Journal of Learning and Teaching in Digital Age, 2023, **8**(2), 267-275
https://dergipark.org.tr/en/pub/joltida
ISSN: 2458-8350 (online)

Research Paper

The Effect of Interactive Videos on Volleyball Education

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ARTICLE INFO

Received: 29 November 2022
Revised: 4 May 2023
Accepted: 8 May 2023

Keywords:
ADDIE model
Instructional Technologies
Media in Education

doi: 10.53850/joltida.1211628

ABSTRACT

This study aimed to examine the effect of interactive videos on volleyball education, and the effects of gender and grade level on volleyball knowledge level were evaluated. A total of 105 (43 boys and 62 girls) fifth and sixth-grade students participated in the study. Participants were divided into three groups: Interactive Video Group (IVG), Video Group (VG), and Control Group (CG). The volleyball education program consisting of seven videos for two weeks was applied to the experimental groups. Interactive videos include single or multiple-choice questions, true-false statements, and drag and drop activities. ADDIE Model was used in instructional design. Gender has no effect on volleyball knowledge level ($p>.05$), but grade level has an effect in favor of sixth graders ($p<05$). In terms of volleyball knowledge level, there is a difference between the pretest and posttest of IVG and VG ($p<.05$) but not in CG ($p>.05$). There is a difference in favor of IVG and VG, respectively, in posttest results ($p<.05$), but not in pretest results ($p>.05$). Interactive videos positively affect volleyball knowledge, so their use in educational environments should be encouraged.

INTRODUCTION

In learner-centered active learning environments, it is assumed that individuals learn better when they discover things on their own and control their learning speed (Leidner & Jarvenpaa, 1995). Learning is maximized when learners are active, motivated, engaged, participating, and interacting with the material (Dror, 2008). Interaction means that learners are active participants in the instruction/learning process (Smith, 1987). Interaction plays an important role in multimedia designs, providing students with opportunities to perform tasks or perform a procedure, but for this, the interaction must be more advanced than simply allowing the student to choose how to navigate the object (Haughey & Muirhead, 2005).

Videos are popular teaching materials among students all over the world, providing rich and flexible learning experiences, as well as providing a stimulating learning environment where students can better understand and retain information (Franzoni et al., 2013; Sablić et al., 2021). Videos increase students' learning performance, and students perceive video technology as a practical learning resource (Giannakos et al. 2015), in addition newly designed enhanced video learning environment was a superior instructional tool than the common video learning environment in terms of students' learning performance (Delen et al., 2014).

There are various definitions of the terms "annotated video," "interactive video", "non-linear video" and "hypervideo" in the literature (Meixner et al., 2014), interactive videos are used in this study. Interactive video increases learner-content interaction, thereby potentially motivating students and increasing learning effectiveness (Zhang et al., 2006). Interactive video offers various interaction options above or next to the video to provide a more engaging and active watching experience (Palaigeorgiou et al., 2019). Cherrett et al. (2009), 75% of the students who participated in their study stated that interactive video improved their learning experience. Some suggestions for interactive video studies are as follows; interactive video instruction provides more effective learning than non-interactive video instruction, the more interactive the instruction the greater the learning, the type and nature of the interactivity affect the magnitude and type of learning, interactivity in the form of embedded questions increases the amount of effort required to learn from the video thereby reducing students' passivity towards the instruction, comprehension and attention to instruction are increased by questioning and response feedback procedures in the interactive video (Hannafin, 1985).

All students are more successful in physical education environments that support autonomy than in controlled environments, so if physical education teachers want to increase their students' motivation and engagement, they should have less control and adopt an autonomy-supportive approach (Hwang & Jin, 2016). In this context, the physical education curriculum should be designed differently from traditional methods, technology-supported methods should be applied, and the deficiencies in the literature should be eliminated by increasing the number of studies in this field. The main purpose of this research was to examine the effect of interactive videos in volleyball education. The following five hypotheses were formed for the research.

H_{01}: Gender has no effect on volleyball knowledge level.
H_{02}: Grade level has no effect on volleyball knowledge level.
H_{03}: Interactive volleyball education videos have no effect on volleyball knowledge level.

H_{04}: Non-interactive volleyball education videos have no effect on volleyball knowledge level.
H_{05}: There is no difference between the effects of interactive and non-interactive videos on volleyball knowledge level.

MATERIALS AND METHODS

Model of the Research

This study examines the effect of two different teaching methods on learning. An experimental research method, which is within the scope of quantitative research, was used. In the study, there are three groups, two of which are experimental and one is controlling, in the pretest-posttest control group design. These; Interactive Video Group (IVG), Video Group (VG), and Control Group (CG).

Students are randomly assigned to the classes in the school where the research was carried out, so research groups were formed by preserving the class structure. Students in a total of 10 classes at the fifth and sixth grade levels participated in the research. The groups are tabulated under the headings of fifth grade, sixth grade, and general. In the fifth grade title, IVG consists of two classes (section A and B), VG consists of two classes (section D and E) and CG consists of one class (section C). In the sixth grade title, IVG consists of two classes (section A and B), VG consists of two classes (section C and D) and CG consists of one class (section E). The groups created separately for the fifth grade and the sixth grade were evaluated together in the general title.

Experimental Phase

The experimental phase of the study lasted for four weeks. In the first week, information about the research was given, student and parent approvals were obtained, and a pretest was applied. In the second and third weeks, the education program consisting of seven videos in total was applied to the experimental groups on the internet via EBA. Since the videos were uploaded to the EBA system, the students had the opportunity to watch the videos whenever they wanted for two weeks. The students in the IVG group watched the interactive videos, while the students in the VG group watched the non-interactive videos. System records were examined and it was confirmed that the students who participated in the study watched all the videos in their group. The fourth week was applied as a posttest.

Participants

The research was carried out in the second semester of the 2020-2021 academic year in a secondary school in Sinop, Türkiye. A total of 105 fifth and sixth grade students, 43 boys and 62 girls, participated in the study. The age (month) information of the students participating in the research by gender and total is given in Table 1.

Table 1. Age (month) information of student groups by gender and total

Group	Boys			Girls			Total		
	n	**M**	**SD**	**n**	**M**	**SD**	**n**	**M**	**SD**
5th grade									
IVG	7	134.57	4.31	16	131.55	2.88	23	132.72	3.71
VG	11	132.78	2.73	8	133.13	1.96	19	132.94	2.33
CG	7	132.43	2.76	10	131.88	3.98	17	132.13	3.36
Total	25	133.22	3.27	34	132.11	2.99	59	132.62	3.14
6th grade									
IVG	7	144.14	3.02	14	145.25	3.49	21	144.84	3.29
VG	8	144.88	2.80	7	143.00	2.08	15	144.00	2.59
CG	3	146.00	7.00	7	145.71	2.56	10	145.80	3.91
Total	18	144.78	3.56	28	144.77	3.04	46	144.77	3.22
General									
IVG	14	139.36	6.12	30	138.70	7.67	44	138.95	7.04
VG	19	138.47	6.77	15	137.73	5.46	34	138.13	6.11
CG	10	136.50	7.68	17	138.33	7.86	27	137.60	7.68
Total	43	138.29	6.71	62	138.32	7.05	105	138.31	6.87

Note. IVG=Interactive Video Group, VG=Video Group, CG=Control Group

Data Collection Tools

This study used "Personal Information Form" and "Volleyball Cognitive Field Test" as data collection tools. Descriptive information showing the students' age, gender, and grade level was obtained with the personal information form in the pretest. Thirty questions of the Volleyball Cognitive Field Test developed by Özgül (2015) were used to determine the volleyball knowledge levels of the students. The correct answers to the test questions are chosen from among the four options for each question. The correct answers to the questions were evaluated as one point, and the students' volleyball knowledge scores were obtained. The lowest score is 0, and the highest score is 30.

Data collection tools were created through Google forms and presented to students via the Education Information Network (known as EBA -in Turkish). EBA is an educational internet platform created by the Ministry of National Education of Türkiye and used by all students. All procedures were carried out in the form of distance education, based on the principle of minimizing contact during the epidemic process and in accordance with the measures taken.

Instructional Design Process

The ADDIE model was used in the instructional design of the research. ADDIE is an acronym for Analyze, Design, Develop, Implement, and Evaluate (Branch, 2009).

Analyze Phase

Learning outcomes are created separately for each grade level in the Physical Education and Sports Curriculum of the Ministry of National Education in Türkiye. The curriculum includes learning outcomes for sports branches at the 8th grade level, but training for sports branches can be started earlier. For this reason, the learning outcomes were selected independently of the grade level and are a follows;

- Explains the concepts specific to sports branches,
- Knows the game rules of sports branches,
- Analyzes the movement phases of sports skills,
- Apply strategies and tactics specific to sports branches,
- Knows the methods of protection from sports injuries.

Design Phase

The seven videos used in the teaching materials were selected from among the Volleyball education videos published on sikana.tv as open access and prepared with the contributions of the French Volleyball Federation, in line with the learning outcomes. Permission has been obtained to use the videos in this study. The video quality is high, and the content is suitable for the sample group. The interactions used in the instructional videos were designed with the H5P program. The videos were dubbed in Turkish. The text, which was deemed appropriate by the experts in sports and linguistics, was voiced and added to the video as dubbing.

Develop Phase

Considering the learning outcomes, it was decided in which order the students would watch the videos. The prepared interactions are embedded in the videos.

Implement Phase

First of all, a pilot study was conducted to eliminate the problems and deficiencies in the videos and data collection tools. After that, the actual implementation started.

Evaluate Phase

Pretest and posttest data were analyzed. The planned instructional design was evaluated from the analyze phase to the evaluation phase.

Videos and Interactions

The original version of the videos used in this study was taken from sikana.tv. Sikana is a non-governmental organization established in 2014 to help everyone improve their daily lives by obtaining free information (Sikana, 2021). Educational videos are used in accordance with the Creative Commons license, by attribution, without any commercial purpose, and without derivation. All company logos and graphics are preserved in their original form.

H5P

H5P; enables everyone to create rich and interactive web experiences more efficiently, makes it easy to create, share and reuse HTML5 content and applications, all you need is a web browser and a website with the H5P plugin, the content produced is responsive and mobile friendly, users have the same rich, interactive can experience content alike on computers, smartphones and tablets, create and edit interactive videos, presentations, games, ads and more, it is a completely free and open source technology licensed under the MIT license (H5P, 2021).

The use of H5P interactive tools via the Moodle LMS is of great benefit by allowing pre-existing video material to be easily adjusted to appropriate online content and can be used as a flexible approach for flipped classroom frameworks or other blended learning

strategies where interactive videos are applicable (Wehling et al., 2021). Over 40 content types with the H5P, including time-based arithmetic tests, crosswords, drag and drop activities, fill-in-the-blank tasks, word search games, picture matching memory games, various question types, interactive books, and a quiz of videos, can produce. H5P learning interactions provide immediate feedback with "check" or "show solution" options, providing reinforcement and guidance, which is very important for learning (Rekhari & Sinnayah, 2018). Teachers can develop objects that require activities such as "drag and drop", "tag the shape" or "order items", these activities attract students' attention and require more than just taking notes on the subject (Haughey & Muirhead, 2005). Video-embedded questions support students' learning, increase their interaction with learning materials, and allow them to spend more time in the learning environment. Interactive video-embedded questions trigger information recall, reflection, knowledge construction, and cognitive conflict learning goals (Palaigeorgiou et al., 2019).

Interactive Videos

Video-based learning; it is defined as the learning process in which the defined knowledge, competencies, and skills are acquired through the systematic use of video resources (Giannakos et al., 2016). As a result of the relationship between video durations and interaction levels, it is seen that short videos have the highest interaction level, so it would be more beneficial for trainers to create videos of less than six minutes (Guo et al., 2014). The video durations in our study were determined as less than six minutes in accordance with the literature and the needs of the students. When students evaluate themselves, they report that they are more interested in short videos, are more focused, and perceive that the content is retained at a higher level (Slemmons et al., 2018). It is recommended that the best time for a question to appear for the first time in interactive videos is after approximately 25% of the video duration (Wachtler et al., 2016). The first appearing times of the questions in the videos have been adjusted in accordance with the recommendation.

Five different types of interaction were used in the videos, and they were created with H5P.

- Single Choice Set: Interaction has only one correct choice.
- Multiple Choice: Many choices are correct in interaction. More than one selection can be made.
- True/False Question: True or false answer is chosen in the interaction.
- Drag Text: There is text in the interaction. The text is completed as fill-in-the-blank.
- Drag and Drop: A match is made by dragging the text or image to the specified place in the interaction.

The use of timelines of videos has been disabled. Since the students could not control the timeline, they encountered all the interactions in order. The answers to the questions are given to the students as immediate feedback. If the question is marked incorrectly, the video will not continue. The student can try again or request that the correct answer be shown to them. Interaction types were determined according to the suitability of the content. The titles of the videos and the interaction types they contain are shown in Table 2.

Table 2. Interactive video titles and interaction types used

Video titles - duration	Single Choice Set	Multiple Choice	True / False Question	Drag Text	Drag and Drop	Total
Volleyball rules - 3 min 57 s	4		3	1		8
Basic rules violations - 5 min 11 s	2	2		1		5
Players' zones, positions, and roles - 3 min 31 s	1			1	2	4
Essential volleyball equipment - 1 min 59 s		1	1	1		3
Underhand and overhand serves - 2 min 56 s	1		1	2		4
Overhead pass - 3 min 53 s	1	1		1		3
Forearm pass - 2 min 44 s	1	1	1			3

Statistical Method

IBM SPSS 21.0 software was used in the calculation and evaluation of the data, the statistical significance level was determined as .05, the level of normality was checked with the One-sample Kolmogorov-Smirnov test, and the equality of variance was checked with the Levene test. It has been determined that all of the values have a normal distribution. The effects of gender and grade level on volleyball knowledge level scores were examined with the Independent Sample T-test. Paired Sample T-test was used to compare the pre-test and post-test test measurements for each interactive, non-interactive, and control group regarding volleyball knowledge level score values. One-way analysis of variance ANOVA was used to test the difference between the groups during the pre-test and post-test. In order to determine the source of the difference between the groups, LSD was used in the post-hoc test for the assumption of equal variances, and the Tamhane test was applied under the assumption of not equal. The effect size values of the relationships were also examined. Cohen's d values are interpreted as small (low) if they are 0.20 and below, medium if they are between 0.20-0.80, and large (wide) if they are 0.80 and higher, eta squared 0.01 is small, 0. 06 is considered as medium and 0.14

is considered as a large effect (Cohen, 1988).

RESULTS

The Independent Sample T-test was used to compare the pre-test and post-test volleyball knowledge level mean scores of the students in the study according to gender, and it is shown in Table 3.

Table 3. Comparison of the groups' volleyball knowledge level mean scores in the pre-test and post-test according to gender

Group	Boys			Girls					
	n	**M**	**SD**	**n**	**M**	**SD**	***t***	**df**	***p***
Pretest									
IVG	14	13.78	4.91	30	15.60	5.36	-1.071	42	.290
VG	19	18.47	4.38	15	16.66	6.10	1.004	32	.323
CG	10	17.30	4.64	17	14.70	4.64	1.401	25	.173
Total	43	16.67	4.97	62	15.61	5.32	1.031	103	.305
Posttest									
IVG	14	25.64	4.16	30	25.10	5.06	0.349	42	.729
VG	19	22.68	4.52	15	21.86	3.85	0.558	32	.581
CG	10	16.60	6.89	17	14.29	5.10	0.995	25	.329
Total	43	22.23	5.98	62	21.35	6.57	0.697	103	.487

Note. IVG=Interactive Video Group, VG=Video Group, CG=Control Group

When the pre-test and post-test volleyball knowledge level mean scores of the groups were evaluated according to gender, it was seen that there was no statistically significant difference ($p>.05$). H_{01} (Gender has no effect on volleyball knowledge level) hypothesis is accepted.

The Independent Sample T-test was used to compare the mean scores of the volleyball knowledge level in the pre-test and post-test of the students in the study according to the grade level, and it is shown in Table 4.

Table 4. Comparison of the groups' mean scores of volleyball knowledge level in pre-test and post-test according to grade level

Group	5th grade			6th grade						
	n	**M**	**SD**	**n**	**M**	**SD**	***t***	**df**	***p***	***d***
Pretest										
IVG	23	13.04	4.38	21	17.19	5.33	-2.827	42	.007*	0.85
VG	19	16.21	5.14	15	19.53	4.82	-1.921	32	.064	-
CG	17	15.00	4.86	10	16.80	4.51	-.953	25	.350	-
Total	59	14.62	4.88	46	17.86	5.03	-3.328	103	.001*	0.65
Posttest										
IVG	23	23.26	5.12	21	27.47	3.14	-3.319	36.932	.002*	0.99
VG	19	20.63	4.27	15	24.46	3.04	-2.934	32	.006*	1.03
CG	17	13.94	5.22	10	17.20	6.46	-1.434	25	.164	-
Total	59	19.72	6.18	46	24.26	5.61	-3.879	103	.000*	0.80

Note. IVG=Interactive Video Group, VG=Video Group, CG=Control Group
*$p < .05$

When the volleyball knowledge level mean scores of the pre-test IVG, Total and post-test IVG, VG and Total groups are compared according to the grade level, a statistically significant difference is observed ($p<.05$). The statistical difference between the grade levels is at the level of medium effect in the pre-test total and at the level of large effect in the pre-test IVG, post-test IVG, VG, and Total. When the mean scores of the volleyball knowledge level of the pre-test non-interactive and control group and the post-test control group are compared according to the grade level, there is no statistically significant difference ($p>.05$). H_{02} (Grade level has no effect on volleyball knowledge level) hypothesis is rejected, grade level has an effect on volleyball knowledge level.
Paired Sample t-test was used to compare the mean score of the pre-test and post-test Volleyball Knowledge Level in the study and is shown in Table 5.

Table 5. Comparison of pre-test and post-test volleyball knowledge level mean score values within the group

Group		Pre-test		Post-test					
	n	**M**	**SD**	**M**	**SD**	***t***	***df***	***p***	***d***
5th grade									
IVG	23	13.04	4.38	23.26	5.12	-9.057	22	.000*	1.89
VG	19	16.21	5.14	20.63	4.27	-4.483	18	.000*	1.02
CG	17	15.00	4.86	13.94	5.22	1.492	16	.155	-
6th grade									
IVG	21	17.19	5.33	27.47	3.14	-7.716	20	.000*	1.68

VG	15	19.53	4.82	24.46	3.04	-4.121	14	.001*	1.06
CG	10	16.80	4.51	17.20	6.46	-0.379	9	.714	-
General									
IVG	44	15.02	5.24	25.27	4.75	-11.957	43	.000*	1.80
VG	34	17.67	5.20	22.32	4.19	-6.173	33	.000*	1.06
CG	27	15.66	4.73	15.14	5.81	0.868	26	.394	-

Note. IVG=Interactive Video Group, VG=Video Group, CG=Control Group
*p < .05

Considering the Fifth Grade, Sixth Grade, and General, there is a statistically significant difference between the pre-test and post-test volleyball knowledge level averages of IVG and VG, and the effect level is large (p<.05), and CG is not (p>.05). H_{03} (Interactive volleyball education videos have no effect on volleyball knowledge level.) and H_{04} (Volleyball education videos without interaction have no effect on volleyball knowledge level.) hypotheses are rejected, interactive and non-interactive volleyball education videos have an effect on volleyball knowledge level.

One-way analysis of variance ANOVA test was used to compare the pre-test, and post-test Volleyball Knowledge Level mean score values between the groups in the study and is shown in Table 6.

Table 6. Statistical relationship between pre-test and post-test volleyball knowledge level mean score values between groups

Group		**Pre-test**				**Post-test**				
	n	**M**	**SD**	**F**	**p**	**M**	**SD**	**F***	**η^2**	**Post-hoc****
5th grade										
IVG	23	13.04	4.38	2.359	.104	23.26	5.12	18.167	.39	IVG>VG
VG	19	16.21	5.14			20.63	4.27			IVG>CG
CG	17	15.00	4.86			13.94	5.22			VG>CG
6th grade										
IVG	21	17.19	5.33	1.249	.297	27.47	3.14	21.920	.50	IVG>VG
VG	15	19.53	4.82			24.46	3.04			IVG>CG
CG	10	16.80	4.51			17.20	6.46			VG>CG
General										
IVG	44	15.02	5.24	2.692	.073	25.27	4.75	36.366	.41	IVG>VG
VG	34	17.67	5.20			22.32	4.19			IVG>CG
CG	27	15.66	4.73			15.14	5.81			VG>CG

Note. IVG=Interactive Video Group, VG=Video Group, CG=Control Group
*p < .05 **LSD, Tamhane

Considering the fifth grade, sixth grade, and general condition, there is no statistically significant difference between IVG, VG, and CG groups regarding pre-test results in terms of volleyball knowledge level mean scores (p>.05). Considering the fifth grade, sixth grade, and general condition, there is a statistically significant difference between IVG, VG and CG groups in terms of volleyball knowledge level mean scores in terms of post-test results large and the effect level is large (p<.05). Considering the fifth grade, sixth grade, and general situation, the mean scores of the volleyball knowledge level of IVG compared to VG and CG and of VG according to CG in terms of post-test results are high and there is a statistically significant difference (p<.05). H_{05} (There is no difference between the effects of interactive and non-interactive videos on volleyball knowledge level) hypothesis is rejected, there is a difference between the effects of interactive and non-interactive videos on volleyball knowledge level.

DISCUSSION

Gender has no effect on Volleyball knowledge level mean score in this sample. There is no study in the literature about the effect of gender on volleyball knowledge level. The fact that gender difference does not affect the cognitive level can be considered among the reasons for this situation.

Grade level (between fifth and sixth grade) affects volleyball knowledge level between fifth and sixth grade. The volleyball knowledge level scores of the students participating in the study are affected by the grade level in both the pre-test and the post-test. The volleyball knowledge level means scores of the students in the sixth grade are higher than the students in the fifth grade. It is thought that this difference stems from the educational and social experiences of sixth grade students.

As a result of the fifth grade, sixth grade, and generally in-group evaluation, the level of volleyball knowledge between the pre-test and the post-test is positively affected by the videos. The education program in which interactive videos with single or multiple choice questions, true false statements and drag and drop activities increase the level of volleyball knowledge. The education program, in which videos that do not contain interactive features, also increases the level of volleyball knowledge. In their study, Rismark and Sølvberg (2019) found that videos support study behavior during a timeline that includes study behavior before, during, and after lessons. In addition to the field education of expert volleyball players, video feedback and inquiry-based intervention programs improve the athletes' tactical knowledge (Gil-arias et al., 2015; Moreno et al., 2016). Providing feedback and self-

assessment using digital video improves skill performance and motivation in primary school physical education classes (O'Loughlin et al., 2013). Vernadakis et al. (2002), in their research on volleyball education of children aged 12-14, found that there was no statistically significant difference between traditional teaching and computer-assisted teaching groups in terms of knowledge and skill tests, that computer-assisted volleyball teaching is a functional method and that traditional reported to be as effective as teaching.

As a result of the evaluation of the fifth grade, sixth grade, and general situation volleyball knowledge level, there is no difference between the groups in the pre-test, this shows that the groups were homogeneous in terms of knowledge level distribution at the beginning of the study. As a result of the post-test, there are positive differences between the groups regarding volleyball knowledge levels. Two different education programs applied are the reason for these differences. Since the education program with interactive videos increases the knowledge level of volleyball more, it is more successful than the education program with non-interactive videos.

In physical education classes, multimedia programs can be used to increase the effectiveness of teaching strategies or techniques, and computers can be used to teach cognitive aspects of sports such as rules and scoring procedures and to allow teachers to devote more time to students' motor skills (Vernadakis et al., 2010). Antoniou et al. (2003) examined the effect of multimedia computer-assisted instruction, traditional instruction, and combined instruction on the learning of rule violations in basketball among university physical education students, and as a result, in the written test, students in all groups improved their knowledge of rule violations, but only traditional instruction and stated that those in the combined education groups protect this knowledge. Wilkinson et al. (1999) revealed that using a volleyball CD helped the development of motor and cognitive skills in a 16-day study conducted within the scope of a volleyball unit with 69 female secondary school students.

Antoniou et al. (2006) found that interactive multimedia teaching software was more effective than the traditional method in the performance of male and female alpine skiers at the beginner level. Li and Sun (2008) stated that the multimedia supported teaching method in aerobic gymnastics has a unique superiority in teaching theoretical knowledge and technical skills compared to traditional teaching methods. Papastergiou and Gerodimos (2013) found that in their study of basketball education, which included interactive learning activities and tests on basketball education attended by 88 physical education students at the undergraduate level, the group in which web-based education was applied together with the traditional method of education had a significantly positive effect on cognitive learning and students' self-well-being compared to the group where only the traditional method of education was applied.

In summary, it is clearly seen that interactive videos support cognitive learning in physical education. This study is the first research in the field of sports sciences to examine the effect of interactive videos containing single or multiple-choice questions, true false statements and drag and drop activities on physical education. The novelty of the study lies in the use of modern technology to promote cognitive learning in physical education. In addition, all stages of instructional design processes are explained in detail on the basis of the ADDIE model, so that it will contribute to filling the literature gap in this field. After these evaluations, a number of recommendations for future research are given. The use of interactive videos in educational environments should be encouraged. It will be important that future research investigate the effect of the interactive video method on psychomotor development at the skill level in volleyball or any other branch. Similar research can be carried out with the blended learning method, and the effect of interactive/non-interactive videos on blended learning can be discussed separately.

Ethics Committee Approval Information: The research was approved by the Sinop University Human Research Ethics Committee (Reference no: 09.07.2021 / 2021-87)

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