THE INFORMATIZATION AND INTELLECTUAL DEVELOPMENT OF PRESCHOOL CHILDREN

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Abstract

Informatization of modern society affects all spheres of its life. Neuropsychological development of children is an important indicator of health which is influenced by social factors, including the informatization of society.

The rapid development of information society is accompanied by a tendency to reduce the quality of Russian education. In this regard, the establishment of links between informatization and intellectual development of children is very important.

The work examined groups of children who visited preschool institutions in the pre-information period (1999-2000), as well as in the period of information development (modern period). A total of 214 children aged 5 to 6.5 years in the preschool organization were studied.

The intellectual development of preschoolers was studied by the Ravenna children’s test (Rogov, 1996). The assessment was conducted in accordance with the classification of degrees of intellectual development. High intelligence was considered the results of the survey, when performing more than 95% of tasks; above average with the number of completed tasks in the range from 75% to 94% of completed tasks; average in the range from 25% to 74%; below average in the range from 5% to 24%; intelligence defect was taken if the number of correct answers was less than 5% (Dermanova, 2002).

The level of anxiety of preschool children were studied by using the method of Prikhozhan A. M. (Prikhozhan, 2000).

The results of the study showed that children at the present stage increased the overall level of anxiety, reduced intellectual development compared with preschoolers in the pre-information period, there was an increase in the aggressive background and unmotivated fears «outside the home».

In our opinion, the informatization not only reduces the possibility of converting information into knowledge, but also reduces social contacts which together with an excess of information lead to a violation of the age development of the nervous system, hyperactivity, aggressiveness, increased anxiety.

It is shown that the informatization is a new factor that requires the study and development of new hygienic methods to reduce the negative impact.

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1. Introduction

The transition of mankind to a new stage of development - the information society, is one of the most important aspects of the development of society. Some authors note that the informatization of society is an objective reality and significantly affects all spheres of society (Gafurova, 2012).

Many researchers note that the development of scientific and technological progress (and in particular the informatization of society and the education system) worsens the overall performance of neuropsychological, intellectual development of children, deteriorating overall health of children (especially during the stay of preschool children in an educational institution). Researchers noted that only 10% of students in Russia can be considered healthy, 50% have morphological and functional abnormalities, 40% have chronic diseases (Kuchma, Stepanova, 2001).

Deterioration of indicators of intellectual development, mental health disorders, the spread of aggressive behavior among children, an increase in the number of hyperactive and inattentive children were noted by some researchers (Savkina, Slobodskaya, 2010). A stable tendency to increase the number of children with signs of motor disinhibition, deviant behavior and other intellectual and mental disorders was revealed (Osipova, 2011).

2. Problem Statement

Intellectual development of children is a sensitive indicator of the health of children. The study of cognitive development of children is an urgent task, as in childhood there is an intensive formation of intelligence, its development (Kolmagorova, 2007). Emotional tension and mental discomfort have a significant impact on the child’s psyche, inhibiting its development (Rusova, 2002). Anxiety is the most important mental mechanism for solving problems of intellectual development (Savkina, 2010; Setko, 2008). The study of problems affecting the development of intelligence, such as computerization, as well as neuro-mental development of children is very relevant.

3. Research Questions

The subject of this research is the intellectual development and anxiety of preschool children in comparison with pre-information and information periods.

4. Purpose of the Study

The aim of the research is to identify the impact of the informatization of modern society on the intellectual development and anxiety of preschool children.

5. Research Methods

Groups were formed for the research. A total of 214 children aged 5 to 6.5 years in preschool institutions were studied. Group I (98 children) - pre-information period children who attended pre-school organization in 1999-2000. Group II (113 children of the modern information period). The formation of groups was carried out by a continuous method but children with severe and high levels of stigma, levels of risk factors in ontogenesis, biological and social history were excluded from the group of children selected for the study. We studied the levels of intellectual development using the Raven test (Rogov, 1996) for children of 5-7 years. The results were compared with the average for the series (Dermanova, 2002). The resulting total figure was converted into percentages and compared with the classification of degrees of intellectual development (Dermanova, 2002). High intelligence was considered the results of the survey, when performing more than 95% of tasks; above average with the number of completed tasks in the range from 75% to 94% of completed tasks; average in the range from 25% to 74%; below average in the range from 5% to 24%; the defect of intelligence was accepted if the number of correct answers was less than 5% (Dermanova, 2002).

The anxiety level of children was evaluated by the method proposed by Prikhozhan A. M. (Rogov, 1996).
Statistical processing of the results was carried out using the program Statistica Base 10 for Windows Ru. During statistical processing, the arithmetic mean (M), the standard deviation (δ), the mean error of the arithmetic mean (m) were calculated. Prior to the statistical analysis, the character of the distribution of signs to normality was evaluated. The statistical significance of differences in quantitative characteristics with normal distribution was analyzed using the Student t-test in the confidence interval of more than 95%. In the case of abnormal distribution of the variation series, the statistical significance of the differences was analyzed using the Mann-Whitney test. The analysis of the statistical significance of differences in qualitative characteristics was carried out using the χ² criterion. The dependence between the two variables was evaluated using Spearman’s correlation coefficient. The critical level of significance when testing statistical hypotheses was taken to be 0.05.

6. Findings

In the modern period is marked by negative trends of the decrease of intellectual potential in children. Thus, an increase in the number of children with average intelligence (46.6%±5.0) and below average (53.3%±5.0). These indicators were 58.4%±4.9 I 41.5%±4.9 children, respectively (intelligence average and below average) in the pre-information period.

The highest rate of decline in the level of intelligence was observed in girls. The number of girls with an average level of intellectual development decreased by 13.8%, intelligence below the average age by 15.2%. In boys, these figures had a lower rate of decline due to the initial low rates. So the average level of intelligence decreased by 10.1%, and the level below the average due to this increased by the same number of children.

The analysis of data in absolute figures (points) also showed a statistically significant decrease in the intellectual development of children in modern conditions (24.6 points in 2000 against 23.1 points at present) p<0.05. Accordingly, it was confirmed prospective trends differences in girls and boys (statistically significant differences were revealed, p>0.05).

In general, the assumptions of many authors to reduce the overall intellectual potential of children depending on the informatization of social development are confirmed (Kolmagorova, 2007). The study of children’s anxiety showed statistically significant changes in general anxiety and shock anxiety assessments (except for school anxiety). So the overall anxiety of preschool children at the present stage...
increased by 7.2 points. In girls, these changes did not differ significantly. Their development amounted to 8.8 points (p≥0.05). In boys, anxiety increased by 12.1 points (p<0.05).

According to the indicators of scale factors, children at the present stage were more prone to so-called magical anxiety, which increased by 3.5 points (p<0.05). Interpersonal and self-assessment anxiety increased slightly less, but by 1.4 points (interpersonal) and 1.3 points (self-assessment), which was statistically significant (p<0.05). Prespecification the differences were significant only for interpersonal anxiety. The increase was 1.3 points for boys and 1.4 points for girls (p<0.05). School anxiety changed by 0.2 points and had no statistical value (p≥0.05).

Correlation analysis of anxiety showed that the main reasons for the increase in anxiety in children in the information society are not violations in the structure of family relations, but a decrease in the level of self-esteem of children, their dependence on the opinions of others. Children in the pre-information period had developed adaptation mechanisms, highly controlled their actions, had a strong and active position in the group (r=0.52). In the information period, low indicators of the relationship between anxiety and family problems (jealousy of siblings: r=-0.28; jealousy of parents: r=0.156), as well as low self-esteem and a weak social position.

7. Conclusion

Our studies have found that despite the high levels of anxiety in both groups, at the present stage these levels were higher. The research helped to understand the mechanisms of formation of anxiety in children in the information society. So in the pre-information period, the formation of anxiety was due to the unfavorable family situation, unfavorable parenting styles, experiences of unfavorable emotional ties. However, the children in this group were more adapted and coped well with situations of anxiety. The informatization of social development and education of children increased the aggressive background and increased unmotivated fears (r=0.4).

The level of intellectual development in the conditions of the informatization has decreased, which explains the decline in the quality of education identified by the results of education under the Program Student Assessment (PISA) for 15-year-old children (Goncharov, 2009). Thus, the reduction of intellectual potential is one of the effects of the informatization of society (Kuchma, 2015).

Thus, according to critics of the informatization Coombs F. and Webster D. (Coobs, 1985), in the information society increases access to information resources reducing the level of cognitive activity of man, and as a result there is a devaluation of fundamental knowledge, «mediocrity» becomes leading in the educational process (Coobs, 1985).

The reason for this negative impact of the informatization is to reduce the possibility of transforming information into knowledge, as well as to reduce social contacts (Coobs, 1985). The lack of communication links in the family, in the educational organization, and at the same time an excess of information lead to a violation of the age-related rates of development of the nervous system, increases hyperactivity, increases aggressiveness, increases anxiety, reduces the ability to empathy (Kuchma, 2001).

Thus, the informatization of public life significantly affects the intellectual development and anxiety of preschool children, which adversely affects both their education and upbringing, and the prospects for further harmonious social development.

References


