124 - CHILDREN'S MOVEMENT TIME IN PHYSICAL EDUCATION CLASSES

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INTRODUCTION

The transformations that large and medium-sized cities have suffered over the past 50 years, due to population growth, housing needs and traffic, may be easily verified in literature (BREUER, 2000). With the increase of urban populations and the natural need for the occupation of spaces, there has been an increase in the financial cost of these spaces and thus the need for the verticalization of housing, leading to a higher number of families, especially of middle class, that have switched houses for apartments in buildings (KNACKFUSS, 2002). This phenomenon may also be seen in the gradual replacement of children's belongings. Street toys have gradually been switched for electronic devices (DIETRICH & LANDAU, 2000). Another determinant factor which has led children to spend their free time preferably indoors is, undoubtedly, the increased dangers of playing outside, in the neighboring areas (DIETRICH & LANDAU, 2000). It is then justifiable that parents should worry and thus their preference for indoor home activities. This situation may be verified in the city of Vitória, in the state of Espírito Santo, Brazil, where the fleet of vehicles has increased by 75% in the past 20 years (DETRAN, ES).

Due to the organization of the environment in industrial societies, children are practically steered or directed toward a sedentary life. In this model of organization, it is noted that children have been losing their spaces and possibilities for movement within cities on a daily basis. A case study in the city of Santa Maria, in the state of Rio Grande do Sul, Brazil, showed that a twelve year-old child living in the central area of the city watched an average of 5 hours of television per day (KNACKFUSS, 2002). On top of that, the aforementioned child presented a diet rich in fat and sugar. The body fat index was 30%, for an estimated maximum of 16%. That indicates sedentariness and obesity. Considering the medical approach, oriented by risk factors, it may be verified that sedentariness is classified among the four most important risk factors to health and carries along, as secondary effects, disturbances in the lipid profile and hypertension.

In first-world countries such as the USA (Hollmann & Hettinger, 2005), child obesity has become a serious health issue, the two main reasons for that are plainly verifiable: a sedentary lifestyle and a fatty diet. To Dietrich & Landau (2000), most cities are structured following a model which privileges passive movements: automobiles, elevators, escalators, automatic gates, etc. Considering what was previously stated, we may verify that the possibilities for a child to move is of the utmost importance, for both the health variable and his/her possibilities to get acquainted with the world. According to Papalia, Olds & Fedmann (2008), a child's full development is directly related to his/her ability to move. Amongst the current possibilities for movement, children have Physical Education classes (PE), which are mandatory in middle and high school within Brazilian territory. PE classes in Vitória, which is the capital of Espírito Santo, are held twice a week and last 50 minutes each as well as in most Brazilian states and cities. In a context of possibilities for movement, both for health and learning purposes, such periodicity is seen as minimal to cause adaptations (WEINECK, 2005). Most programs for physical exercises which aim for aptitude improvement are held at a frequency of three times a week on alternate days, with 60-minute sessions (WILMORE & COSTILL, 2000). To Weineck (2005), traditional school physical activities (average of 2-3 hours per week, with groups generally overly populated) are not enough to compensate, at least in part, the long periods the students spend sitting. Therefore, these conditions of a lack of movement represent a special problem, especially for the developing body. According to statistical data, between 50 and 65% of all students of ages 8-18 present body flaws of deficits, over 30% are overweight, 20-25% show circulation problems or disturbances in its regulation (HOLLMANN & HETTINGER, 2005).

Observing such phenomenon, in terms of possibilities for children's movement in large cities, it is believed that this problem might have an ever broader extent, depending on the time spent moving in a Physical Education class. Data from a research shows that German students spend an average of less than 10 minutes in movement, the remaining time is spent checking attendance, queuing, holding for the teacher's instructions, etc. (DIETRICH & LANDAU 1999). With what has been previously presented, the following objectives for this study are set.

OBJECTIVES

Observe the average time spent moving by children between the ages of 9 and 11, during a Physical Education class in a Middle School in the city of Vitória, ES, and verify whether there is a difference between genders.

METHOD

This has been an experimental study (GAYA, 2008), constituted by students of both genders, in a middle school of the public system in the city of Vitória, ES. The study group contained 30 students, 15 boys aged 10 on average (Σ =10) with a standard deviation of 0.67 (± = 0.67) and 15 girls aged 9.87 on average (Σ = 9,87) and a standard deviation of 0.67 (± = 0.67).

For collecting data the following instruments have been used: chronometers, clipboards and pens. Prior to data collection, two students per class were picked by means of a draw. The evaluation was done by two Physical Education students from the Federal University of Espirito Santo, who kept their distance during the class in order not to interfere with its course, keeping an attitude of observation from afar. The classes were always 50-minute long, and when the teacher's activities began, so did the timing on the chronometers to check how long the students spent in movement. The time on the chronometer would be paused whenever the individuals were still. Every time movement was resumed, so would the time on the stopwatch. This continued until the teacher ended the class; stretching time was not taken into account. It was asked of the teachers that they keep their regular teaching routine, without alterations, and stick to their planning as established in the course and class plans.

RESULTS

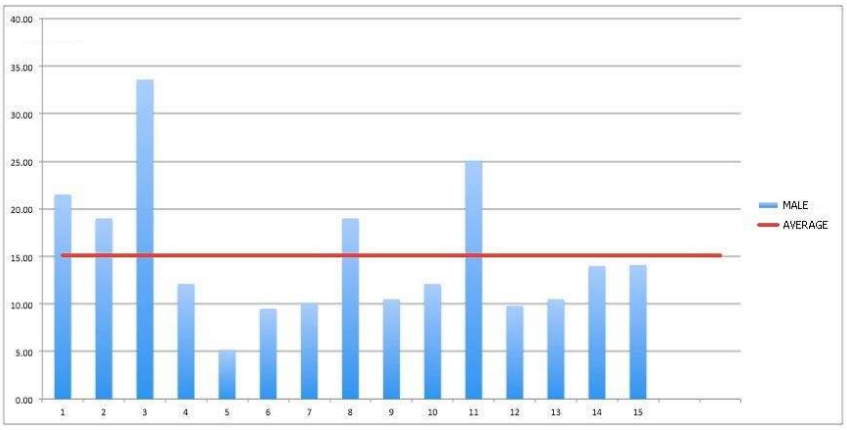
Table 1. Individual movement time, age, group average and standard deviation of male subjects in the researched sample.

MALE		
SUBJECT	AGE	TIME (minutes)
1	11	21.5
2	10	19
3	11	33.6
4	10	12.1
5	10	5.2

6	9	9.5
7	10	10.1
8	10	19
9	10	10.5
10	10	12.1
11	9	25.1
12	9	9.8
13	11	10.5
14	10	14
15	10	14.1
AVERAGE	10	15.1
SD	0.7	7.4

Table 1 shows that ages in the male group range from 9 to 11 (Σ=10 years., ± 0.70). It is noted that in the age variable, due to the standard deviation, the subjects are homogeneous. This fact strengthens the data by lessening the influence of a possible difference among subjects in terms of maturation. In the time variable, there was a variation in the 15 male subjects of 33.6 minutes for the maximum time and 5.2 for the minimum time Σ =15.1/ ±=7.4).The average presented in the group with a relatively high standard deviation means an important difference among subjects. This leads to believe that the teaching method employed by the teacher cannot be used as an argument or subterfuge for lower indexes. For better visualization of the total data and also the individual differences among subjects, the following Graph 1 is presented. It may be verified that out of the 15 subjects in the study, nine (60%) had times ranging between 9 and 14 minutes, one subject had an extremely low time of 5.2 minutes and only three had times over 20 minutes. The top and bottom results, of 33.6 and 5.2 minutes, were responsible for the increase in the standard deviation.

Graph 1. Individual movement time, age, group average and standard deviation of male subjects in the researched sample.



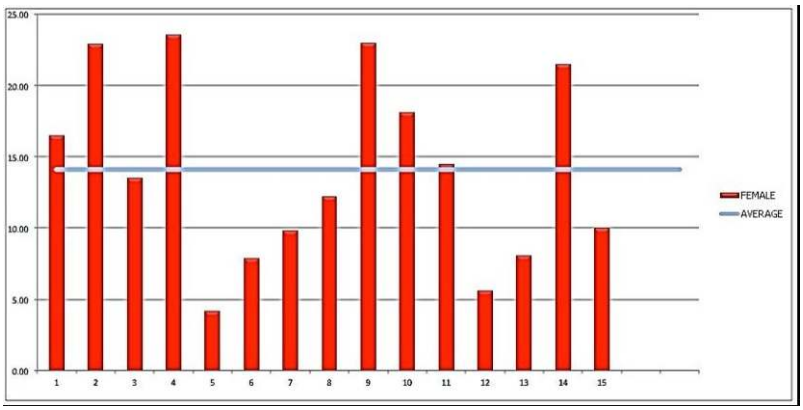
Below is Table 2, which shows the results for females. It may be observed that the age of the subjects ranges from 9 to 11 (Σ=9.87 years/ ± 0.64). It is thus possible to perceive the group's homogeneity. The movement times ranged between 4.2 and 23.6 minutes. The maximum individual result was lower in comparison with the male group, as well as the minimum one. That value is almost a minute, on average, less than that of the male group, a fact which proves, in this study, that girls move less during Physical Education class.

Table 2. Individual movement time, age, group average and standard deviation of female subjects in the researched sample.

SUBJECT	AGE	TIME (minutes)
1	11	16.5
2	10	22.9
3	10	13.5
4	10	23.6
5	9	4.2
6	9	7.9
7	9	9.8
8	10	12.2
9	11	23
10	10	18.1
11	10	14.5
12	10	5.6
13	9	8.1
14	10	21.5
15	10	10
AVERAGE	9.87	14.09
SD	0.64	6.6

For better visualization, Graph 2 shows the individual results and the variation among the subjects in the female group. Four subjects had times above 20 minutes, five below 10 and the remaining had times between 10 and 20 minutes. The increase in the standard deviation in this case is initially due to the fact that subject 5 had an extremely low time of 4.2 minutes.

Graph 2. Individual movement time, age, group average and standard deviation of female subjects in the researched sample.



The results of the groups show that the male group has a higher average movement time than the female group. The lowest movement time between the groups was in the feminine one, of 4.2 minutes and the highest time was in the male group with 33.6 minutes. Both averages of 15 minutes for males and 14 for females seem to be insufficient to cause adaptations to revert into benefits for one's health, based on studies by Weineck (2005), and Wilmore & Costill (2001).Considering a medical approach, the time collected by this study also seems to be insufficient according to the American College of Sports Medicine (2004).The indication in this case is 50 to 60 minutes of exercise at a moderate intensity at least three times a week.

CONCLUSION

Based on the results from this research, it has been noted that the average of movement time in the male group (15.10) was 1 minute higher than the average movement time in the female group (14.09). The highest individual index, between the two groups, was in the male one (33.6) whereas the lowest was in the female group (4.2). The conclusion reached is that the movement time in both groups is insufficient to cause adaptations that would revert into significant benefits for one's health. In case the purpose of school Physical Education is to provide children with a health gain through movement, its class practice and periodicity must necessarily be revised, otherwise some of the goals established by such class in schools might not be achieved, which ends up being a contradiction.

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CHILDREN'S MOVEMENT TIME IN PHYSICAL EDUCATION CLASSES

ABSTRACT

The objective of this study was to verify and compare the movement time in Physical Education classes, with students of both genders in Middle School in the public school system in the city of Vitória, ES. The study group contained 30 students, 15 males aged 10 on average (±=0.70) aged 9.87 on average (±= 0.67). In the execution of this research, the following instruments were used: chronometers, clipboards and pens. The classes were 50-minute long and upon the start of the teacher's activities, the timing on the chronometer would also be started and paused when the subjects were still. Whenever the students would start moving again, timing on the chronometer would be resumed, and so on until the end of class. The data was collected by two university students through observation from afar, who had been chosen by means of a draw. The results showed that the movement time was an average of 15.1 (±:7.4) minutes for the boys and 14.09 minutes (±:6.6) for the girls. Based on the data analysis and also on the literature (WEINECK, 2005; WILMORE & COSTILL, 2001) the conclusion is that the groups' average movement time in Physical Education classes is not enough to provide positive adaptations in the relation between exercise and health.

KEYWORDS: Physical Education, time, health.

LE TEMPS DE MOUVEMENT DES ENFANTS DANS LES CLASSES D'ÉDUCATION PHYSIQUE

RÉSUMÉ

Cette étude visait à déterminer et comparer le temps de mouvement dans les classes d'éducation physique des élèves des deux sexes de l'école primaire dans la municipalité de Vitória/ES/Brésil.Le groupe analysé était composé de 30 étudiants, 15 mâles avec un âge moyen de 10 ans (± = 0,70) et 15 femelles avec un âge moyen de 9,87 ans (± = 0,67).Pour effectuer la recherche, les instruments suivants ont été utilisés : chronomètres, porte-blocs et stylos.Les leçons ont duré 50

minutes et au début des activités du professeur, la mesure du temps de mouvement des élèves a commencé avecun chronomètre, qui a été arrêté quand les individus étaient immobiles.À chaque reprise d'activité du mouvement, le chronomètre a été déclenché et cette procédure a été répété jusqu'à la fin de la classe.Les données ont été recueillies par deux universitaires qui ont fait des observations éloignées de deux élèves par classe préalablement choisis par tirage au sort.Les résultats ont montré que le temps de mouvementa été en moyenne 15,1 minutes (± : 7,4) pour les garçons et 14,09 minutes (± : 6,6) pour les filles.Selon l'analyse des données et également basée sur la littérature (Weineck,2005 ; WILMORE &Costill, 2001), l'étude a conclu que le temps moyen de déplacement de groupes en éducation physiquene suffit pas à provoquer des adaptations positives en ce qui concerne l'exercice et la santé.

MOTS-CLÉS : éducation physique, temps, santé

EL TIEMPO DEL DESPLAZAMIENTO DE LOS NIÑOS EN LAS CLASES DE EDUCACIÓN FÍSICA

RESUMEN

Este estudio tuvo como objetivo verificar y comparar el tiempo del desplazamiento en las clases de educación física de los alumnos de ambos los sexos de la educación básica de la red municipal de Vitória/ES. El grupo estudiado fue compuesto de 30 alumnos, 15 del sexo masculino con la edad media 10 años (±=0,70) y 15 del sexo feminino con la edad media de 9, 87 años (±= 0,67). Para ejecutar la investigación fueron utilizados tales instrumentos: cronómetros, sujetapapeles y bolígrafos. Las clases fueron de 50 minutos y al princípio de las atividades del professor, se empezó a contabilizar el tiempo de los desplazamientos de los alunos através del cronómetro que se pausaba cuando los individuos se quedaban estáticos. A cada retomada de la actividad motora, se activava nuevamente el cronómetro, repitiendo este procedimento hasta que el professor enceraba la clase. Los datos fueron obtidos por 2 alumnos elegidos previamente por sorteo, através de una observación a distancia. Los resultados muestran que el tempo de desplazamiento fué em media de 15, 1 minutos (±:7,4) para nos niños y de 14,09 minutos (±: 6,6) para las niñas. Según el análisis de los datos y respaldado por la literatura cientifica (WEINECK, 2005; WILMORE & COSTILL, 2001) se pudo concluir que la media del tempo de desplazamiento de los grupos en las clases de Educación Física , no es suficiente para generar adaptaciones positivas en la relación ejercício y salud.

PALABRAS CLAVE: educación física , tiempo, salud.

O TEMPO DE MOVIMENTO DE CRIANÇAS NAS AULAS DE EDUCAÇÃO FÍSICA

RESUMO

Este estudo teve como objetivo verificar e comparar o tempo de movimento nas aulas de Educação Física,de alunos de ambos os sexos doensino fundamental da rede municipal de Vitória/ES.O grupo de estudo foi composto por 30 alunos, 15 do sexo masculino com idade média de 10 anos (±=0,70) e 15 do sexo feminino com idade média de 9,87 anos (±= 0,67). Para execução da pesquisa utilizou-se os seguintes instrumentos:cronômetros, pranchetas e canetas.As aulas foram de 50 minutos e ao início das atividades do professor, deu-se o início da cronometragem do tempo de movimento dos alunos sendo o cronômetro travado enquanto os indivíduos estavam parados. A cada retomada de atividade motriz era disparado novamente o cronômetro, procedendo-se desta maneira até o professor encerrar a aula.Os dados foram coletados por dois acadêmicos por meio de uma observação a distância de dois alunos por aula escolhidos previamente por meio de sorteio. Os resultados mostraram que o tempo de movimento foi em média de 15,1 minutos (±:7,4) para os meninos e de 14,09 minutos (±: 6,6) para as meninas. Segundo a análise dos dados e também baseados na literatura (WEINECK, 2005; WILMORE & COSTILL, 2001) conclui-se que a média do tempo de movimento dos grupos nas aulas de Educação Física, não é suficiente para provocar adaptações positivas na relação exercício e saúde.

PALAVRAS-CHAVE: Educação Física, tempo, saúde