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UDC 612

### **The Influence of Study Load on the Psycho-emotional State of Schoolchildren at Schools of Innovative Type**

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**ABSTRACT.** In the article the connection of psycho-emotional state of schoolchildren of 7th and 9th grades studying at schools of innovative type with intensive education technology with educational load was studied. Increase of anxiety level, decrease in activity, health and mood, and increasing emotional instability of schoolchildren of both sexes by the end of the lessons was revealed.

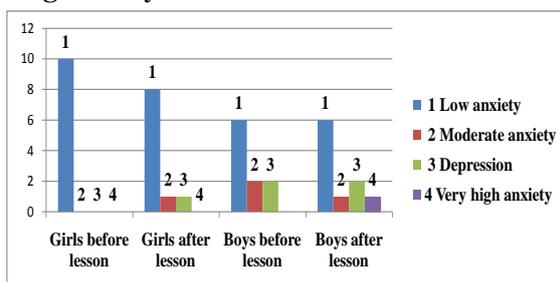
**Keywords:** study load; psycho-emotional state; emotional instability; anxiety level; difficulty scale.

**INTRODUCTION.** At the present stage in the education system changes occur, new educational systems and technologies are introduced, the number of subjects offered for study increases. In this case the time for homework increases, the time of physical activity and sleep reduces and as a result of this health of schoolchildren deteriorates. Study load depends on the organization of the educational process, including timetables, elective classes and extracurricular and extramural activities of students. Along with this, in research of some authors high level of school anxiety, school neuroses of schoolchildren studying by new technologies was identified [1, 2, 3]. Therefore, the problem of influence of school study load on psycho-emotional state of children is especially actual. The correct organization of education taking into account study load on the psychics of schoolchildren can be an effective factor in improving the social adaptation [4].

**MATERIALS AND METHODS.** The study involved schoolchildren of the 7th (20 pers.) and 9th (20 pers.) grades of the specialized school for gifted children "Daryn" (Karaganda). To assess the psycho-emotional state of schoolchildren the following psycho tests were conducted: Spielberger-Khanin test exploring situational anxiety, HAM test designed for rapid assessment of health, activity and mood, testing by Eysenck Questionnaire to determine level of emotional

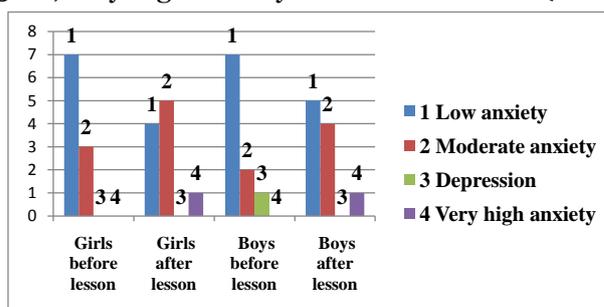
stability. Testing was conducted before and after 6-8 lessons. The results were statistically processed in Excel, reliability of the results was assessed by Student's t-test. Analysis and evaluation of timetables compounded in the target classes was conducted by the table (scale of difficulty of subjects) of Sivkov G.I. (1975) [5].

**DISCUSSION.** Conducted research allowed to reveal that parameters of schoolchildren of the 7th and 9th grades were different depending on gender, as well as before and after lessons. In particular, before lessons among students of the 7th grade low anxiety was noted at 100% of girls and 60 % of boys. Moderate anxiety at 20% and depression at 20% of boys before lessons. The study of situational anxiety among schoolchildren after lessons allowed to reveal the following changes: low anxiety was noted at 80%, moderate anxiety at 10 % and depression at 10 % of girls. Among boys percentage of students with low anxiety remained unchanged, the number of students with moderate anxiety decreased by 10 %, depression was observed in 20 % of cases and very high anxiety level in 10 % of cases (Pic. 1). On the whole analysis of the results indicates to the deterioration of psycho-emotional state of students by the end of lessons, which appears as depression and growing anxiety level of the students.



Pic. 1. Levels of situational anxiety of students of the 7th grade before and after lessons

Among the 9th grade students during the Spielberger-Khanin test identifying the level of situational anxiety before the lessons we found: among girls low anxiety in 70% of cases, moderate anxiety in 30% of cases. After 6-8 lessons among girls low anxiety was noted at 40% of students, moderate anxiety at 50%, very high anxiety at 10% of students (Pic. 2).



Pic. 2. Levels of situational anxiety of students of the 9th grade before and after lessons

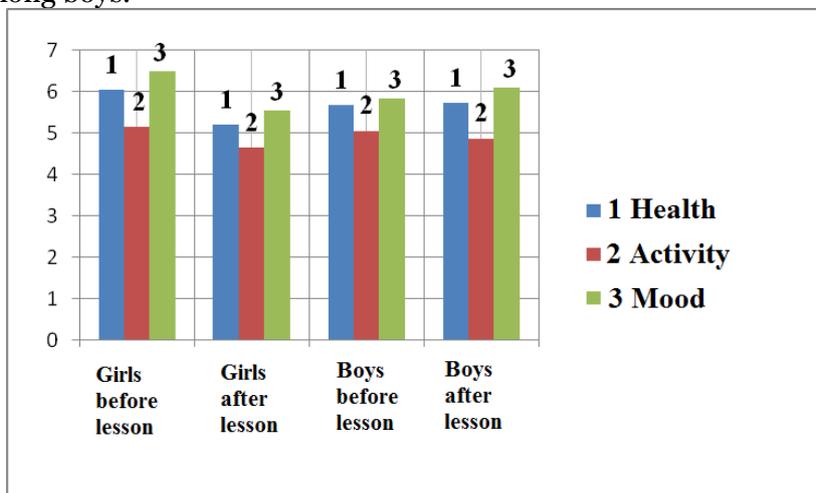
Among boys of the 9th grade low level of situational anxiety before the lessons was observed in 70 % of cases, moderate anxiety in 20 % and depression in 10 % of cases. After lessons low anxiety was noted in 50 %, moderate anxiety in 40 % and very high anxiety in 10 % of cases.

Thus, the analysis of situational anxiety allows to conclude that the educational process affects the level of anxiety of schoolchildren, regardless of sex, because after lessons situational anxiety increased by 30 % among girls and by 20 % among boys, while both groups had students with a very high level of anxiety.

Rapid assessment of the mental state: health, activity and mood among the 7th grade students before and after lessons did not reveal significant changes to the downside. However,

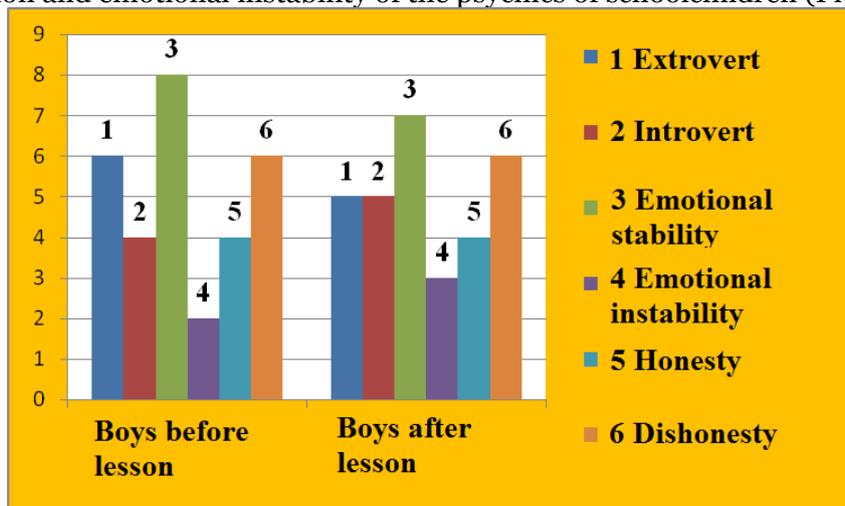
despite the fact that the numerical values remained within normal limits, in general, all parameters were significantly lower after lessons than before. The greatest changes to the downside found in index of activity (Pic. 3).

Analysis of the rapid assessment of the mental state of the 9th grade students allowed to reveal significant decline in health, activity and mood in both sexes after lessons, with the greatest changes found among boys.



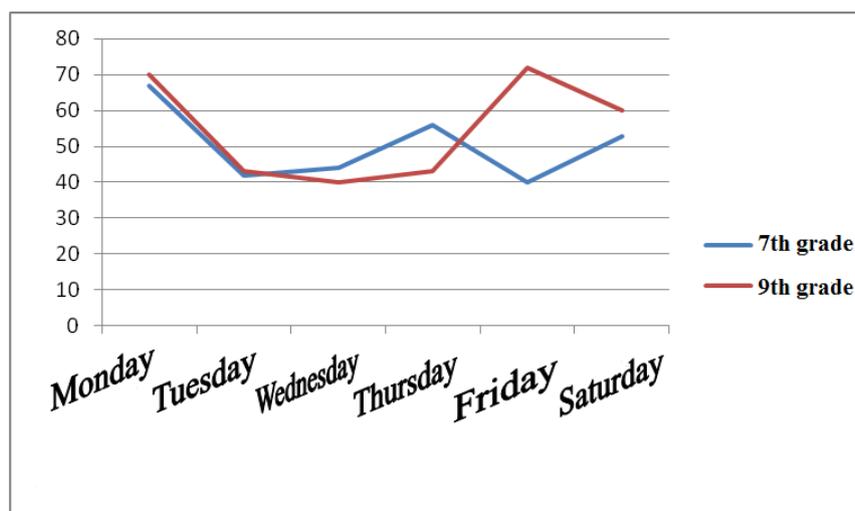
Pic. 3. Self-assessment of the mental state of the 7th grade students

Among students of the 7th grade level of neuroticism remained unchanged before and after lessons at boys and declined after school at girls. At boys of the 9th grade the index rose, which is evidence of tension and emotional instability of the psychics of schoolchildren (Pic. 4).



Pic. 4. Indicators of the basic properties of personality of students of the 9th grade

Modern scientific researches have established biorhythmological optimum of intellectual working capacity of schoolchildren. Intellectual working capacity of students on different days of the study week is not the same [6]. Its level increases toward the middle of the week and remains low at the beginning (Monday) and at the end (Friday) of the week. Therefore, the distribution of the study load throughout the week was constructed in such a way that most of its volume fell on Tuesday and Thursday. Analysis of ranking of school timetable on weekdays by Sivkov difficulty scale has shown that in the studied school in the 7th grades Monday, Thursday and Saturday are the most heavily loaded, the same situation is observed in the 9th grades, where the highest score in parameters of difficulty is registered on Monday, Friday and Saturday. In these days the schedule includes double lessons of mathematics, Russian language, Kazakh language, as well as lessons of physics and informatics. As can be seen the most difficult subjects are included in these days (Pic. 5).



Pic. 5. Graphical distribution of subjects difficulty scale in timetable at students of the 7th and 9th grade

Weekly load in the 7th grade is 38 hours and in the 9th grade is 42 hours, while according to the recommendation of age physiologists weekly load in the 7th and 9th grades should be 30 hours. Meanwhile, among the factors contributing to overfatigue of schoolchildren and deterioration of their psycho-emotional state incorrect organization of labor and educational process in general plays an important role; discrepancy of study load to age and individual features of schoolchildren and ignoring of hygiene requirements to regime and conditions of education [7].

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**Аннотация.** В статье изучена связь психоэмоционального состояния школьников 7 и 9-го классов, обучающихся в школах нового типа с интенсивными технологиями обучения с учебной нагрузкой. Выявлено повышение уровня тревожности, снижение активности, самочувствия и настроения, а также повышение эмоциональной неустойчивости школьников обоего пола к концу занятий.

**Ключевые слова:** учебная нагрузка; психоэмоциональное состояние; эмоциональная неустойчивость; уровень тревожности; шкала трудности.