

93 - LATERALITY AND RHYTHM BY GENDER, IN PRE-ADOLESCENT STUDENTS

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INTRODUCTION**Concepts**

Acknowledged by the World Health Organization for more than half a century, Psychomotricity is a science that has not taken the same scholars' interest yet, comparing to other sciences. There are many explanations to the meaning of Psychomotricity. In its "Psycho" composition, it recalls the intellectual (cognitive), emotional (affective) and mental (neurological). Motricity means movement, act, action, gesture.

Amongst the authors who define the word Psychomotricity, Velasco (1999) cites Germaine Rossel: "Psychomotor education is the education of the mind control and motor expression." For Ajuriaguerra, "it is the realization of the thought through a precise motion act, economic and harmonious", and to Vayer "education is the integrity of the being, through its body." It is the science that spotlights the indivisible unity of the human being, including its intellectual functions. Although logical, natural and simple, we can only understand it in depth if we understand the human genesis, phylogenesis and anthogenesis.

However, researchers like Gallahue (2003) deal with this matter as Movement Education, a process of changing in motor behavior that takes place in function "of specific environmental factors, practice opportunities, encouragement, tuition and ecology". Lê Boulch (1982) adds the Motricity is responsible for the formation of the indispensable basis of any regular or special child (with disabilities or high skills) and to ensuring the development of functional human being.

The main objective of the study is to assess the children's ability at body controlling, in right and left shifts and rhythmic structure. Specifically, observe the children's skills in getting by laterality, at the test starting, as facts ascertainment that are the search for answers to our concerns about the students' abilities.

The hypothesis to be verified regards to the fact that boys are more active than girls, because they are most involved with ball games ever since they learn to walk, thus, they will have better motor performance, carrying the body with greater control in the space.

THEORETICAL REFERENCE

Developmentalist educators acknowledge that, although the instruction is an important aspect of the teaching and learning process, it does not explain the learning, but the development does. Gallahue (2003) says that the research on the developmental aspects of motor behavior was in the past "more limited in scope and magnitude than the research done on the development cognitive and affective processes."

Developmentalist psychologists have tended to show interest upon movement simply as a visual indicator of cognitive running, likewise, "social psychologists interested in the process of emotional development have only given superficial attention to the movement and its influence on individual's social and emotional development." Motor development is a phenomenon worthy of study for its own sake, though the primary thrust of research on motor development has come from the branches of Psychology, with potential influences on other areas of the behavior.

To better understand the life cycles of humans, we cite the Perinatal Clinical History (HCP), which is an extensive and comprehensive health record, which covers the entire prenatal, childbirth, postpartum, newborn, including hospitalizations during pregnancy (SEGRE, 2002). The general objective of this instrument is to be used as basis for planning medical care to the pregnant and her son, one right of every human being.

Each person begins its existence in a cell, the egg (Gray, 1988; MOORE; Dalley, 2001). A child is born and becomes present in the world, one human being that two hundred and eighty days before was a single cell. "He is such a natural process as it was at the conception, and so it will be, in his following development, fulfilling stages like crawling, toddling, walking with impatient feet, and venturing into the unknown, with a curious mind" (TANI, 1988).

As social being, it is deeply involved in every kind of interaction with others. "What kind of experience might take place this first step of its life way?" It is hard to know what happens in the mind of a child during the first days of life. The development to which Gray (1988), Moore (2001), Tani (1988) refer originates the cell number increase, through the cell division, followed by their growth and differentiation, accompanied by its functional activity, called metabolism.

Jersild (1961) gives a psychological dimension, featuring three steps by which a person comes into existence. The first one is the conception, and second, the process of birth. The third step is the "self", distinct, conscious of its existence and identity, with components of perception (of itself, its body and the impressions it causes to others), concept (which makes the characteristics, skills, resources, shortages and limitations the concept that it has of its origin, antecessors and the future), and of attitude (feelings that one feels about itself and its origins and future perspectives, its way of self-looking with pride or shame, merits or demerits, its self-acceptation).

Publications by Gesell (1978) point out that the limits of the self expand with an astonishing speed: the baby cries, sees part of its body, has thermal sensations, grab objects, smiles at other people, in particular, at its mother, hear noises, among them his name. Through the evolution, starts calling itself by its own name and use the pronouns I, me, you, our, and so passionately, the possessive my.

Gallahue (2003) notes that Gesell (1928) and McGraw (1935) made the first serious attempts to study the motor development, which is concerned with age, however, does not depend on it. In this perspective, it is a function of innate biological processes that result in the acquisition of infantile motor skills. "Several factors that involve motor skills and physical performance interact in complex ways with the cognitive and affective development. Each of these factors, in turn, is affected by a wide variety of requirements related to specific tasks, biological and environmental."

Although the "biological clock" is quite specific, each individual has its own time for acquiring and developing motor abilities. The age groups are approximate time scales, in which certain behaviors may be observed. The movement development process should remind us constantly of the learner's individuality. As for the motor control and motion competence, the developmentalists recognized the interactive role of two basic systems in development, which are heredity and environment.

METHODOLOGY

The test has been applied to 149 pre-adolescents, from the genders masculine and feminine, aged 9 and 10 years old, students at Fundamental Schools located in Dourados city-MS:

Procedures – initially, it were made contacts with the schools directions and a stratified draw to select the students who took part in the study. The parents and guardians were sent authorization requests for allowing the students to participate in the aforementioned study (Term of Informed Consent, Free and Acknowledged).

Organization – so as to apply the Three Stripes test, the teacher has defined three tracks (stripes) of 1 meter long and 5 cm wide, parallel and distant 1.20 m, one and another. An evaluation form was used to record the data: number of the student, age, gender, weight, height, school grade, time of the test performance and to which side the movement started.

To obtain the body weight and height measures, it was observed the protocol set out by Tanner (1985):

1) Body mass: material – a balance accurate to 100 grams.

Protocol – the student must stand upright, with the backs to the balance scale, feet on and centered on the platform, erect and gazing on a point ahead. He/she must wear as little clothing as possible. It is done only one measurement.

2) Height: material – measure tape fixed to the wall, graduated in centimeters and tenth of centimeters and a square rule.

Protocol – the evaluated should be in orthostatic position (standing), feet together, trying to touch the measure instrument with the posterior surfaces of the heels, pelvic waist, shoulder blade and the occipital region. The measurement is made with the evaluated in inspiratory apnea, in order to minimize possible variations on this anthropometric variable. The head should be oriented in the Frankfurt plane, parallel to the ground. The measure will be made with the cursor (book) in 90-degree angle in relation to the scale. The evaluated is required to be barefoot and allowed to using short pants and T-shirt. Three measurements are made, taking their average as the real height value.

Protocol of the Three Stripes Test of Johnson & Nelson (1979), in Marins & Giannichi (1998):

3) The student will start the test facing the teacher, with one foot on each side of the centerline. At the evaluator sign, moment which the chronometer is fired, the student starts the dislocation to the right, with steps of joining, returning to the starting track and shifting to the left, and so on, successively, until passing over the central track eight (8) times. By stopping the timer, the teacher tells the child the test is finished. The child can not cross its legs neither steps on lines, if it occurs, the test must be restarted.

Test Protocol for Measuring the Rhythm of Johnson & Nelson (1979), in Marins & Giannichi (1998):

Three times (64, 120 and 184) are placed in the metronome, which consequently will give three beat speeds 12, 22 and 32, respectively, in 10 seconds. The evaluated should listen to the metronome at every speed, and then walk as close as possible to the speed given in 10 seconds. The steps of the evaluated must be counted by another tester. The metronome must be turned off (for the evaluated) during the test.

Result: it is the total number of deviations off the specific beat number of each one of the three speeds.

The test data of the Three Stripes will be treated with descriptive measures, through mean, standard deviation and percentiles. The hypothesis will be tested by the Test t of Student, with bilateral significance to differences and means and chi-square for categorical variables.

The data obtained in the interview and the measures of the variables referenced will be analyzed and interpreted, aiming to verify whether there is significant difference between pre-adolescent males and females, concerning the children's ability in bodily control, and shifting movements to the right and left and rhythmic structure.

The sample consisted of 149 pre-adolescents, aged between 10 and 11 years old, being 87 from feminine gender and 62 masculine gender, who were randomly selected in five municipal schools in Dourados-MS.

The scheme of data collection was performed as follows:

In this study, five dependent variables were analyzed (tests of laterality, time to running the three stripes test, identify left/right, start the test correctly and ability of lateral dislocation of the quantitative variables), in relation to three controlling variables (sex, weight and height).

The variables data were tabulated and analyzed by descriptive or exploratory techniques of statistical analysis.

The hypotheses were tested by means of the test t of Student, with bilateral significance for differences in means and chi-square, for categorical variables (qualitative), and the Spearman coefficient (rs), to verify the simple linear correlation between two variables.

RESULTS

Eighty-seven or 58.4% out of the 149 adolescents studied were female, and sixty-two, 41.6%, male. Among them, seventy-seven, or 51.7% of the sample weighed less than 31 kg and heighted less than 1.39 m, and seventy-two (48.3%) weighed over 32 kg and heighted more than 1.39 m. On average of the three tests, it was found that 130 (87.2%) out of the adolescents performed the test markedly or totally off the pace and only 19 (12.8%) performed it at the pace or moderately off.

Table 1. Frequency in the rhythm (pace) tests by participants' gender, weight and height and percentage.

Test Rhythm	Result of the test	Adolescents (n = 149)											
		Gender						Height [m]					
		Masculine (n = 62)		Feminine (n = 87)		Weight [kg]			Height [m]				
		N	%	n	%	Below Aver.(n=77)	Aver.(n=72)	Over (n=72)	Below Aver.(n=77)	Aver.(n=72)	Over (n=72)		
1	on pace ^a	25	54.3	21	45.7	27	58.7	19	41.3	27	58.7	19	41.3
	off pace ^b	37	35.9	66	64.1	50	48.5	53	51.5	50	48.5	53	51.5
2	on pace ^a	44	49.4	45	50.6	44	49.4	45	50.6	46	51.7	43	48.3
	of pace ^b	18	30.0	42	70.0	33	55.0	27	45.0	31	51.7	29	48.3
3	on pace ^a	17	54.8	14	45.2	14	45.2	17	54.8	18	58.1	13	41.9
	off pace ^b	45	38.1	73	61.9	63	53.4	55	46.6	59	50.0	59	50.0
Average	on pace ^a	12	63.2	7	36.8	9	47.4	10	52.6	13	68.4	6	31.6
	off pace ^b	50	38.5	80	61.5	68	52.3	62	47.7	64	49.2	66	50.8

a including the categories “on pace” and “moderately off pace”;
 b including the categories “markedly off” and “totally off pace”; 1 = test...; 2 = ...; 3 =

Regarding the test 1 of rhythm, Table 1, it was found a high number of adolescents – 103 (69.1%) – failed to perform the test on pace, being 66 (75.9%) female teenagers, and 37 (59.7%) males.

This difference is statistically significant ($\chi^2(1) = 4.443$; $p = 0.035$), i.e., individuals belonging to two samples differed in relation to the test 1 of laterality, and the women have shown had more difficulties in performing this test.

In the test 2, 60 (40.3%) teenagers could not perform the test on pace, among them, 18 (29.0%) were male and 42 (48.3%) female. This difference is statistically significant ($\chi^2(1) = 5,574$; $p = 0,018$). Again, the girls have shown the greatest difficulties in completing the test 2 of laterality.

In test 3, the number of adolescents who could not achieve the test on pace was very high, 118 (79.2%), being 45 (72.6%) from masculine gender, and 73 (83.9%), feminine. This difference is marginally significant ($\chi^2(1) = 2.819$; $p = 0.093$), so that the tests of laterality evidence significant dependency on sex. On the other hand, it has not been found significant difference ($p > 0.25$), in none of the three tests of laterality, with reference to weight and height variables. So, walking on pace does not depend on adolescent's weight or height.

By analyzing the average among the three tests of laterality, it was verified that the number of teenagers who could not run the test in the rhythm was 130 (87.2%) - 50 (38.5%) boys and 80 (61.5%) girls, what mean statistical significance ($\chi^2(1) = 4,161$; $p = 0,041$). The female group has presented the greatest difficulty in performing the three tests of walking on pace. Regarding to weight and height, there was no significant difference.

In the three stripes runtime test evaluation, it has been considered, as controlling variables, the gender (sex), weight and height and their respective results are presented on Table 2.

Table 2. Three Stripes test runtime, in average, standard deviation and statistical significance.

Variables	Adolescent	N	Average	Standard Deviation	t (p)	Significance
Gender	Masculine	61	18,28	3,82	2,146(0,033)	*
	Feminine	87	19,78	4,41		
Weight	below average	76	19,97	4,55	2,437(0,016)	*
	over average	72	18,31	3,70		
Height	below average	76	19,74	4,27	1,727(0,086)	Ns
	over average	72	18,55	4,12		

It is observed that the times for performing the Three Stripes test are not equal between the sexes, and the average runtime is significantly different ($t(114) = 2.146$; $p = 0.033$) between male and female adolescents, by means of the test t of Student. The average time of the test performance was significantly different ($t(114) = 2.437$; $p = 0.016$) for the variable "weight", in which the lighter ones took longer, on average, to perform the test. The shorter teens also needed more time, on average, to accomplish the test of the three stripes, but the difference was not statistically significant ($t(114) = 1.73$; $p = 0.086$).

In Table 3, we present the percentiles scores for the three control variables studied, which is useful for interpreting the test.

Apropos the test to verify whether the adolescent identifies right and left, 58 (38.9%) were not able to identify them and 91 (61.1%) have identified these lateral directions. In table 4, considering the two groups of teenagers, male and female, it was found that the 58 who could not identify right and left, 21 (36.2%) were male and 37 (63.8 %) female. This difference was not statistically significant ($\chi^2(1) = 1.141$; $p = 0.285$) at the level proposed.

Table 3. Percentile of the adolescents studied by category of gender, height and weight, regarding the identification of right / left.

Percentile	Gender		Weight		Height	
	Masculine	Feminine	Below Average	Over Average	Below Average	Over Average
	100	29,00	32,53	32,53	30,44	30,44
90	24,97	27,54	26,65	23,42	26,86	25,12
80	20,28	22,90	24,53	19,79	23,73	20,93
70	18,64	20,40	21,95	18,87	20,43	19,42
60	18,04	19,38	19,37	18,10	19,04	18,17
50	17,34	18,56	18,57	17,55	18,36	17,41
40	17,00	17,93	17,93	17,23	17,93	17,17
30	16,14	17,45	17,35	16,44	17,48	16,08
20	15,39	16,64	15,96	15,54	16,88	15,59
10	14,07	15,14	14,96	14,18	14,92	14,05
0	12,88	13,19	13,16	12,88	12,88	13,16

Considering the two groups of teenagers – in relation to the below / above weight and height average – it was found that within the same 58 who could not identify right and left, 29 (50%) weighed less than the average, and 29 (50%), weighed over the average. In relation to height, 29 (50%) who were unable to identify left and right heighted less than the average, and 29 (50%) were taller than the average. The differences remarked here are not statistically significant, Table 4, therefore, it is possible to ascertain that the variable identifying right and left did not depend on the variables gender, weight and height.

Table 4. Identifying the right and the left, by category of the controlling variable in number and significance.

Variable of control	if the adolescent identifies left/right		$\chi^2(p)$	Sig.	
	does not	does			
Gender	Masculine	21	41	1,141(0,285)	Ns
	Feminine	37	50		
Weight	below average	29	48	0,107(0,744)	Ns
	over average	29	43		
Height	below average	29	48	0,107(0,744)	Ns
	over average	29	43		

The results on Table 5 are similar to those presented on Table 4, so that the variable "start the test of lateral dislocation"

did not depend on the variables of sex (gender), weight and height.

Table 5. Number of adolescents that started the test of lateral dislocation by the right side, in each category of controlling variable and statistical significance.

Variable of control		the adolescent started by the ... side:		$\chi^2(p)$	Sig.
		incorrect	correct		
Gender	Masculine	20	41	1,437(0,231)	Ns
	Feminine	37	50		
Weight	below average	30	47	0,014(0,907)	Ns
	over average	27	44		
Height	below average	27	49	0,589(0,443)	Ns
	over average	30	42		

There was a very high correlation ($r_s = 0.971$, $p < 0,001$) between failing in the test to identify the right / left and start the shift from the correct side.

Table 6. Frequency and percentage in the tests of lateral displacement, by category of gender, weight and height of the adolescents.

In relation to lateral dislocation, he/she presented:	Gender				Weight				Height			
	Masculine		Feminine		Below Average		Over Average		Below Average		Over Average	
	n	%	n	%	n	%	n	%	n	%	n	%
Ability	25	42,4	5	63,1	41	55,4	37	53,6	38	52,1	40	57,1
Flaw	19	32,2	1	16,7	17	23,0	16	23,2	16	21,9	17	24,3
Poor ability	6	10,2	1	17,9	10	13,5	11	15,9	12	16,4	9	12,9
Great difficulty	9	15,3	2	2,4	6	8,1	5	7,2	7	9,6	4	5,7

It is verified that 78 (54.5%) out of the adolescents had no failures in lateral dislocation and that 65 (45.5%) have had one flaw, at least. The number of failures depends significantly ($\chi^2(3) = 15.215$; $p = 0.002$) on the gender and does not on the weight ($\chi^2(3) = 0.199$; $p = 0.978$), or on height either ($\chi^2(3) = 1.266$; $p = 0.737$).

CONCLUSION

If the theory states that by the 9 years old, at most, the children must have developed the laterality already, the test "start through the right" has shown that 38.9% were unable to identify left and right, and, in this group, the girls are the most representative. That percentage is upsetting, even if the statistical data do not represent significance to the point of alarming the readers.

It is necessary the teachers to develop activities aimed at improving all aspects identified in this study, so that Physical Education in schools is dedicated to Motor Education, respecting the evolutionary stages and the profile of behaviors which the motor, psychological and cognitive control develop in, with the integration of the environment, and in the spatial, temporal, corporal orientation, laterality, characteristics and functions of left and right brain hemispheres.

Always connected to conscious breathing, this attention is beneficial to fine and gross motor skills, allowing solve distinct manifestations, such as paratonia and synkinesis. The tendency of developing Physical Education classes expressly directed to sports obstructs significant part of the students to take advantage of the opportunity to develop their potentials, like rhythm, basic to all activities related to motor education, specifically, the women, as ratification of the hypothesis that male students perform better than female pre-adolescents in the body control in the space.

On this basis, the area of Physical Education has divided the university graduation into Licentiate and two Bachelor Degrees, considering the competence of the professionals it graduates to work in the schools. Concomitantly, it is essential to call attention to the difficulty of the teachers that bases their work just in sports, because of their academic formation, without making changes and upgrading their knowledge, in order to envision and promote the health of the school population and its future.

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LATERALITY AND RHYTHM BY GENDER, IN PRE-ADOLESCENT STUDENTS

The objective the study has been verifying whether there were lower limbs and bilateral pace asymmetries or not, in 10-11-year-old pre-adolescents, students at municipal schools, in Dourados-MS. It were used the tests for speed and agility and the Test of Time (ability to repeat a rhythm in dislocation), both of Johnson & Nelson, in Marins and Giannichi (1998). The motor exploration is the development of a positive self-concept in each child. In this case, it was also checked out if there were deviations on the number of heartbeats, for each speed. The rhythmic experience, lived with their own paces, adjusts to the data from the space and must be kept through the time-perception work and, particularly, through the game play of internalizing their own motion rhythms. The rhythm in motor development is an important tool for the association and understanding of the rhythm, structural support for thoughtfulness in education, since it commands the basic locomotion forms of the man throughout its existence (VERDERI, 2000). The hypothesis to be verified regards the fact boys are more active than girls, given that they are more involved with game ball since they toddle, therefore, they will have better motor performance, carrying the body with greater control in space. After the statistical treatment of the tests applied, the test t of Student indicated that the test runtimes are not equal between the genders, pointing that the average test running time has differed significantly ($t(114) = 2,146; p = 0,033$) between male and female adolescents, it is significant for male students and confirms the hypothesis stated, as well the gap in the School Physical Education. Concerning the evaluation of the three rhythmic speeds, in the average, in the three tests, it was verified that 130 (87.2%) out of the adolescents performed the test markedly or totally out of the rhythm, and within these ones 50 (38.5%) are from masculine gender and 80 (61.5%) from feminine. The difference is statistically significant ($\chi^2(1) = 4,161; p = 0,041$), whereas the girls had greater difficulty in running with the three tests of walking in the rhythm, only 19 (12.8%) have accomplished it in the rhythm or moderately off. The results show that is necessary to prioritize the development of the rhythmic scheme even before teaching motion games, as recommended by Le Boulch.

KEYWORDS: Laterality. Pace. Pre-adolescents.

LATÉRALITÉ ET RYTHME PAR SEXE DES ÉCOLIERS PRÉ-ADOLESCENTS

L'objectif de cette étude a été de vérifier s'il existe des asymétries bilatérales des membres inférieurs et de rythme chez les pré-adolescents âgés de 10 et 11 ans, écoliers des écoles municipales de Dourados-MS. On a utilisé des tests de vélocité et d'agilité, et un test de temps (habilité à répéter un rythme dans le mouvement) tous les deux de Johnson & Nelson, in Marins et Giannichi (1998). L'exploration motrice développe une auto-conception positive pour chaque enfant. Dans ce cas on a également vérifié s'il y avait des variations du nombre de pulsations cardiaques, pour chaque vélocité. L'expérience rythmique vécue de ses propres mouvements s'ajuste aux données de l'espace et doit être maintenue à travers le travail de la perception temporelle et, en particulier, par le jeu d'intériorisation de ses propres rythmes moteurs. Le rythme dans le développement moteur est un important instrument d'association et de compréhension de ces rythmes, soutien structurel pour la prise de conscience durant l'éducation, compte tenu que celle-ci détermine les formes de bases de locomotion de l'homme pour toute son existence (VERDERI, 2000). L'hypothèse à être vérifiée concerne le fait que les garçons sont plus actifs que des filles, vu qu'ils sont plus habitués à jouer au ballon dès qu'ils apprennent à marcher. Dans ce cas ils auront un meilleur développement moteur, déplaçant leurs corps avec un plus grand contrôle dans l'espace. Après traitement statistique des tests appliqués, le test t de Student a montré que le temps d'exécution des tests des trois essais n'est pas le même pour les deux sexes. Le temps moyen d'exécution diffère beaucoup ($t(114) = 2,146; p = 0,033$) entre adolescents masculins et féminins. Cela est significatif pour les écoliers du sexe masculin, et confirme l'hypothèse énoncée ainsi que la lacune existante en éducation physique à l'école. L'évaluation des trois vélocités rythmiques, en moyenne, pour les trois tests, vérifie que 130 (87,2%) des adolescents exécutent le test totalement ou en partie hors rythme, dont 50 (38,5%) sont du sexe masculin, et 80 (61,5%) de sexe féminin. La différence est statistiquement importante ($\chi^2(1) = 4,161; p = 0,041$) vu que les filles ont montré de plus grandes difficultés pour exécuter les trois tests de marche en rythme, et seulement 19 (12,8%) les ont exécutés dans le rythme ou plus ou moins hors rythme. Les données montrent qu'il est nécessaire de développer en priorité le projet rythmique avant même d'enseigner les jeux de motricités, conformément aux recommandations de Le Boulch.

MOTS-CLÉS: Latéralité. Rythme. Pré-adolescents.

LATERALIZACIÓN Y RITMO POR GÉNERO EN ESTUDIANTES PRE-ADOLESCENTES

El objetivo del estudio fue determinar si existen asimetrías bilaterales de los miembros inferiores y de ritmo en pre-adolescentes de 10 y 11 años de edad, estudiantes de las escuelas municipales en Dourados-MS. Fueron utilizadas las evaluaciones de velocidad y la agilidad y la Prueba del Tiempo (capacidad de repetir un ritmo en desplazamiento), ambos de Johnson & Nelson, en Giannichi y Marins (1998). La exploración motora es el desarrollo de un propio concepto positivo en cada niño. La experiencia rítmica vivida con sus propios movimientos se ajusta a los datos del espacio y, todavía, debe ser mantenida a través de la labor de percepción temporal y, en particular, mediante el juego de la interiorización de sus propios ritmos motores. El ritmo en el desarrollo motor es un importante instrumento para ocurrir la asociación y la comprensión del ritmo, ayuda estructural para tomar conciencia de la educación, ya que esta es responsable por la organización de las formas básicas de locomoción humana en su entera existencia (Verderosa, 2000). La hipótesis a verificar es tocante al hecho de que los niños sean más activos que las niñas, pues están más involucrados con el juego de pelota desde haber aprendido a caminar, por lo tanto, han de tener un mejor rendimiento motor, llevando el cuerpo con mayor control en el espacio. Después el tratamiento estadísticos de las evaluaciones aplicadas, la prueba t de Student indicó que el tiempo de ejecución de la prueba de las tres bandas no es idéntica entre los géneros, sendo que el tiempo mediano para la ejecución se quedó significativamente distinto ($t(114) = 2,146; p = 0,033$) entre adolescentes masculinos y femeninos, lo que es significativo para los estudiantes del género masculino y confirma la hipótesis planteada y la brecha existentes en la Educación Física. En la evaluación de la tres velocidades rítmicas, en media, en las tres pruebas, se comprobó que 130 (87,2%) de los adolescentes realizaran la prueba de notablemente o completamente fuera del ritmo, y de estos individuos 50 (38,5%) son del sexo masculino y (61,5%) del sexo femenino. La diferencia es estadísticamente significativa ($\chi^2(1) = 4,161; p = 0,041$), siendo que las niñas presentaran mayor dificultad en la ejecución de las tres pruebas de caminar en el ritmo y, sólo 19 las ejecutaran en el ritmo o fuera de él. Los resultados muestran que es necesario dar prioridad al desarrollo del esquema rítmico incluso antes de enseñar los juegos motores, según lo recomendado por Le Boulch.

PALABRAS-CLAVE: Lateralización. Ritmo. Pre-adolescentes.

LATERALIDADE E RITMO POR GÊNERO EM ESTUDANTES PRÉ-ADOLESCENTES

O objetivo do estudo foi verificar se existem assimetrias bilaterais de membros inferiores e de ritmo em pré-adolescentes de 10 e 11 anos de idade, estudantes de escolas municipais de Dourados-MS. Foram utilizados os testes de velocidade e agilidade e Teste de Tempo (habilidade de repetir um ritmo em deslocamento), ambos de Johnson & Nelson, in Marins e Giannichi (1998). A exploração motora é o desenvolvimento de um autoconceito positivo em cada criança. Neste caso também foi verificado se existiam desvios do número de batidas cardíacas, a cada velocidade. A experiência rítmica vivida com seus próprios movimentos ajusta-se aos dados do espaço e deve ser mantida através do trabalho de percepção temporal e, em particular, pelo jogo de interiorização de seus próprios ritmos motores. O ritmo no desenvolvimento motor é um importante instrumento para a associação e compreensão do ritmo, suporte estrutural para a conscientização na educação, uma vez que este ordena as formas básicas de locomoção do homem em toda sua existência (VERDERI, 2000). A hipótese a ser verificada diz respeito ao fato de os meninos serem mais ativos que as meninas, uma vez que estão mais envolvidos com o jogo de bola desde que aprendem a andar; logo, terão melhor desempenho motor, transportando o corpo com maior controle no espaço. Após o tratamento estatístico dos testes aplicados, o teste t de Student apontou que o tempo de execução do teste das três faixas não é igual entre os sexos, sendo que o tempo médio para execução diferiu significativamente ($t(114) = 2,146$; $p = 0,033$) entre adolescentes masculinos e femininos, isto é significativo para os alunos do sexo masculino e confirma a hipótese enunciada e a lacuna existente na Educação Física Escolar. Na avaliação das três velocidades rítmicas, em média, nos três testes, verificou-se que 130 (87,2%) dos adolescentes executaram o teste acentuadamente ou totalmente fora do ritmo, sendo que destes 50 (38,5%) são do sexo masculino e 80 (61,5%), do sexo feminino. A diferença é estatisticamente significativa ($\chi^2(1) = 4,161$; $p = 0,041$), sendo que as meninas apresentaram maior dificuldade na execução dos três testes de andar no ritmo e, apenas 19 (12,8%), executaram-nos no ritmo ou moderadamente fora. Os resultados denotam que é necessário priorizar o desenvolvimento do esquema rítmico antes mesmo de ensinar os joguinhos motores, conforme preconiza Le Boulch.

PALAVRAS-CHAVE: Lateralidade. Ritmo. Pré-adolescentes.