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## The role and importance of play in physiotherapy

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**Abstract:** Play is one of the human condition, as it accompanies us throughout our lives. The developmental role of play is used in many areas, education and training being no exception. In this article, the role and importance of toys in physical education sessions for pupils in the specialised teaching service who are in physical education are examined. The research included 120 students from schools in Hajdúböszörmény and Hajdúdorog, who are part of the Hajdúböszörmény branch of the Hajdú-Bihar County Pedagogical Service and are classified as students in physical education. We were looking for answers to questions such as what sports or movement games they play in PE sessions, how much they like them and how motivated they are by playing them. The results of the research confirm that the positive personality of the physical education teacher, the colourful toolbox and the methods he uses, such as the use of movement games, motivate pupils to actively participate in physical education lessons. By exploiting the motivational role of games, both children's attitudes towards physical education and their activity in class can be shaped. According to the pupils who participated in the sessions, it was found that they felt the positive benefits of the PE sessions in terms of performance, fitness and resilience and self-confidence.

**Keywords:** physical education sessions, motivation, movement games

## **Introduction**

The choice of topic is that today's sedentary and sedentary lifestyles are causing increasingly serious health problems, not only among adults but also among children.

Civilisation's harmful effects, sedentary work and activities often lead to various postural and locomotor disorders or internal diseases. Many of the disorders affecting the locomotor system can be reversed, and the condition of children suffering from internal diseases can be improved by means of targeted physiotherapy sessions, where physiotherapists use and teach children and students the applicable forms of movement, with a focus on prevention, alongside the appropriate anatomical knowledge. Because of the increasing prevalence of lesions and internal diseases at an increasingly young age, it is very important that children who are treated by physiotherapists in nursery schools and schools receive professional development as soon as possible.

In addition to targeted development, the task of professionals is to encourage children and pupils to take up physical activity and to maintain their motivation, which is essential for successful and effective development. There are many forms of motivation, but the various movement and sports games used in physical activity sessions can provide both development and motivation and enjoyment for the participants.

Therefore, our research investigates the role and significance of the games used in physical education classes among the students of the Hajdú-Bihar County Pedagogical Specialist Service of Hajdúböszörmény Member Institution, who are involved in physiotherapy.

Play is a fundamental human activity through which knowledge, skills and competences are acquired (Bús, 2013; Mező et al., 2018; Mező and Mező, 2023). Games are used in the development of movement (Eigner, 2012; Lívják and Szabó, 2017; Kórik et al., 2022, Kurniawan and Hanief 2022), motor skills and physical education (Seres, 2006; Juhász et al., 2017; Sopa and Pomohaci 2021; Mahkamjonovich 2021) and in physiotherapy teaching, recreational (Lenténé et al., 2018; Tătar et al., 2018; Marianna, 2019; Kinczel and Müller, 2020; Hőnyi et al., 2021, Pálincás et al., 2022; Ferenczi and Lenténé, 2022) and competitive sports (Buhás et al., 2018; Sopa, 2021; Abdullaey, 2020), and has undisputed merits.

Claparède (1974), in his work "Functional Education", emphasizes that play is the driving force of development, motivating the child to participate in activities that lead to his development. He also points out that the educator must be aware of the needs and wants of the child and what the child will gain from the skill or ability and what its function will be. With this knowledge, he or she will be able to choose a play activity for educational purposes that will help and support children's ability and skill development (Claparède, 1974). Pachner (2017) reviews the writings and views on the functional approach to play and highlights that science or scientist and play are also closely related, as they are the process of cognition and the answers to the why. Indeed, playful cognition and creative thinking characterise both the scientist's quest for knowledge and the child's ability to use play to learn about the world.

Writings on the psychological approach to play (Stöckert, 1995 and 2016) highlight essential features of the nature of play such as "rules limit play" "but it is not

compulsory to do so, so it is voluntary". The rules guide the players, but leave a number of options that the player is free to choose." This kind of choice also develops creativity and different skills.

Play has a special place and role in early childhood education and in the methodology of school education, as it is indispensable for teaching a number of subjects and knowledge areas and for developing competences (Kovács, 2005; Kovács, 2008; Pásztor, 2014; Téglási, 2015; Balázs et al., 2015; Szabó, 2018; Albertazzi et al., 2019).

Different movement and sports games also play a very important role in the teaching of movement and the development of motor skills (Pásztor and Rákos, 1998; Kovács, 2004; Király and Szakály, 2011; Bíró, 2015; Ampatuan and San Jose, 2016; Andrásné Teleki, 2018; Simon, 2018; Wolf, 2022).

There is a wide range of possibilities for the use of games in physical education, as they can be used in the warm-up part, but also in the main part of the movement material, in skill development or in the warm-down part. In physiotherapy sessions, games can also be used in the warm-up, warm-down or in the movement therapy material of deformities or internal medicine diseases in the main part (Földi, 2003; Ramocsa 2005 and 2009; Gunda et al., 2015; Simon and Kajtár, 2015; Öry et al., 2019; Simon, 2022).

The fundamental task of the physiotherapy subject is to impart a certain literacy, which is none other than movement literacy and, as a result, motor action safety. The precondition and consequence of this is also the proper development, maturation, fitness and good health of children. It is important to organise and hold lessons by age and diagnosis group, but always bearing in mind individual differences. Minimising awareness of illness, developing physical intelligence and competence, and developing and consolidating the desire to play sport.

Timely, individualised and effective development is of the utmost importance, since all our actions are psychosomatic actions, the quality of which is decisive. Without the ability to learn to move, children will find it difficult to acquire new motor skills. In defining developmental objectives, it is also necessary to define pedagogical tasks in order to plan the training process. These are: motivation; developing the desire to play sport; raising awareness of health as a value; strengthening self-confidence; developing correct self-esteem; removing psychological inhibitions; teaching patience and perseverance; developing responsibility for oneself; teaching the principle of fair play; team building.

Physiotherapy teachers are looking after children with minor physical, musculoskeletal and/or internal medicine diagnoses. They need specific developmental support in addition to or instead of physical education. The precise medical indications are set out in the National Institute of Child Health's technical publication, Health Aspects of Physical Education Classification. It lists diseases and disorders by diagnosis and describes the physical education categories adapted to the diagnosis, the timing of reviews, and the forms of exercise recommended and avoided.

The most common indications are: orthopaedic and neurological disorders, juvenile hypertension, obesity, bronchial asthma, heart disease, major eye disorders, etc. Based on these and other conditions, the specific tasks of physical education can

be divided into several sub-areas, which can be divided into two main groups: physical education for musculoskeletal conditions and physical education for internal and other diseases.

It is important to emphasise that the lesions or diseases covered by physiotherapy are of such a degree that they do not prevent regular participation in education.

The aim of our research was to investigate the motivation of students in physiotherapy who are part of the pedagogical service of the special education service. How we can make our work even more effective, with a view to facilitating the planning work to be done in advance. Including making it easier to choose the necessary methods and tools. What are the optimal conditions and what conditions need to be changed in order to achieve more accurate and differentiated preventive work. By identifying the gaps and problems that arise, it is possible to anticipate how and how to make changes. This is done in order to provide children with the most varied and specialised care possible, taking into account the important factor of ensuring that the sessions are conducted in a good atmosphere. They should not feel that it is a burden or a necessary bad to go to physiotherapy.

### **Materials and methods**

Our research used both primary and secondary research. In the framework of primary research, we compiled a questionnaire consisting of 22 questions, which we filled out on paper with children who were students of the Hajdú-Bihar County Pedagogical Specialist Service of Hajdúböszörmény, who were classified for physical education and who attended schools in Hajdúböszörmény and Hajdúdorog (Tóvizi, 2023).

Before starting the children, we filled out parental consent forms from all students. The questionnaire was completed voluntarily and anonymously. When filling in the questionnaires, the students' abilities were taken into account, and therefore students attending the Institute for Special Education and Methodology and children in the first and second grades who were less able to read and write were not asked.

In addition to demographic questions, the students also answered questions that asked about the activities they had done in physical education classes, with a focus on movement games.

Before the study, we examined the number of students enrolled in physiotherapy in the institutions of the Hajdú-Bihar County Pedagogical Service of the Hajdúböszörmény Member Institute (Table 1). Based on the data of the 2022/2023 school year, we can see that the population included a total of 414 students, of which 120 were included in the sample, i.e. 29% of the students, which is sufficiently representative of the population.

**Table 1.** Number of pupils enrolled in physical education by type of school in the school year 2022/2023

Type of school	Number of pupils enrolled in physical education in the school year 2022/2023	
	Number of pieces	Main
Primary school	3	34
Secondary school	1	20
Integrated Educational Methodology Institutions	6	360

The secondary research and data collection revealed that the four most common diagnoses of students classified for physical education were two of the musculoskeletal disorders (spinal deformity and flat feet) and two of the internal medicine disorders (obesity and asthma). It can be concluded that in the school year 2022/2023, most of the children classified in the physiotherapy category in the institutions of the Hajdú-Bihar County Pedagogical Service of the Hajdúböszörmény Member Institute of the Hajdú-Bihar County Pedagogical Service, 222, were classified as having some form of spinal deformity; and many students were classified as having luteal deformity: 166 pupils; but obesity also affected 64 children, and of the children with asthma, only those with a more severe problem (poorly controlled) were classified, 19. Pupils with milder asthma receive remedial education within the framework of normal PE lessons. Among the children, there were pupils with a combination of flat feet and spinal deformity or flat feet and obesity.

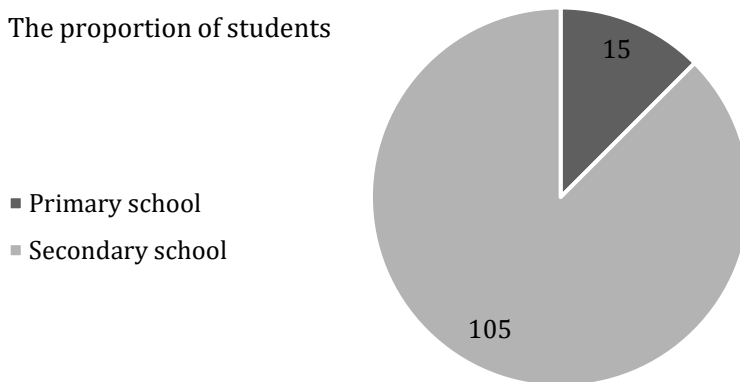
When analysing the sample, the following demographic data were recorded:

For age data, the study was conducted between the ages of 8 - 18 years. It can be seen that students aged 10 to 14 years, i.e. in the fourth to seventh grades, are in the majority. 8 years old 1, 9 years old 6, 10 years old 16, 11 years old 17, 12 years old 24, 13 years old 29, 14 years old 11, 15 years old 3, 16 years old 4, 17 years old 5 and 18 years old 4-

Examining the gender ratio among the respondents to the questionnaires, it can be concluded that a slightly higher proportion of boys are. 52% of respondents, i.e. 62 people, are boys, while 58%, 58 people, are girls.

Figure 1 illustrates the distribution of respondents by type of school. The propensity to complete the questionnaire voluntarily was higher among primary school students.

The proportion of students



**Figure 1.** Proportion of primary and secondary school pupils

The questionnaire was distributed in the institutions of Hajdúböszörmény and Hajdúdorog. Of all respondents, 32 respondents completed the questionnaire from Hajdúdorog and 88 from Hajdúböszörmény. Since there are more schools and more students classified for physical education in Hajdúböszörmény, this ratio can also be seen in the proportion of settlements.

### Results and discussions

Analysis of responses to questions related to the physical education occupation.

In the context of physical education classes, we examined why and since when students have to attend classes. How well they are aware of the concept and significance of physical education. Furthermore, what is their own judgment, emotional attitude and attitude towards the physical education class.

We asked how much experience they had of attending physiotherapy classes, i.e. how many years they had been attending PE classes. The responses of the students show that the majority of the respondents are those for whom this is the first school year that they have been classified, 33 students to be precise, 23 have been attending for two years, 25 for three years, 15 for four years and 24 for more than five years.

We also wanted to know if the students were aware of why they should attend physiotherapy, i.e. what their diagnosis is. A student could indicate more than one diagnosis. It was found that most of the children felt the need to attend the sessions because of problems with the musculoskeletal system. 100 of them indicated a spinal problem and 52 a diagnosis of flat feet as a reason. On a positive note, only 4 of the respondents said they did not know why they were attending physiotherapy, meaning that a significant majority of them were aware of why they were classified. However, a surprising result was that only 6 students admitted to obesity (obesity), whereas many more were classified as obese compared to the baseline data for those classified as attending physiotherapy.

We also wanted to know how aware students are of the concept of physiotherapy itself, and what physiotherapy means to them. We were pleased to find that 82 of the 120 students who responded (68.3%) had a clear understanding of the main elements of physiotherapy and its positive impact on their health, its role in improving their

physical and mental well-being. They also wrote phrases such as "healing physical education", "spinal gymnastics", "helps you heal", "strengthens the body", "rehabilitation", "like physical education, but we do exercises that make the scoliosis go away", "playful developmental exercises". 24 students (20%) mentioned the positive personality of the teacher and the good atmosphere of the physiotherapy classes when defining the term: "the teacher is nice", "calmness", "the other students are nice and I made a lot of new friends". The teacher's personality is a decisive element of the teacher-student relationship in education, which also influences the success of the learning process (Bernáth and Bíró, 2021). Other research also confirms the significance of the physiotherapist-child and parent relationship or patient relationships in the success of therapy (Hust et al., 2011; Huzmeli et. al. 2020; Dina and Pavel, 2023).

We asked those who like to go to physiotherapy classes what the reasons are. A total of 63 (52.5%) of the students liked to attend physiotherapy classes, 51 (42.5%) said they liked it because there was a lot of play in the class, 13 (10.8%) mentioned the positive personality and kindness of the teacher, and 17 (14.16%) said they liked it because of the importance of healing. The use of varied tasks and different tools was mentioned by 8 (6.6%).

Those who said that they do not like physiotherapy (57, 47.5%) gave the reason "I can't go to PE", as there are pupils who like to move, play sports and specifically need to attend PE classes. It is noticeable that the negative responses did not mainly refer to the nature of physiotherapy, but rather to things that are unrelated to it, because they are related to its organisation. In almost all institutions, classes are held in the morning, at 0th lesson or, on the contrary, late afternoon after classes. This is difficult for 31 students: "get up early", "come back", "stay long", "take time away from study".

We were also curious to know what other physical education and physical therapy related activities or therapies the respondents were used to participating in.

The answers to the questions show, on the one hand, whether students participate in physical education activities outside school and, on the other hand, whether they play sports in any form that is not closely related to physical education. Of the 120 children surveyed, 38% (48) do not participate in any other exercise-related leisure activities. 27 (22.5%) attend activities that can be closely related to physical education, such as swimming, horseback riding, private physical education classes. Multiple studies confirm the positive therapeutic effects of swimming, aquatic exercise, balneotherapy (Verhagen et al., 2012; Kargülle and Kargülle, 2015; Sziva et al., 2017; Akhmedenov, 2020; Tokpanov et al., 2021; Akhmedenov and Idrisova, 2021; Makhanova et al., 2022; Dryglas and Smith, 2023; Pírjol et al., 2023;) and horseback riding on posture (Lee et al., 2011; Angoules et al., 2012; Zadnikar and Kastrin, 2021).

An interesting result is that 51 students (42.5%) said that they participate in various sports activities that are not directly related to physiotherapy, but help to meet the need for physical activity, develop motor skills and improve fitness. The recreational sports activities mentioned by respondents were: football (16), handball (6), dance and folk dance (11).

Here are the results of the questions on the game. We have asked about the popular play activities and types of play used in the classroom, and the variety of tools used. These results can be of help to the physiotherapy teachers in their planning in the future, since if these favourite forms of movement and equipment are integrated into the movement material of physiotherapy lessons, the pupils can be well motivated and participate more actively in the sessions. This can lead to more effective developmental and rehabilitative work and a change in children's attitudes.

For the question "What type of games do you like most?", students were given the opportunity to tick more than one answer. 62.5% of the students, i.e. 75 people, indicated sports games as their favourite type of game, a preference that is also reflected in the leisure sports activities they play in their free time. The next most popular games were "running" and "catching", both of which were indicated by 40 - 40 people (33.3%). Next in the ranking were preparatory games for sports games, chosen by 36 (30%), and various competitive games, chosen by 32 (26.6%). Few chose line and relay races (13.3% and 15.8%).

In the next question, we wanted to know what kind of tools students like to use in physiotherapy lessons. In all institutions within the scope of our professional service, it can be said that the equipment of the halls, gymnasiums and gyms is adequate. At each location, a well-furnished sports equipment and various equipment are available to teachers and, of course, to children. This allows us to plan lessons in a varied and versatile way. We were also able to ask the children more questions on this subject, as we were sure that they were familiar with all the equipment and how it could be used. We asked the pupils which tools they liked to play with the most. From the answers to the previous question - that they prefer sports and ball games - we could already infer that the most popular tool would be the ball. This proved to be the case, as 99 out of 120 students preferred to play with a ball or fitness ball (58). The least votes were for a gym ball (11), a hoop (15) and a rubber ball (18). 10 students chose a sports equipment other than the ones listed. They mentioned a ribbed wall, a mattress, a rubber band, a Dyn-Air cushion and props used in TRX.

In the questionnaire, certain statements were formulated, to which students had to answer on a likert scale of 1-5, where 1= disagree at all, 2= rather disagree, 3= partially agree, 4= rather agree, 5 = completely agree with the statement.

Our statements and their ratings (mean and standard deviation) are illustrated in table 2.

The results show that the students agreed most with the statement "I prefer to participate in physical education classes if there are more playful exercises", as this statement had the highest mean value (mean=4.358, sd=0.21) and the lowest standard deviation value. This shows that students were very consistent in their answers to this question.

The second highest mean value was given to the statement "My mood is better when there is more play" (mean=4.241, sd=0.48) and the third highest mean value was given to the statement "I enjoy and actively participate in playful movement tasks" (mean=4.208, sd=0.39). These statements and the high agreement with them by the students indicate that they have a need and demand for movement play and playful task solving in physiotherapy lessons, which motivates them to perform the



tasks. An important finding is that the majority of students also agree with the improvement of fitness (mean=3.733, sd=0.88), the improvement of workload (mean=3.583, sd=0.34) and the increase of self-confidence (mean= 3.325, sd=0.78), which means that they feel and experience the positive effects of the movement material used in physiotherapy sessions.

**Table 2.** Distribution of responses to statements

Distribution of responses to claims(1 - strongly disagree, 5 - strongly agree)	Average	Standard deviation
I prefer to participate in PE classes if there are more playful exercises	4,358	0,21
The atmosphere is better when there is more play	4,241	0,48
I like and actively participate in playful movement activities	4,208	0,39
I like my opinion to be taken into account when formulating the rules of the game	4,191	0,41
I feel my work is more effective if tasks are integrated into the lesson in a playful way	4,058	0,35
I like to be involved in the choice of games	3,891	0,67
Since I have been in physical education, my condition has improved	3,733	0,88
Since I have been attending physical education, my load capacity is better	3,583	0,34
My self-confidence has increased since I started physiotherapy	3,325	0,78
I enjoy playing the games I learned in physiotherapy classes outside of class	3,133	1,11

## Conclusions

In choosing the topic of this study, we found it interesting to investigate the motivational power of play in the context of physiotherapy sessions, as experience and literature suggest that children today need a high level of motivation to perform movement tasks. Civilisation's harmful effects, sedentary lifestyles, mobile phone use, computer and video game use can lead to musculoskeletal and/or internal disorders. These disorders can affect children's performance, activity levels and personality development. In our study, we wanted to find out to what extent games, and more specifically mobile games as a tool, have a positive effect on stimulating pupils' activity and interest, and on helping them to work more effectively.

One of the most important tasks of physiotherapy teachers is to make children aware of their diagnosis. They raise awareness of the importance of physical education. They should inform them about the most recommended forms of movement, while at the same time drawing attention to harmful exercises. The assumption was that the pupils attending the sessions were all aware of their orthopaedic and/or internal medicine diagnosis. They are familiar with the concept of physiotherapy and are willing to participate in the sessions in order to improve their condition.

A positive result is that 82 out of 120 students surveyed know and understand the essence of physiotherapy. They summed up the importance of the subject in one

sentence or one word. They like to attend the classes because it means healing for them. The many tools and games they can try and the teacher is kind. The negative responses about the subject were more about the time commitment.

The results of the research highlight that the physiotherapy teacher can motivate students through the variety of play types and the use of a wide range of tools incorporated in the physical education teacher's work.

The children's responses confirmed that they were keen to participate in the following movement games in physiotherapy lessons: sports games, preparatory games, running and catching games. It was also confirmed that they require a variety of equipment, but the highest number of votes for sports games also indicated that the most preferred sport was ball.

The research confirmed the role of games in motivation, which is a useful outcome for physiotherapy teachers to take into account in lesson planning. Children attending physical education classes feel a positive change in their condition in terms of resilience and self-confidence.

Our research provides usable results for the planning work of physical education and physiotherapy teachers, as well as for universities involved in physical education training or further education, mentor teachers (Győri et al., 2018), as these results should be incorporated into training and further education.

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