

The Effect of using Flexible Grouping Strategy based on Sensory Motor Perception Training in Learning Some Volleyball Skills

Emad Toama Radi, Montazer Hussein Sabet, Monib Hassan Nashmi

Department of Physical Education & Sport Science, Faculty of Basic Education, Al Mustanseriyah University, Baghdad, Iraq

ABSTRACT

The problem of the study was clear that despite the multiplicity of strategies, methods and styles of teaching in the educational process, but the teaching process is still limited to the use of strategies and methods of traditional teaching, particularly in physical education materials that are practical. Strategies are characterized with clear control of the teacher without interference or giving the relative freedom to the student. This is greatly reflected on students from negative side as well as the failure to promote an atmosphere of competition between students and this is noted by researchers through their work as teachers and through their field visits to schools during application periods. In addition, the teaching staff of physical education lacks the change and to identify the latest trends in teaching methods including strategies and methods. Therefore, the study aimed to prepare special educational modules using flexible grouping strategy based on sensory motor perception training in learning some volleyball skills as well as to find out the impact of using of flexible grouping strategy based on sensory motor perception training in learning some volleyball skills. The researchers used the empirical method and selected the sample consisting of 60 students from middle stage, the fifth grade literature section, with tests used in the research, exploratory trial, pre-tests and application of educational modules on the sample of the study and post-tests. The researchers found the experimental group is better than the control group as it used flexible grouping strategy based on sensory motor perception training in learning some volleyball skills.

Keywords: Flexible grouping strategy, sensory motor perception, volleyball

INTRODUCTION & SIGNIFICANCE OF THE STUDY

The current development in various sciences and disciplines around the world is unprecedented. Organization and educational outputs become unable to keep up with this great progress, so it was necessary to change planning, implementation and evaluation in educational outputs.

In spite of studies, researches, assertions and modern psychological and educational literature and modern with their implications are necessary to activate teaching methods and means in a way that stimulates and develops the role of learners and makes them active, supportive and effective in the educational process. However, they still suffer from some non-viable accumulations, which are reflected negatively on the learner and are restricted to make the learner receive limited knowledge through listening and traditional prompting in various fields of science, including physical education and sports sciences. The teacher who masters the use of strategies and different teaching methods is the one who makes the lesson characterized by flexibility and vitality with his own style reflected on learners and makes them interact with lesson through the good performance of exercise and producing the

Access this article online



Website:
<http://sjsr.se/>

ISSN:
2001-9211

Address for correspondence:

Emad Toama Radi, Department of Physical Education & Sport Science, Faculty of Basic Education, Al Mustanseriyah University, Baghdad, Iraq. E-mail: Emadiraq516@gmail.com

educational unit in a way that suits the level and abilities of learners, which in turn gives the advantage to learn those sport skills.

Therefore, a teacher should work to organize his lesson explanation process with consideration to individual differences among learners, their correct physical, skill, psychological and mental conditioning in order to reach the best responses by learners.

Sensory motor perception appears in various sport events including volleyball as it is prominent in most moves through sensing movement and perceiving its divisions. This comes through performance of the needed movement from learners which can be improved through motivating training. In addition, volleyball is considered one of the team games that are characterized with frequent attention to team members, opponents and ball. It also needs motor, skill and physical abilities with quite high degree by not contacting the opponent team's players. Thus, it needs compound training, especially in terms of feeling and perception of distance and time.

Here, the significance of the study lies in the fact that a teacher uses flexible grouping strategy in teaching with inclusion of sensory motor perception training which improves learner's volleyball abilities and its effect on motivating and learning skills.

PROBLEM OF THE STUDY

Volleyball is one of the sport games that require a set of motor and physical abilities in order to produce skills flexibly and consistently. It requires mastering skills and motor mastery which is derived from perceptive and sensory abilities that depend on motor adjustment. Despite the multiplicity of strategies, methods and styles of teaching in the educational process, but the teaching process is still limited to the use of strategies and methods of traditional teaching, particularly in physical education materials that are practical. Strategies are characterized with clear control of the teacher without interference or giving the relative freedom to the student. This is greatly reflected on students from negative side as well as the failure to promote an atmosphere of competition between students and this is noted by researchers through their work as teachers and through their field visits to schools during application periods. In addition, the teaching staff of physical education lacks the change

and to identify the latest trends in teaching methods including strategies and methods and weakness of students in terms of movement sensing, perception and learning. This motivated the researchers to study this real problem and find solution for it. This is done through the use of flexible grouping strategy based on sensory motor perception training in learning some volleyball skills.

OBJECTIVES OF THE STUDY

The study aimed to:

- Prepare special educational modules using flexible grouping strategy based on sensory motor perception training in learning some volleyball skills.
- Finding out the impact of using of flexible grouping strategy based on sensory motor perception training in learning some volleyball skills (underhand passing and forward underhand serving).

METHODOLOGY OF THE STUDY

The researchers used the empirical method.

Sample of the Study

The selected sample is from students at fifth grade literature section in Al Khadra' Model School – Baghdad/Al Karkh 1 for the year 2013 – 2014. The sample was selected purposively with a number of (90) students distributed on 3 halls (A, B and C). Students in exploratory trial and absent students were eliminated with a hall not included in the main trial (total 30 students eliminated). Thus, the sample was (60) students constituting 66.66%. Hall C was selected for the empirical group (30 students) and Hall B for the control group (30 students).

Sample Homogeneity

The researchers performed sample homogeneity in length, age and weight for all sample members as shown in Table 1:

Tests of the Study

- 1 Measuring underhand passing with the ball (Clifton Volleyball) (Mohamed Hassan Allawi & Mohamed Nasr El Din, 1987, 325).
- 2 Forward underhand serving (Mohamed Sobhy Hassanin & Hamdy Abdul Moneim).

Table 1: Sample homogeneity in length, age & weight

Variables	Arithmetic mean	Standard deviation S.D	Median	Skewness coefficient
Age	17,70	0,67	17,29	1,00
Length	171,99	2,15	173	0,540
Weight	65,75	2,40	66,01	0,360

The table showed that skewness coefficient in variables is between real limits (± 3), so the sample is homogeneous

Exploratory Trial

The researchers performed the exploratory trial on a sample of students eliminated from the main trial (10 students) on 10/11/2013. The trial was repeated after seven days since 17/11/2013 and resulted in:

- Determining the time of explaining skills, overcoming some difficulties faced by researchers, consideration of respondents' safety, getting to know tests and how to be applied by the assistant team.

The selected tests in the study depend on scientific basics and applied on Iraqi environment, but the researchers decided to apply these basics on a sample of (10) students and as shown in Table 2.

Pre-test

The researchers conducted pre-tests including the following tests: (Underhand passing and forward underhand serving) on the sample and in the indoor sport hall in the school on 24/11/2013 applied by specialist teachers in physical education under researchers' supervision.

Using Flexible Grouping Strategy based on Sensory Motor Perception Training

The researchers decided to include special educational units prepared by them and including flexible grouping strategy based on sensory motor perception training in into the adopted course by Al Karkh 1 Educational Directorate. The units included the use of flexible grouping strategy and students were divided into small groups not more than (8) students for the single group equal or not equal in numbers based on the required formation and purpose. The student is free to move in return for another partner's come back to the group. The application is based on sensory motor perception in learning skills under study. There were (8) educational units distributed as 2 units a week, (4) units for each skill and the period of the single unit is

Table 2: Reliability, validity and objectivity

Variables	Validity	Reliability	Objectivity
Underhand passing	0.90	0.81	0.94
Forward underhand serving	0.92	0.85	0.95

The counted (R) value was bigger than the tabulated one (0.52) at freedom degree (8) and under significance level (0.05) and the tests obtained a high degree of validity, reliability and objectivity

(45 min). Application of units started from 01/12/2013 to 25/12/2013.

Post-tests

The researchers conducted post-tests on the sample of the study and on the empirical and control groups at the same sport hall by the applied by the same teachers who applied pre-tests as post-tests were conducted on 29/12/2013.

DISCUSSING RESULTS

Discussing Results of Pre- and Post-tests for Empirical & Control Groups for Underhand Forward Serving and Underhand Passing in Volleyball

Table 3 shows that the empirical group excelled in skill tests (underhand passing and forward underhand serving) in favor of post-test. The researchers attribute this to the use of flexible grouping strategy based on sensory motor perception training to be included in the course in the form of special educational units for skills under study which were used in a consistent and scientific way. The groups were divided into small sub-groups that gave strong motivation to learners to participate effectively. This gave them movement flexibility between both groups and the learner becomes the axis of educational process with growing social responsibility, team work and development. The teacher here becomes a guide and director (the flexible grouping strategy is based on making each student in the group has an effective role confirming his/her activity. Thus, the exerted effort in educational situations may lead to keep the learning effect, function and transfer (Ziad Barakat, 2005, 4).

In addition, sensory motor perception training played a role in advancing the empirical groups as they were prepared in a way that is consistent with learners and their ages in coordination with the used strategy. It played a significant role too through sensing and

Table 3 :Arithmetic means, standard deviations S.D, calculated & tabulated (T) values in pre- and post-tests for skills under study in volleyball for empirical & control groups

Skills	Group	Pre-test		Post-test		Calculated T value	Tabulated T value	Significance
		+ Mean	S.D	+ Mean	S.D			
Forward underhand serving	Empirical group	19,0	1,70	23,1	1,20	10,96	1.69	Significant
	Control group	18,7	1,50	20,7	0,89	4,95		Significant
Underhand passing	Empirical group	11,20	2,90	16,23	2,10	4,07		Significant
	Control group	9,4	2,10	12,86	1,30	2,90		Significant

*The tabulated (R) value is (1.69) under significance level (0.05) and freedom degree (29)

perceiving skills as sensory knowledge is of a great importance in sport motor work consistent with the ability of perceiving all phenomena shown in a distinctive way in educational process.

(Sensory receptors in muscles send sensory signals which carry information about the extent of muscle extension or contraction, loosening, tensioning, speed and strength of muscle contraction, different body postures as a whole, changes in these parts, accuracy of movement in these parts and accuracy of movement in the surrounding space with performance time. Thus, this information helps in accurate estimation of motor performance by players through the nervous system's control over performing acquired movements and mastering their performance during motor learning processes) (Hashem Al Kilany, 2005, 70).

Therefore, we believe that the advance of the empirical group came mixed through the use of flexible grouping strategy with sensory motor perception training which motivated learners to learn the skills shown through results obtained by the empirical group. In addition, it was found that the control group excelled in post-tests.

Discussing Results of Post-tests for Empirical & Control Groups in Coordination and some Volleyball Skills

Table 3 shows that the empirical group which used flexible grouping strategy based on sensory motor perception training in learning was more effective on volleyball skills. This asserts the effectiveness of teaching using flexible grouping strategy based on sensory motor perception training in learning which were consistent through variable groups in number and their places in learning skills. They played an effective role for the empirical group's advance. Since teaching based on flexible grouping strategy as an educational

unit including a specific subject which, in turn, includes learning elements maybe different and complex with the main goal to increase interaction of students and effective participation in various activities desired by flexible groupings in the single educational situation in order to achieve the specific educational goal of the educational unit with high efficiency. Through these activities, a learner can move from a group into another giving the freedom in selecting suitable groups and estimating group levels through the guiding and supervising teacher (flexible grouping strategy is one of the most important strategies through which a learner is able to use various teaching methods and match educational activities with needs and abilities of students with achieving societal objectives or equal comprehensive development for all students despite differences among them) (Fad Khalil Ibrahim, 2010, 58 – 59)

The flexible grouping strategy refers to free movement of students through groups in the knowledge of teachers with follow-up of all learners through movement and mobility among groups to facilitate learning process and following-up all learners. Tools and suitable place are prepared for this purpose providing each group with learning sources separately and for the rest of groups. Learners can also be evaluated by the teacher separately with educational units related to teaching using flexible grouping strategy. Activities were designed based on needs and objectives of subjects considering consecutive presentation of skills' contents and individual differences among learners. In addition, a set of exercises were presented to allow learners an opportunity in practice and performing required duties in educational situations (teaching with the use of flexible grouping strategy is characterized with flexibility in selecting ad learning activities according to self-speed and ability in learning and providing circumstances that give learners positive roles in each educational situation) (Rober, 1990, 90).

Table 4: Arithmetic means, standard deviations S.D in post-tests for volleyball skills for empirical & control groups

Skills	Empirical group		Control group		Calculated T value	Tabulated T value	Significance
	+ Mean	S.D	+ Mean	S.D			
Forward underhand serving	23,1	1,20	20,7	0,89	6,94	1,68	Significant
Underhand passing	16,23	2,10	12,86	1,30	3,80		Significant

*The tabulated (T) value is (1.68) under significance level (0.05) and freedom degree (58)

The advance in the group studied using flexible grouping strategy has a significant effect on learners' participation which is the most important quality in teaching as learners engage and participate in a way that exceeds their being receptors of information only, but they participate in educational activities in an excellent and consistent way throughout educational units. Moreover, sensory motor exercises have an effect on enhancing motor adjustment and advancing volleyball skills as it considered mental abilities by selecting exercises in a way that the sensory motor perception is mainly linked to central nervous system which is considered one of the most important results of brain related to knowledge and higher mental processes represented in perception, sensing, remembering and sight. Accordingly, these processes are the main axes of knowledge organization for learners as it is hard for learners to perceive motor behaviors in absence of one of these main axes (performance aesthetics and development is determined by developing perceptive processes as a result of players being subject to assisting training means that develop these abilities). This led to develop ball sensing because of the strength of nervous processes from which an increase in perceiving outer space (Mohamed Hassan Allawi et al, 2003, 48).

Sensory perception has a direct effect on learning and enhancing skill performance and accuracy with acquisition of new skills in addition to learning and playing situations, especially at serving and passing needing touching and sighting senses and other internal senses such as sensing direction, distance and time more than any other sense, which attributes to learners wide horizons in perceiving the biggest set of variables surrounding performance (sensory motor perceptions can be improved through advanced exercises related to such perceptions) (Khaled Shawki, 1998, 83). These exercises develop sensory-motor perception of skills which helps learners achieve more understanding to the nature of performing the needed skills, which makes learners succeed in performing motor skills. In addition, continuous training leads to increase learner's ability on skill performance concentration. This, in turn, led

to develop perceptions (the more the training period is for players, the more their experience and skills in various playing situations) (Eman Hamad, 1998, 34).

The exercises were selected in a regular manner with graded difficulty and consistent body limbs and functional effect on developing coordination between muscular and nervous systems in which physical abilities are involved (developing coordination is considered one of the main goals of physical education) (Abu El Ela Ahmed, 1997, 205).

In addition, the flexible grouping strategy based on sensory motor perception training in learning have a clear effect on advancing the empirical group in all skills as they were prepared in a consistent manner to the sample in terms of estimating position and directing ability in terms of time, place and control of body movement, perception of body position and changes in the field, movement, the ability of motor connection and coordination. These factors give quality of exercises prepared by the researchers in which the focus was on enhancing motor coordination among parts of the body and volleyball skills improving learners' movement. Through results, we notice the advance of the empirical group which used teaching using flexible grouping strategy based on sensory motor perception in all volleyball skills.

CONCLUSION

- 1 Results showed excellence of the empirical group which used teaching with flexible grouping strategy based on sensory motor perception training in learning some volleyball skills over the control group.
- 2 The proposed educational units including teaching with flexible grouping strategy and sensory motor perception training have positive effect as assistance exercise in acquiring perception and motor coordination in volleyball.
- 3 Results showed enhancement of the control group which used teaching adopted by teachers in learning volleyball skills.

RECOMMENDATIONS

- 1 To work on benefiting from findings of the current study for learning and developing sensory motor perception and some volleyball skills in the field of teaching volleyball in middle schools in the Ministry of Education.
- 2 To conduct similar studies on other samples and games.

REFERENCES

- Abu El Ela Ahmed Abdelfattah (1997): "Sport Training: Physiological Basics", 1st Edition, Dar Al Fikr Al Arabi, Cairo.
- Eman Hamad Shehab (1998): "A Proposed Program in Motor Education to Raise Mental Ability Level & Sensory-Motor Perception for Children with 4 – 5 Years Old", PhD Thesis, Baghdad University, Faculty of Physical Education.
- Hashem Al Kilany (2005): "Motor Education in Kindergarten",

- Educational Studies, Journal (32), Issue (2), Jordanian University.
- Khaled Shawki Abu El Fotouh (1997): "Developing Preparation of Performing Spike Serve Skill for Volleyball Juniors", Unpublished Master Thesis, Faculty of Physical Education, Zagazig University.
- Ziad Barakat (2005): "The Effect of using Education in Small Groups on Immediate and Temporary Knowledge Achievement for Second Middle Grade Female Students in Mathematics", Unpublished Master Thesis, Palestine.
- Fadel Khalil Ibrahim (2010): "Introduction to General Teaching Methods", 1st Edition, Dar Ibn El Atheer Press, Al Mawsel University.
- Mohamed Sobhy Hassanin & Hamdy Abdul Moneim (1997): "Scientific Basics of Volleyball and Measuring Methods", 1st Edition, Cairo, Book Center Press.
- Mohamed Hassan Allawi et al (2003): "Psychological Preparation in Handball", 1st Edition, Egypt, Book Center Press.
- Mohamed Hassan Allawi & Mohamed Nasr El Din Radwan (1987): "Skill & Psychological Tests in Sports", 1st Edition, Cairo, Dar Al Fikr Al Arabi.
- Robert, M. "the what why & how of cooperative learning, social studies, 1999.

Annex 1: Model of an education unit

Educational objective: Learning underhand serving skill		Unit: First	Grade: 5 th ()		
Number of students: 30		Event: Volleyball	Date: / /2015		
Pedagogical objective: Order and respect		Tools: Chalk marks, volleyball	Time: 45 min		
Time/min	Unit parts	Explaining event or skill	Order & formation	Notes	
10 min	Preparation part	Administrative side (2 min)	Attendance and preparing tools	xxxxxxxxx ○	Ensuring silence & order
		Front (3 min)	General preparation of all body organs	x x x x x x x x x x x x x x x	Ensuring the most important muscle groups involved in the skill
		Physical training (5 min)	Performing exercises of body parts (jump, balance, neck, arms, trunks, feet)		Explaining the skill of underhand serving
30 min	Main part	Educational section 10 min	The teacher explains underhand serving skill, performs a model ensuring movement parts and model of students	xxxxxxxxxxx x x x x	Explaining underhand serving skill
		Applied section 20 min	<ul style="list-style-type: none"> • Students divided into two groups, underhand serving to the partner on a distance of (3m) and increase distance • Serving in front of the net to the partner in the other half of the field • Drawing a line (2m) away from center line, other line away (2m) and other (1m) away. The student throws the ball on these lines blindfolded • Determine baseline and other line (10 cm) away. The student stands on the baseline and throws the ball in a way that makes it fall on the second line (blindfolded) 	2 teams 4 teams 4 teams 4 teams	External feedback coming directly Participation and playing roles of students
5 min	Final part 3 min 3 min	Preparation and relaxing training to restore normal body position and then dismissal	x x x	x ○	Keeping order