



## The Effect Specialization and Diversification Involvement on Learning of Sports Skills According To Deliberate Practice and Deliberate Play

Mahdi Fahimi<sup>1</sup>, Mahdi Sohrabi<sup>2\*</sup>, Hamidreza Taheri<sup>2</sup>, Masumeh Shojaei<sup>3</sup>

<sup>1</sup> Ph.D. student, Ferdowsi University of Mashhad, International campus, Mashhad, IR Iran

<sup>2</sup> Professor, Ferdowsi University of Mashhad, Mashhad, IR Iran

<sup>3</sup> Associate Professor, Alzahra University of Tehran, Tehran, IR Iran

\*Corresponding Email: [sohrabi@um.ac.ir](mailto:sohrabi@um.ac.ir)

### ABSTRACT

*Objective: The aim was effect deliberate practice and deliberate play on sports skills with emphasis on specialization and diversification in boys 10-12. Methods: The 120 male students randomly divided into four groups of volleyball, soccer, basketball deliberate practice and deliberate play. Pretest and posttest were AAHPERD volleyball, soccer, and Basketball sports skills. Duration of the project was 16 weeks and 3 sessions per week and 90 minutes each session began. Data obtained from questionnaires and personal details about sports experience and test were adjusted using parametric tests, such as T-dependent test and MANOVA with Tukey post hoc test, and software Statistical SPSS19. Results: The results of the study showed that compared four groups, deliberate plays to other deliberate practices have a better motor skill in volleyball, soccer and Basketball sports skills ( $P < 0.05$ ). Volleyball and soccer deliberate practice group had developed Soccer Dribble Test and Control dribble and Defensive movement basketball skills test. Basketball deliberate practice group had not developed the others soccer and volleyball skills. Conclusion: The results showed that diversification participation in some exercises during the early stages of growth, can facilitate the development of general cognitive and physiological skills and create a rich environment for children.*

**Keywords:** Deliberate practice, deliberate play, specialization, diversified, sport skills

### INTRODUCTION

Scientific talent in the sport in our country not long history, but in other countries, particularly in Eastern Europe is a long-standing history. The sporting talent of precision scientific instruments and advanced is very important. Also, compare the results with local data according to ethnic and geographical features are necessary. Review and assessment of anthropometric characteristics, physical, physical, psychological, social and sports together, features a modern sports talent. [1] Successful countries at major sporting competitions such as the Olympics, from an early age, the talent to do. In a systematic way of talent, quizzes and tests for the detection of different sporting talent in the test used to measure basic skills in various fields, respectively. Therefore talent metrics such as anthropometric characteristics, psychological, physiological, physical, social, sports people need to find talent. [2] Despite the success of long-term prediction problems in young players, has talent and developmental programs for professional clubs and national federations is growing rapidly. [3] More programs to nurture talent and innovation in scientific perspectives on professional clubs are sponsored by modeling talents. Thus, models and talents are part of the scientific evidence to explain the inherent ability to identify potential performance in elite sport is used.

Six models, talents, including Bloom's stages of talent development, [4] Gagne's differentiated model of giftedness and talent, [5] Sikentmihalyi, Rathunde, Whalen and Wong's model of talent development in teenagers, Kote's stage model of sport participation, [6] Bali's six-stage long-term athlete development model, [7] Bailey and Morley's model of talent development in physical education and Morley multidimensional concepts inherent ability to interact with programs to nurture talent and personal and environmental characteristics have been studied separately. According to the latest views, many factors can influence the business and the emergence of high levels of

performance. Through analysis, effects, the effect of variables that can be primary and secondary efficacy variables are divided by skill. Initial effects, including genetic factors, and mental training while secondary effects of social factors - cultural and background are [8].

Genetic factors interact is a combination of physical and mental stamina. Much of the literature on the nature of the genetic, physiological and cognitive features that are focused on sports performance. According to Baker and Horton studies of hereditary characteristics is basically about how individual genetic makeup (genotype) on the expression of specific behaviors or individual capacity (phenotype) is. Scientific findings show that a significant amount of variation between individuals in the performance of cardio - vascular, can be attributed to the presence or absence of genes. This shows that you can have a predominant genotype, the progress of the activities that they are important factors that influence [9].

Horton Baker suggested that psychological traits common to all sports, there are high levels of performance. The psychological factors are the features of "acquisition" and what is "the emergence and detection of" essential skills divided. A high level of motivation for the acquisition of skills is essential. Without the proper motivation, it is unlikely that an athlete is able to achieve a significant level of skill. Mental state, such as self-confidence and concentration skills are necessary for the emergence and detection. [10] Motor abilities of individual genetic characteristics are relatively stable basic features and improved through practice not find easily defined. However, during the development of competencies can be formed, which also appears to have a genetic basis. On the other hand, it is generally believed that motor skills through training or experience, modified and adjusted and generally includes motor abilities [11].

Therefore, the first step in discovering and identifying talent centers motor skills of children because they are innate and acquired and then follow with programs dedicated to the development of motor skills Children are. Also, the results of these tests, each person according to their strengths and weaknesses can select relevant sport or sports to achieve greater success. It seems that the accurate identification of the child's ability to move, and then select the correct approach for the development of motor skills is essential. However, perceptual motor skills are born with different genetics and environment, but one of the most important environmental factors in the development of these skills during the early years of a child's life and is sensitive [12].

Anyway, it seems that children who experienced childhood physical point of view are more active, more athletic skills his likely growth can be. But the interesting thing here is how the childhood from the perspective of the period of limitation of or diversification movement. Ericsson and his colleagues in the theory of deliberate practice suggested that the general concept of the elite sport by focusing on education over time, with a primary condition, extends. That really any form of training, distinguishing individual performances, but employment in the form of training that distinguishing individual performances, which they deliberate practice called. By definition, this type of training, including training activities. These are inherent need to try hard and enjoy a safe and purposeful designed to areas of poor performance of existing strengthen [13].

Ericsson and his colleagues argue that they also collect and store hours of deliberate practice that lead to higher levels, lead is not easy, but these hours must be collected and stored in accordance with the terms of biological and cognitive growth is crucial. Finally, they argued that early specialization is important for the future success of the initial success with rigorous training method, continuous, leading to success faster, and achieve the desired level of skill. [14] Accordingly, some researchers believe that to realize the dream of having skilled and elite athletes, the need to curb childhood, only to participate in a particular sport, with a focus on deliberate practice and progress in the sport is [15, 16].

But according to studies, it appears that specific early despite the vast benefits, may cause problems such as corrosion and withdrew from exercise [18, 19, 20, 21 and 22] increased injury [23, 24, 25] and nutritional problems are. [26] On the other hand, some scholars such as Wiersma believed to participate in a number of different sports before assigning the later stages of growth. [27] Nano Leite and Jim Sampaio Portuguese basketball career review and found that most children have participated in different sports [28].

Some researchers, such as Stanislav Asterkovich and colleagues also found different results. They studied 10 years on 406 Judo men and women from 9 to 20 years and found that successful implementation of the tournament childhood with their success in adulthood not significant and only 7% of men and 5% of women remained at the same level of success. [28] Based on previous research, such as Joseph Baker [1, 2, 8 and 10] it is assumed that the motor experiences in childhood can increase motor skills and sports, but the rate of progress is different. Different research specialization and diversification effect immediately (in deliberate practice) on both sides of a continuum but little research have investigated the middle of the continuum spectrum (exercise enjoyable) is discussed.

It seems that the presentation of sports activities, with emphasis on the involvement of children, whether as traditional sports (deliberate practice), whether for fun and games as (pleasure) on a different exercise by the results of the impact specialization and Diversifying early end. From this perspective, this research tries to answer the question of whether early specialization or diversification, with emphasis on participation and fun game species, prior to the development of sports skills, or intentional participation in the priority.

In fact, few studies have examined practically deliberate practice and deliberate plays on sports development in school children and more studies have used the retrospective interview for understanding the basic reasons of this relationship. The purpose of this study was to examine the effect of deliberate practice and deliberate plays of soccer, volleyball and basketball on learning of sports skills in 10-12-year-old boys and compare them.

## MATERIALS AND METHODS

### *Setting and participations*

This study was conducted in sports class of Qom city, Iran during 2015-2016. The study took place in elementary schools in a middle class that was boys 10-12 years old. Sample volume was selected by G-Power 3.0.10 software, Hundred and twenty boys 10-12 years old selected randomly by a personal information questionnaire. After pretest AAHPERD Soccer, volleyball, and basketball sports skills, Test subjects were divided by random matching into four groups. Soccer deliberate practice, volleyball deliberate practice, basketball deliberate practice and deliberate plays.

They were homogenized in demographic characters (i.e. social, economic, cultural characters, and live environment). From homogenized subjects by Kolmogorov- Smirnov test, 120 subjects were randomly divided into 4 groups that each 30 subjects were allocated by random matching to the one group. The exclusion criteria research was a lack of participation in one session.

### *Instrumentation*

The AAHPERD Soccer, volleyball, and basketball sports skills Test was selected for the study. This test had validity and reliability for children upper 10 years old. AAHPERD Soccer Test consists Soccer Wall Volley Test, Soccer Dribble Test, Soccer shot Test, keep the Soccer ball Test AAHPERD Volleyball Test consists Volleyball Volleying Test, Volleyball serving Test, Volleyball set up Test, Volleyball pass Test, AAHPERD Basketball Test consists throw and shot ball test, passing test, Control dribble test, Defensive movement test. A total standard score, adjusted for child age, was used to interpret test performance. This test is a standardized, product-oriented assessment commonly used in the assessment of sports skills in children.

### *Intervention program*

The intervention program was sixteen week. Three Group was an early specialized involvement in a single sport with an emphasis on deliberate practice in soccer (group A), volleyball (group B), and basketball (group C) that traditional early specialized involvement, group D was, early diversified and deliberate play involvement. The group D performed soccer, volleyball, and basketball skills playfully, and randomly at any sessions. The length of each session was 90 minutes. The session took place three days per week according to specific session plan. Programs consisted of three sections: 1) warming up 2) main program 3) cool down. The programs were performed under the supervision of a coach. All groups had the coach, he had the certification of coaching from related national federations IRAN.

In the deliberate play group purposefully varied soccer, volleyball and basketball motor skills games and fun and less organized but in deliberate practice-specific groups, legitimate, objective, deliberate, less fun, more practice and training for increasing weak skill levels and was under the control of coach.

soccer skills were training with foot controls, internal foot controls, foot controls on the thighs, chest control, head control, all passes, dribbling, the outside of the foot pass, pass with the side foot. Shooting with the foot, dribbling and cheat. volleyball skills were getting to the ball and keep the ball, positioning, and shading, control and pass the knuckles and forearms, service, jumping and spiking and receiving and defense. Basketball skills were getting to the ball and carry the ball, control the ball, pass, and shot and throw the ball to the basket, dribbling and deception, foot movement and defense.

### *Procedures*

This study has been confirmed by research council Department of Sports Sciences, Ferdowsi university of Mashhad, Mashhad, IR Iran. The study protocol was approved by the Ethics Committee of Department of Sports Sciences, Ferdowsi university of Mashhad. This study utilized a pretest and posttest applying the quasi-experimental design.

**Statistical methods**

The data were analyzed using descriptive analysis and inferential statistics. For homogenizing the subjects we using the Kolmogorov- Smirnov test, Variance Analyze of Repeated Measures was utilized to determine whether significant differences existed groups for boys aged 10-12 years old between the four groups. T-dependent test to analysis within group mean variables and between group analysis, four groups of one-way analysis of variance test (MANOVA) with Tukey post hoc test was used to determine the existence of differences in skills. Software SPSS19 was employed to analyze data. P<0.05 was considered significant.

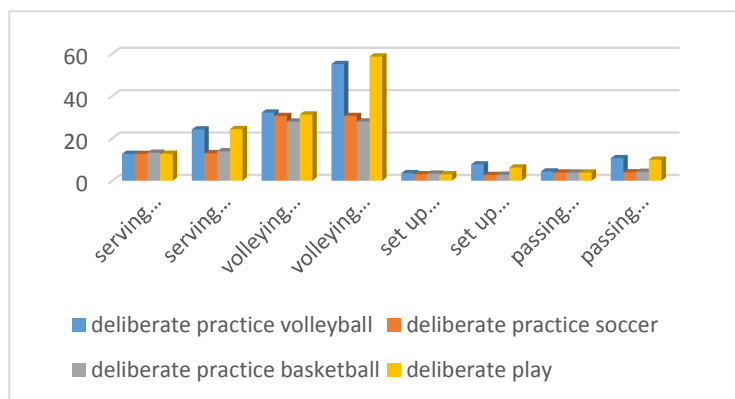
**RESULTS**

Demographic data of all 4 participants in groups showed in (Table1). sports skills in all groups had significant changes after the intervention. Mean sports skills before and after the intervention have been shown in table 2. Two-way analysis of variance test for sports skills in four groups between four groups showed significantly different (P=0.01).The mean difference in four programs compared to each other by Tukey post hoc test and the results were presented in chart 2.

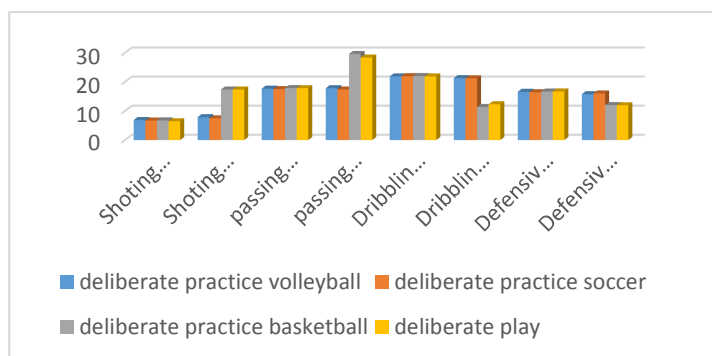
**Table1. General Characters**

Groups	Age		I.Q		Weight		High	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Deliberate practice soccer	11.1	0.3	110.8	1.4	25.9	3.1	130.7	3.1
Deliberate practice volleyball	11.1	0.4	110.1	1.5	24.5	2.7	129.7	2.7
Deliberate practice basketball	11.2	0.3	109.3	1.3	26	2.8	130.3	3.6
Deliberate play	11.0	0.3	109.8	1.6	26.2	2.4	129.1	3.6

The deliberate plays had significantly increased for all Soccer Wall Volley Test, Soccer Dribble Test, Soccer shot Test, keep the Soccer ball Test, Volleyball Volleying Test, Volleyball serving Test, Volleyball set up Test, Volleyball pass Test, throw and shot basketball test, passing test, Control dribble test, Defensive movement basketball test (chart2). Deliberate practice soccer and volleyball had significantly increased for all their soccer and volleyball skills but also increase basketball dribble test and Defensive movement basketball test. But deliberate practice basketball had only significantly increased just for their basketball skills and had no significant effectiveness for other soccer and volleyball skills (chart 3).



**Figure 1. Effect deliberate play and practice on volleyball skills**



**Figure 2. Effect deliberate play and practice on basketball skills**

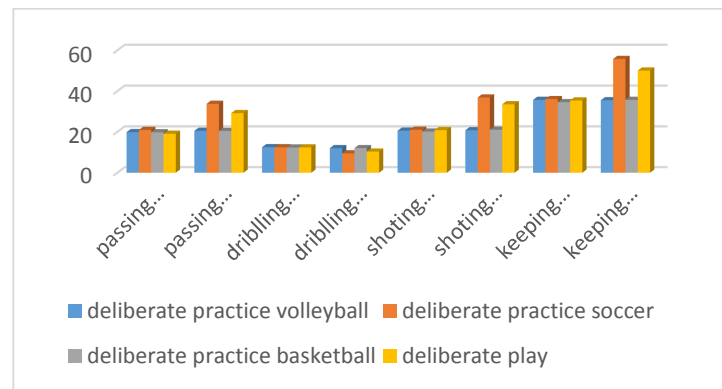


Figure 3. Effect deliberate play and practice on soccer skills

## DISCUSSION

The results of this research show that deliberate play is more efficient to the deliberate practice in training sessions for developing motor and general abilities skills. This research showed that deliberate play can be affected by a suitable sports skills. The history demonstrates that individuals improve sports skills by interplay with the environment. Previously the researcher's thought that sports skills could be developed by deliberate practice. [17] The deliberate play elements that may have chipped into advantageous factors on sports skills consist a module that is made of multiple-skill training in every session, proper opportunity for skill training. however, it is generally proposed that individuals spontaneously accumulate sports skills until their member's growth but researchers argue that environmental status is efficient on sports skill. The environmental status that consists practice opportunities, persuasion and guidance are essential to the improvement of mature patterns of skills.

Individuals must have enough time for sports training. Opportunity for training is confined to low equipment, time and facilities. Despite using necessary equipment and facilities is expensive for children, however, there are not enough clubs for training. And Time is the another factor; some individuals have any enough time to improve their skills because the daily schedule is filled with play station games, TV and anytime for sports play. Enough equipment, facilities and time are essential for improvement sports skills. [15] Parents and coaches, who cannot put out opportunities for deliberate practice, sometimes conflict participations of children in sports classes and finally children maybe drop down or burn out [18].

For doing the deliberate play some kinds of equipment are needed and put out enough equipment for training this play is prepared. So many of this obstacle which was said due to the insufficient equipment can be eliminated. Training chances are not only accountable for improving sports skills. For the feck of participations, developmentally suitable guidance and schedule are necessary. [17] The deliberate play is an important factor in improvement sports skills. The researchers proposed deliberate play using some skills is generally important for the training [19].

A schedule that consists a wide domain of play can motivate participation that can be useful for raising quality guidance. plays are a pleasure, diverse and funny activities. The needed skills of this play are accommodation with sports skills. In deliberate play as sports experiences, there are some types of sports skills such as jump, throw, kick, and dribble. But in deliberate practice in sports class in schools, children a few skills; they just perform limited games such as passing the ball for twenty times by right leg then twenty times by left leg but in the deliberate play the children did this skills into lazy Bear play. So this training has a little chance to transfer to others skills.

Also participating in soccer program caused children to development in soccer skills, the reason of this effect can be considered too according to Gallahou suggested different levels of skills that including body control( stability and transfer) and balance and transferring of body weight, caused to increasing endurance and muscular power, that flying of body is in company with coordinatng, timing and speed of movement, that existed in this programs, that affected directly and indirectly by components of sports skill [18].

Brian proposed that another feasible intermediary of the communication between sports skills might be neuropsychological or physiological in essence. Some sports requires motor, neuromuscular, cognitional and biomechanical systems that prepare activation, sequencing, timing, and scaling of muscle activity. individuals with better sports skills can participate in wide opportunities so they are better at activating and sequencing motor

patterns. More effective motor patterns can conclusion less energy cost and low fatigue that can follow conduct to high rate and intensity of sports activity [26].

### CONCLUSION

The results showed that diversification participation in some exercises during the early stages of growth, can facilitate the development of intrinsic motivation and create a rich environment for the development of motor skills, general cognitive and physiological skills in athlete, and exposure to practice sports in other situations and environments, particularly in public aspects of transport pattern recognition and decision-making, and may need to spend or perhaps partly replace for some high time that sport-specific training that provide for the development and promotion of the sports team skill.

#### *The limitations*

The limitations of the study were: A) Lack of control of status outside the school environment and education, sanitation, nutrition, the sleep of students. B) Lack of control of individual differences in terms of physical and psychological characteristics of children. C) Lack of control research on the psychological and motivation progress conditions by learners. D) Lack of control of their searches on physical activity outside of the study, of course, the researchers mentioned this matter to parents and were helped them.

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