

Effect of Headline Learning on Young Volleyball Player

* Gabin Balou Fernandes^{1,4}, Anatole Ibata³, Jean Itoua Okemba¹, Jean Luc Euloge Olingou^{1,2}, Aimé Simplicie Christophe Ambeto¹, Serge Armel Moukouanga¹, François Entsiro¹, Alphonse Massamba^{1,4}

¹Laboratory of Didactics of Physical Education and Rehabilitation, Higher Institute of Physical Education and Sports, University Marien NGOUABI, Brazzaville, Congo

²Laboratory of Sports and Human Performance, Higher Institute of Physical Education and Sports, University Marien NGOUABI, P.O. Box 69, Brazzaville, Congo

³Laboratory of Exercise Physiology and Biomechanics, Higher Institute of Physical Education and Sports, University Marien NGOUABI, P.O. Box 69, Brazzaville, Congo

⁴Laboratory of Biosciences and Sports, Higher Institute of Physical Education and Sports, University Marien NGOUABI, P.O. Box 69, Brazzaville, Congo

Abstract: *The purpose of this experimental, longitudinal and case-by-case study was to evaluate and analyze the effect of a cuff learning program on volleyball in beginners, in relation to the teaching factors related to it the study, conducted from February 1 to March 16, 2016 in Brazzaville, covered 32 volleyball players of average age 12.2 years including 16 beginners (cases). The apprenticeship program was inspired by that of the French Volleyball Federation for subjects of comparable age. The performances were recorded before and after the program using a high-definition camera, the subjects were observed blind. The scores were determined using a Likert descriptive- numerical scale. The results obtained show significant progress in young volleyball players (case) compared to control volleyball players: +41.2% ($p < 0.005$) versus + 17.4% ($p > 0.05$) in the learning process. In conclusion, learning the headline depends on the reliability of the program, identifying the obstacle objectives and optimizing the didactic determinants related to the execution of the gesture.*

Keywords: *Effect, Cuff, Volleyball, Learning, beginners, didact*

1 Introduction

Volleyball performance was achieved through mastery of the cuff in order to achieve accurate passes and shots. In agreement with [1], we can consider the cuff in volleyball players as a supplementary sporting situation. From this postulate, we undertake to analyze the learning of this gesture in the context of beginners.

[2] formulates the functional internal logic of volleyball in the following terms: "Search for the rupture of the exchange with the adverse collective, necessarily at the earliest and for its benefit, on each referral" From this formulation that we take as a reference, it appears in the first place that it is the logic of opposition that founds the hard core of volleyball. It determines the existence of this singular project, because of the specificity of the problems that the environment is supposed to pose to the learners and the experts. This project thus defined gives a global sense governs all the driving behaviors of the practitioner [3].

The opposition challenge crosses all the different situations encountered in the course of the game. A headline, whatever the position, responds in these actions to this issue of opposition.

However [2] challenges this universal aspect of the opposition issue that crosses all situations for all volleyball players. He raised the idea that the headline takes on this issue, depending on the interpretation of the actor's game. Indeed, each actor has a way of getting involved in making the headline, depending on what he has to do during the game.

On the other hand, volleyball is a breaking sport, as all sports of dismissal. The search for a break with his profit is thus fundamental. The headline then constitutes a phase of preparation of the direct opposition, that is to say, that it may be accompanied by a crisis for the adversary device [4] to a good organization of the game around a player whose function is to ensure the distribution of the offensive game of the team through the passer [5].

At the outset, it should be noted that the senior men's volleyball team of Congo occupied second place at the 11th African games held in Brazzaville in September 2015. This denotes the interest of young people, adolescents and adults for this discipline. Volleyball is a physical and sports activity (PSA) used in the teaching of Physical Education and Sporting, which explains the need to better understand all the gestures involved in its practice.

This is the case of the headline, which has not always been well assimilated, according to our observations, by the beginner players. However, the effectiveness and position of the forearm: 1) quantify the complex movements involving several bodily segments during the reception; 2) measure the rapid movements of the balloon; 3) determine the muscular efforts, contribute to a good learning of the headline, through the intervention of the coach in the context of beginners.

Research Questions

Our study responds to a triple question:

- 1) Is learning the headline in the context of volleyball beginners a central, invariant task of the level of practice?
- 2) Does the Congolese environment or context influence the achievement of the task?
- 3) Does the learning mode have an impact on the success of the cuff when receiving the ball?

From these questions, we can suggest the following hypotheses: 1) The cuff learning system, the theories of the game and their consideration in the team game project favor the appropriation of the cuff to the volleyball.

2) The local context which refers to the constraints of the evolution of the different relations of force on the side-out (service / reception, attack / defense, attacker / counter) are factors of success in the situations of reception and return of the ball to Volleyball.

In carrying out this study, we have set ourselves the main objective of establishing the level of effectiveness of learning based on the identification of obstacles related to the activity of volleyball. In this respect, we have set ourselves the following specific objectives:

- to evaluate the performance of young volleyball players in the execution of the cuff before and after a volleyball training program, focusing on the said gesture;

- appreciate the impact of the apprenticeship program on the appropriation of the headline for beginner players;

2. Materials and methods

2.1. Type and location of study

The experimental, longitudinal and case-control study was conducted in Brazzaville from 1 to 6 March 2016, either four (4) weeks. It dealt with

beginner volleyball players playing in the volleyball training center, "jean Claude MOUPITA", which is located within the premises of CEG Angola Libre. The learning took place on the platform set up within the institution.

2.2 Sampling

The population of this study was composed of young people belonging to the recovered categories, namely: young and minors. The main criteria for inclusion were regularity in training and the presentation of a medical-sports certificate not contradicting the practice of volleyball. Thus, only boys were involved in the study because of their Regularity at meetings. The study sample was 32 subjects. Their mean age was 12.2 ± 0.7 years (range: 10-15 years). The anthropometric characteristics of the subjects are presented in Table 1.

Table 1: Anthropometric Characteristics of subjects

Means \pm DS		Range
Height (cm)	147.8 \pm 9.8	122 – 163
weith (Kg)	47.8 \pm 9.8	21 – 67
IMC(Kg/m ²)	21.63 \pm 2.61	14.11 – 25.56

Abbreviations: IMC, Body Mass Index; DS, Standard deviation (or standard deviation)

2.3 Experimental procedure

1) Conduct of the experiment

The learning plan was developed in consultation with the technical staff of the center. This one was inspired by that of the French Federation of Volley Ball (FFVB), for the novice players. The analytical method was used. The program consisted of 12 sessions at a rate of (3) sessions per week. The duration of a session was 2 hours.

The first session was devoted to diagnostic evaluation, during which observation of the manner of execution of the volleyball cuff by the players

(beginners) was carried out. After this session, a program Of 10 learning sessions was conducted.

2) content of Learning Sessions

Outside of the observation and evaluation sessions there were 10 other sessions (apprenticeship). The diagnostic assessment session identified the obstacles that learners face when learning from Analysis of their mode of execution of the various phases of the cuff.

Finally, the last session on summative evaluation. During the evaluations (diagnostic and summative), the instrument used was of the descriptive-numerical type translated by a Lickert scale. Each player made a headline. The evaluation criteria were: well executed headline; 5 points; Moderately successful, 3points; More or less well done, 1.5 points; Not successful, 0 point. The use of a camera of sight helps to improve the motor learning of the cuff.

2.4 Rating Criteria

Well Executed cuff Plan of contact: the inside of the forearms; Arms stretched, forming an angle with the bust.

Push: is done at the level of the legs, while keeping the angle between the bust and the arms. Moderately successful

- In the contact plane with the ball, the body weight must be on the front leg of the player.

- The trunk is not too bent forward but kept straight

Maintain more or less well done

- Contact plane: inside the front arms; stretched arms forming the angle with the bust.

- No thrust of legs

- Plan of contact: the outside of the forearms; Unstretched arms

- Pushed to the level of legs, feet not staggered.

Unsuccessful

- Balloon touching the arms or even the chest; Arms bent at an angle to the bust.

- Arms glue to the body.

- No thrust on legs, keep feet crossed.

- a KODAK HSV -200 video camera.

Thus, markers (reflective sensor, Biodex brand JCP 120, Saint-Etienne, France) were positioned in each subject on the scapulo-humeral articulation (at the right epicondyle), the elbow and the wrist. Subsequently, the subject making the cuff was filmed using the KODAK video camera at very high speed, scrolling 200 frames (or frames per second, ips).

2.5. Variables studied

They were summarized:

Scores made during the execution of the cuff ;

2.6. Ethical Considerations

Due to the involvement of children in this experimental study, a prior authorization was sought from the National Commission on Ethics in Health Sciences Research (CNERSSA), the General Delegation for Scientific Research. In addition, the recommendations of Helsinki II were respected.

2.7 Statistical analysis

Data are expressed as mean ± standard deviation or score. Student t test was used for the comparison of categorical and continuous variables normally distributed, respectively. P-value ≤0.05 defined statistical significance. All statistical analyses were performed with Mathcad Version 10.0 at the department of statistics of the Brazzaville sciences and Technology Faculty.

3-Results

3.1 Data of pre-training observations

3.1.1 Data related to quotations

Table 2 presents pre-apprenticeship scores for subjects in two groups.

Table 2: Scores in the subjects of the two groups before the training program

Subjects Groups	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
GE	0	1.5	1.5	0	1.5	1.5	1.5	1.5	0	1.5	1.5	1.5	0	1.5	1.5	1.5
GC	3	3	3	3	3	3	1.5	3	1.5	1.5	3	3	1.5	3	3	1.5

Abbreviations: GE, experimental group; GT, control group

In the experimental group, twelve (12) children (75%) had a higher score than the others in the control group (10 cases out of 16 or 62.5%).

Score equal to 1.5

Means, standard deviations and extreme scores in both groups prior to the training program are shown in Table 3.

Table 3: Means, standard deviations and extent of scores in both groups prior to the program.

GE n=16		GC n=16	t	P
Means ± DS (/7)	1.1 ± 0.7	2.3 ± 0.4	2.1	<0.05
Xmin	0	1.5		
Xmax	1.5	3		

Abbreviations: DS, Standard deviation (standard deviation); GE, experimental group; GC, control group; Xmin, minimum score; Xmax, maximum score

In the pre-test, performance in the cuff was significantly higher ($p < 0.05$) in the control group: 2.3 ± 0.4 versus 1.1 ± 0.7 for the experimental group.

3.2 Observations after the training program

3.2.1 Results appreciated by the Likert scale

Post-apprenticeship scores for group participants are shown in table 4.

Table 4: scores in the subjects of the two groups after the training program

Subjects Groups	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
GE	1.5	3	3	3	1.5	3	3	3	1.5	3	3	1.5	3	1.5	1.5	3
GC	3	3	3	5	3	1.5	1.5	3	1.5	3	3	1.5	1.5	3	3	3

Abbreviations: GE, experimental group; GT, Control group

At the end of the learning group, 9 (56.2%) children in the experimental group had a score of 3 and the other 7 had a score equal to 1.5. In the control group, the scores were as follows: a child with 5

Points, 9 (56.2%) with a score Equal to 3 and 6 (37.5%) Children score 1.5

Table 5 reports the averages, standard deviations, and extremes of scores established by subjects in both groups after the apprenticeship program.

Table 5: means, standard deviations and extent of scores in groups after the apprenticeship program

GE n=16		GT n=16	t	P
Mean ± DS (/7)	2.4 ± 0.5	2.7 ± 0.6	0.55	>0.05
Xmin	1.5	1.5		
Xmax	3	5		

Abbreviations: DS, Standard deviation (standard deviation); GE, experimental group; GT, control group; Xmin, minimum score; Xmax, Maximum score

At the end of the apprenticeship program, the performance levels were comparable, with the difference of the averages not being significant.

3.3 Variations of scores before and after the apprenticeship program

3.3.1 Influence of the program on scores

The comparison of the scores obtained in the pre- and post-apprenticeship tests in the two groups is presented in Table 6

Table 6: Comparative results of pre- and post-learning scores in the two groups

	Pre program	Post program	t	p
GE (n=16)	1.7±0.7	2.4±0.5	2.13	< 0.05
GC (n=16)	2.3±0.4	2.7±0.6	0.78	> 0.05

Significant progress (+ 118.2%, $p < 0.05$) in achieving the headline was noted at the experimental group level at the end of the program. At the control group level, the improvement was not significant.

4-Discussion

The aim of this work was to evaluate the impact of a volleyball apprenticeship program on gesture at the beginning of the discipline. Our results show that progress was clearly significant ($p < 0.05$) in these subjects compared to those in the control group: 2.7 ± 0.6 points versus 1.1 ± 0.7 points. **Genericity and specificity of knowledge in joint didactic action to appropriation of the headline**

The first observations suggest that the activities carried out by the young players allowed to develop the capacities of execution of the headline. This fact is consistent with the proposals of [6], [7] on the components of the coach's activity. Beginner players, in view of the smooth running of the sessions and their content, have built knowledge related to the execution of the headline. It is through a process of devolution and in the context of the functioning of the didactic contract [8] that the teacher (coach) aims to ensure that the activity of the learner responds to the expected answer. Thus, in order to ensure the transmission and appropriation of the contents of the sessions proposed, we have chosen and prescribed tasks in such a way that the novice players meet the expected tasks, that is to say the actual content of their expectations. Based on the work of [9], we described the tasks prescribed for novice volleyball players in order to appropriate the headline, ie the goals and conditions of execution. What they had to do put into perspective the potential activity of these young players, as recommended by [10] However, limiting themselves to explaining the tasks prescribed was not enough. We had to identify our choices about the content to be taught. Indeed, every teacher (coach) must account for the choices and staging of learning content [6] This approach has produced positive effects on the motor skills associated with headlines Our players. Moreover, according to [11] it is as beginners and more particularly the relationships of influence and power. Consequently, our choices, as justified by

[12], testify to an essentially technicist conception of the teaching of Volley Ball. Teaching volleyball consists primarily of teaching the subjects how to perform the basic technical gestures (pass, cuff, attack and service). Thus, the players studied rationally occupied the ground (arc of circle in reception, passer by the net, attacking at 3m of the net...). They also had to learn to differentiate and coordinate their actions (the receiver sends to the forwarder who sends to the attacker). Our players have, therefore, applied a formal model that does not take into account the different configurations of the game or the evolution of the balance of force. This is the reason why we have prohibited the direct reference in 1×1 .

In addition, it can be seen in the school context that most of the time the EPS teacher directly transmits the technical solutions to the students in learning the headline. It then brings the answers even before the students have been confronted with the problem posed. Students have to apply the procedures given. It is as if the teacher communicated the knowledge to the students in a discursive manner in order to see it appear as quickly as possible.

It is therefore important to emphasize that starting from the fourth session; the situations proposed in our program have become mainly playful. They were close to the overall game situation. As a result, our beginner players were confronted with the basic requirements of Ball Volleyball. However, based on the studies of [13], the logic of tactical choices and the implementation of a common reference between the players were left to the spontaneous discovery of the beginner players. Presented the execution of the headline through a volleyball match, to develop the "body reception" capacity of the ball. In this context, we have developed strategies such as brainstorming, individual work and group work. This genericity is not specific to the teaching of volleyball, but prescribed by the pedagogical approach involved in the implementation Skills-based programs and their guide to Canada [14].

As for the specificity of the didactic action, it was linked to the methodological approach adopted.

This specificity can be interpreted as being related to the personal relationship of the coach to the object of knowledge [15] and to the mastery of the teaching / learning / evaluation process. The other element of specificity was related to the tasks proposed by the learning session and to the time management during the development of the reception Capacity Of The ball.

Finally, from our results showing a high percentage of success of the headline and satisfaction of expectations for the beginner volleyball players studied (Table 6), we can say that we devoted their sessions to the improvement of the technical and tactical gestures associated with the reception Ball, in order to raise the level of play of the players. Indeed, the knowledge taught has been mastered by even the weakest players at the end of the apprenticeship program. It is then an acquisition of the specific motor operations for the execution of the headline.

5. Conclusion

This master's degree in sports has focused on analyzing, identifying and understanding the didactic factors of cuff learning in volleyball and performance in beginner players. The results suggest that the learning program implemented leads to significant progress in the appropriation of gestures. It is in this context that, in our opinion, this work provides inputs to the STAPS field, in particular in the volleyball discipline, on various levels: methodological, scientific, theoretical and sports.

6. Acknowledgment

We were recognizing towards all the members of laboratories for their honest collaboration to write this article.

7. References

- [1] S. Macquet, Mechanism and education of volley ball movements. Paris Editions Review EPS. 2001
- [2] L. Recope, Volley, the specialist's guide. Paris: Editions Vigot, 193p. 1996
- [3] R. Fournier, Theoretical and practical treatment of volleyball. Genève: Scerdes, 205p. 2007
- [4] G. Selinger, and Ackerman, The art and science of volley ball. Berlin: Springer-verlag. 2002
- [5] E. Breniere, Factors influencing the learning of volleyball reception. The coach's notebooks 124, 21-27. 2000
- [6] S. Joshua, Disciplinary specificities, didactic specificities: towards a comparative didactics, in: P.Venturini, C.Amade-Escot, A.Tereisse, (eds), Study of actual practices: the didactic approach. (Pp.17-240.Grenoble: The Wild thought .2002
- [7] E. Pautal, P.Venturini and J.P. Dugal, Precognition of the relation to knowledge to better understand in a didactic system.Didaskalia, 33, 63-68. 2008
- [8] G. Brousseau, Theory of didactic situations. Texts collected and prepared. Grenoble: The wild thought. 1998
- [9] M. Leontiev, Analysis of the joint coaching-novice volleyball action in the treatment of a ball reception problem.STAPS, 4 (86), pp 93-10. New
- [10] F. Robert, Analysis of the professional gestures of the players of the French men's volleyball team. J, Rieps, 23, 46-75. 2006.
- [11] H. Barbier. Teaching from the historical evolution of the balance of power attack-defense in volleyball, in: J. M. Legras (ed), *towards a cultural testimony of APSA*. (Pp. 231-254) .Paris: Vigo. 2006.
- [12] A. Durey and Bouthier, Technology of physical and sports activities.Volleyball case. *Impulses*, 1,117-126.1994.
- [13] A. Glaive. The revolution of the cuff by the spectacle. Volley France Tech, Journal of the Technical Technical Department of the FFVB, number 3, 21-26. 2001
- [14] D.J.Bunker, and R.D. Thorpe, A model for the teaching of volleyball in young sportmen.*The Bulletin of Physical Education*, 48(1), 5-8. 2012
- [15] J.F. Grehaine, Organizing the game in volleyball.Paris:Actio.1992.