

# **Evaluating Effectiveness of Using Information-Communication Technologies to Overcome Characterological Disorders of Children with Mental Retardation**

Trufanova G. K.\* Khlystova E.V. Sebergeseva Yu.G.

*Ural State Pedagogical University, Yekaterinburg, Russian Federation*

*\*Corresponding author. Email: ya.trufanova-galina@yandex.ru*

## **ABSTRACT**

The article presents results of the study on evaluating effectiveness of using information-communication technologies to overcome characterological disorders of primary schoolchildren with mental retardation. On the basis of theoretical analysis, conditions and mechanisms of formation of the personal sphere of children of this category are described. The results of an empirical study of maladaptive characterological manifestations in children with mental retardation are presented. Relationship between characterological manifestations in the studied category of children is established. The article describes a correctional-developmental program for overcoming characterological disorders based on the use of information-communication technologies. Attention is focused on principles and conditions for effective use of information-communication technologies to achieve correctional goals. The results of testing the correction program using information-communication technologies are presented and its effectiveness is analyzed.

**Keywords:** *characterological disorders, maladaptive character traits, children of primary school age with mental retardation, information-communication technologies*

## **1. INTRODUCTION**

Characterological disorders are currently a common phenomenon and are frequently attracting attention of researchers. Arising in the process of becoming a person and becoming fixed in adolescence, they significantly reduce adaptive capabilities of a person, cause antisocial, criminal behavior, and reduce the level of psychological and social well-being of society as a whole [9].

With mental retardation (MR), the risk of personal disharmony increases significantly. At the same time, this mental sphere can be a resource that compensates intellectual insufficiency inherent in this category of abnormal development [4, 8]. Therefore, the study of characterological disorders in children of primary school age with MR, as well as the search for effective technologies for their prevention is an urgent task of modern special psychology.

The use of information and communication technologies (ICTs) in this regard is still a little-explored area. Most often, these tools are used for solving educational problems, developing and correcting cognitive sphere [1]. The possibilities of information-communication technologies (ICTs) in optimizing a personality of young children with MR remain an open question, both in theoretical and practical aspects.

Based on the above mentioned, the purpose of the work was formulated: to evaluate effectiveness of using information and communication technologies to overcome characterological disorders of primary school children with mental retardation.

## **2. METHODOLOGY OF THE RESEARCH**

The problem of personality formation and its structural components is one of the key issues in various spheres of psychology [9]. Character is considered as a set of stable personality traits that determine a person's attitude to people, to work, to events occurring around him, as well as his/her purposeful actions.

It manifests itself as a product of individualization of a person in the process of socialization, the result of resolving a contradiction between: a) typification of thinking and behavior due to the very essence of socialization, and b) innate individual characteristics and preferences of a person [7]. Thus, the character reflects almost all mental parameters of an individual.

Personal sphere of individuals having MR is influenced by dysontogenetic mechanisms, which give originality to this process. Mental infantilism, reduced regulatory role of speech, distorted social matrices, neurodynamic disorders, and destructive psychological defenses are all reflected in gradually entrenched forms of social response [4].

Considering specifics of neuropsychological mechanisms of developing the psyche in some variants of MR, Ya. Semago and M. M. Semago, , point to the lopsided maturation of individual functions. The authors emphasize the obvious manifestation of asynchrony as a dysontogenetic model. Disproportionate mental development is characterized by a marked advance in development of some mental functions and properties of the emerging personality and a significant lag in pace and timing of maturation of other functions and properties, that becomes the basis of the disharmonic structure of the personality [11].

G. V. Gribanova describes infantile or impulsive-affective ways of getting out of conflict situations, a tendency to asocial contacts, and ignoring socially significant norms as characteristic features of MR. By the end of adolescence, these features become already stable character traits [3].

Thus, as character disorders, researchers consider maladaptive traits that are already noticeable in preschool age, can latently manifest themselves in primary school age, and by the adolescent stage are fixed as character accentuations. At the end of puberty, which is a critical period of characterological disorders, it is already legitimate to speak about personal disorders (psychopathies) [5, 6].

In classifications of mental disorders, psychopathies are considered as relatively stable complexes of symptoms that reflect lifestyle, attitude to oneself and others [2]. They present character abnormalities that are accompanied by a loss of adaptability, flexibility, adaptability to changing realities, and are the basis of neurotic disorders and asocial behavior [6].

It is obvious that primary school age can be a key for preventing and overcoming characterological disorders in the case of MR [5]. Using ICT for these purposes opens great opportunities, as it allows children to communicate adaptive behavior patterns and moral standards as the basis of personal attitudes in an accessible form, by passing cognitive limitations.

Undoubtedly, the use of these technologies in working with children with mental retardation requires to form an ICT competence that will allow to organize effectively the process of interaction with children with a MR in accordance with their development characteristics and educational needs [12]. However, there is an unclear issue about the content of ICTs remained It concerns saturation ICT and limitations when forming a corrective program using these methods.

### **3. RESULTS OF THE RESEARCH**

An experimental study of possibilities of ICTs for overcoming characterological disorders of primary school children with MR was conducted on the basis of “Yekaterinburg boarding school № 9, which implements adapted basic general education programs”. The sample of probationers was made up of 10 children with MR at the age of nine-ten years. The following methods were used

as psychological assessment: "Observation chart" of D. Stott for studying peculiarities of emotional and behavioral spheres, the projective test "Nonexistent animal" for identifying characteristics of a personality in general, and the level of aggression of children, in particular, “the "Rosenzweig Test" for determination of a prevailing model of frustration reaction. To assess predisposition to a particular accentuation, a symptomatic observation form were compiled.

Analysis of obtained experimental data showed that the majority of subjects are characterized by manifestations on the following diagnostic scales: distrust of new people, things, situations; depression; anxiety towards adults; hostility towards adults.

During examination, it was noted that these children rather often did not help their peers, behaved with restraint or impulsively (extreme options), and often showed refusals to actively participate in the game. Half of the probationers were characterized by frequent manifestations of apathy, social inattention, and sudden and sharp declines of activity and mood.

Based on the results of the analysis of empirical data obtained during the survey of respondents using t "non-existent animal" method, it was found that predominance of suppressed aggression with obvious manifestations of destructive attitudes, which were mainly manifested when children interpreted their own drawings.

The study of the direction of frustration reaction using the “Rosenzweig’s test method” demonstrated the predominance of two types of it: impulsive and extrapunitive. That is, a frustrating situation is considered by the probationers either as something insignificant or unavoidable, in which there is no blame for others or oneself, or as a manifestation of their own guilt or responsibility. In both cases, there is no condemnation of external side (other participants in frustrating situation) and no intention to overcome the social conflict presented in the stimulus material.

When calculating the manifestations of the symptom complex of various character accents, the predominance of the following types was found: hysteric, conformal, unstable. This indicates a clear manifestation of unbalanced traits: a high need for attention to oneself, admiration from others, lack of their own opinion and initiative, a tendency to avoid responsibility, impulsiveness.

In order to determine and analyze characterological profile of the probationers there have been necessity of establishing patterns and mutual influence of individual components of character, determination of features of these patterns and predisposition to certain types of character accentuation or psychopathic development proved. These data are a key in determining the content and direction of further corrective work.

To identify relationship between indicators of characterological manifestations of the probationers, a Pearson correlation analysis was performed using the Excel program. The result is shown in table 1.

**Table 1** Correlation matrix of indicators of characterological manifestations of probationers

	mistrust	depression	anxiety	extrapunitive	intropunitive	impunitive
mistrust		<b>0,756645</b>	-0,47973	0,055308	-0,13413	0,123619
depression			-0,27927	0,438851	-0,27259	-0,2643
anxiety				0,377256	-0,39723	0,029008
extrapunitive						
intropunitive				-0,79871		
impunitive				-0,32297	-0,31151	

As it can be seen from the data presented in the table, there is a positive correlation (0.756 at  $p = 0.01$ ) between two psychological parameters, this is "Distrust to adults" and "Depressiveness". It can be assumed that distrust to adults, new people, situations works as the main trigger of lower mood.

The obtained data became the basis for formulation of correctional tasks: formation of a positive image of an adult; constructive, trust-based models of interaction with him/her in solving life problems; reducing impulsivity in social response, personal decentralization, and fixing socially acceptable standards of behavior.

The following principles were taken into account when selecting technologies and forming corrective procedures:

1. The principle of normalization of emotional and behavioral spheres. When determining the content of ICT, it is important to use those forms that will optimize emotional and behavioral spheres.
2. The principle of health protection. Abnormality of the nervous system in the case of MR determines a clear dosage of information load, creating additional conditions for leveling sensory tension.
3. The principle of complexness. It involves a combination of ICTs with active forms of socio-psychological learning. One of these forms of work is socio-psychological training with the use of information and communication technologies. The work is based on a complex thematic method combined with visual and game techniques, which contributes to the involvement of various resource aspects of the psyche [8].

In order to prevent and overcome characterological disorders of children of primary school age, a correctional-developmental program was compiled and implemented, including 40 training sessions to increase motivation and achieve a higher correctional effect, elements of ICTs were included. Using ICT in correctional training sessions were the following: selection, viewing and subsequent analysis of fragments of films, videos, social ads, etc.

All videos were selected taking into account the age characteristics of students and actual themes of a lesson. In correctional classes, videos were used in four main ways:

1. as an updating of a lesson theme;
2. as an illustration of the main content of the lesson in order to consolidate knowledge and skills;

3. as a means of tracking the main content of the lesson in the video;

4. as a process of maintaining a positive emotional background of the group at the final stages of the lesson.

While watching the video, special attention was paid to images and behavior of characters that are acceptable for children of primary school age, emotional experiences, positivity or negativity of film dynamics. After watching a video, such forms of work were organized as: spontaneous discussion, reflection of feelings by each participant of a training, associative drawing, creating new stories, giving examples from their own lives and analyzing these examples.

The analysis of effectiveness of the proposed program for prevention and overcoming of characterological disorders in children with MR was carried out using the control stage of the experiment using the "observation chart of D. Stott and symptomatic observation of manifestations of character accentuations.

The majority of probationers showed a decrease in indicators of characterological disorders. There were significant decreases in the following scales: distrust of adults; anxiety towards adults; hostility towards adults; and neurotic symptoms.

Statistical data obtained when calculating the student's t-test indicates the effectiveness of the correction program being implemented, since the calculation indicators are in the zone of statistical significance. The analysis of qualitative characteristics shows that more positive changes were observed on the scales that indicate attitude to adults: distrust of adults, anxiety towards adults, hostility to adults. There was also a significant reduction in neurotic symptoms in all subjects.

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#### 4. DISCUSSING THE RESULTS

The analysis of the conducted detailed experiment confirms the following provisions:

- children of primary school age with a MR show unbalanced character traits, which can be considered as characterological disorders or prerequisites for them;
- according to the results of the study, the probationers, to a greater extent, show traits of hysteria, conformity and unstable personality type;
- such features as distrust of adults, fear of the new, a tendency to depressive experiences, and impulsivity are

#### 5. CONCLUSION

Information-communication technologies have wide opportunities in implementation of psychological-pedagogical support for children of primary school age with a MR. It is obvious that the potential of these methods is not limited to educational tasks. In the process of overcoming characterological disorders and optimizing personal sphere, resources of these technologies deserve special attention.

Effectiveness of using ICT to solve these tasks is achieved due to such features of organizing correctional work as:

- predominance of visual information in the course of a lesson;
- reducing the impact of the emotional barrier that occurs during verbal personal interaction between children and adults;
- opportunity to reduce the effect of decentralization, distraction from their own behavioral problems and analysis of actions of the characters shown;

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interrelated with the found features of characterological disorders;

- the use of ICT in the construction of corrective measures to overcome characterological violations requires compliance with a number of conditions that take into account the specifics of the MR;
- implementation of a correctional program using ICT under specific conditions can significantly reduce manifestations of characterological disorders and prevent formation of personality disorders in the future.

- actualization of emotional experiences and identification with the characters as a tool for forming empathy and socially-approved standards of social response;
- development of psychological competence due to familiarity with different types and analysis of different social situations;
- training in reflection and introspection;
- opportunity to alternate types of presented information (viewing, discussion, case tasks, joint creativity, etc.).

Thus, the use of information- communication technologies to overcome characterological disorders of children of primary school age with MR is effective when taking into account specific manifestations of this variant of abnormal development. The use of these methods optimize personal development reveals new opportunities for psychological support, updating compensatory resources and successful socialization of children with mild developmental disabilities.

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