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Factor analysis of a tool for measuring the teaching competence of Algerian University professors

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Abstract: Teaching is one of the main tasks performed by the teacher in the school environment, and its importance is through the role in which this task is emphasized. Where the teacher translates all courses, programs and objectives into procedural work through which he serves the educational process. The teaching profession has grown and has become very important in terms of the role it plays in embodying the ruler's objectives, which we wish to achieve through those practices that occur in the classrooms where the parties of the case are both teacher and learner, in order to achieve Learning objectives. ***Materials and methods***. Curriculum (model) : The descriptive method was used in a survey method to suit the nature of the study. Community (case of study): The research community included 28,709.00 physical and sports education students nationwide, according to official statistics for 2016/17. The target community are 8,373 master's students out of a total 23 institutes and departments was relied upon at the national level. Sample search: A sample of 786 master's students was selected at 9.39% in a simple random way. ***Tools:*** A range of references have been used that have studied the subject of teaching, including the Alali Study (2017), Hamid's Study (2016) and the Study (Atallah A, 2006 |) (Nawal, 2015), (Omar et al., 2011).) (Darling-Hammond, 1997). (Lovat, 2009) (Leclercq, 1998) (Alali & Atallah, 2018) (Omari & Arbeyat, 2016). ***Results and discussion.*** Through the basic components and the way the Vermax groups rotate and the Kizer eraser, we found the following: The saturation of ten items on the first factor is the X18 items with saturation of 0.732, and each of the phrases S12, S19, S13, S15, S21, S17, S34, S25, S14. The second factor is saturated with eight items, the largest of which is the item S2 with saturation of 0.658 as well as the items' S23, S10, S11, S35, S1, S39 and S16. The third factor is saturated with eight items, the largest of which is the item S33 with a saturation of 0.667 and included the items S5, S7, S4, S3, S8, S22 and S27. The fourth factor saturates seven larger items of the X30 with a saturation of 0.812 and included the items S30, S31, S28, S37, S9, S36 and S29. The fifth factor is also saturated with seven larger items achieved by the item S24 with a saturation of 0.647, and included the items S24, S40, S45, S6, S38, S44 and S43. The sixth factor was saturated with five larger items, with the term S41 saturating 0.818, followed by the items S41, S42, S26, S20 and S32. ***Conclusion.*** Through factor analysis, it is clear to us that the factors have combined around six factors. Through the results, the factors are shown to measure one major factor. The six factors were named according to the pool of key elements. The basic factor has been named according to the six factors collected. The proposed factors are cognitive competence, planning efficiency, implementation efficiency, evaluation and follow-up efficiency, language control and information technology efficiency, personal competence and student relationships (contact and communication).
Keywords: factor analysis, tool, measuring, teaching competence.

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Introduction

Teaching is one of the main tasks performed by the teacher in the school environment, and its importance is through the role in which this task is emphasize (teaching is one of the most important basics of educational work based on educational attitudes between teacher and learner to achieve learning goals) (Atallah A, 2006) in which the teacher translates all courses, programs and objectives into procedural work through which he serves the educational process. University teaching skills may depend not only on linking theoretical ideas and concepts to applied environmental evidence, but also on the relationship and interaction of students with university teaching. And it's better to offer the lecture in a series of exciting and influential organizations on the students to learn and become part of their personalities, otherwise they lack feasibility and importance and therefore loss and forgetfulness. Learners must retain information and skills for a long time in order to become a philosophy and style in their lives, profession and aspirations, otherwise they will lose the value and substance that the university seeks to develop in the preparation of its students) (lafta , 2012), as confirmed by studies that (teaching is no longer the same as before where recent research on education revealed weaknesses in previous thinking about the limited role teachers and schools can play in improving education). (Lovat, 2009)

The teaching profession has grown and has become very important in terms of the role it plays in embodying the ruler's objectives, which we wish to achieve through those practices that occur in the classrooms where the parties of the case are both teacher and learner, in order to achieve Learning objectives. That's why the teacher came to play a pivotal role in this teaching task, in which Leclercq emphasizes that university education is directly related to one teacher who talks to hundreds of students in one lecture. Far from being the only form of pedagogical relationship at the university level where different teaching methods have been practiced. (Leclercq, 1998) And from that point of view, he must be aware of the tasks he has in his educational mission and be well qualified in order to achieve these objectives. Several studies have been carried out in this regard requiring tasks to be carried out according to the privacy of the teaching staff and to have a role and quality. by the National Education Commission and the Future of America. Section 1 describes, "Doing what matters most: investing in good teaching."(SM) (Darling-Hammond, 1997) as confirmed by Nawal's study (attention to education in general and higher education in particular, was the result of the evolution of the education perception as consumption.

The concept of teaching has been associated with many different concepts and there are those who limit it to what the teacher does inside the classroom, and there are those who gave him a greater dimension consistent with the role he plays before entering the classrooms until the exit. This is what the educational process is about to say (the teaching process can only be very effective and effective except with a professor who has prepared a full preparation familiar with all the developments and events going through the educational process) (Allali & Atallah, 2018), this gives us a look at the new concept of the professor or what is known as the teacher or the teaching process where he must have a great knowledge of educational developments and control the subject he is studying in all respects (psychological, physiological, social, ... Etc.).So that Mahmoud Daure and others say. (The process of evaluating the performance of university professors with higher degrees helps educational institutions achieve A range of objectives, including measuring the extent to which he progresses or lags in his work according to Objective criteria and judgment on the harmonization of the requirements of the teaching profession and the qualifications of teaching staff and their psychological, cognitive and social characteristics, in addition to revealing the strengths and weaknesses in their performance, enabling the educational institution to take measures to ensure the development and promotion of its performance level(ali et al., 2010), and therefore its role is not a recital but a knowledgeable knowledge of all matters and merits associated with the learner, (the educational process is a great responsibility rests with the Faculty members who vary in the nature of their experience, abilities and mechanism of dealing with students(Omari & Arbeiha, 2016).

Hence his competence in what he performs as an educational role and supervisor of the educational process and the main element in which he considers his central role. The competence of the teaching process is necessary and important for the success of the educational process and therefore this concept of competence came to be associated with teaching to increase the educational value of the teaching work and therefore it reaches what is known today as quality, which is synonymous with it completely the higher the efficiency achieved quality in education and became useful in achieving the goals (the quality process aims to apply Advanced methods for continuous improvement and development of inputs in the educational process and achieving The highest possible levels of practice or processes, thereby codizing the outputs of educational institutions(Hammidi, 2016, P1). Studies have also stressed that quality in higher education is necessary to promote and improve education, emphasizing(the need to establish a standard for the overall quality of higher education institutions by the Ministry, whose

purpose is to ensure that they achieve The message of higher education and raising the level of university graduates through the quality of the curriculum and the school environment and the emphasis on caring for the university professor for the stone he represents for the learning process is a scientific qualification and the saving of distinguished working conditions commensurate with the role required of him) (Ahmed & Jibril, 2013).

Therefore Quality has been closely linked to education and has become an urgent requirement so that we are in the same aspiration as the goals set in advance and therefore Hamidi emphasizes (the need for quality in the circular service has gained new dimensions and become more urgent, it is an administrative philosophy directed to the leadership of the university based on the needs of customers to achieve University growth and reaching its goals and objectives) (Hammidi, 2016, P2).The quality of education is also very strongly linked to the academic performance of students and an essential element in the academic achievement of these students, as confirmed by the study of Heli Muhonen et al. , 2017) and others .

Studies have confirmed poor teaching performance in line with quality standards in teaching, where it confirms (the lack of interest of faculty members in applying Standards of quality of education within the lecture. Poor performance of faculty members in the use of modern teaching strategies such as (collaborative learning - problem solving - problem-based learning) (Mohammed, 2016) and another study confirms that (the competency of the quality of the educational process of the professor of physical education and sports falls at the average level in general and does not rise up to the required level. We have recommended – dedicating a culture of quality in the field of education due to its active role in achieving Goals and objectives.) (Student, 2018), and here the role of the professor is central to the dedication of quality, if he loses it, things become more complicated as he emphasizes (that the lack of knowledge of the professor of physical education and sports in secondary education professionalism in general in line with the quality of the educational process, not keeping up with the latest information in his field of specialization .Lack of knowledge of calendar competencies .We therefore recommended that this teacher should have the teaching competence that helps him to perform his professional duties in high quality, the need to keep up with the scientific developments in the field of specialization). (Student, Bashir, Kamal, & Ahmed, 2015)

Therefore, the focus should be on the performance of the faculty member to carry out his duties towards his students as well as to provide him with the basic knowledge he needs to carry out his duties to the fullest.

That's why several tools have been developed to measure the teaching competence and quality of the teaching process, which have relied on a set of criteria to measure them, identify their indicators and come up with a credible tool in measuring the quality of the teaching process, so this research came to answer the following question:

General question:

- What is the working structure of the components of the teaching competency measurement tool for the university professor?

- What is the working structure of the dimensions (items) of the teaching competence measurement tool for the university professor?

Materials and methods

Curriculum (model) : The descriptive method was used in a survey method to suit the nature of the study.

Community (case of study): The research community included 28,709.00 physical and sports education students nationwide,

According to official statistics for 2016/17.The target community are 8,373 master's students out of a total 23 institutes and departments was relied upon at the national level.

Sample search: A sample of 786 master's students was selected at 9.39% in a simple random way.

Tools: A range of references have been used that have studied the subject of teaching, including the Alali Study (2017), Hamid's Study (2016) and the Study (Atallah A, 2006 |) (Nawal, 2015), (Omar et al., 2011).) (Darling-Hammond, 1997). (Lovat, 2009) (Leclercq, 1998) (Alali & Atallah, 2018) (Omari & Arbeyat, 2016).We have developed questions from this theoretical background and seen all the elements from which the various items of the teaching process have been formed, whether at the university or what is happening in the classrooms.

Results and discussion

- Through the results of the descriptive statistic, we note that the calculation averages were limited to (4,661, 2,902) as the highest and lowest value. And the sample number reached 786.

- The table that builds the interconnection or square correlation matrix, which is the first solution to the relationships between the variables involved in the working analysis, which represents the interconnection coefficients between existing factors and which shows the existence of interrelated coefficients between different factors without reference to the strength of this link and the rule confirms that the greater the relationship between the variables than 0.30, the better indicative that the variables involved in the measurement are good.

And the matrix selector is less than one in ten

thousand, which is the default value, which is acceptable in this case.

- The Keiser-Mayer-Olkin sample adequacy measure is 0.828, which is a good value, with a minimum value of 0.600, and Bartlett's spherical test was statistically significant at 0.000, indicating a matrix similar to the unit matrix .It is therefore suitable for factor analysis.

The matrix of changes, which represents the correlation coefficient of the items or the factor with itself, are all good and function links .This means that the factorial solution is good because the elements of the two matrixes far from the small diameter and the Measures Sample Adequacy (MSA) are limited between (0.930, 0.736), which means that the sample is sufficient for factor analysis.

-This supports the results obtained from the Kizer-Meyer-Olkin sample adequacy test (KMO), which indicates that the sample is suitable for factorial analysis. They are all indicators and data to judge that the sample and data are suitable for the use of factorial analysis.

Table

The socialists or the communality values

Items	*Eigen Value*	*Communality*	*Items*	*Eigen Value*	*Communality*	*Items*	*Eigen Value*	**Communality**
S1	**1**	,577	**S16**	**1**	,645	**S31**	**1**	,683
S2	**1**	,577	**S17**	**1**	,655	**S32**	**1**	,508
S3	**1**	,478	**S18**	**1**	,755	**S33**	**1**	,540
S4	**1**	,637	**S19**	**1**	,647	**S34**	**1**	,523
S5	**1**	,621	**S20**	**1**	,512	**S35**	**1**	,454
S6	**1**	,533	**S21**	**1**	,663	**S36**	**1**	,389
S7	**1**	,456	**S22**	**1**	,616	**S37**	**1**	,460
S8	**1**	,467	**S23**	**1**	,560	**S38**	**1**	,542
S9	**1**	,528	**S24**	**1**	,543	**S39**	**1**	,552
S10	**1**	,595	**S25**	**1**	,475	**S40**	**1**	,661
S11	**1**	,405	**S26**	**1**	,578	**S41**	**1**	,688
S12	**1**	,581	**S27**	**1**	,516	**S42**	**1**	,601
S13	**1**	,567	**S28**	**1**	,435	**S43**	**1**	,451
S14	**1**	,366	**S29**	**1**	,458	**S44**	**1**	,527
S15	**1**	,541	**S30**	**1**	,682	**S45**	**1**	,584

It represents the communality values or Extracts of each of these forty-five Items contributes to the factor by a certain percentage and here we note that the highest value achieved by single 41, which contributes 0.688 and the lowest value of the Item is number 36, which contributes 0.389. The communality values of the Items are the ratio explained by the factors derived from the total variation of the term and result from the sum of horizontal saturation boxes of the item on the factors.

Table shows the Eigen Values of the six proposed factors before and after rotation.

FACTORS	*THe FIRST Eigen Value*			*Total squares on factors before rotation*			**Total squares on factors after rotation**		
	Total	Variance%	Cumulative %	Total	Variance%	Cumulative %	Total	Variance%	Cumulative %
1	13,659	30,354	30,354	13,659	30,354	30,354	5,002	11,115	11,115
2	3,081	6,846	37,200	3,081	6,846	37,200	4,673	10,384	21,499
3	2,604	5,786	42,986	2,604	5,786	42,986	4,335	9,632	31,131
4	2,074	4,609	47,594	2,074	4,609	47,594	4,071	9,047	40,178
5	1,728	3,840	51,434	1,728	3,840	51,434	3,699	8,220	48,398
6	1,688	3,751	55,185	1,688	3,751	55,185	3,054	6,786	55,185
7	1,541	3,424	58,608						
8	1,286	2,857	61,465						
9	1,150	2,556	64,022						

The Eigen Values before and after rotation factors and the amount of variation explained by each factor and the overall factor show that the factor analysis of the six proposed factors was at the Eigen Value at 1,688, which we assumed collectively explained the value of 55,185% of the overall explained variation, which is greater than 50%, which is acceptable.

We have proposed six factors because of what we found in the theoretical literature that studied this subject, where the studies were not in agreement on the competencies to be available to measure the teaching competence of the professor of sports education in particular and professors of other subjects in general, where the study of Khoeldi and Abdul Latif touched on four qualifications arranged as follows: educational competences, humanitarian competences, technological and calendar competences (Khwelde & Chenini) 2017, the study of Talib Alali and Bengueneb also touched on seven teaching competencies that must be available in the sports education teacher, namely, scientific and cognitive competencies, teaching competencies and motivational, planning competencies and the formulation of objectives, personal and leadership competencies, competencies of effective communication and class management, evaluation competencies, and professional development competencies (Alali, 2017), as Atallah mentioned the efficiency of planning, the efficiency of implementation and the efficiency of the calendar and each of these competencies is divided into other subtypes (methods and strategies teaching in physical education and sports.

As for Allali and Allah in another study, they relied on six competencies that must be available in the sports education teacher, namely, scientific and cognitive competencies, teaching competencies and motivational, planning competencies and the formulation of objectives, personal and leadership competencies, and competencies Effective communication and class management, evaluation competencies, intellectual and confidential study relied on nine dimensions of the teaching process of personal competence, teaching skills, ethics and professionalism of education, planning efficiency, implementation efficiency, student evaluation efficiency, Efficient reinforcement and motivation methods, communication and communication efficiency, technological efficiency (God & Govi, 2018)

Yahia and Abeer also identified other competencies: teaching planning, teaching methods, teaching implementation, classroom management, evaluation, and personal competences. (Shadifat & Ershid, 2009).Therefore, the teaching competence has been arranged as follows:

cognitive competence, planning efficiency, implementation efficiency, evaluation and follow-up efficiency, language control and information technology, personal competence and student relationships (contact and communication).which we see as necessary for the university professor to be familiar with the teaching process

Factor solution before rotation

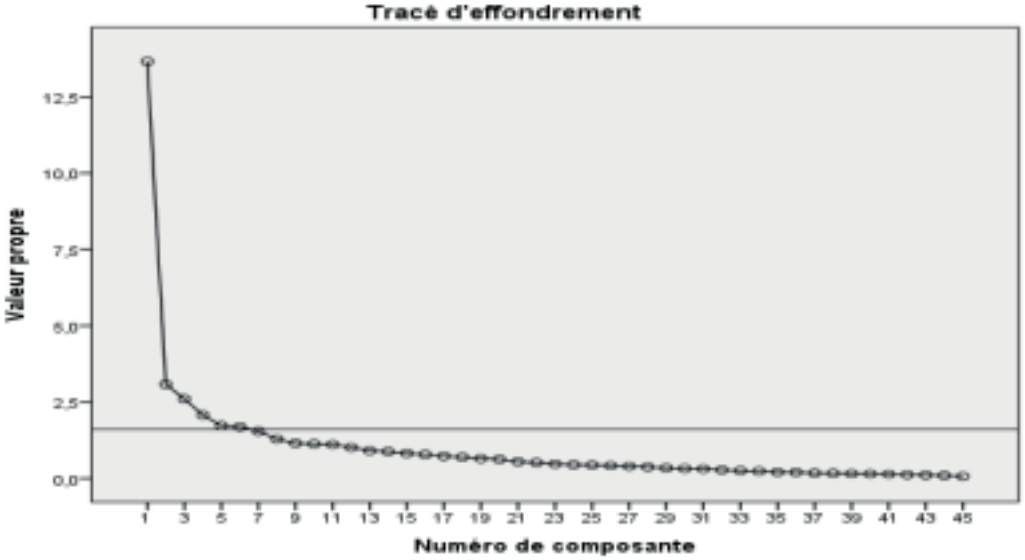
It is clear that the Eigen Values of the six factors are, respectively, the Eigen Value of FIRST factor 13, 659, and the Eigen Value of factor VI is 1,688 and the Eigen Values of other factors are among these factors.

The first factor explains 30,354 and the sixth explains 3,751.

The Factor solution after recycling:

- It is clear that the Eigen Values of the six factors are, respectively, the Eigen Value of factor 5,002, the Eigen Value of factor VI is 3,054 and the Eigen Values of other factors are among these factors.

- The first factor explains 11,115 and the sixth factor explains 6,786.The combined factors explain 55,185%



The graph shows the six primary Eigen Values that are larger than the Eigen Value of 1.688 and then the factors take a straight line. The graph is another criterion that can be used in addition to the criterion of maintaining factors with a latent Eigen Value of more than 1,688 to identify pre-defined factors with six factors in Factor analysis and to maintain only those in the steep area.

Table

Matrix components spreading Items on extracted factors

factor matrix before rotation *Matrice des composantes a*						
Component Composante					Factors (components)	
1	2	3	4	5	6	He does his job properly
,757						He takes into account individual differences when explaining the module
,732			-,302			Give the students the references they use to prepare the module
,692						His plan respects the conditions and elements of good planning
,682	-,316					He directs students in their work
,671						It is easy to contact him.
,666						His plan is adjustable
,665				-,306		He looks for possible alternatives to get out of the difficulties he is facing
,662						Continuous evaluation of students
,628				-,441		He sets specific goals for his lesson.
,623	-,322					He answers students' questions outside the lesson.
,621						The model correction and assessment hand will be published after the end of each exam.
,615						He delivers his plan to the supervisors of the various committees
,596			,331			He puts a plan in front of the students at the beginning of each lesson.
,592						The timing of the model is respected and all the items placed in the goal are done
,590				-,306		He Moves between items with ease.
,583			-,371			Controls the management of the material
,578	-,324					Controls the information and the course of the lesson
,577						Supervising the notes
,572						He uses the computer to give his lecture
,561		,489				The student is allowed to review the examination papers.
,551						He asks about students' concerns
,547		-,375				Gives terms in different languages
,546						He gives students the program at the beginning of each course
,544				-,354		He answers students' questions comfortably and does not avoid discussion.
,539	,418					Coordinates with his colleagues to achieve the objectives of the course
,537						He can adjust himself in different situations while teaching
,534	,306	-,376				He explains the basic elements in detail
,528			-,474			Be flexible in dealing with students
,522	,400					He speaks without stuttering and pronounces the letters correctly
,517			,330	,303		At the end of each semester, a final report is made for the items achieved

,505						He asks a variety of questions to measure the different levels of mental reasoning.
,495					-,387	He doesn't miss the scheduled lessons
,495		-,324				He uses a variety of teaching methods and techniques to achieve the objectives of the lecture
,493		,389				He feels his ability to convey information
,489		,476				He Urges students to use the National Online Documentation System SNDL
,470					-,344	he Encourages discussion among students
,464						He Accepts and discusses students' opinions.
,460		-,313				He is Able to teach the material
	,615	,341			,362	He is Able to teach the module.
,381	,589					he Simplifies the information and diversifies the examples Familiar with all elements of the material
,383	,565					he has the ability to keep up with matter and control it
	,487	,457				he Uses modern methods of teaching (PowerPoint, email, multimedia)
	,302	,601		,391		he is characterized by calm and emotional balance
,406		-,422		,361		He organizes the scientific module in a sequential order.
,474			-,504			he organizes the scientific module in a sequential order
Extraction method: Principal component analysis. Méthode d'extraction : Analyse en composantes principales./						
a. 6 extracted components. / a. 6 composantes extraites.						

Table

The matrix of components after rotation

Matrix of components after recycling						
Component Composante						Factors (components)
1	2	3	4	5	6	
,732	,369					He Takes into account individual differences when explaining the module
,697						He Moves between items with ease.
,685						He organizes the scientific module in a sequential order.
,652						He Explains the basic elements in detail
,615	,319					He Controls the management of the module
,524		,409		,382		He does His job properly
,506				,490		He sets specific goals for his lesson.
,445	,428	,375				The timing of the module is respected and all the items placed in the goal are done
,426		,319		,315		He looks for possible alternatives to get out of the difficulties he is facing
,421						He Controls the information and the course of the lesson
	,658					He gives students the program at the beginning of each course.
	,655					He puts a plan in front of the students at the beginning of each lesson.
,350	,577		,317			He Give the students the references they use to prepare the course
	,567					At the end of each semester, a final report is made for the items achieved
	,561					He Coordinates with his colleagues to achieve the objectives of the course
	,501	,477				His plan is adjustable.
	,482		,321	,443		He delivers his plan to the supervisors of the various committees
,332	,389		,347	,367		His plan respects the conditions and elements of good planning

		,667				He asks a variety of questions to measure the different levels of mental reasoning.
		,661	,300			The model correction and assessment hand will be published after the end of each exam
		,589				The student is allowed to review the examination papers.
	,522	,569				Continuous evaluation of student
		,537				He answers students' questions outside the lesson.
,384		,506				He Supervising the notes
,495		,501				He directs the students in their work
	,341	,429		,367		It is easy to contact him
			,812			He is characterized by calm and emotional balance
			,769			He Can adjust himself in different situations while teaching
			,593			He Accepts and discusses students' opinions
	,331		,525			He Doesntmiss the scheduled lessons
,373	,349		,513			He asks about students' concerns
,306			,498			He Encourages discussion among students.
			,443		,395	Be flexible in dealing with students
				,647		He Uses a variety of teaching methods and techniques to achieve the objectives of the lecture
				,636	,469	He Uses modern methods of teaching (PowerPoint, email, multimedia)
		,333		,596		He uses the computer to give his lecture
,363		,302		,527		He Urges students to use the National Online Documentation System SNDL
	,463			,509		He Speaks without stuttering and pronounces the letters correctly
	,317			,477	,406	He Feels his ability to convey information
	,347	,309		,453		He Gives terms in different languages
					,818	He is Able to teach the module
					,739	He has the ability to keep up with module and control it
			,310		,627	He Simplifies the information and diversifies the examples
			,383		,489	Familiar with all elements of the material
,312			,359		,436	He answers students' questions comfortably and does not avoid discussion
Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser.a normalization						
a. Convergence of rotation in 17 iterations						

Through the basic components and the way the Vermax groups rotate and the Kizer eraser, we found the following:

- The saturation of ten items on the first factor is the X18 items with saturation of 0.732, and each of the phrases S12, S19, S13, S15, S21, S17, S34, S25, S14.

- The second factor is saturated with eight items, the largest of which is the item S2 with saturation of 0.658 as well as the items' S23, S10, S11, S35, S1, S39 and S16.

- The third factor is saturated with eight items, the largest of which is the item S33 with a saturation of 0.667 and included the items S5, S7, S4, S3, S8, S22 and S27.

- The fourth factor saturates seven larger items of the X30 with a saturation of 0.812 and included the items S30, S31, S28, S37, S9, S36 and S29.

- The fifth factor is also saturated with seven larger items achieved by the item S24 with a saturation of 0.647, and included the items S24, S40, S45, S6, S38, S44 and S43.

- The sixth factor was saturated with five larger items, with the term S41 saturating 0.818, followed by the items S41, S42, S26, S20 and S32.

Table

the factors can be named as follows

numbers	*Questions*	*numbers*	**Questions**
1	His plan is adjustable.	24	He uses a variety of teaching methods and techniques to achieve the objectives of the lecture
2	He gives students the program at the beginning of each course.	25	He looks for possible alternatives to get out of the difficulties he is facing
3	He answers students' questions outside the lesson.	26	He Simplifies the information and diversifies the examples
4	He Continuous evaluation of students	27	It is easy to contact him.
5	The model correction and assessment hand will be published after the end of each exam.	28	He Accepts and discusses students' opinions.
6	He Urges students to use the National Online Documentation System SNDL	29	Be flexible in dealing with students
7	The student is allowed to review the examination papers.	30	He is characterized by calm and emotional balance
8	He Supervising the notes	31	He can adjust himself in different situations while teaching
9	He asks about students' concerns	32	He answers students' questions comfortably and does not avoid discussion.
10	He Gives the students the references they use to prepare the module	33	He asks a variety of questions to measure the different levels of mental reasoning.
11	At the end of each semester, a final report is made for the items achieved	34	The timing of the material is respected and all the items placed in the goal are done
12	He Moves between items with ease.	35	He coordinates with his colleagues to achieve the objectives of the course
13	He Explains the basic elements in detail	36	He Encourages discussion among students.
14	He Controls the information and the course of the lesson	37	He doesn't miss the scheduled lessons
15	He Controls the management of the module	38	He speaks without stuttering and pronounces the letters correctly
16	His plan respects the conditions and elements of good planning	39	He delivers his plan to the supervisors of the various committees
17	He sets specific goals for his lesson.	40	He uses modern methods of teaching (PowerPoint, email, multimedia)
18	He Takes into account individual differences when explaining the course (module)	41	He is Able to teach the module
19	He organizes the scientific module in a sequential order.	42	He has the ability to keep up with module and control it
20	Familiar with all elements of the material	43	He Gives terms in different languages
21	He does His job properly	44	He feels his ability to convey information
22	He directs the students in their work	45	He uses the computer to give his lecture
23	He puts a plan in front of the students at the beginning of each lesson.		

numbers	***Factors***	Items
1	Cognitive competence	**5**
2	Planning Efficiency	**8**
3	efficient execution	**10**
4	calendar and follow-up Efficiency	**8**
5	Interpersonal competence and relationships with students (contact and communication)	**7**
6	Efficient language control and media technology	**7**
Total		**45**

This is initially the exploratory factor analysis of the teaching efficiency measurement tool for the university professor after we finished the initial process of the basic components of the factors of the tool we wanted to know if these factors measure the same characteristic of the efficiency of the teaching process we performed the process from the beginning but this time on the factors derived from the initial process the results were as follows:

Through the results of the descriptive statistics, we note that the highest average calculation achieved by dimension 4,6076 personal competence and relationships with students (contact and communication) and the lowest average calculation achieved after the efficiency of language control and media technology 3,5055 on a sample consisting of 786.

Interconnection coefficients between existing factors (dimensions) that show the existence of interrelated transactions between different factors without reference to the strength of this link as a principled solution are acceptable. The matrix selector is less than one in ten thousand, which is the default value, in this case

- The Keiser-Mayer-Olkin sample adequacy measure (KMO) to measure sample adequacy, which the closer one is, is better and here we note its value of 0.819, which is good value, and the indication level was 0.000, a function value indicating the matrix similar to the unit matrix. It is therefore suitable for working analysis.

- The matrix of changes, which represents the correlation coefficient of the dimension or the factor with itself, are all good and function links. This means that the factor solution is good because the elements of the two matrixes far from the small diameter and the sample adequacy scale (MSA) are limited between (0.870, 0.704), which means that the sample is sufficient for factor analysis.

- This supports the results obtained from the Kizer-Meyer-Olkin sample adequacy test (KMO), which indicates that the sample is suitable for factor analysis. They are all indicators and data to judge that the sample and data are suitable for the use of factor analysis.

Table

The socialists or the communality values

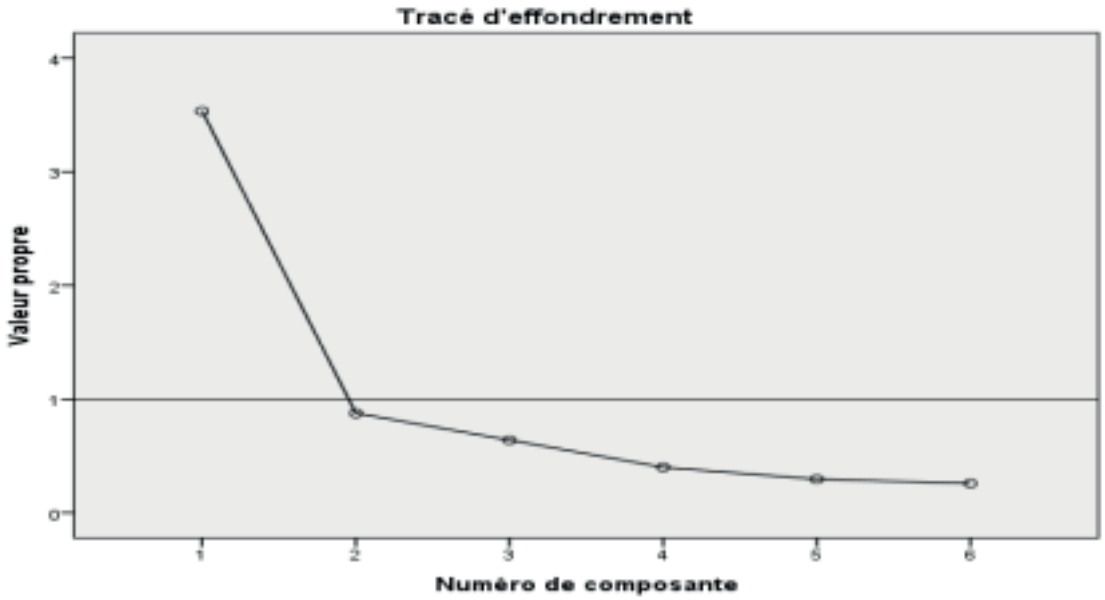
Factor	*The Eigen Values*	**Communality**
Cognitive competence	**1**	**,321**
Planning Efficiency	**1**	**,715**
implementation efficiency	**1**	**,702**
evaluation and follow-up efficiency	**1**	**,719**
Efficient language control and media technology	**1**	**,555**
Personal competence and student relationships (contact and communication).	**1**	**,522**
Basic component method		

The Eigen values of the factors and the amount of variation interpreted by each factor and the overall factor, it is clear that the factor analysis of the factors in the manner of the underlying factors was given one factor solution under which all the other factors fall and represents the Eigen value 3.534 and collectively explains the value of 58,895,000% of the total variation explained, which is greater than 50%, which is acceptable.

Table

Matrix of components after rotation

Essential Component Matrix	
	Components
	1
evaluation and follow-up efficiency	**,848**
Planning Efficiency	**,845**
implementation efficiency	**,838**
Efficient language control and media technology	**,745**
Personal competence and student relationships (contact and communication).	**,722**
Cognitive competence	**,566**
Method of extraction: The method of analyzing the basic components	
One extracting factor: the quality of the teaching of the university professor	



Distribution table of extracted factors by using sing the basic component method, which carries and saturates the column of six factors, we note that the factors are saturated on one factor and explain only one factor as described in the table above, which means that the six factors explain to us one factor, which is the quality of teaching at the university professor.

Discussions:

- Through factor analysis, it is clear to us that the factors have combined around six factors.

- Through the results, the factors are shown to measure one major factor. The six factors were named according to the pool of key elements.

- The basic factor has been named according to the six factors collected.

The proposed factors are cognitive competence, planning efficiency, implementation efficiency, evaluation and follow-up efficiency, language control and information technology efficiency, personal competence and student relationships (contact and communication).

- Basic factor teaching competence of the university professor.

- We recommend using this tool to know the teaching competence of a university professor in the specialty of physical and sports education because of its impact on the educational factor at the university.

- We recommend using second-class factor analysis to end procedures for the relationship of items with each other

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