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Original article

Methodological strategy through the game for teaching passreception in basketball

Estratégica metodológica a través del juego para la enseñanza del paserecepción en baloncesto

Estratégia metodológica através do jogo para o ensino da percepção de passe no basquetebol

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ABSTRACT

The teaching-learning process requires didactic strategies that contribute to the acquisition of specific motor habits in an effective way; the game method can contribute considerably to this purpose. In this sense, the objective of the research is to improve the teaching process of pass-reception in basketball through a methodological strategy, using the game method. Two independent groups were formed with 20 male basketball







players, each one from the Millennium Educational Unit *Nela Martínez Espinosa*; a traditional training was implemented to the Control Group and a methodological strategy with six games to the Experimental Group during one semester and the teaching process of the pass-reception was prioritized. The Control Group did not significantly improve the pass-reception technique (p=0.180), unlike the Experimental Group (p=0.000), while, when comparing the results in the post-test between independent groups, the Experimental Group presented a better average range (24.50) than the Control Group (16.50), with a significant difference in its favor (p=0.030). For the present research, a significant improvement in the pass reception technique is achieved in the basketball players of the Experimental Group. It is deduced that the use of a methodological strategy that prioritizes the game method, contributes significantly to the teaching-learning process in the acquisition of specific motor habits of basketball as part of the sports initiation stage.

Keywords: Methodological strategy; Game; Teaching-learning; Passing-receiving; Basketball.

RESUMEN

El proceso de enseñanza-aprendizaje requiere de estrategias didácticas que contribuyan a la adquisición de hábitos motrices específicos de una forma eficaz; el método del juego puede contribuir considerablemente a dicho propósito. En tal sentido, se plantea como objetivo de la investigación perfeccionar el proceso de enseñanza del pase-recepción en baloncesto a través de una estrategia metodológica, utilizando el método de juego. Se conforman dos grupos independientes con 20 basquetbolistas masculinos, cada uno de la Unidad Educativa del Milenio Nela Martínez Espinosa; se implementa un entrenamiento tradicional al Grupo Control y una estrategia metodológica con seis juegos al Grupo Experimental durante un semestre y se prioriza el proceso de enseñanza del paserecepción. El Grupo Control no mejoró significativamente la técnica del pase-recepción (p=0.180), a diferencia del Grupo Experimental (p=0.000), mientras que, al comparar los resultados en el postest entre grupos independientes, el Grupo Experimental presentó un mejor rango promedio (24.50) que el Grupo Control (16.50), con una diferencia significativa a su favor (p=0.030). Para la presente investigación, se logra una mejora significativa en la técnica del pase-recepción en los basquetbolistas del Grupo Experimental. Se deduce que el uso de una estrategia metodológica que priorice el método de juego, contribuye notablemente al proceso de enseñanza-aprendizaje en la adquisición de hábitos motrices específicos del baloncesto como parte de la etapa de iniciación deportiva.

Palabras clave: Estrategia metodológica; Juego; Enseñanza-aprendizaje; Pase recepción; Baloncesto.

RESUMO

O processo de ensino-aprendizagem requer estratégias didáticas que contribuam para a aquisição de hábitos motores específicos de forma eficaz; o método do jogo pode contribuir consideravelmente para este propósito. Neste sentido, o objetivo da pesquisa é melhorar o processo de ensino da recepção de passes no basquetebol através de uma estratégia metodológica, usando o método de jogo. Dois grupos independentes foram formados com 20 jogadores masculinos de basquete, cada um da Unidade Educacional Nela Martínez Espinosa Millennium; um treinamento tradicional foi implementado para o







Grupo de Controle e uma estratégia metodológica com seis jogos para o Grupo Experimental durante um semestre e o processo de ensino da recepção de passes foi priorizado. O Grupo de Controle não melhorou significativamente a técnica de recepção de passagem (p=0,180), ao contrário do Grupo Experimental (p=0,000), enquanto que, ao comparar os resultados no pós-teste entre grupos independentes, o Grupo Experimental apresentou uma faixa média melhor (24,50) do que o Grupo de Controle (16,50), com uma diferença significativa a seu favor (p=0,030). Para a presente investigação, uma melhoria significativa na técnica de recepção de passes é alcançada nos jogadores de basquete do Grupo Experimental. Deduz-se que o uso de uma estratégia metodológica que prioriza o método de jogo, contribui significativamente para o processo de ensino-aprendizagem na aquisição de hábitos motores específicos no basquetebol como parte da fase de iniciação esportiva.

Palavras-chave: Estratégia metodológica; Jogo; Ensino-aprendizagem; Passe-recepção; Basquetebol.

INTRODUCTION

Sports technique includes a set of skills specific to sports, which allows a more efficient use of energy expenditure and the execution of motor movement. In this sense, enhancing the teaching-learning process in sports is one of the essential premises of the sports training management process that is emphasized in the initiation stage, (Peláez, 2021; Acebo Calderón & Alcívar-Molina, 2021).

The use of the game method is one of the most widely used strategies to improve the acquisition of specific sport techniques, (Betancourt, Quilca, & O'farrill, 2020; Mejía & Pérez, 2020; González-Espinosa, Molina, García-Rubio, Medina, & García-Santos, 2017) while enhancing basic motor skills, (Pol-Rondón, Durruthy-Rivera, & Robert-Gómez, 2021) either through the design of pre-sport games as is usual in Physical Education or as a didactic way in initiation sports training.

It is necessary to highlight the importance of the game as a tool for the learning of children and young people, it is understood that sport for them is game; this essence should never be forgotten. In this way, each training could be developed with a ludic and motivational approach. Here, skills can be taught with a global approach, but also specific, by being very useful in later stages, such as when using pre-sport games (Rodríguez, Bárzaga, & Palmero, 2019). In terms of didactic methodology of sports training, the work of the specific technique for the present case, the pass-reception in basketball, promotes the basic postulates to athletes so that they can perform much more complicated technical-tactical activities, in a simpler and recreational way (Eduarte Águila, Stable Bernal, & Lanza Bravo, 2019).

This research work seeks to provide alternatives to solve a recurrent problem in educational institutions in the area of Physical Education, specifically in the teaching of the fundamentals of different sports. The study specifically addresses the difficulties generated in the teaching of pass-reception in basketball with EGBS students of the *Nela Martínez Espinosa* EMU of the "La Troncal" canton, an aspect that, according to the authors of this research, is a common cause in many educational units of the country.







In the solution of this problem, the literature specifies some strategies such as the use of the game method already mentioned, games that allow emulating the movements executed in the different types of passes and receptions of basketball. The work allows a progressive and methodical learning that result in a more technical execution of this important foundation within the game of basketball (González-Espinosa, Mancha-Triguero, García Santos, Feu Molina, & Ibáñez Godoy, 2019).

It is evident that the problem about the adequate methodologies for the teaching of fundamentals in sports and particularly in basketball is generalized. Discrepancies prevail here about when to start, how to start and which methods are the most appropriate for the teaching of basketball, both in the dimension of sports training and in the dimension of Physical Education.

Many teachers and sports trainers wonder how to plan teaching, (Chng & Lund, 2018; Metzler & Colquitt, 2021). It is assumed that planning can solve the uncertainty inherent in practices; but the recipes that exist, in many occasions, have as the only result an industrialized teaching by ordered patterns. It is necessary to change the patterns by principles, it is noticed that any passage from the practical principle to the theoretical scheme. Any reading of this scheme as a plan or as a teaching method misses everything that constitutes the reality of practices in their development. Therefore, instead of transcribing a recipe of simplified steps, (Giménez, 2005), which would only manage to simplify the real complexity of the practice of basketball teaching, it is better to analyze some principles resulting from the practices themselves. It should be noted, once again, that they are just that, that is to say, they are only rules that guide the action but that must be adapted to the action. In conclusion, there are no magic recipes for all, but rather the basic strategies must be adapted to each circumstance.

In this sense, once the problematic situation is founded, the purpose of this research is to improve the teaching process of pass-reception in basketball through a methodological strategy that prioritizes the game method.

MATERIALS AND METHODS

A non-probabilistic intentional sampling was used; forty 8th grade students of the *Nela Martínez Espinosa* Millennium Educational Unit (male gender), Canton "La Troncal", Province of Cañar, Republic of Ecuador were selected for the study. The inclusion criteria are that the students belong to this educational unit, do not present injuries or other factors that limit the application of the intervention proposal, participate in the intervention process in at least 95% of the classes, as well as present a consensual signature to submit to the research process.

The students were divided into two independent groups with 20 students each (Group 1: Control; Group 2: Experimental), a traditional training is applied to the control group, a methodological strategy with specialized basketball games is implemented in the experimental group, briefly described in the next paragraph, and an experimental orientation to the research process is evidenced.

The adopted strategy includes six didactic exercises based on the game method, which have an objective, organization, development and specific rules. This proposal was applied during a semester, which in terms of training planning includes six mesocycles of a simple periodization, with a free frequency in the use of the exercises in each week.







It is noteworthy to highlight that it was carried out with a minimum application of three days per microcycle. In this sense, the teaching-learning strategy was adopted in the basketball players studied.

The aforementioned author listed 13 aspects to be taken into account for the elaboration of the games, which were fully complied with in the present research, although with the specific variations required by the objective of the research. In this research, priority was given to the pass-reception in the execution of the games and the respective evaluation of the athletes.

For the control of pass-reception, a systematic evaluation was performed without prior notice to the basketball players. The assessment was performed during two training mesocycles (before implementing the intervention proposal or pretest and after implementing the proposal as part of the sixth mesocycle or posttest), using observational methodology in the following adapted game:

Ten passes received by jumping stops or by step; objectives: to achieve the unmarking, making stops, without lifting the pivot foot before the execution of turns, as well as to improve the pass-reception. Organization: two teams are created with the same number of players (Red Team and Blue Team); the game is played in one-half of the court. Development: it will begin with a jump between two players, simulating the start of an official game; it is developed within the circle in the middle of the field. The team that receives the ball will try to develop ten consecutive passes, but the receptions of the passes will be made with a stop by passing or jumping. The team not in possession of the ball shall attempt to intercept the pass in order to gain possession of the ball and begin the ten consecutive passes. In the event that the pass is intercepted before the ten passes in a row are completed, the pass count will start again from number 1. Rules: The ball may not be dribbled, the reception must be carried out in conjunction with the stop, no fouls may be committed, nor may the ball be moved out of the space established for play to take place. In the previous game, the technical component of pass-reception will be specified in the evaluation, using a four-level Likert scale described below:

- 1 point: deficient: four or more technical errors recorded.
- 2 points: insufficient: three technical errors recorded.
- 3 points: correct: between one and two technical errors recorded.
- 4 points: excellent): perfect technical execution, without registering execution errors in the pass-reception.

The most common errors in the execution of pass-reception include dropping the ball on reception, loss of the ball due to bad reception, loss of the ball due to bad passing, and any technical foul during the execution of the game. In the application of the aforementioned exercise-test, official basketballs were used, in a court with official measurements, as well as footwear appropriate for the age group, in addition to the rest of the safety and protection measures.

Given the non-existence of a normal distribution of the data recorded in the evaluation of the pass-reception, a correlational statistic for two related samples of non-parametric type will be applied, to its credit the Signs Test ($p \le 0.05$), which determine the advances in the teaching-learning process of the pass-reception in basketball to each independent group. On the other hand, to determine which of the independent groups presented







better technique of the pass-reception, the non-parametric Mann-Whitney U Test for two independent samples ($p \le 0.05$) will be applied. SPSS v25 for Windows will be used for the recording and processing of each correlational statistic, as well as the general tabulation of the data.

RESULTS

Table 1 shows the results achieved through the game described in the *Material and Methods* section, used as a *test to* assess pass-reception in the basketball players studied. Two evaluations are recorded, before (Pretest) and after (Posttest) implementing the intervention process that included the six exercises mentioned (Table 1).

Table 1. - Pass-reception results of the basketball players studied

No	CONTROL GROUP		EXPERIMENTAL GROUP		
	Pretest	Posttest	Pretest	Posttest	
1	1	2	3	4	
2	2	3	2	3	
3	2	2	1	3	
4	2	2	2	3	
5	1	2	2	2	
6	2	2	1	2	
7	2	3	2	3	
8	2	1	2	3	
9	2	3	2	3	
10	2	2	2	2	
11	3	3	2	2	
12	2	2	2	3	
13	2	3	1	2	
14	1	1	2	3	
15	2	2	2	3	
16	3	2	2	2	
17	1	2	2	2	
18	3	3	1	3	
19	2	2	2	3	
20	2	2	2	3	
	1,95	2,20	1,85	2,70	







As shown in Table 1, the means reached as part of the pretest in the pass-reception for both independent groups presented a qualitative level between Deficient and Insufficient (Control Group: 1.95 points; Experimental Group: 1.85), which evidences that both independent groups at the beginning of the intervention process presented a similar level in the basketball pass-reception (p=0.678; Table 3). This characteristic is very useful to show that both groups present a similar technical-tactical level in the technique studied, controlling a fundamental extraneous variable that could, if not controlled, falsify the results of the research.

On the other hand, Table 2 shows that the control group did not present, according to the Signs Test, a significant improvement after the end of the intervention process (p=0.180), although in terms of mean differences, the posttest presented a better average score (Pretest: 1.95 points; Posttest: 1.85 points), as shown in Table 1. However, in the case of the Experimental Group, the level of pass-reception was significantly improved according to the Signs Test (p=0.000) (Table 2 and Table 3).

Table 2. - Signs test for each independent group

Frequencies				
		N		
Control Group. Posttest - Control Group. Pretest	Negative differencesa, d	2		
	Positive differences ^{b, e}	7		
	Ties ^{c,f}	11		
	Total	20		
Experimental Group. Posttest - Experimental Group. Pretest	Negative differences ^{a,d}	0		
	Positive differencesb,e	14		
	Ties ^{c,f}	6		
	Total	20		

a. Control Group. Posttest < Control Group. Pretest;
 b. Control Group. Posttest > Control Group. Pretest;
 c. Control Group. Posttest > Control Group. Pretest;
 d. Experimental Group. Posttest < Experimental Group. Pretest;
 e. Experimental Group. Posttest > Experimental Group. Pretest;
 f. Experimental Group. Posttest = Experimental Group. Pretest

Table 3. - Test statistics^a

	Control Group. Posttest - Control Group. Pretest	Experimental Group. Posttest - Experimental Group. Pretest
Exact significance (bilateral)	,180 ^h	,000 ^b

a. Signs Test.b. Binomial distribution used.







The Signs Test (Table 2) shows negative differences in the case of the Control Group 2, resulting in two basketball players who decreased their performance in pass-reception. On the other hand, seven positive differences or basketball players improved their performance in the pass-reception and 11 ties, showing that the traditional training did not contribute in these basketball players in their performance in the pass-reception technique.

In the case of the Experimental group, the Signs Test shows 0 negative differences, 14 positive differences and 6 ties, so it can be deduced that the intervention process with the games contributed to improve the technique of pass-reception in a better way.

On the other hand, the table 4 compares the results of the two *tests* applied to each independent group, with no significant differences when comparing the performance of the data obtained in the pretest (p=0.678). This includes a lower average range in the Experimental Group (19.70) than in the Control Group (21.30), which points to significant differences when comparing the results obtained in each independent group as part of the post-test (p=0.030). This favors the Experimental Group by having a better average rank (24.50) than the Control Group (16.50) (Table 4 and Table 5).

Table 4. - Mann-Whitney U test

Ranges					
	Groups	N	Average range	Sum of ranks	
Data. Pretest	Control Group	20	21,30	426,00	
	Experimental Group	20	19,70	394,00	
	Total	40			
Data. Posttest	Control Group	20	16,50	330,00	
	Experimental Group	20	24,50	490,00	
	Total	40			

Table 5.- Test statistics^a

	Data. Pretest	Data. Posttest
Mann-Whitney U	184,000	120,000
W for Wilcoxon	394,000	330,000
Z	-,537	-2,416
Asymptotic sign(bilateral)	,591	,016
Exact significance	,678b	,030b
[2*(sig. one-sided)].		

a. Grouping variable: Groups.b. Not corrected for ties.







DISCUSSION

The intervention strategy based on the game method can contribute significantly to the teaching-learning process in basketball, for which various aspects should be taken into account, such as those set out in Cárdenas (2011). It includes the recommendation of the use of the game as a means to improve the technical fundamentals of the sport, the approach of global situations adapted by modifying the games according to a defined objective. A game dynamic is established between the phases of defense-offensive, the cooperation-opposition relations are taken into account, variability is included in the game situations, the game method is unified with others directly related such as the competitive and cooperative method, the autonomy of the athlete and communication with everyone is favored. This is because at the moment of putting their knowledge into practice they cannot reach the objectives set, since the methodological gaps, as in the knowledge related to the subject, limit their scope of action. Consequently, their performance in the labor field is not positive, a situation that has a significant impact in the case that they want to devote themselves full time to the identification of talents destined to high performance. From here, the first action is usually oriented to the motor component, not only related to basic motor skills, but also to sport-specific motor skills. Such is the case of pass-reception in basketball, where the incidence of pre-sport games in the development of throwing technique in mini basketball usually has remarkable qualitative results, (Peláez, 2021) as manifested in the present research.

In Ecuadorian middle level educational institutions, sport is practiced empirically in many ways, which in the case of basketball takes into account offensive and defensive techniques. Physical preparation is normally emphasized as part of the initial specialization, (Páez et al., 2016) without normally including didactic fundamentals of relevance that contribute to improve the teaching-learning process. The problem starts from the lack of interest of Physical Culture teachers because other sports disciplines of more popularity in Ecuador are prioritized.

The results evidenced in the present research, demonstrate, in part, deficiencies in the learning of technical fundamentals of basketball, which is not only due to the misapplication of specific techniques and methodologies, which can create differences in learning according to the teaching-learning method, (González-Espinosa, Molina, García-Rubio, Medina, & García-Santos, 2017). This is caused by the lack of training of teachers in the area, which limits alternatives that allow providing solutions to different problems constantly presented in the professional exercise. Therefore, a methodological recommendation of importance is related to the process of improvement of the basketball professional, including the Physical Education teacher, who needs to appropriate knowledge of Didactics as a complement to the process of sports training management.

CONCLUSIONS

For the present research, a significant improvement is achieved in the pass-reception technique in the basketball players of the Experimental Group of the Millennium Educational Unit *Nela Martínez Espinosa*. It is deduced that the use of a methodological strategy that prioritizes the game method contributes significantly to the teaching-







learning process in the acquisition of specific motor habits of basketball, at least in the sports initiation stage.

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Authors' contribution:

The authors have participated in the writing of the work and analysis of the documents.



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