data obtained in the course of qualitative and statistical analysis of the results of the questionnaire, the methodology of S.A. Kulakov, 55% of junior schoolchildren who do not identify themselves with computer games (further - CG) characters, whose degree of enthusiasm for the virtual environment of computer games is recognized as acceptable, are defined by us as group of inactive CG users (group of norms). In turn, active users of computer games (risk group) accounted for 45%, showing an excessive passion for computer games, identifying with computer characters.

In order to assess the empirical validity, the rank correlation Spearman data on the selected groups - active and inactive users of computer games. Correlation analysis showed that in the group of junior schoolchildren we have identified - inactive users of computer games, the mean values have a greater spread, no correlations were found between the significance of computer games and the parameters of gaming enthusiasm. Correlation at a significance level of $p \leq 0.05$ was achieved in group of active users according to the following scales: the importance of computer games in a child's life ($R = 0.51$; $p \leq 0.05$); the duration of the game (more than 1.5 hours per day) ($R = 0.66$; $p \leq 0.05$); pronounced enthusiasm for

computer games ($R = 0.57$; $p \leq 0.05$), the presence of identification with a computer game character ($R = 0.59$; $p \leq 0.05$). A positive correlation indicates that with an increase in one indicator, an increase in another occurs: increase in the importance of computer games is directly proportional to the increase in all parameters (time spent at the computer, the number of preferred games, etc.).

According to the main hypothesis of the study, the systematic effect of the virtual reality of a computer game can influence the constitution of the Self-image. To test this assumption, we compared the characteristics of the Self-image - active users of computer games (experimental risk group) and inactive users of computer games (control group). The study of self-esteem showed that 70% of students - active users of CG revealed high values of this parameter (of which 45% have very high, but poorly differentiated self-esteem, 25% - high and well-differentiated self-esteem), medium - 20%, low - at 7%. Among junior schoolchildren who are inactive CG users, high self-esteem was found in 65% of people, medium - in 30%, low - in 5%. In order to prove the statistical reliability of the results obtained, we applied Fisher's angular transformation, and as a result, we did not find significant differences regarding self-esteem in the groups: 70% \ 65%, $p \leq 0.01$; 30% \ 20%, $p \leq 0.01$; 7% \ 5%, $p \leq 0.01$. In both groups of subjects, most often there is high self-esteem (70% and 65%), medium - in 20% and 30% of cases, and low - in 5% and 7% of primary schoolchildren. Fisher's angular transformation ϕ performed to identify differences in the qualitative characteristics of self-esteem in the studied groups showed a difference in only one indicator: active users of computer games, completing a task, more often than inactive users assign negative characteristics to themselves. For younger schoolchildren - active users, the percentage of such answers is 11%, and for inactive - only 3% ($\phi^* = 1.98$, $p \leq 0.01$).

The ratio of the time perspectives of the Self-image in the study groups is presented in Figure 2.

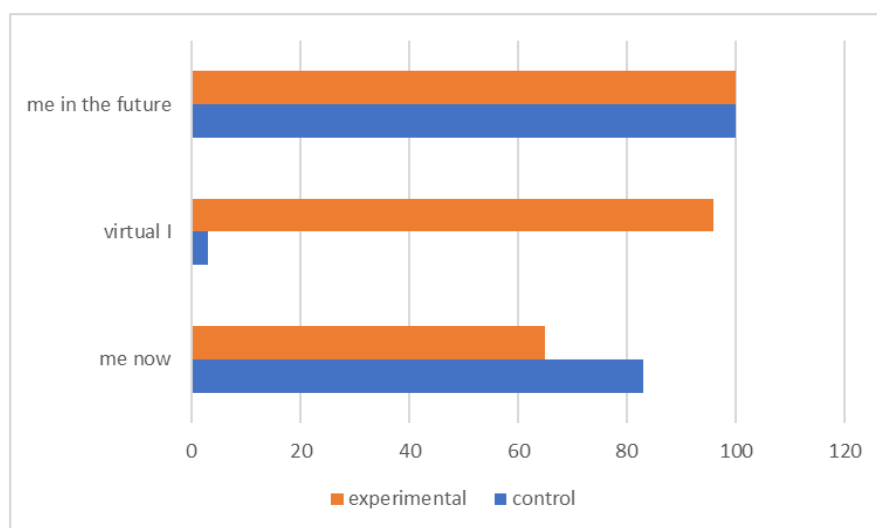


Fig. 2. The ratio of the time perspectives of the "I" image in two groups (in points).

The method of nonparametric statistics, Mann-Whitney U-test, was applied to the obtained data in order to identify the reliability of differences in components of the

image "I-virtual" among younger schoolchildren - active and inactive users of computer games (Table 1).

Table 1. The difference in the indicators of the "I" image among younger schoolchildren - active and inactive users of computer games.

The difference in the indicators of the "I" image among younger students	Rank sum Risk group	Rank sum Norm group	Difference	Statistical reliability, p <0.05
"Real Me"	99.50	110.50	eleven	-
"Virtual Me"	132,00	78,00	54	0.0513
"Ideal Me"	108.50	101.50	7	-

At the level of $p \leq 0.05$ in the control group, the descriptions of "Virtual Me" are poorly differentiated. Active CG users have practically the same image of "Ideal me" and "Virtual Me". This indicates a tendency to saturate the Self-image with future social roles and directs internal activity to the process of self-improvement in virtual reality.

To determine the characteristics of the self image and the identity parameters of younger schoolchildren - active and inactive users of computer games, we used methodology of M. Kuhn, T. McPartland "Who am I?". In the risk group it was shown that the main types of its valence are: neutral (48%) - the ratio of positive and negative self-identification takes place in descriptions where emotions are not clearly expressed; positive identification (40%) takes place when positive parameters dominate over negative ones; negative identification (about 11%) - negative descriptions of identity dominate. The main types of identity valence among inactive users of computer games are neutral and positive. Both groups are characterized by neutral identity and positive identity, which is an indicator of an adaptive state. In both groups, there is an overestimated self-esteem. The respondents in the experimental group are distinguished from the control group by the frequency of negative assessments, when negative categories prevail in the description. This type of valence reflects a maladaptive identity status. A qualitative analysis showed that in the answers of the two groups there are all categories of the methodology "Who am I?", excepting the category of "Material Self". Of the six categories, the samples are dominated by "Social Self", "Communicative Self", "Active Self" and "Reflexive Self".

Of the "Social Self" components, there are more often direct designations of gender, role position (student, schoolchild), ethnic and regional, family affiliation. The higher percentage of answers from respondents in this category can be explained by the fact that social roles are extremely important for younger students, since entering school is a landmark event in the life of every child: during this period, new meanings, goals and values of the child are formed, regardless of the degree of passion for computer games.

"Communicative Self" in both groups contains indications of friendly relations, peculiarities of interaction. We assumed that this category would be less represented in the experimental group, but the results of mathematical analysis showed no difference in the percentage of this category in both groups. The "Reflexive Self" of younger schoolchildren - active users of CG - turned out to be specific: in addition to the first name, surname, personal qualities, indicators of emotional self-attitude, there were also the names of computer heroes. Consequently, active users are dominated

by responses indicating that they position themselves as gamers compared to their peers who are inactive users.

A qualitative analysis of the identified characteristics of the "Physical Self" showed that the physical image of the self of an inactive CG user is prescribed in a more detailed way than that of their peers - active players: the percentage of emotionally positive responses in this category is significantly less than in the normal group. This testifies to the absence of the desire for reflection of sensory experiences and bodily sensations in younger schoolchildren - active users of computer games, as well as the uncertainty in the characteristics of the "Physical Self".

The rest of the respondents from the risk group (34%) and the control group (53%) most often describe themselves in the context of relationships with others. Children who are aware of themselves through the sphere of relationships evaluate themselves quite positively. Their self-image can be considered adequate to the real self-image, and self-esteem is overestimated, or adequate. In both groups, there are no students with a low level of self-awareness and structuredness of the self-image. Table 2 summarizes the mean values for each category of Kuhn's test.

Table 2. The ratio of answers in the two groups by category.

Category	Risk group (%)	Norm group (%)	Difference	φ *
Social Self	60%	62%	2%	-
Physical Self	1%	7%	6%	* $p \leq 0.01$
Communicative Self	10%	11%	1%	-
Active Self	11%	10%	1%	** $p \leq 0.05$
Reflexive Self	20%	26%	6%	** $p \leq 0.05$
Perspective self	10%	11%	1%	-

Note: φ * - the value of the Fisher criterion; level of statistical significance * $p \leq 0.01$; ** $p \leq 0.05$; "-" dash means no significant difference between percentages

As can be seen from Table 2, there are differences in the indicators regarding the "Active Self": among younger schoolchildren - active users of CG there are statements about activities in a computer game, they represent and express themselves as players. Such statements are absolutely not typical for inactive CG users ($p \leq 0.05$). Analysis revealed characteristics of the "Physical Self" showed that the physical image of the "I" of the inactive user of the CG is prescribed in a more detailed way, in relation to peers - active players. This testifies to the lack of desire for reflection of sensory experiences and bodily sensations in younger schoolchildren - active users of computer games, uncertainty in the characteristics of the "Physical Self".

The next stage of the study was implemented using the "Drawing of a nonexistent animal" and is aimed at carrying out diagnostics that reveal the specifics of the Self-image of younger schoolchildren - active and inactive users of computer games. The interpretation of this technique was carried out by describing the measured signs of self-attitude and differentiation of the Self-image of younger schoolchildren. In this regard, the quantitative ratio of self-esteem indicators and personality traits in the groups was calculated (that is, the number of drawings where this or that indicator is present). In the qualitative analysis of this technique, special attention is also paid to such an indicator as the image of characters in computer games, in view of the

previously formulated assumption that there is a relationship between the image of a non-existent animal and the Self-image, the mediation of his fantasy by the experience of interaction with virtual reality.

It turned out that the drawings of active users of computer games are replete with images rather than a non-existent animal, but a computer character of a specific computer game (20%). This kind of phenomenon was not found in the images of a nonexistent animal in the group of inactive users of computer games. Thus, the image of a non-existent animal in the form of a computer character is a significant diagnostic indicator.

4 Discussion

Currently, research on the impact of computer games on the mental health and personality of active users is focused on the problem of psychological well-being; studying the relationship between Internet addicted behavior and preferred genres of computer games (Hyunho H.; Hyunsuk J.); [8] analysis of the influence of computer games on personality traits and behavior (Eun Joo Kim; Kee Namkoong) [9]. Thus, the authors confirm the results of our study that as a result of excessive immersion in computer games, active users may experience changes in the level of self-esteem and self-control. In research of Eun Joo Kim and Kee Namkoong it was shown that narcissistic personality traits are positively correlated with addiction to computer games, while self-control is negatively correlated with online gaming addiction ($p < 0.001$). Interesting conclusions regarding the influence of computer games of different genres on personality traits were obtained in the study by Matveeva L.V., Makalatiya A.G. Confirming our thesis that virtual reality creates special opportunities for studying oneself and gaining a variety of experience of communication with others (often inaccessible in real life), the authors consider a computer game as a “model of successful activity” and a factor influencing the processes of self-identification [10]. The choice of games, according to the authors, is largely determined by the preferred type of action, and not by plot and semantic parameters. The ability to experience states of confidence, strength, fearlessness determines the degree of human involvement in virtual reality and is one of the important aspects of the attractiveness of a computer game. Thus, in a study carried out by Marian Sauter and Tina Brown, it is shown that social context and gaming motives (in particular, achievement motives and escapism) can be considered as predictors of involvement in computer games and be an important indicator of psychological well-being [11]. As in a number of other studies, the thesis is substantiated that computer games partially perform a compensatory function, helping people to escape from disturbing reality, incomplete contacts, loneliness, stress. However, moving social activity into the plane of the game entails a temporary decrease in social anxiety along with a dangerous decrease in live communication and full-fledged social contacts.

Thus, foreign involvement in computer games can be considered as an unconstructive strategy to combat stress in order to reduce psychoemotional tension and overcome negative emotional states [12, 13, 14]. This can potentially pose risks to the social identity of young people [15]. Thus, in a study by Giardina, A., Di Blasi, M., Schimmenti, A., the purpose of which was to study the features of experiencing anxiety during COVID-19 self-isolation, it was shown that computer games actually mitigate emotional stress during pandemic-related self-isolation, however, inadequate game models may represent a vulnerability factor that deserves clinical attention [12]. Thus, of particular importance is the study of the meanings and values

of computer games in order to more accurately predict possible risks or positive contributions that determine the process of self-knowledge and self-identification of a person at different age stages.

5 Conclusions

Summing up, let us draw some conclusions: the virtual reality of a computer game is one of the factors in the transformation of the Self-image of an active user if there is an identification (identification) of oneself with its heroes; the Self-image of active users of computer games has a number of features: the uncertainty of the descriptions of the physical self, the weakness of reflection of one's own emotional experiences and bodily sensations, an unrealistic level of aspirations, inadequate self-esteem. Virtual game reality is one of the factors in the constitution of the Self-image in those cases when the user, delving into a computer game, begins to change his identification, identifying himself with virtual heroes. Role-based identification arising in an active user of computer games initiates a number of intrapsychic changes.

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