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Use the PLS Micro-Squares Method for Measuring the Teaching Competence of Professors of Physical and Sports Education

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ABSTRACT. The research aimed to build a tool to measure the teaching efficiency of physical education and sports teachers in the school environment in the intermediate education stage, and this by verifying its validity and applicability, as the tool includes in its final form 33 standards that meet the standards of honesty and stability, and covers 6 main dimensions, namely scientific knowledge competencies, and the efficiency of planning and formulation competencies, and the efficiency of implementation, the efficiency of evaluation and follow-up, the competencies of effective communication management and class, and the efficiency of professional development. The model was applied to 355 teachers of intermediate education in the national west and the value of stability was 0.63, and from it we say that this measure has an acceptable constant, and the value of the GoF standard is equal to 0.42, which is greater than 0.36. Which shows a great matching quality of the study model. The researcher also concluded that all predictive units are more than zero, as their maximum value on the axis of planning competencies and goal formulation was 21%. The lowest value was also recorded on the professional development axis at 11% that can be judged to have an acceptable predictive

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ability. By calculating the effect size 2R and through the test results, we notice that all variables have values of "f2" that exceed 0.35≤ Es, the effect size is large in all variables. In light of these results, we recommend that you take advantage of this tool to measure and evaluate the teaching competence of the physical education and sports teacher in the school environment.

Keywords: *Factorial structure, measurement, teaching efficiency, Professor of physical education and sports*

INTRODUCTION

In light of the current modernization of information and the terrible technological development that the world is witnessing in all fields in general and in the field of educational curricula in particular, we note that the educational process has become a prominent place among the priorities of this development and this is an issue of interest to the issue of preparing professors and studying their teaching competencies at the present time due to the importance of the role of Professor Guy of the teaching process Diouf (2007). where this preparation requires a special priority to demonstrate their abilities, skills and the extent to which they use the art of teaching from developments and changes (Benguenab, 2021). This movement has become an effective force in the reality of the wheel of the educational process and in the preparation and preparation of the future teacher and raise his career level, and this process requires a broad and comprehensive view where the necessary competencies are determined for the teacher of sports education to exercise his role to the fullest (Laroua, 2015). Since the change is an important, objective and orderly process, the professor within his class and during his class has been given full freedom to act using what he sees as appropriate educational methods to achieve the technical and scientific competencies required by the good conduct of the course, in addition to the opinions and beliefs that accompany the subject of the lesson.

Many experts in physical education and sports believe that those who teach physical education and sports in the middle and secondary school must possess the necessary teaching competencies to teach different sports skills, so there must be basic educational competencies of the teacher of physical education and sports in both stages (intermediate and secondary) qualify him to perform his role efficiently and effectively, in addition to personal competencies,

there is no doubt that the properties of teachers educational competencies will develop their abilities and enrich their experiences and help them to achieve educational goals, within the framework that facilitates meeting their needs, so disclosure of their availability is crucial, because it will help to identify their weaknesses and strengths, and then address them.

Recent studies in physical education and sports have ensured that the subject of physical education and sports is based on teaching competencies as stated in the recommendations of the Conference on Teacher preparation between globalization and the requirements of the development plan in the State of Kuwait (2003). the second conference on teacher preparation in the Kingdom of Saudi Arabia (1993), which called for the need to conduct studies to determine the necessary competencies of teachers in all disciplines in accordance with the cognitive development of each subject.

The intermediate education stage is an important stage in which the personality of the learner is formed, and he acquires many basic skills that help him to continue education and move to the university level, so it needs a teacher who can practice teaching skills and various competencies so that he can deal with students.

Therefore, it is necessary to focus on the performance of the physical education and sports teacher to carry out his duties toward his students as well as provide him with the basic knowledge he needs to carry out his duty to the fullest.

Based on the lack of studies that dealt with exploratory and confirmatory factor analysis as a statistical method in educational and psychological studies and the need to know the scientific bases for the methods of extracting factors and the statistical basis for methods of determining the number of factors and methods of rotation, often the researcher is satisfied with the default methods found in the statistical software packages without knowing the appropriateness of these methods for the nature of the research and its objectives, so the researcher studied the construction of the worker, for this reason, several tools have been developed to measure the efficiency of teaching and the quality of the teaching process, which relied on a set of criteria to measure them and determine their indicators and come up with a tool that is credible in measuring the quality of the teaching process, and this research came to answer the following question.

MATERIAL AND METHODS

Participants

1. The method followed in the study: This descriptive methodology is defined by Bachir Saleh Al-Rachidi as a set of research procedures that integrate to describe the phenomenon based on collecting facts and data, classifying and analyzing them thoroughly and sufficiently in order to reach results and generalizations about the phenomenon in question. Soysal (2018).

2. Research community: The original community of research was represented by professors of physical education and sports in the school community (middle stage) from four states in western Algeria, whose number was (757) professors.

3. Sample search: To complete this study, we selected a random sample of 355 physical education and sports teachers for intermediate education.

4. Data collection tools: ***Arab and foreign sources and references.***

Measure: After the student has been briefed on several studies related to the research topic, he has built a measure on the teaching efficiency of physical education and sports teachers in the school environment, the **scale of the following dimensions:**

5. Statistical Tools : SPSS v.23

- The arithmetic means to see how high or low the responses of the study subjects to each of the statements of the study variables
- Standard deviation (standard deviation) has been used to identify how skewed individual responses are.
- Kolmogorov-Smirnov.
- The half-hash coefficient of confirmation of the instrument.
- Smart PLS Version 3.3.3

RESULTS

Analyze the results of the study testing the standard model and the structural model of the study.

Analysing the convergent truth Internal consistency

Table 1. Shows *Results of statements saturation for all dimensions of the study form after deletion*

Factor Loading						
Calendar and follow-up competencies	**Competencies for effective communication and class management**	**Professional development**	**Efficiency of implementation**	**Competencies in planning and formulating goals**	**Cognitive and scientific competencies**	**Phrases**
0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.59**	**Knowledge and science 1**
0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.63**	**Knowledge and science 2**
0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.74**	**Knowledge and knowledge 5**
0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.64**	**Knowledge and knowledge 6**
0.00	**0.00**	**0.00**	**0.00**	**0.52**	**0.00**	**Planning and formulation of objectives 1**
0.00	**0.00**	**0.00**	**0.00**	**0.70**	**0.00**	**Planning and formulation of objectives 2**
0.00	**0.00**	**0.00**	**0.00**	**0.51**	**0.00**	**Planning and formulation of objectives 3**
0.00	**0.00**	**0.00**	**0.00**	**0.62**	**0.00**	**Planning and formulation of objectives 4**
0.00	**0.00**	**0.00**	**0.00**	**0.72**	**0.00**	**Planning and formulating objectives 5**
0.00	**0.00**	**0.00**	**0.00**	**0.64**	**0.00**	**Planning and formulating objectives 6**
0.00	**0.00**	**0.00**	**0.00**	**0.62**	**0.00**	**Planning and setting goals 7**
0.00	**0.00**	**0.00**	**0.47**	**0.00**	**0.00**	**Operational competence 1**
0.00	**0.00**	**0.00**	**0.60**	**0.00**	**0.00**	**Capacity of Executive 2**
0.00	**0.00**	**0.00**	**0.70**	**0.00**	**0.00**	**Efficiency of operation 3**

0.00	**0.00**	**0.00**	**0.71**	**0.00**	**0.00**	**Capacity of Executive 4**
0.00	**0.00**	**0.00**	**0.70**	**0.00**	**0.00**	**Capacity of Executive 5**
0.00	**0.00**	**0.00**	**0.40**	**0.00**	**0.00**	**Efficiency of operation 6**
0.00	**0.00**	**0.67**	**0.00**	**0.00**	**0.00**	**Professional development 1**
0.00	**0.00**	**0.65**	**0.00**	**0.00**	**0.00**	**Professional Development 2**
0.00	**0.00**	**0.41**	**0.00**	**0.00**	**0.00**	**Professional development 3**
0.00	**0.00**	**0.70**	**0.00**	**0.00**	**0.00**	**Professional development 4**
0.00	**0.00**	**0.73**	**0.00**	**0.00**	**0.00**	**Professional development 5**
0.00	**0.70**	**0.00**	**0.00**	**0.00**	**0.00**	**Effective communication competencies manage page 1**
0.00	**0.77**	**0.00**	**0.00**	**0.00**	**0.00**	**Competencies of effective communication page manage-ment 2**
0.00	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**Efficiency of effective communication page manage-ment 3**
0.00	**0.70**	**0.00**	**0.00**	**0.00**	**0.00**	**Competencies of effective communication page manage-ment 4**
0.69	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**Follow-up Calendar Competencies 1**
0.77	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**Follow-up Calendar Competen2**
0.69	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**Follow-up Calendar Competen3**
0.58	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**Efficiency of the calendar 4**
0.70	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**Performance of the calendar 5**

Source: Prepared by the student based on Smart PLS outputs

Through table number (01) we see that the phrases of the variable cognitive and scientific competencies have increased their coefficient by a small amount after deleting the phrases that were less than the required standard, the values of the statements of the other variables increased by a small percentage, and some of them remained the same as it should be noted that we have kept the statements below 0.70 for necessity. Benguenab (2022) points out that indicators with external loads between 0.40 and 0.70 should only be removed when the deletion of the indicator increases the value of composite reliability or derived variance (p.161).

Composite Reliability

The Composite reliability Standard measures the sum of the underlying variable factor loads relative to the sum of factor loads plus error variance and the recommended value must be 0.7 and above Hair (2014). The results of composite reliability (CR) and Table (02) can be illustrated as follows:

Table 2. Shows the reliability results of the CR

Composite Reliability (CR) Reliability of the vehicle	Alpha Cronbach	Dimensions	Variable
0.75	0.57	**Cognitive competence and scientific**	**Teacher's teaching competence**
0.81	0.73	**Competencies in planning and formulating goals**	
0.77	0.64	**Efficiency of implementation**	
0.77	0.65	**Professional development**	
0.82	0.71	**Competence of effective communication and class management**	
0.82	0.73	**Calendar and follow-up competencies**	

The average variation extracted (AVE)

The AVE is one of the most popular metrics to validate convergence at the structural model level. This measure is defined as the large average value of the square loads of indicators associated with the factor, i.e. the sum of the square loads divided by the number of indicators (paragraphs). Using the same logic used in individual indicators an AVE value of 0.50 or more refers to the

construction (factor) that explains on average more than half the variance in its indicators. By contrast, an AVE value below 0.50 indicates that on average there is still greater variation in element error rather than the explained variance in construction.

Table 3. Shows the average variance extracted (AVE)

AVE	Dimensions	Variable
0.315	Cognitive and scientific competencies	Teacher's teaching competence
0.320	Competencies in planning and formulating goals	
0.399	Efficiency of implementation	
0.569	Professional development	
0.399	Competencies for effective communication and class management	
0.569	Calendar and follow-up competencies	

Discriminant Validity

Table 4. Shows the results of the Vernerlanker standard

Efficiency of implementation	Follow-up calendar competencies	Competencies in planning and formulating goals	Competencies of effective communication class management	Scientific knowledge skills	Professional development	
					0.642	Professional development
				0.658	0.259	Scientific knowledge skills
			0.735	0.204	0.276	Competencies of effective communication class management
		0.624	0.296	0.325	0.271	Competencies in planning and formulating goals
	0.690	0.326	0.444	0.147	0.240	Follow-up calendar competencies
0.647	0.294	0.508	0.299	0.478	0.323	Efficiency of implementation

Source: SmartPLS output

In order for the study tool to have differential validity, the Vernerlacker criterion for each underlying variable must be greater than the study variables, i.e., as much as possible compared to the rest of the variables, i.e. the variable represents itself more than it represents the rest of the variables.

DISCUSSIONS

Its constant value as 0.46 and it was subjected to the correction coefficient of Sperman and Brown, and its value was 0.63, Razali (2024) points out that as long as the value of Alfa Kronbach for the first and second halves is not equal or close, we rely on the GITman correction coefficient of 0.63 and from which we say that this measure is an acceptable constant : CR", cross Loading(HTMT) Fornell and Larcker (1981). Efficiency of implementation, efficiency of evaluation and follow-up, competencies of effective communication management and class, efficiency of professional development.

CONCLUSION

The contemporary world is witnessing a growing interest in quality work, especially in the fields of education and educational work.

This interest comes from the full conviction that the quality of education is in the presence of specific and accurate standards that reach in their ambition and accuracy to a degree that suggests what needs to be learned and acquired and the level to be reached in each of the fields associated with the educational process. Meeting the professional and personal needs of teachers and providing them with public services in the educational institution will strengthen the bonds of familiarity and belonging and improve their job satisfaction toward their educational institutions, and this is in line with the basic objective for which the educational administration found itself, namely the development of the educational process and the provision of services to all employees, including teachers. respond to their physical and moral needs and improve the school organizational climate to help them improve their performance and educational effectiveness.

For all this, this study came to build a tool to measure the teaching competencies of teachers of physical education and sports in the school community, starting from the problem identified in what is the working structure of the tool to measure the teaching competencies of the professor of physical education and sports in the middle education stage? And as the objectives of the

study, we tried to identify or build the model of teaching competencies and to conduct this research we have studied familiarization with the research and studies that dealt with such a problem, which dealt with the search for the professional reality of the professor of physical education and sports, and his teaching competencies.

We concluded a set of results that summarized that this measure is an acceptable constant, and that there is no overlap between the variables of the study has achieved the study tool differentiated truthfulness according to the criterion of Verner Lancro as well as the results of the current study concluded the existence of discrimination issues of validity and each unique structure and this indicates the quality of the model

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