DOI https://doi.org/10.69513/jnss.v1.i2.a2 *: ISSN:3107-2232*

Al-Noor Journal for Physical and sport science

https://jnss.alnoor.edu.iq/

The effect of skill-based exercises through sequential practice according to video presentation (slow - normal) on learning a number of basic football skills

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Article information

Article history:
Submit Date: 6 February 2026
Revise Date: 22 May 2026
Accept Date: 9 June 2026

Keywords:
Sequential practice;
Video presentation;
Slow-motion video;
Motor learning;
Football skills;
Physical education.

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Abstract

The research aims to:
-Determine the effect of using sequential skill-building exercises based on video presentation (slow and normal speed) and the method employed in learning several basic football skills.
-Compare the three research groups in learning several basic football skills.
The researchers hypothesized the following:
There are statistically significant differences between the pre-test and post-test results of the three research groups in learning several basic football skills, favoring the post-test.
There are statistically significant differences between the post-test results of the three research groups in learning several basic football skills.
The researchers used the experimental method because it suited the nature of the research and experiment. The research population was chosen purposively from first-year students in the College of Basic Education, Department of Physical Education and Sports Sciences - University of Mosul, for the academic year (2025-2026), first semester, and their number was (102) male and female students, representing sections (A, B, C, D). Hall (C) was excluded because it contains female students, and the research sample was represented from sections (A, B, D). They were randomly selected by drawing lots, and their number was (74) students. A number of students were excluded because they were not equal to the sample members, in addition to excluding the absent students, whose number was (7). Thus, the final number of sample members became (45) students, with a percentage of (44.11%) of the original population. They were distributed into three groups by drawing lots, with (15) students for each group. The researchers used the design of equivalent randomly selected groups with pre- and post-observation controlled for control. The educational curriculum was implemented starting from 25/11/2025 until 7/1/2026, with one educational unit per week for each group.
The researchers used the SPSS version 25 statistical software package, employing appropriate statistical methods, most notably the arithmetic mean, standard deviation, t-test for paired samples, one-way ANOVA, and Least Significant Difference (LSD).
The results showed that all groups improved in the post-tests compared with the pre-tests, with greater improvement in the experimental groups. The second experimental group, which used normal-speed video presentation, showed superiority in dribbling, passing, and ball control skills, while no significant difference was found between the two experimental groups in scoring.

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DOI https://doi.org/10.69513/jnss.v1.i2.a2 *: ISSN:3107-2232*

1- INTRODUCTION

What distinguishes our era is the rapid advancement of information technology, characterized by leaps and tremendous developments in scientific knowledge. This has led the educational process to face important issues, foremost among them the development of learning and the appropriate use of educational technologies to achieve better learning outcomes.

Exercise is of great importance in preparing students physically, technically, and mentally in various motor skills, in accordance with the nature and capabilities of the students. Experts and specialists have not agreed on a specific concept of exercise due to the difference in its purpose. They have agreed that it is the smallest component in the educational and training unit for motor performance with a known time and repetition. Learning is only possible through it, and it leads to the development of the skill. The sum of the exercises is the educational unit, and together they form the educational program. Mayer stated that learning involves a relatively stable change in performance [1]. Many researchers in the field of education have been interested in understanding the effectiveness of using interactive video and integrating it into the teaching and skills development process to enhance learning experiences. This is based on the understanding that educational video serves as a tool during educational situations. The word video is derived from the Latin root meaning "I see" [2]. However, the term video is not limited to the visual aspect alone, but encompasses both the audio-visual and visual aspects together. The use of educational video presentations is considered one aspect of modern technological innovations that can be greatly exploited in developing the educational process. Recent studies have confirmed the effectiveness of video-based learning and observational practice in improving motor skill acquisition, technical performance, motivation, and learner engagement in physical education settings [2,6,7,8]. It is a medium that, if its programs are well prepared, planned and evaluated, has helped to overcome many of the problems and challenges we face in our current era, since the modern scientific approach advocated by experts in motor learning is the call for diversification in educational and teaching methods and approaches [3] [4]

Despite the growing body of literature on video-based learning and observational practice, limited studies have compared slow-motion and normal-speed video presentations within a sequential practice framework for teaching fundamental football skills, particularly among university students in physical education programs. Furthermore, few studies have examined these instructional approaches simultaneously using equivalent experimental groups.

1-2 Research Objectives:

1-2-1 Determine the effect of sequential skill-building exercises using video presentations (slow and normal speed) on learning several basic football skills.

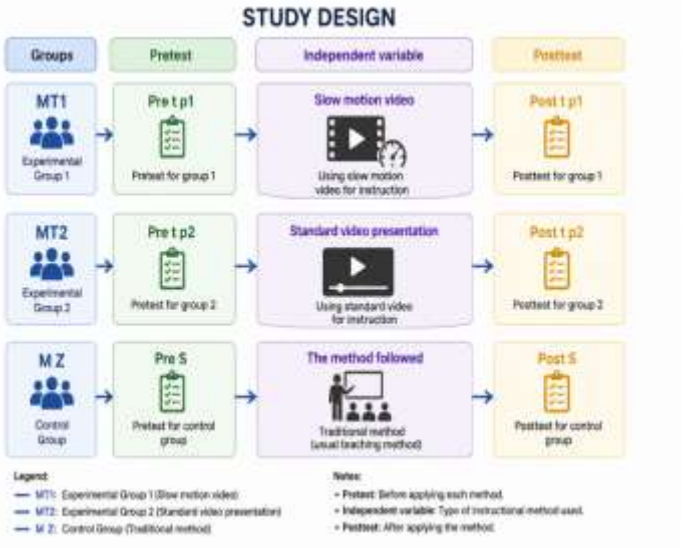
1-2-2 Compare the three research groups in learning several basic football skills.

2. Materials and Methods

2.1. Research Method: The researchers used the experimental method as it was suitable for the nature of the research problem.

2.2.Population and Sample

The research population was selected purposively from first-year students in the Department of Physical Education and Sports Sciences at the College of Basic Education, University of Mosul, for the first semester of the 2025-2026 academic year. The population consisted of (102) male and female students, representing classrooms (A, B, C, and D). Classroom (C) was excluded as it contained only female students. The research sample consisted of (74) students from classrooms (A, B, and D). A number of students were excluded because they were not equal to the sample members, in addition to excluding the absent students, whose number was (7). Thus, the final number of sample members became (45). The sequential method of video presentation (slow and normal) was distributed by lottery, with (15) students for each group. Hall (A) was in the sequential method according to the slow video presentation, and Hall (B) was in the sequential method according to the normal video presentation, while Hall (D) was in the



method followed, and they were distributed among the three halls with (15) students for each group.

2.3 Experimental Design:

The researchers used an experimental design called (a controlled pre- and post-observation randomized equivalent groups design)

Figure (1) illustrates the experimental design used in the research.

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2.4 Methods of Data Collection:

Scientific sources and references, questionnaires, scientific observation, measurements and tests, devices and tools

2.4.1 Personal Interviews:

A number of interviews were conducted with specialists in the field of (motor learning, teaching methods, sports psychology, sports training science, measurement and evaluation, and football).

2.4.2 Questionnaire:

2.4.2.1 Questionnaire form to identify the most important elements of physical and motor fitness and their tests that influence the learning of several basic football skills:

2.4.2.3 Questionnaire form to determine the degree of the apparent motor structure components of basic football skills:

The questionnaire form, , was prepared and presented to a number of experts and specialists in the field of (motor learning, football) to obtain their opinion on the validity of this form.**[4]**

2.4.2.4 Questionnaire to Determine the Suitability of the Educational Units for the Two Experimental Groups:

A questionnaire was designed to ascertain the suitability of the educational units, and was presented to a number of experts and specialists.[5]

2.4.3 Scientific Observation:

Evaluating mathematical skills by calculating points is an important method that relies on observing and evaluating the performance of movements by experts through observation and recording through scientific observation [2]

2.5 Homogeneity of the Three Research Groups:

The homogenization process between the three research groups was carried out to control the variables using a one-way ANOVA test. The homogenization process included (chronological age measured in years, height measured in centimeters, and mass measured in kilograms). It appears that there are non-significant differences between the three research groups in the variables of (age, height, and mass), and this indicates the homogeneity of the three research groups.

2.5.1 Equivalence in the most important elements of physical and motor fitness affecting the learning of several basic football skills:

The researchers conducted an equivalence test among the three research groups, assessing the physical and motor fitness elements affecting the learning of several basic football skills. The results indicated that the research groups were indeed equivalent.

2.6 Equipment and Tools Used:

Laptop, display screen, football, cones, measuring tape, stopwatch, electronic scale, goals, chalk, and colored tape.

2.7 Equivalence in Basic Football Skills:

Equivalence was established between the three research groups in a number of basic football skills.

Therefore, the researchers used Pearson's correlation coefficient between the test results for a number of basic football skills:

2.8 Research Variables and How to Control Them:

The research included the following variables:

2.8.1 Independent Variables:

The research included the following independent variables:

-Sequential exercise using slow-motion video.

-Sequential exercise using standard video.

-The methodology used.

2.8.2 Dependent Variable:

The research included the following dependent variables:

Learning a number of basic football skills.

Other factors related to the experimental procedures were controlled to ensure the integrity of the experimental design. These factors include:

A. Educational Material:

The researchers selected the educational material by analyzing the content of the football textbook. This material covered several basic football skills.

B. Instructor: The instructor taught the basic football skills to the three research groups, which were located in rooms A, B, and D. [3] [6]

C. Lecture Location: The students in all three research groups received their lessons in a single location: the indoor hall of the Department of Physical Education and Sports Sciences at the College of Basic Education, University of Mosul, from the beginning to the end of the experiment.[7]

D. Evaluators: The three research groups were evaluated to measure the research variables

2.9 Exploratory Experiment:

The researchers, with the help of the assisting team, conducted an exploratory experiment on students from outside the research sample and from within the community, Hall (c), consisting of (7) students, related to physical tests and the validity of educational units, on a sample consisting of (7) students, on Tuesday, 18/11/2025.

2.10 Educational Units:

After reviewing scientific sources, including the sequential exercise was used as one of the training methods (practice) according to the video presentation. It was employed in the curriculum prescribed for the Department of Physical Education and Sports Sciences in learning a number of basic football skills. [6, 14, 15 ,16] After conducting personal interviews with experienced and specialized individuals, some modifications were made and the duration of the video presentation was determined in its two forms (slow,

DOI https://doi.org/10.69513/jnss.v1.i2.a2 *: ISSN:3107-2232*

with a speed of (0.50x), and normal, with a speed of (1.00x)). [3]

2.11 Timetable for the Learning Units:

The researchers developed the learning units after conducting personal interviews with specialists in (motor learning, football, sports training). The learning programs consisted of (12) learning units, with (6) learning units for each experimental group, distributed over six weeks at one learning unit per week. The duration of each learning unit was (90) minutes.

2.12 Pre-tests, Main Experiment, and Post-tests:

The pre-tests and post-tests for the selected research variables were conducted as follows:

2.12.1 Pre-tests:

The pre-tests were conducted on Sunday and Monday, November 23-24, 2025, and covered a number of basic football skills.

2.12.2 Main Experiment:

The main experiment was conducted from Tuesday, November 25, 2025, to Wednesday, January 7, 2026, for a period of six weeks, with one instructional unit per week. The unit was distributed according to the weekly schedule for first-year students in the football course at the Department of Physical Education and Sports Sciences, College of Basic Education, and consisted of three groups (two experimental and one control), as follows:

1 .The first experimental group, which used the sequential method with slow-motion video presentation:

The program was implemented using slow-motion video presentation with teacher explanations. The skill related to the lesson was explained during the learning activity, and the skill was presented in slow motion. This slow-motion presentation gave students ample time to understand the skill. The teacher paused the presentation to answer students' questions and inquiries about the skill. The students then practiced the skills in the applied activity. Using a data projector, the skill was shown video for students to review before the practical component. Students then performed the exercises in the practical section, progressing from easy to difficult.

2 .The second experimental group, which used the standard video presentation method:

The program was implemented using the standard video presentation method, accompanied by the teacher's explanation. The teacher explained the skill related to the lesson during the learning activity, and the skill was presented at the standard video presentation speed, matching the time it was performed in the lesson. The teacher paused the presentation to answer students' questions and inquiries about the skill. The students then practiced the skill in the applied activity and completed exercises related to it, using a data projector. (Data show) The skill was presented via video for students to view before the practical part. Students then performed the exercises in the practical section, progressing from easy to difficult. Appendix (8) illustrates a model of a physical education lesson unit using the standard video presentation method.

3 .Control Group: The subject teacher implemented the standard method for teaching basic football skills without intervention from the researchers.

2.12.3 Post-Tests: Post-tests were administered on Tuesday and Wednesday, January 13-14, 2026. Pre-tests were also conducted for several basic football skills and the attentional focus variable.

2.13 Statistical methods: The data were processed using the SPSS statistical package.

3. Results

Presentation and discussion of the results comparing the pre- and post-tests for several basic football skills across the three research groups:

Table (1) shows the calculated means, standard deviations, and t-values for several basic football skills across the three research groups.

Variable	Test	First Exp. Group M±SD	t	Second Exp. Group M±SD	t	Control Group M±SD	T
Rolling	Before	3.93±1.09	8.52	4.82±0.78	9.01	4.13±1.12	5.23
	After	6.93±0.59	—	6.80±0.24	—	5.73±0.45	—
Passing	Before	3.66±1.75	10.39	3.15±1.33	9.34	3.46±1.18	8.98
	After	8.06±0.70	—	6.73±0.58	—	6.06±0.25	—
Suppres-sion	Before	4.73±1.62	6.43	4.22±1.39	7.04	4.80±0.77	6.81
	After	7.60±0.73	—	6.84±0.27	—	6.26±0.45	—
Scoring	Before	4.13±0.74	17.87	3.91±1.23	7.79	3.93±0.59	12.91
	After	7.53±0.51	—	6.64±0.58	—	6.60±0.25	—

***Significant at a margin of error ≤ (0.05)**

There are significant differences between the results of the pre-test and post-test for all the basic football skills in the first experimental group that used the (slow video presentation) method in the lesson, as the calculated t values were respectively (8.52 , 10.39 , 6.43 , 17.87) in favor of the post-test.

DOI https://doi.org/10.69513/jnss.v1.i2.a2 : ISSN:3107-2232

There were significant differences between the pre-test and post-test results for all basic football skills (under study) in the scond experimental group, which used the standard video presentation method in the lesson. The calculated t-values were (9.01 – 9.34 – 7.04 – 7.79), respectively, in favor of the post-test.

There were significant differences between the pre-test and post-test results for all basic football skills (under study) in the control group, which used the standard method in the lesson. The calculated t-values were (5.23 , 8.98 , 6.81 , 12.91), respectively, in favor of the post-test.

The researchers attribute the development in the first experimental group, which used the slow video presentation method, to the increased enthusiasm, motivation, and desire to continue performing. Using a variety of stimuli to excite students and increase their motivation for the lesson led to eliminating boredom and instilling in them a spirit of active participation. This was reflected positively and effectively in learning a number of basic football skills. The attention given to increasing repeated attempts and providing the learner with different patterns of feedback, commitment, urging, encouragement, and variety in performance helps beginners to learn and acquire basic skills [5]

As for the slow video presentation method, it gives a visualization of the sequence of movement and the sequence of the motor stages of performing the skill. This helps learners to observe each stage of the performance that is difficult to observe, contemplate and examine. This was confirmed by what (Mödinger & Wagner,2022) indicated, that the slow-speed presentation method leads to faster skill acquisition and gives a greater opportunity for learning[2].

In addition to the fact that each type of video presentation has special advantages and benefits, the ordinary video presentation method actually gives the student a real picture of the skill and its details, complete and sequential according to its logical sequence of performance. Denis indicated that the video tape at normal speed provides the learner with experiences close to real experiences, and in it the learner's attention can be directed to the basic requirements for good skill performance, and it works to develop the learner's abilities, improve performance, and increase positive engagement during the learning process [8,9]. The results of the current study are consistent with recent evidence showing that video presentation is an effective tool for improving motor skill learning [10,11]. Schmidt and Lee stated that one of the benefits of scheduling practice is activating acquired information during the learning of basic skills [3] [12] .

Table (2) shows the summary of the results of the analysis of variance between the three research groups in the post-test of a number of basic football skills.

No.	Variable	Unit	Source of Variation	SS	df	MS	F	Sig.
1	Rolling Inside the Foot	Degree	Between Groups	31.526	2	15.763	45.740	0.001*
			Within Groups	14.474	42	0.345		
			Total	46.000	44			
2	Short Pass	Degree	Between Groups	87.249	2	43.625	131.152	0.001*
			Within Groups	13.970	42	0.333		
			Total	101.220	44			
3	Ball Control by Sole of the Foot	Degree	Between Groups	242.612	2	121.306	5.050	0.001*
			Within Groups	121.306	42	24.020		
			Total	344.553	44			
4	Close Scoring	Degree	Between Groups	87.768	2	43.884	137.017	0.001*
			Within Groups	13.452	42	0.320		
			Total	101.220	44			

* Significant at a margin of error ≤ (0.05) and two degrees of freedom (2-42).

Table (2) shows that there are significant differences between the three groups, as the calculated (F) values were respectively (45.740 – 131.152 – 5.05 – 137.017). In order to test the possible differences between the means of the groups or methods used in the study for some types of basic football skills, and to determine which method is superior to the other, the researcher used the (L.S.D) test to find out these differences, as follows:

DOI https://doi.org/10.69513/jnss.v1.i2.a2 *: ISSN:3107-2232*

Table (3) shows the results of the LSD test to compare the arithmetic means of basic skills for the three groups.

Skill	Comparison	Mean Difference (I–J)	Sig.
Rolling	Control vs. First Experimental	-1.511	0.001*
	Control vs. Second Experimental	-1.956	0.001*
	First Experimental vs. Second Experimental	-0.444	0.044*
Passing	Control vs. First Experimental	-2.622	0.001*
	Control vs. Second Experimental	-3.200	0.001*
	First Experimental vs. Second Experimental	-0.578	0.009*
Ball Control (Putting Out)	Control vs. First Experimental	-5.622	0.005*
	Control vs. Second Experimental	-2.067	0.008*
	First Experimental vs. Second Experimental	-3.556	0.004*
Scoring	Control vs. First Experimental	-2.756	0.001*
	Control vs. Second Experimental	-3.133	0.001*
	First Experimental vs. Second Experimental	-0.378	0.075

Table (3) indicates that the second experimental group outperformed the first experimental group and the control group in rolling, passing, and ball control skills. The first experimental group also outperformed the control group in these skills. In scoring, both experimental groups outperformed the control group, while no statistically significant difference was found between the first and second experimental groups. These findings suggest that sequential skill-based exercises supported by video presentation contributed to improving learning outcomes. This may be explained by the role of practice scheduling, feedback, and observational learning in enhancing motor skill acquisition [11, 12]. The slow-motion presentation allowed learners to observe details that are difficult to perceive at normal speed. In addition, video presentation combines visual observation with verbal explanation, which supports observational learning and performance modeling [6, 13].

Conclusions:

The research results showed that all groups demonstrated improvement in learning basic football skills in the post-tests, but this improvement was greater in the two experimental groups compared to the control group. The post-test results also showed that the second experimental group, which used the video presentation at normal speed, achieved a clear advantage in dribbling, passing, and ball control skills, while no significant differences were found between it and the first experimental group in scoring skills. Thus, the results confirm the effectiveness of sequential skill exercises accompanied by video presentations in improving the learning of basic football skills.

Recommendations:

The researcher recommended the following:

1 .Emphasizing the use of video presentations to develop football skills exercises using a sequential approach.

2 .The necessity of using video presentations (both slow and normal speed) for other sports.

Future Research Directions

Investigating the long-term retention effects of slow-motion video presentations.

Applying sequential video-based practice to other sports disciplines.

Comparing video feedback with virtual reality and augmented reality training systems.

Examining the influence of video presentation methods on cognitive load and decision-making.

Study Limitations

- The study was limited to first-year students from the Department of Physical Education and Sports Sciences at the University of Mosul.
- The sample size was relatively small (n = 45), which may limit the generalizability of the findings.
- Only four basic football skills were examined.
- The intervention lasted six weeks, and long-term retention was not evaluated.

Researchers' Contributions

Researcher Talab contributed to developing the research concept, constructing the scale, collecting and statistically analyzing data, and writing the research draft. Researcher Fawaz contributed to the study design, academic supervision, critical review, and approval of the final version for publication. All researchers reviewed and approved the final version.

Conflict of Interest

The researchers acknowledge that there is no conflict of interest related to the publication of this research.

Funding

This research did not receive any financial support from public, private, or non-profit organizations.

Data Availability

The data supporting the findings of this study is available to the researchers upon reasonable request.

DOI https://doi.org/10.69513/jnss.v1.i2.a2 *: ISSN:3107-2232*

Ethical Considerations

The study was conducted in accordance with the ethical standards of scientific research. Participants participated voluntarily after the study objectives were clearly explained, and confidentiality and privacy were guaranteed.

Acknowledgement

The authors would like to express their sincere gratitude to the University of Al-Hamdaniyah and the University of Mosul for their academic support and for providing a conducive environment that facilitated the completion of this research.

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DOI https://doi.org/10.69513/jnss.v1.i2.a2 *: ISSN:3107-2232*