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RESEARCH ARTICLE

The Effectiveness of a Differentiated Learning Strategy using Flexible Groups to Improve Football Skills and Keep It

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Abstract
In this research, it was aimed to determine the effect of the differentiated training strategy on the development of football skills by using flexible grouping in order to develop and make permanent football skills. The research consisted of 147 second grade students of Saif Al-Dawla Junior High School, Al-Karkh, Baghdad Third Education Department. Groups are control group (KG; n:8; Age 22.7±.1.5yeer, height 171±6.8 cm, body weight 65.4±3.3 kg; BMI 22.4±2.7and experimental group (DG; n:12; Age 21.9±.2.1 year, height 170.6±5.4cm, body weight 64.2±5.5 kg; BMI It is divided into two equal groups: 22.7±2.9. Put down, Passing and Rolling tests were applied to the research group at the beginning and end of the study. Tested for differences between groups with unpaired t-tests. Results were considered significant when $p<0.05$. The research hypothesis assumes that there is a statistically significant difference at the significance level ($p<0.01$) between the Pre-test and post-test mean score results of the experimental and control groups in favor of the posttest group in terms of football skill development. test. The post-test mean results for the two study groups were statistically significantly different at the significance level ($p<0.01$) and favored the experimental group. The post-test and post-test (post-test) results for the maintenance range experimental group were statistically significantly different at the significance level ($p<0.01$). There was a statistically significant difference between the results of the soccer skill posttest and the maintenance test. In conludes; emphasizes that differentiated learning is a promising approach to nurture adaptive behavior and develop basic skills in football players.

Keywords
Performance of Football Skills, Teaching Strategies, Flexible Grouping

INTRODUCTION

In recent years, many studies have been added to the literature on how technical skill teaching methods improve sports performance. It is a motor learning method developed by differentiated learning DL) method training. **Schöllhorn et al.** (**2009**) define this motor learning method as a structure that includes situational variability in training practices.

DL is a motor learning method that is characterized by a high amount of variability during practice and is claimed to provide the learner with a higher learning rate than other methods (**Tassignon et al., 2021**). In DL training, he emphasizes the importance of variability during learning and argues that a movement pattern can be characterized by adding randomly variable elements. He states that differences should be created in movements without repeated movements and without correction during the skill

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acquisition phase (**Aydın and Küçük, 2022**). Football is one of the widely practiced sports and it occupies a good place as it is an interesting game in the interrelation of defensive, offensive and skills (**Lucchesi, M, 2000**).

Performance in football can be characterized by the integration of physical (**Tierney et al., 2016**), tactical (**Russell et al., 2013**) and technical mastery (**Bradley et al., 2013**). Accordingly, significant effort has been made to optimize these three dimensions to improve individuals' performance. While success results from complex interactions of these variables, technical actions that can be determinants of team success have received great attention (**Russell et al., 2013; Castellano et al., 2012**). Performance indicators including total kicks, kicks on goal, ball possession, passing, and corner kicks have all been the subject of analysis in terms of distinguishing successful teams in football (**Daspar et al., 2019**).

And the audience's interaction with every game movement that students should learn and master in a high level in matches, and that teaching football as a methodological subject for students in the first intermediate grade school stage is no different from any other game through the preparation of modern scientific methods to develop what should be developed and achieve the best results. The development processes are continuing in the modalities and methods of flexibility and exercises and their organizations. All the objectives that the teacher wishes to achieve when giving educational lessons through the use of various teaching strategies and methods that coincide in their implementation together during one lesson to teach and practice new skills and to develop other skills that were previously taught.

The concept of incorporating variability in skills into practice was largely pioneered by Schmidt, who later popularized the idea of incorporating movement variability into the training context as a way to facilitate motor learning (**Wulf and Schmidt, 1997**). Variability in skills is therefore seen as a fundamental component of training and learning, and this premise is reinforced in the differentiated learning approach (**Scho¨ llhorn, 1999**). Differentiated learning is characterized by challenging the participant to perform a variety of exercises, without repetition, that mimic some of the many environmental conditions in which they would have to reproduce movement in (**Savelsbergh et al., 2010; Schollhorn et al., 2006**). Participants who participated in these interventions demonstrated greater skill acquisition as well as greater skill retention. Differentiated learning training, addressing a football-specific context, has been successfully applied to football passing, football ball control and football kick performance (**Coutinho et al., 2018**).

Therefore, the differentiated education strategy is one of the latest teaching strategies that take into account individual differences between students and distinguish between skills, and reach the goal of taking responsibility for decision-making in correction and giving the learner the opportunity to give feedback and increase social interaction among students through the differentiated education strategy (**Algozzine & Anderson, 2007**).

As a result, we have achieved many goals and advantages by linking the differentiated education strategy to the method of flexible grouping in one educational unit. Hence the importance of research in two aspects: the theoretical side. This thesis is a qualitative addition to the subject of physical education teaching methods, as well as its importance in the practical aspect, as this thesis is a new attempt to improve motor abilities and learn skills in football.

The success of any educational situation helps the teacher and the learner to achieve the planned goals, and this success depends on the good selection of teaching methods that organize the process of students learning the basic skills of games, and help to achieve the goals and that choosing the appropriate method saves time and effort. In skills, this diversity made it necessary for coaches and teachers to be familiar with the flexible methods and methods that help in flexibility and maintenance of basic skills (**Andersen, 2006**) including the game of football as problem of study.

Through informing the researchers of many interrelated studies and research and their work in the teaching profession of physical education, they found that many students face difficulties in the process of improving the performance of football skills due to the lack of use of teaching strategies that suit their abilities and capabilities, and that most of the teachers provide them with information at the same level as well as the lack of interest in achieving the compatibility between

their nervous and muscular abilities, and this is what leads to their not learning at the required level, and therefore the process of learning skills in football is not compatible with the development in the level of the game.

The objectives of study is to prepare educational units according to the differentiated education strategy using flexible grouping to improve and retain football skills, identify the effect of the differentiated education strategy using flexible grouping to improve and retain the football skills of the experimental group and the best experimental and control groups in improving and retaining some football skills and reveal the percentage of maintenance of football skills.

MATERIALS AND METHODS

Participants

Here, researcher Dr. Ismail Abdel Zaid Ali baptized to use the experimental method as it is more appropriate to the nature of field research procedures with regard to the pre-test, the exploratory experiment, and the equivalence procedure, as well as subjecting the dependent variables to the influence of the independent variable through the experiment and then conducting the post-test.

As for the research population, it was determined intentionally from second-grade middle school students at Saif al-Dawla Middle School for Boys in the third Karkh Directorate of Baghdad Education for the academic year 2020-2021, who numbered 115 distributed into four divisions.

Table 1. Shows sample homogeneity in morphological variables

Variables	Control Group (n:8)	Experimental Group (n:12)
Age (Years)	22.7±.1.5	21.9±.2.1
Height (cm)	171±6.8 cm	170.6±5.4
Weight (Kg)	65.4±3.3	64.2±5.5
BMI (kg m-2)	22.4±2.7	22.7±2.9

The research sample was determined by a systematic random method, and the research sample consisted of four study groups: Division A, numbering 29, Division B, 26, Division C, numbering 31, and Division D, 29. As for the experimental and control research groups using the (lottery) method, group A was adopted as an experimental group, and group C was a control group and enumeration. The two groups: 28 students (14) per group. The two research groups represent 24% of the research community. This is a good percentage and representative of the community. Here are the uncles of Dr. Ismail Abdel Aziz and Saad Allah Saeed Ali to conduct an initial exploratory experiment on 12 students from Division C from outside the research sample. In addition, the researchers excluded 8 students because they belong to football clubs. So researchers The researcher Dr. Amina Karim used experimental method and adopted the experimental design of two experimental and control groups, which were equal in number and independent. They used many tools to obtain valuable scientific information, and these tools are compatible with the nature of the research problem and procedures.

1. Standards and tests
2. The open personal interview.
3. Data dump forms for test results.

Experimental design

Metrics

Methodological vocabulary for football has been adopted according to the guide for physical education teachers prepared by the General Directorate of Curricula in the Iraqi Ministry of Education.

It included the following tests.

1- Rolling test between the five signs: (**Mohsen, Thamer et al., 1991, p. 159**)

2- The suppression test (Mohsen, Thamer et al., same source, p. 150)

3 - Pass the ball on the wall for 30 seconds.

Exploratory experiment for skill tests. The researchers conducted the exploratory field experiment, which is considered scouting research, in which the researcher resorts to conducting a reconnaissance study. In this step, the researcher applies it to a small sample chosen in a correct manner and an appropriate number from the same community. It is considered training for the researcher and the assistant work team. The researchers applied the skill tests on June 10. 2020, and football skills tests on July 10, 2021, at 10 a.m. at Malazim Seif Al-Dawla Boys' School. The researchers were supervised and the implementation was carried out by the subject teacher and the assistance of the assistant work team.

Before implementing the main research experiment, The researcher, Dr. Saadallah Saeed, conducted the study a skills pre-test for the control and experimental research groups, so the test date was 10/12/2020. After The researchers, Dr. Amina Karim and Dr. Ismail Abdel Zaid, confirmed this the integrity of the internal and external procedures for the research methodology, the pre-test was conducted for the two research groups on 10/23/2020, as shown in Table (1). Equivalence between the two research groups in the dependent variablesThe The data was statistically analyzed by researcher Dr. Saad Saeed, who used... the SPSS statistical package and applied many rules, including the t-test for two independent samples of equal numbers, as shown in Table (2).

After the researchers conducted the scientific conditions for the test and confirmed the element of equivalence between the two research groups and that the sample is equal in terms of the dependent variables, this is what Table (2) shows.

Table 2. shows, through the statistical methods used, the degrees of equality of the two research groups

Skills	Measuring unit	Control		Experimental		Difference	t- Value	% Mistake	Sig type
		M	SD	M	SD				
Put down	Degree	5,46	0,42	5,67	0.52	0,05	-1,18	0,82	Non
Passing	Degree	3,98	0,35	4,02	0,52	0,64	0,20	0,43	Non
Rolling	Time	16,6	0.03	16,46	1,27	1,11	0,53	0,59	Non

Mean (M) , Std. Deviation (SD)

After ensuring that the two research groups were equal, educational units prepared by the researchers were implemented according to the strategy of differentiated education according to flexible activities, as the educational program was implemented from 10/27/2020. According to the literature on differentiated education strategy, researchers have identified some controls upon which the educational unit was designed, and these controls include the following:

The students were divided into groups according to their levels and the degree of difficulty of the skill in their performance. Therefore, the groups differed from one skill to another and also differed from one educational unit to another. The totals are distributed to students in the form of educational stations. Skill exercises are applied that vary according to the difficulty and level of the group. The groups move from one station to another at the direction of the subject teacher.

The teaching method that is compatible with the skill is adopted. Therefore, more than one method has been adopted, such as the partial, total, or mixed method. The time between parts of the educational unit is reduced after the students practice and benefit from the time and add it to applying more skill exercises. After Dr. Ismail Abdel Aziz counted the educational units according to the independent variable, they were collected and given to the subject teacher, for whom a workshop was conducted with the assistant team on the mechanism of teaching using the independent variable.

Giving rest periods between one exercise and another and between moving between educational stations, in addition to that for the purpose of transporting equipment and tools to the lesson.

Apply the principle of flexible groups and work according to the principle of easy
to difficult when performing exercises.

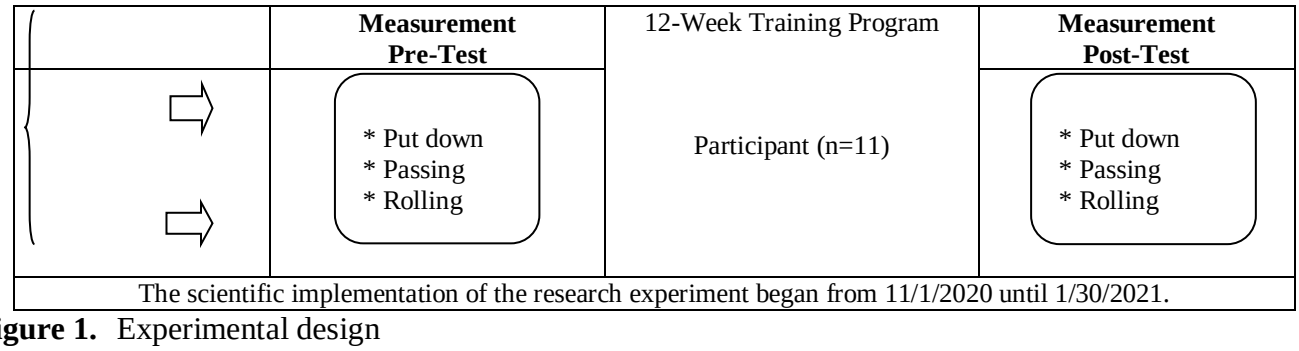

Figure 1. Experimental design

Post-test

The post-test was conducted for the two research groups on February 5, 2021, for the skills studied, at 10 a.m., with the researchers taking into account the provision of an atmosphere similar to what was done in the pre-test. Retention test: Retention tests were conducted on 2/12/2021 for the skills under study.

Statistical Analysis

In the descriptive analysis data is reported as means ± standard deviations and percentage of changes. Physical characteristics before the intervention were tested for difference between the groups with unpaired t-tests. Test data was examined for normality with Shapiro Wilk test and for homogeneity of test. Results were considered significant when $p<0.05$. IBM SPSS statistics version 22.0 package was used.

RESULTS

The research hypothesis assumes that there is a statistically significant difference at the significance level ($p<0.01$) between the Pre-test and post-test mean score results of the experimental and control groups in favor of the posttest group in terms of football skill development. test. The post-test mean results for the two study groups were statistically significantly different at the significance level ($p<0.01$) and favored the experimental group. The post-test and post-test (post-test) results for the maintenance range experimental group were statistically significantly different at the significance level ($p<0.01$). There was a statistically significant difference between the results of the soccer skill posttest and the maintenance test (Table 3).

Table 3. Presenting the results of the mean of the two tests, pre and post-tests, for students of the control group in football skills.

Skills	Measuring unit	Pre-test		Post-test		F. Mean	F.Std. deviation	t. value	Sig level	Sig type
		Mean	Std. deviation	Mean	Std. deviation					
Put down	Degree	4.43	0.35	7.63	0.51	-3.20	0.65	-19.0	0.00	Sig
Passing	Degree	3.98	0.35	6.64	0.49	-2.66	0.58	-17.5	0.00	Sig
Rolling	Time	16.6	1.03	14.5	0.76	2.10	1.17	6.92	0.00	Sig

The results presented in Table (4) showed that there was an improvement in the post-tests of the football skills tests, and that this improvement was in favor of the differentiated training group ($p<0.01$).

Table 4. Presentation and discussion of the results of the mean of the two tests , Pre and Post, for the experimental group students in football skills.

Skills	Measuring unit	Pre-test		Post-test		F. Mean	F.Std. deviation	t. value	Sig level	Sig type
		Mean	Std. deviation	Mean	Std. deviation					
Put down	Degree	4.33	0.19	9.79	0.62	5.45-	0.68	31.0-	0.00	Sig
Passing	Degree	4.02	0.52	8.77	0.77	4.74-	1.01	18.1-	0.00	Sig
Rolling	Time	16.4	1.27	13.2	0.87	3.25	0.84	14.9	0.00	Sig

The results presented in Table (5) showed that there was an improvement in the post-tests of the football skills tests, and we found that this improvement was in favor of the differentiated training group (Experimental Group) ($p<0.01$).

Table 5. Presentation and discussion of the results of the mean scores of the two Post-tests of the two experimental and control groups in football skills.

Skills	Control		Experimental		F. Mean	t . value calculated	Sig level	Sig type
	Mean	Std. deviation	Mean	Std. deviation				
Put down	7.70	0.58	9.94	0.71	0.32	9.40-	0.00	Sig
Passing	6.64	0.49	8.77	0.77	3.96	8.93-	0.00	Sig
Rolling	14.5	0.82	13.2	0.87	0.02	4.44	0.00	Sig

DISCUSSION

According to the results of our research, the research hypothesis assumes that there is a statistically significant difference at the significance level between the Pre-test and post-test mean score results of the experimental and control groups in favor of the posttest group in terms of football skill development. The post-test mean results for the two study groups were statistically significantly different at the significance level and favored the experimental group. The post-test and post-test (post-test) results for the maintenance range experimental group were statistically significantly different at the significance level. There was a statistically significant difference between the results of the soccer skill posttest and the maintenance test.It is observed that DL training performed for 12 weeks has a positive effect on the motoric characteristics and basic football skills of football players. Due to the observed positive effect and statistically significant differences, it is thought that the inclusion of DL training into traditional football training will make positive contributions to football players in terms of basic skills and motoric characteristics.

Recent research emphasizes that differentiated learning is a promising approach to nurture adaptive behavior in football players (**Santos et al., 2018**). Differentiated learning training has been applied in a number of sports and includes speed skating (**Savelsbergh et al., 2010**), badminton (**Henz and Scho llhorn, 2016**), basketball (**Santos et al., 2018), hockey (Beckmann et al., 2010**), In golf (**Porter And Magill, 2010**), athletics (**Schollhorn et al., 2010**), handball (**Wagner and Muller, 2008**) have yielded positive results.

We found that there is a development in the post-tests of the tribal skills tests, and the researchers attribute the emergence of these results to the use of differentiated education, which had a significant and clear impact on the superiority of the experimental group members (differentiated education using flexible grouping to improve the skills of Football and keep it) the fact that this type of education gives many opportunities to teach all students according to the level of each student and take into account individual differences and divide students into groups on the basis of their intelligence, desires, tendencies, aptitudes and skill levels, and provides them with a good environment for learning. (In that differentiated education plays a major role in what students practice about the various processes and activities during the course of the flexibility, as there is self and collective dependence and individual and collective responsibility among the members of the group in learning information and its agreement, as well as the use of continuous evaluation and positive and moral reinforcement, which helped raise the adequacy of students and increased the Continuing to carry out practical activities. Differentiated education works on the effectiveness of the student's role in the flexible process, as the student is an active participant in the learning process and not just a receiver of information. Individual and collective verbal, visual and kinesthetic information provided by the teacher directly, and that the student learns by looking at another student, when he performs the right way and corrects mistakes) (**Sparapani, 2013**). Here, the researchers confirm, through the statistical analysis in the table, the superiority of the experimental group over the control group in motor abilities and skills, and the researchers attribute this development to the experimental group.

One study revealed how players enrolled in a differentiated learning program over a 4-week period demonstrated higher accuracy scores on a kicking task compared to a more traditional approach training program (**Schollhorn et**

al., 2012). Furthermore, Santos and collaborators (Santos et al., 2018) demonstrated that a 5-month training intervention sustained with differentiated learning embedded in small-sided games fostered creative behavior and promoted tactical regularity in under-13 and under-15 football players.

The use of the differentiated education strategy worked to take into account, satisfy and develop the tendencies and trends of students, which attributes the level of motivation and raises the level of challenge for learners, as differentiated education emphasized through its principles to achieve and provide an effective learning environment for learners and increased their effectiveness in performing skill exercises that suit their level (Differentiated education works on the teacher's adjustment of the educational level in the educational process and the output in response to the students' readiness and inclinations and the appropriateness of the educational method for them). This is what researchers agree with Dr. Saadallah Saeed on the importance of the role of modern teaching strategies: "Learning methods play an important role in the entire educational process. Learning is This is achieved through healthy and positive interaction between teacher and student. Educational The system depends on the methods adopted by the teacher to transfer the complex of knowledge to his studentsstudents (Majed, 2022) . The researchers also confirm that the differentiated education strategy has worked to meet the needs of learners and took into account their individual differences in performing skill exercises through a training approach that meets those differences. Considering that technical improvement is one of the main goals of coaches of youth players (Lloyd et al., 2016), a better understanding of the acute effects of differentiated learning on players' batting performance may help coaches better plan and design training tasks to improve it.

As the flexible grouping worked on finding repetitive attempts in one educational unit and diversifying the skill exercises had an effective effect on improving and learning skills, the diversification of exercises, the type of skill and the time allotted to practice all of these things had a significant impact on the process of developing these skills Flexible grouping work to move a small group of students through a series of centers or groups that are usually a set of various exercises, and this station can last for an educational unit or for several units (Tomlinson & Allan, 2000).

Conclusion

The use of the differentiated education strategy according to the style of flexible grouping has a positive effect on learning football skills. The flexible grouping used by the researcher were compatible with the skills of the students and according to their individual differences. The efficiency of the skill exercises applied by the researcher. The method adopted has a positive impact on developing football skills. The involvement of all students in performing skill exercises using the differentiated education strategy according to the flexible grouping helped to speed up the learning of football skills within the capabilities of the students and taking into account their individual differences.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethics Committee

This study was performed by adhering to the Helsinki Declaration. Ethical approval of the study was obtained from Ministry of Education, Iraq Ethics Committee at the board meeting dated 20.02.2023 and numbered No:4/153

Author Contributions

Study Design, AKH, IAA; Data Collection, AKH; Statistical Analysis, AKH; Data Interpretation, IAA, SSM; Manuscript Preparation, SSM, IAA; Literature Search, AKH, IAA. The published version of the manuscript has been read and approved by all authors.

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