

EFFICACY OF APPLICATION TECHNOLOGY OF MANAGING PHYSICAL EXERCISE BY THE MUSICAL ACCOMPANIMENT TO REDUCE SCHOOL ANXIETY FIRST FORM PUPILS

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Annotation. *Purpose:* to study the need to improve the mental state of first-graders and the possibility of achieving this goal, the lesson of physical culture at the expense of proper use of musical accompaniment exercise. *Material:* participated in the experiment experimental, control and background group (only 55 students of first class). *Results:* argues that music has a regulating effect on mental and physiological state of a person. It is noted that the combined effects of exercise and music on the body and psyche of a child reduces total anxiety in school. Also reduces the fear in a meaningful situation knowledge test. Found that the effect of exercise without music and with various embodiments use musical accompaniment in the lesson to address interpersonal relations student and the teacher has no significant difference. *Conclusions:* as a result of the pedagogical experiment to identify significantly positive, confirming the effectiveness of the technology of managing physical exercise by the musical accompaniment for the performance of most indicators of school anxiety.

Keywords: physical education lesson, music, technology, regulation, first grade, school anxiety.

Introduction

The fulfilled analysis of scientific-methodic literature on official statistics permitted to determine necessity in improvement of not only physical but also mental pupils' health. It is conditioned by the fact that top day the process of children's studying at school is accompanied by a lot of stressful factors, many of which provoke child's transition from stress to distress.

With it by data of S.S. Filippov and V.V. Zhgutova (2205) who carried out analysis of schoolchildren's physical condition and factors, which determine it, on the base of scientific researches' results, a conclusion was made that diseases of nervous-mental sphere has not less (and may be even greater) significance, than abnormalities of physical development. Thus, it is evident, that mental condition is one of the most important components of health.

Considering integral unity and interconnection of human physical and mental condition, in order to solve health related tasks of physical culture lessons we think it is necessary to facilitate improvement of schoolchildren's mental condition.

Rational, scientifically grounded application of musical accompaniment provides substantial opportunities for solution of this task.

Music has wide spectrum of influence that has been known since ancient times and is proved by researches of domestic and foreign scientists. Special physiological researches showed influence of music on different systems of human being [1, 2, 4, 9, 10, 11, 15, 16, 17, 18, 19, 20 et al.]

It was proved that listening to music accelerates heart beats rate; there was found musical irritants' amplifying influence on pulse, breathing depending on pitch, volume and tone structure of sound, on producing of hormones. Frequency of breathing and heart beats rate changed depending on temp or tonality of music [11, 19, 20 et al.]

Basing on the above mentioned, on the base of inter-disciplinary researches, numerous observations and pedagogic experience we developed regulation technology for physical exercises' trainings with the help of musical accompaniment.

The present research has been fulfilled as per plan of scientific & research works of RSPU, named after A.I. Gertsen, direction No. 23 "Studying and development of professional and sport abilities in the process of physical culture and sport activities".

Purpose, tasks of the work, material and methods

The purpose of the research is determination of effectiveness of the developed technology intended for reducing of first-year pupils' school anxiety.

The methods and organization of the research: analysis of scientific-methodic literature, method of pedagogic projecting, pedagogic experiment. The research was carried out with involving of first year pupils of At. Petersburg.

Results of the research

At the beginning of studying at school child endures serious mental and psycho-physiological load, which, sometimes, cause state, called school stress.

As per data of scientific researches in Moscow 5-% of first year pupils need psychologists', psycho-neurologists' and logopedists' aid; the quantity of children with some or another psychological or psychiatric diagnosis is increasing with every year.

Alongside with it, formation of positive attitude to studying, maintaining and strengthening of children's psycho-somatic health are the tasks of priority at initial stage of school education [14].

Accordingly it actualizes regulation of emotional state of first year pupils at physical culture lessons, decreasing the level of school anxiety. For this purpose we developed regulation technology of physical exercises' trainings with the help of musical accompaniment.

Registration of combined influence of physical exercises' and music on a person is of special importance for solution of such tasks. It is quite evident that pedagogue shall consider and base, first of all, on physiological responses of trainees' organisms. In theory and methodic of physical culture there exist clearly worked out for every age contingent of trainees kinds of motion activity and so on, loads and physiological responses. Alongside with it, in musical therapy there are data about physiological responses of human organs and systems to music. However, every of scientific branches regard influence of physical exercises and music separately from each other.

But owing to the fact that in physical culture trainings these two means are used simultaneously it is necessary to consider amplification of their influence on a person.

The above mentioned is especially important for improvement of human mental state that requires separate analysis.

Ye.P. Ilyin (2011) marks out six, the so called, "basic" emotions: anger, fear, sadness, disgust, happiness and surprise. With it, each of the mentioned emotions more or less expressively influences on such main physiological "indicators" as: heart beats rate, temperature of finger, electric conductivity of skin, muscular activity [3].

When working out technology for regulation of trainees' mental state we considered the following:

1) Emotions are psycho-physiological phenomenon that is why, in the opinion of Ye.P. Ilyin (2011) human feelings' originating can be judged about both by self report of a person about his state and by character of excitation (activation) of nervous system, vegetative indicators (heart beats rate, BP, breathing frequency and etc.) and psycho-motor indicators: mimic, pantomimic (posture), motion responses, voice.

2) Negative emotions cause stronger physiological responses than positive, independent on sex, age and cultural belonging. (Ye.P. Ilyin, 2011 et al.) and, accordingly, are more responsible for negative influence on human organism and mentality. With it in case if it is impossible to manifest negative emotions, if it is necessary to suppress them, there can appear not only negative mental states, nervous disorders but also different diseases, which have psycho-somatic ontogeny. Therefore, at lessons, special attention shall be paid just to this aspect.

3) Application of musical accompaniment of physical exercises shall obey not only to general and specific requirements to musical accompaniment but it shall be based on recommendations and data of recent psychological researches of musical therapy specialists. It is necessary to especially underline some scientific facts, determined recent years by psychologists and specialists in musical therapy do not always coincide with recommendations of physical culture specialists, who earlier dealt with application of music in physical culture and sports.

In particular, it was determined that using of optimistic, vigorous music at the beginning of training (that was recommended by nearly all authors, who dealt with application of music in physical culture), causes irritation and even aggression, if trainees are in depression or have other negative emotion states. At the same time, people, who feel psychological comfort, do not feel discomfort from both major and minor music. Therefore, at the beginning of training it is necessary to use minor music when building training process.. It is required in order for trainees could cope with their negative emotions (it is known that in modern conditions many people often feel psychological discomfort).

4) When choosing specific exercises it is necessary to consider the most common for all mankind responses to some or another body senses or movements. For example, deep, slow calm breathing causes relaxed state, while quick, "surface" breathing is associated with anxiety. Movements, directed upward and aside with great amplitude, permit to "cope" with external object and so on.

Technology of physical training process's regulation with the help of musical accompaniment includes the following elements: physical exercises of different orientation (basing of requirements of curriculum); psycho-motor means of expression (expressive movements); dance movements; creative tasks for individual expression of different emotional states; role plays and musical accompaniment, setting emotional background, image, style and character of movements, combining all specified components in one unity.

Owing to its potential, musical accompaniment is naturally included in all used in the given variant of technology, motion components.

Dancing-figured exercises reflect the mentioned 6 basic emotions. They naturally include, together with physical exercises of different orientation (on coordination, on physical condition, motion abilities, correction and etc.) psycho - motor means of expression (expressive movements). It is specially significant that with expressing of emotions through motion channels, orientation of movements, their quickness, temp, amplitude, unification are their emotional-expressive characteristic.

The used role – musical games characterize the presence of definite plot and different roles, which can vary in the process of training. They also fulfill certain important psychological role. Musical accompaniment shall ensure necessary image and character of a participant, his mood and state.

Creative tasks for individual expression of different emotional states can be fulfilled in different forms – individually, in pairs in circle and so on. This kind of tasks shall facilitate awareness of deep personal feelings by personality. Fulfillment of such tasks can be either under accompaniment, offered by a pedagogue or under music, chosen by a trainee.

In its turn psycho – motor means of expression (expressive movements) naturally supplement all motion components of this variant of technology (physical exercises, dances, games), facilitating more effective working thorough emotional states.

For experimental verification of effectiveness of the developed technology we carried out research, in which first year pupils took part. In both groups (EG and CG) there was equal quantity of children – 18 persons in every group. Both classes (groups) were trained by one and the same program [7].

Main part of lesson in both groups included exercises without musical accompaniment; at the end of training games under music were practiced. In experimental group these games were conducted under expressive, music, which corresponded to topic of game. In control group, pedagogue conducted these games under phonograms, which, by results of pedagogic analysis, belonged to type “musical background”. In “background” group games as well as the whole lesson were carried out without music.

In experimental group, in preparatory and final parts of lesson we introduced developed by us technology for regulation of trainees’ mental state; special attention was paid to choosing of music for outdoor games, to introducing of exercises of musical-dancing expressive training. In control group musical accompaniment was chosen by teacher.

Considering the fact that both in control and experimental groups physical exercises of preparatory and final parts of lesson were accompanied by music, which was used in different manner, we decided to compare emotional state indicators of both groups with indicators of pupils, who were trained without musical accompaniment. For this purpose we chose the so-called “background” group (BG) – 19 persons, in which music was not used.

BG was trained by the same program as EG and CG.

As on beginning of pedagogic experiment mean indicators of experimental, control and background groups (see fig.1). were not significantly different ($p > 0,05$).

Initial diagnostic showed that practically by all parameters first year pupils of all groups sense certain discomfort, connected with beginning of school life.

For example, the highest level was registered in general anxiety mean indicators, which were in experimental group 71.78 points; in control – 68.11 and in BG – 70.17 points.

It should be noted that these indicators are very close to zone of high anxiety (from 75 to 100 points).

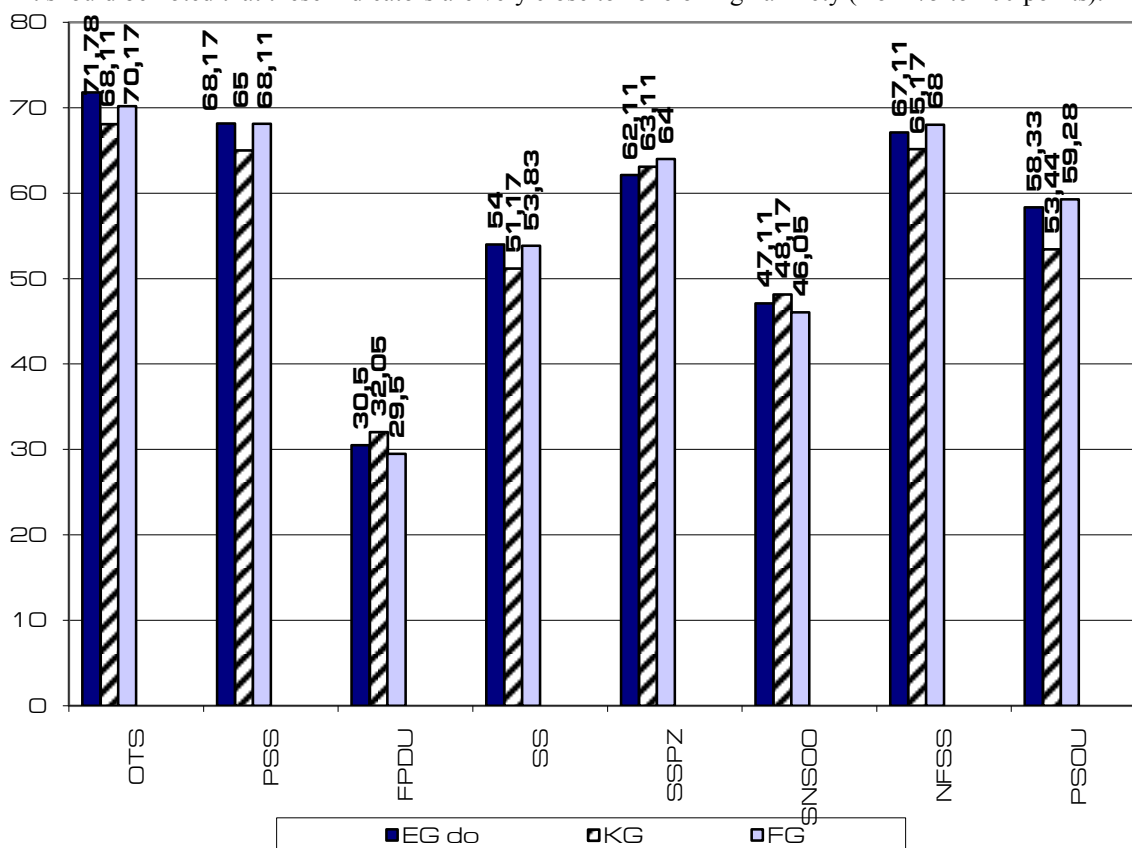


Fig.1. Mean indicators of test for school anxiety (Fillips' test) of experimental, control and background groups before pedagogic experiment (points):

EG do –experimental group; CG – control group; BG – background group; GA – general anxiety at school; FSS – feeling of social stress; FDS – frustration of demand in success; FS- fear of self-expression; FCK - fear of checking of knowledge; FNCE – fear of non compliance with expectations of environment; FNCE – low physiological resistance to stresses; PFRT – problems and fears of relations with teachers.

Sensing of social stress was also high and at experimental group reached 68.17 points, at control group – 65 points and at background group – 68.17 points.

Low indicators of physiological resistance to stress, which were approximately at the same level, were also important unfavorable factor. EG – 67.11 points; CG – 65.17 points and BG – 68.0 points.

Be the moment of experiment’s finish all indicators of school anxiety reduced in all three groups (see fig.2).

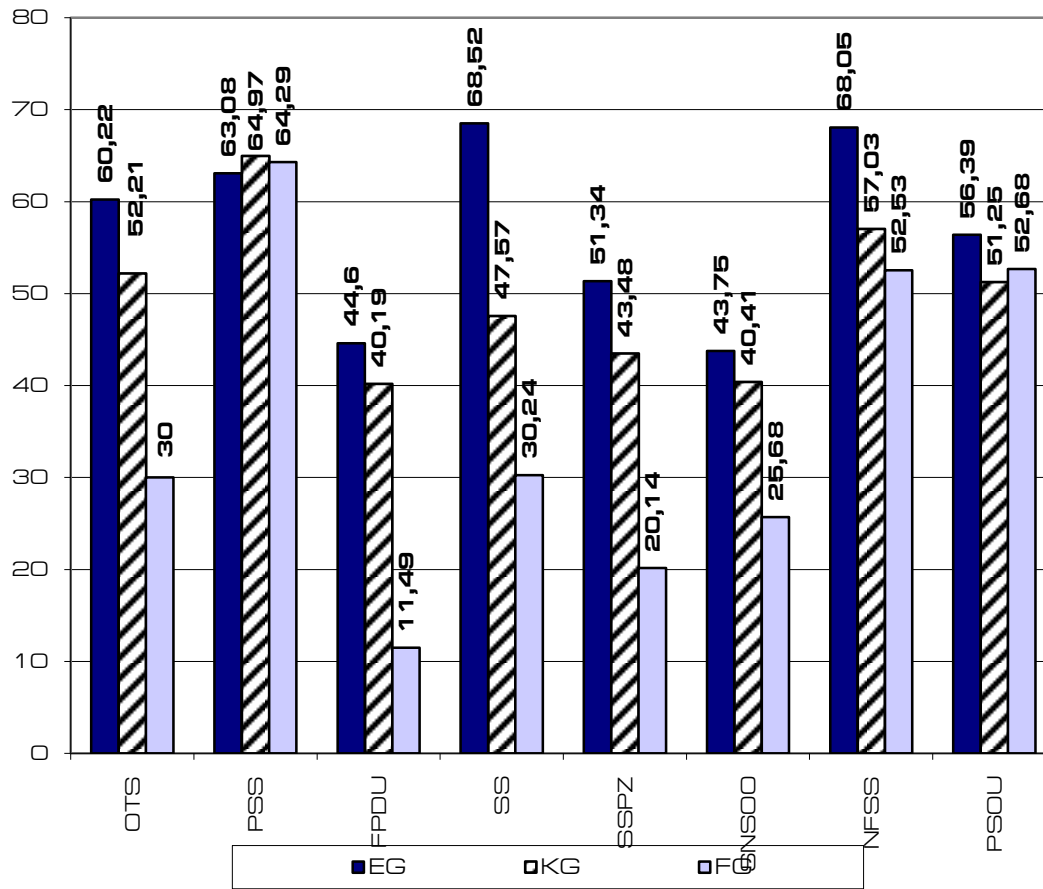


Fig.2 Changes of indicators of school anxiety (Fillips' test) at experimental, control and background groups after experiment (%).

EG –experimental group; CG – control group; BG – background group; GA – general anxiety at school; FSS – feeling of social stress; FDS – frustration of demand in success; FS- fear of self-expression; FCK - fear of checking of knowledge; FNCE – fear of non compliance with expectations of environment; FNCE – low physiological resistance to stresses; PFRT – problems and fears of relations with teachers.

It can be explained by sufficiently comfortable psychological conditions, which were created in school, where the tested studied, by qualified pedagogical personnel and administration’s care of favorable psychological atmosphere for all participants of educational process.

But in experimental group, in which physical culture lessons were conducted with musical accompaniment, developed and used in compliance with technology of musical accompaniment for physical culture lessons, most of school anxiety indicators turned out to be lower in comparison with control and background groups.

The best result was determined for indicator “fear of self-expression”. In experimental group it reduced by 68.52%, while in control group result improved by 47.57% and in background group – only by 30.24%. With it differences between indicators of EG, CG and BG were statistically significant ($p < 0.05$).

Regulating influence of musical accompaniment on such important for human mental and physical condition of such indicator as “low physiological resistance to stress” is rather significant factor. In experimental group this indicator improved by 68.05%, while in control group physiological resistance to stress increased by 57.05% (differences from experimental group are statistically significant ($p < 0.05$)). In background group this indicator improved by 52.53%. With it, if differences from experimental group are confident ($p < 0.05$), then in comparison with control group they are not statistically confident ($p > 0.05$), though indicators of control group are higher.

Therefore, we can affirm that musical accompaniment, applied as per our technology, influence as regulator of human mental and physical condition, while influence of music, used without consideration of its regulating effect, was not statistically verified, though it was registered and can be an occasional factor.

Regulating influence of music at physical culture lessons was found in reducing of general anxiety at school. In experimental group this indicator improved by 60.22%, in control group – by 52.21%, in background group general anxiety reduced only by 30%. With it differences between mean indicators of all three groups were statistically significant ($p < 0.05$).

“Problems and fears in relations with teachers” reduced in experimental group by 56.39%, in control – by 51.25%, in background – by 53.58%. However, it should be noted that results of experimental group are not statistically confident in comparison between all three groups ($p > 0.05$).

Thus, we can make conclusion that influence of physical exercises both under music and without music on inter-personal relations “teacher-pupils” are not significantly different. Positive changes of this parameter are conditioned rather by other factors.

In parameter “Fear of checking of knowledge” we registered substantial and statistically significant differences ($p < 0.05$) in all three groups.

Indicators of experimental group improved by 51.34%, while at control group the improved by 43.48% and in background group – by 20.11%. It can be explained by the fact that combined influence of physical exercises and music on child’s organism reduces general anxiety and, therefore, decreases fear in such important situation as checking of knowledge, which is actually the main basis and indicator of children’s functioning in the period of school life.

Changes of frustration (not-satisfying) of demand in success turned out to be less significant. But changes in experimental group were confidently higher ($p < 0.05$) than in control group.

Frustration of demand in success at EG reduced by 44.6%, in Cg – by 40.19%, in BG – by 11.43% (differences between control and background groups’ results were statistically significant with ($p < 0.05$).

Conclusions:

Basing on the obtained results we can conclude that developed by us technology influences positively as regulator of trainees’ mental condition and effectively reduces level of school anxiety.

The further prospects of researches in this direction can be studying of the developed technology’s application with required supplements for complex rehabilitation of persons with post-traumatic syndrome.

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