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**Construction a Scale of Theoretical and Legal Knowledge of  
Basketball Among Second-Year Students in the College of Physical  
Education And Sports Sciences | Mosul University for the Academic  
Year 2021/2022**

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**ABSTRACT**

The research aims to build a scale of theoretical and legal knowledge of basketball among second-year students in the College of Physical Education and Sports Sciences, University of Mosul. The researchers use a descriptive approach in the survey method to meet the methodology of the research. The research community consisted of (317) students in the second stage in the College of Physical Education and Sports Sciences. As for the research sample (construction sample). It included (100) students after excluding the stability sample and the exploratory experiment sample. The research sample became (31.54%) of the total research population. The researchers used the following statistical methods: arithmetic mean, standard deviation, percentage, ease coefficient, difficulty coefficient, and discrimination coefficient.

The study developed a scale for measuring theoretical and legal knowledge for second-year students in the College of Physical Education and Sports Sciences at the University of Mosul and based on the findings, the researchers recommended the following the possibility of using the measurement tool by the teachers in evaluating the cognitive level of the second stage students.

**Keyword :** Construction a Scale, Theoretical and Legal Knowledge of Basketball, Physical Education.

**المخلص**

هدف البحث إلى بناء مقياس المعرفة النظرية والقانونية لكرة السلة لطلاب السنة الثانية في كلية التربية البدنية وعلوم الرياضة / جامعة الموصل . استخدم الباحثون المنهج الوصفي . وتكون مجتمع البحث من (٣١٧) طالب وطالبة ، اما عينة البحث فقد شملت (١٠٠) طالب وطالبة كعينة بناء بعد استبعاد عينة الثبات والتي بلغت (٣٠) طالب وطالبة وعينة التجربة الاستطلاعية والتي بلغت (١٠) طلاب ، وبلغت النسبة المئوية للعينة (٣١.٥٤ %) من مجموع مجتمع البحث. وتم استخدام الأساليب

الإحصائية التالية: المتوسط الحسابي ، والانحراف المعياري ، والنسبة المئوية ، ومعامل السهولة ، ومعامل الصعوبة ، ومعامل التمييز .

وختاماً تم بناء مقياس لقياس المعرفة النظرية والقانونية لطلاب السنة الثانية في كلية التربية البدنية وعلوم الرياضة في جامعة الموصل ، وبناءً على النتائج ، أوصى الباحثون باستخدام المقياس للتعرف على المستوى المعرفي لمجتمع البحث في عملية التقويم .

**الكلمات المفتاحية :** بناء المقاييس، المعرفة القانونية والمعرفية بكرة السلة، التربية الرياضية.

## 1- Introduction

These developments and the amendments that have occurred through lectures and introductory seminars in the field of basketball in the International Federation of the game, and the result of this interest at the international and academic levels and because the vocabulary of the curriculum for the faculties of physical education and sports sciences includes the rule of the game, specifically for students of the second stage at the level of the University of Mosul and the importance of aspects Cognitive in understanding and comprehending the vocabulary of the rule of the game requires standing in front of the possibility of identifying the extent of understanding and understanding the legal material, theory, vocabulary, and rules of the game. The legal knowledge variable is one of the important matters that the athlete, a practitioner or an observer, should understand and comprehend an appropriate amount of matters and topics related to legal knowledge” (Nicolas, 2005, 7) hence the importance of research in providing a measuring tool for legal and theoretical knowledge for students The second stage in the College of Physical Education and Sports Sciences. The problem of study represented by the requirements for accessing theoretical and legal knowledge of the game of basketball through the results of academic achievement when performing the theoretical and practical exams that students achieve for scientific and cognitive excellence and improving the level of academic performance and always striving to keep pace with the development that takes place in various scientific fields, including those related to Specifically in the international rule of basketball, which was approved in the year (2020), which is among the rules that took into account the amendments added by the International Basketball Federation in its vocabulary, which calls on researchers in the field of legal knowledge to keep pace with this development and modernization and stand on the most important cases that have been activated In rule, studying it seriously and in-depth, and working with this rule as an educational and academic curriculum among the requirements and vocabulary of the College of Physical Education and Sports Sciences. Basketball, which was worked out in the last years.

The research aims to construct a scale for theoretical and legal knowledge of basketball for second-year students in the College of Physical Education and the Sports Sciences / University of Mosul for the academic year 2021-2022

### **1-2 Research ranges :**

- Human range: Students of the second stage of the College of Physical Education and Sports Sciences at the University of Mosul. The academic year 2021-2022.
- Time range: the period from 25/3/2022 to 30/4/2022.
- Spatial domain: College of Physical Education and Sports Sciences at the University of Mosul.

### **1-3 Defining terms:**

Knowledge: (Nicolas, 2005) defines them as a general term that expresses the processes related to perception, discovery, recognition, imagination, appreciation, remembering, learning, and thinking, through which the individual obtains knowledge and perceptual understanding or interpretation to distinguish them from emotional currencies (Nicolas, 2005, 9) The researchers define it procedurally as the score that the student obtains when answering the items of the scale.

### **2- Previous studies:**

#### **2-1 Study of (Al-Nahi, and two others 2014):**

Building a scale of theoretical legal knowledge of basketball among students of the Faculty of Physical Education at the University of Mosul and identifying the level of legal knowledge (theoretical) in international rule (2010) among students of the Faculty of Physical Education at the University of Mosul. The researchers used the descriptive approach using the survey method, the research community and its sample consisted of students of the second stage of the College of Physical Education at the University of Mosul for the academic year (2012 - 2013), and their number was (199), and the sample of the construction sample amounted to (130). Analysis, data collection, and testing as means of data collection. The researchers reached the effectiveness of the scale that was built to measure theoretical legal knowledge in basketball. In the second stage, students were distinguished by legal knowledge at a high level.

### **3- Research procedures**

#### **3-1 Research method:**

The researchers used the descriptive approach in the survey method

**3-2** The research community and its sample The research community included students of the second stage in the College of Physical Education and Sports Sciences at the University of Mosul for the academic year 2022/2021, amounting to 290 male and female students, while the construction sample amounted to (100 ) and the stability sample amounted to (70 ) and the exploratory experiment sample amounted to (10 ).

**3-3 Research tools:** The researchers used the questionnaire as a means of data collection, as the current study required the following:

- Building a scale of theoretical and legal knowledge.

Also to reach the research objectives, the researchers did as follows:

### **3-3-1 Preparing the initial version of the scale:**

The preparation of the initial city scale required several procedures that began with the process of determining the scale periods in accordance with the rules of international rule that were determined in accordance with the research environment and the level of students and the development of instructions on how to answer them and the method of correction. The formulation of questions took into account the levels of learning According to Bloom's classification, which are:

A- Knowledge 45%

B- Understanding 30%

C- C Application 25% (Hamdan, 1985, 149),

The number of items for the level of knowledge (35) and the level of understanding (23) and the level of application (19) items, and each item has three alternatives For answering, one of them is correct. Therefore, the scale in its initial form is ready to be presented to experts to judge its validity (Appendix 1)

### **The apparent validity of the sections and their validity:**

In order to identify the validity of the sections, the scale was presented in its initial form to the masters with expertise and specialization in measurement, evaluation, and the game of basketball<sup>1</sup>, to judge the validity of the formulated sections. According to the statistical treatment by the percentage rule. It relied on the percentage of agreement (100%) in all sections, as Bloom indicates that "the approval of experts' opinions can be relied on by 75% or more in this kind of honesty" (Bloom and others 1983, 126).

Under this procedure, sections (13.30.32.38.39.40.57) were excluded, and thus the scale became composed of (70) sections in its initial form, which were relied upon in the scale-building processes to conduct discriminatory power and conduct exploratory experiments.

### **3-3-2 Scale stability:**

The stability of the scale means the score of coherence and accuracy with which the measurement method used can measure the phenomenon, the subject of measurement (Farhat, 2002, 64). The researchers used the test-retest method, after an interval of (7) days, on a sample of (20) students. The reliability coefficient between the two tests was (0.847).

<sup>1</sup> : The experts are:

- Prof. Dr.Thilam Younis Alrulei, College of Physical Education and Sports Sciences - University of Mosul.
- Prof. Dr.Makki Mahmoud Hussein, College of Physical Education and Sports Sciences - University of Mosul.
- Prof. Dr.Ghaida Salem Aziz, College of Physical Education and Sports Sciences - University of Mosul.
- Assistant Professor. Dr. Sabah Jassim Muhammad, College of Physical Education and Sports Sciences - University of Mosul.
- Assistant Teacher. Aws Muhammad Taha, College of Physical Education and Sports Sciences - University of Mosul.

### 3-3-3 Self-honesty:

The self-honesty was calculated, which is extracted from the square root of the reliability coefficient. As indicated by the practical sources, it is calculated through the following equation:

$$\text{Self-honesty} = \sqrt{\text{stability}}$$

$$\text{Self-honesty} = 0.920 \quad (\text{Hassanin, 1995, 192})$$

### The exploratory experiment:

The exploratory experiment was conducted on a sample of (10) students in the second stage to answer the sections of the scale consisting of (70) sections, as (Bahi and others, 2002) indicate the necessity of applying the test in an exploratory study on a sample of the research community to identify the appropriateness The test in terms of wording and content for application to the research sample.” (Bahi and others, 2002, 199)

### 3-3-4 Statistical analysis of section :

#### 3-3-4-1 The validity of construction :

“one of the specifications of a good scale is to conduct the process of statistical analysis of its sections to know the ability of the sections to distinguish between Individuals who get high scores, and those who get low scores on the same scale, i.e. extracting the discriminatory power of the sections” (Jabir, 1973, 272)

Statistical analysis was found as follows:

#### Coefficients of Ease and Difficulty:

Some designers of the scale may adjust the score of ease of the phrase to study its difficulty and arrange it according to difficulty, since the relationship between ease and difficulty is direct: Ease coefficient + Difficulty coefficient (= 1 which is one Integer) (Farhat, 71, 2001) and the difficulty coefficient of the section It is a statistical indicator that expresses the characteristics of the substantive section that is double-corrected as completely correct reality and deserves (1 score), or completely incorrect and deserves (zero scores) and the difficulty coefficient of the section controls the amount of its variance, equal to the number of scores (1) (Al-Nabhan, 191,2004)

The difficulty coefficient of the section is then calculated through the following equation: The difficulty coefficient of the section = the number of those who answered correctly in the period from the higher category - the number of those who answered correctly in the section of the lower category, the number of members of the higher category + the number of members of the lower category, the ease coefficient = For the individuals who answered correctly to each section / the total number of individuals (Al-thahir and others, 2002, 128).

#### 3-3-5 Discrimination coefficient:

After the section, the discrimination coefficient is one of the important characteristics in the analysis of sections. Distinguishing the section helps in determining its ability to distinguish between students with low achievement

and students with high achievement. The use of the examinees' total scores (the sum of the marks on the scale items as an internal test is distinct if the proportions of individuals who answered correctly from the upper category are higher than the proportion of individuals who answered them correctly from the lower category. the steps for calculating them are similar to the steps for calculating the difficulty coefficient for the objective item and the equation is:  
The score of discrimination of the section = the number of those who answered correctly to the section of the higher category + the number of those who answered correctly to the section of the lower category / the number of examinees in one of the two categories or distinguished category (Al-thahir and others, 2002, 126)

Table (1) The coefficient of difficulty, ease, and coefficient of discrimination for each section of the theoretical and legal knowledge scale

Section	Difficulty	Ease	Discrimination	Section	Difficulty	Ease	Discrimination
1	0.83	0.88	0.37	39	Excluded, according to experts		
2	0.56	0.63	0.59	40	Excluded, according to experts		
3	0.69	0.65	-0.33	41	0.67	0.77	0.22
4	0.74	0.75	0.37	42	0.70	0.79	0.37
5	0.57	0.55	-0.41	43	0.65	0.78	0.56
6	0.57	0.60	0.56	44	0.78	0.75	0.30
7	0.54	0.77	0.70	45	0.65	0.63	0.33
8	0.76	0.85	0.33	46	0.56	0.68	0.44
9	0.26	0.30	0.15	47	0.70	0.69	0.37
10	0.67	0.65	0.52	48	0.72	0.77	0.33
11	0.56	0.66	0.59	49	0.96	0.98	0.00
12	0.65	0.63	0.48	50	0.52	0.66	0.30
13	Excluded, according to experts			51	0.72	0.80	0.33
14	0.09	0.10	0.11	52	0.72	0.80	-0.26
15	0.67	0.72	0.52	53	0.67	0.77	0.30
16	0.70	0.70	0.37	54	0.89	0.90	0.07
17	0.74	0.77	0.44	55	0.56	0.66	0.44
18	0.52	0.65	0.52	56	0.31	0.45	0.26
19	0.72	0.75	0.41	57	Excluded, according to experts		
20	0.67	0.60	-0.30	58	0.56	0.60	0.30
21	0.83	0.88	0.33	59	0.50	0.60	0.41
22	0.15	0.15	0.00	60	0.50	0.66	0.33
23	0.69	0.75	0.41	61	0.46	0.60	0.41
24	0.76	0.77	0.33	62	0.87	0.88	0.11
25	0.63	0.77	-0.37	63	0.69	0.75	0.33
26	0.63	0.75	0.44	64	0.61	0.65	0.33
27	0.65	0.79	0.30	65	0.07	0.11	-0.07
28	0.07	0.12	0.07	66	0.61	0.68	0.41
29	0.65	0.77	0.48	67	0.70	0.72	0.30

30	Excluded, according to experts			68	0.59	0.70	0.37
31	0.61	0.66	0.41	69	0.80	0.80	0.33
32	Excluded, according to experts			70	0.67	0.77	0.22
33	0.70	0.68	0.44	71	0.65	0.60	0.33
34	0.09	0.11	0.04	72	0.57	0.55	0.41
35	0.67	0.77	0.52	73	0.69	0.70	0.33
36	0.67	0.80	0.37	74	0.63	0.65	0.30
37	0.91	0.95	0.11	75	0.61	0.67	0.41
38	Excluded, according to experts			76	0.85	0.88	0.15
				77	0.74	0.72	0.30

Table (1) shows that the ratio of the coefficient of ease and difficulty ranges between (zero, 1) as well as the coefficient of discrimination ranges between (zero, 1). When referring to the coefficients of discrimination of the sections appropriate to the sample size, (0.21) is not used because of its difficulty and more than ( 0.80) is not used for their ease, as well as sections that are less distinguished than (0.30) are not used (Imam and two others, 1991, 119), so sections (9.14.22.28.34.37.41.49.52.54.56.62.65.70.76) are easy sections or very difficult or little to distinguish so it was omitted from the scale.

### 3-6 Description of the scale and its correction:

After the procedures carried out by the researchers in the previous steps. In its final form, the scale consisted of (55) items of a multiple-choice type. The answer key is the only answer pattern, and the sections of the scale are answered through three alternatives, one of which is correct only, and the rest two are wrong. Where the scale is corrected in the light of its correction key. As shown in the appendix, it is given weights for the correct answer (1) score, and the wrong answer (0) scores, and with this, the highest total score on the scale is (55).

### 3-7 Statistical means:

- Arithmetic mean
- standard deviation
- Pearson's correlation coefficient
- Ease and difficulty coefficient
- Percentage

### 4- Results:

The researchers followed the scientific methods and foundations to achieve the objectives of the research and to build standards. The results indicated that the scale is characterized by honesty, which was found in the following ways:

- Virtual (superficial) honesty.
- The validity of the content (the content).
- Self-honesty.

The results also indicated that the scale is characterized by its stability, which was tested by the re-test method. Where the stability coefficient was (0.847).

Thus, the researchers have built a scale of theoretical and legal knowledge of basketball for second-year students in the College of Physical Education and Sports Sciences (University of Mosul), where the scale includes (55) items in its final form, and thus the goal of the research was achieved.

### **Conclusions and recommendations:**

#### **Conclusions:**

The development of a tool for measuring theoretical and legal knowledge for students of the second stage in the College of Physical Education and Sports Sciences at the University of Mosul.

#### **Recommendations:**

The possibility of using the measurement tool by teachers in assessing the cognitive level of students in the second stage.

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