An Analytical Study of reasoning skills according the bloom's taxonomy included in the curriculum of physical education and sport based on competency approach in middle school in Algeria

Estudio analítico de las habilidades de razonamiento según la taxonomía de Bloom incluidos en el currículo de educación física y deporte basado en el enfoque por Competencias en la escuela de secundaria en Argelia

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Summary

This study aims to reveal the scope of the presence of reasoning skills according to Bloom's taxonomy in the competency indicators included in the physical education and sports curriculum of a secondary school in Algeria. To achieve the objectives of the study, the technique of content analysis was used, and the validity and stability were tested using the Holsti method. The main findings of the study were as follows: the competency indicators contain most of the reasoning skills according to Bloom's taxonomy, as well as, however, neglect the ability to analyze and the low presence of the cognitive aspect of the skills of reasoning according to Bloom's taxonomy in the competency indicators included in the physical education and sports curriculum.

Keywords

Sports physical education curriculum; content analysis; abilities; Bloom's taxonomy.

Resumen

Este estudio pretende desvelar el alcance de la presencia de habilidades de razonamiento de acuerdo a la taxonomía de Bloom en los indicadores de competencia incluidos en el currículo de educación física y deportiva de una escuela de secundaria en Argelia. Para lograr los objetivos del estudio, se utilizó la técnica de análisis de contenido, y se comprobó la validez y la estabilidad usando el método de Holsti. Los principales hallazgos del estudio fueron los siguientes, los indicadores de competencia contienen la mayoría de las habilidades de razonamiento de acuerdo con la taxonomía de Bloom, así como, sin embargo, descuida la habilidad de análisis y la baja presencia del aspecto cognitivo de las habilidades de razonamiento según la taxonomía de Bloom en los indicadores de competencias incluidos en el currículo de educación física y deporte.

Palabras clave

Curriculo de educación fisica del deporte; análisis de contenido; habilidades; la taxonomía de Bloom.

Introduction

Piaget acknowledged that the main purpose of education is to develop critical thinking in students and make them able to do new things (Piaget, 2005), and descriptive study showed that teachers and parents conceded the intellectual development of students one of the main objectives in school education (Goodlad, 1984). And Davies (2006) emphasized the importance of incorporating thinking skills into different curriculum. Brookfield (1997) also believes that the importance of teaching thought is not only useful to enrich human life and change its status for the better.

Experts in curriculum design are interested in the establishment of educational objective to develop the mental abilities of the student and his thoughts and prepare the pupils to become thinker, creative and innovative, so design goals educational correctly and complementary manner will help the teacher to teach the students well as it should, and improve their thinking at all levels and not just to acquire and retain knowledge (Darwazeh, 2008), it is also necessary that the curricula contain the cognitive domain, because he is essential in human development, it was considered one of the main goals of education, it is also considered an

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important basic foundation that must be taken into account in the curricula (Alian, 2001), and The construction of curriculum and its implementation must be adapted to the mental and cognitive abilities of students and their growth, this is one of the key points to the success of education programs and achieve its objectives.

The cognitive domain is one of the important areas of physical education, because it is related to mental operations and the ability of the individual to acquire and use information and theoretical knowledge in different levels, therefore the cognitive domain represents the goals that emphasize the mental aspects such as knowledge, understanding and reasoning ability and the cognitive domain is essential for the development of mental abilities in students (Zaghloul, 2002), and Physical education and sport does not become an academic subject without adding to their intellectual skills curriculum (Willgoos, 1979).

The American Association (AAHPERD) announced the need to teach the knowledge related to sports and physical activity in schools to educate and develop the generation of a better way, and students must learn the rules and procedure that enable to practice sport and physical activity effectively (Kholi, 1999).

Studies and research shows that the educational action of the reasoning skills in the Arab world is still very limited, which makes students unable to provide evidence beyond the superficial understanding of concepts and relationships (Molasses, 2002).

We found through contacts with teachers of physical education and sport in schools, that there is a confirmation that the theoretical side is very rare in physical education and sport, and that there is no study in Algeria aimed to assess and analyze the new curriculum of physical education and sports based on the competency approach, therefore it is necessary to evaluate and analyze the curriculum in order to introduce change and renew the content of the goals in the curriculum to facilitate and improve the work of teaching and increase its efficiency, so that eventually can train and build a pupil able to adapt to any situation in society effectively.

Methods and materials

The study sample

The descriptions of the competencies in the field of education provide an overview of the key characteristics that describe in a holistic manner the attitudes, skills and knowledge that must be conveyed to the students (Tiana, Moya & Luengo, 2011), While the Competency Indicators identify the specific aspects of each competency that are transferable between subjects or contexts, they also describe cognitive, affective or psychomotor behaviors to help identify situations where a competency may be applied (Tanner, 2007).

Through the above, The study sample consists of all indicators of competency included in the curriculum of physical education and sport based on competency approach in middle school in all grade levels (Level I, level II level III, Level IV).

Table 1. sampling distributions

Number of competency indicators	Number of competency	Level
66	06	Level I
56	06	level II
60	06	level III
61	06	Level IV

The limitations of the study

- This study was limited to analyzing the content of the competency indicators included in the curriculum of physical education and sports based on the competency-based approach in the middle school that has been put into practice by the Ministry of National Education in Algeria since 2003/2004 and reprinted in 2013.

- This study was limited to the analysis of reasoning skills according the bloom's taxonomy, Therefore the validity of the results obtained is determined by Intercoder Reliability.

- The accuracy of this study is determined by the compatibility of the tool used in the analysis with the intended purpose, and therefore the results will be related to the validity and reliability of the study instrument.

Protocol

The researchers used the method of content analysis because it is more in line with the present study, using quantitative estimates to judge things analyzed, it is possible by this method to calculate the number of repetition and quantitative classification.

To achieve the objective of the study, we have built the tool of this study for analyzing indicators of competency included in the curriculum of physical education and sport a middle school in all grade levels (Level I, level II level III, Level IV), to calculate and classify cognitive reasoning skills of bloom taxonomy included in the curriculum of physical education and sport a middle school in Algeria.

we have chosen the word as a unit of analysis and category analysis was cognitive reasoning skills according the bloom taxonomy (Knowledge .Comprehension .Application .Analysis .Synthesis .Evaluation).

To achieve validity and reliability of the tool of the study, we have given this tool to the professors from various universities in Algeria and even foreign countries, they was (10) to determine the importance of content this tool and its relation to our study. and also analyze the curriculum of physical education and sport of level II, between two coders, and calculate the coefficient of reliability, using Holsti's Method, The formula is:

PAo = 2A/ (N1+N2)

Table 2. InterCoder Reliability

percentage of agreement	decisions coders 2	decisions coders 1	consensus decisions
%91.07	56	56	51

As shown in Table2, we noted that percentage of agreement is high, this confirms the reliability of the content analysis tool in this study.

Results

To achieve the purpose of the study, the researchers analyzed the curriculum of physical education and sport for middle school in Algeria by analyzing the content of the competencies indicators, the word was used as a unit of analysis, giving a single repetition of each word that indicates one of the reasoning skills according the bloom's taxonomy, After calculating the repetition number and classifying them according to Bloom's taxonomy that has been statistically processed by the spss software (version 17), The results of this study are as follows:

Table 3. repetition and percentages of cognitive thinking skills of Bloom's taxonomy in the curriculum of physical education and sport

Rank	Percentage	Total	number of repetitions				Bloom taxonomy	
			Level IV	level III	level II	Level I		
05	%3.84	09	01	01	01	06	Knowledge	1
03	%13.67	32	20	03	02	07	Comprehension	2
01	%60.68	142	46	36	28	32	Application	3
06	%00	00	00	00	00	00	Analysis	4
04	%15.81	37	14	09	05	09	Synthesis	5

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02	%5.98	14	04	07	00	03	Evaluation	6
	% 100	234	85	56	36	57	total	

It is seen from the data in the table (03) that the total number of repeat cognitive thinking skills of Bloom's taxonomy was 234 in the curriculum of physical education and sport based competency approach a middle school in all grade levels (Level I, Level II Level III Level IV),

Application skills was ranked first, his number of repetition was 142, equivalent to 60.68%، Then in second Rank There are skills of evaluation, his number of repetition was 37, equivalent to 15.81%, also the skill of comprehension was ranked third, his number of repetition was 32, equivalent to 13.67%, and Fourth rank was for the skills of Synthesis, his number of repetition was 14, equivalent to 5.98 %, and Fifth rank was for the skills of Knowledge, his number of repetition was 09, equivalent to 3.84 %, In the Sixth rank we scored no number of repetition for skills analysis, equivalent 00%.

Discussion

Results show that the curriculum of physical education and sport contains most of cognitive thinking skills of Bloom's taxonomy, but the number of his repetition was not balanced well as it should, therefore dominated the majority of competency indicator in the curriculum mentioned,

This may be because the curriculum designers have given great importance to the motor domain, because they think the sporting activities practiced by students in course of physical education and sport require more emphasis on skill of application, in comparison with other cognitive thinking skills of Bloom's taxonomy, In any case this belief does not mean neglecting some skills in the curriculum, but must take into consideration all skill that are necessary for mental development among students.

As well as skills of evaluation comprehension have occupied first and second place in succession, while the Synthesis and knowledge skills have a very low percentage of repetitions, and the total neglect of analysis skills. therefore the results emphasize the need to take full advantage of the analysis skills and knowledge and integrate them into the curriculum sufficiently. Because low skills such as knowledge is the basic step to learn and acquire higher-order thinking.

In this sense, Rasheed (2009) says that knowledge is the lowest level of academic achievement in the cognitive domain, but essential to build higher levels of reasoning, Fouad and (2005) add by saying that existing reasoning skills in bloom taxonomy are based mainly on the basic knowledge and information that can be used to solve the problem and improve the deduction ability in students, as well as the emotional aspects dependent knowledge, therefore it is possible to develop the affective domain through knowledge.

There is no doubt that the program that neglects the analysis skills helps to weaken the creative thinking ability among students and make the difficult task to solve the problem and adapt to different situation, .

This result contrasts with the fundamental bases that must be respected before building the program, these bases consist in introducing all cognitive thinking skills of Bloom's taxonomy in the curriculum without exception.

In this regard. De Bono (1989) confirms the need to teach each of thinking skills in school, and it's part of a modern curriculum. And Beyer (1988) says that helping learners become active thinkers is a strategic goal in the education system. Henry and William (1995) concluded in their experimental studies that thinking skills increase the cognitive development of students, and develop their knowledge.

When comparing our results with the results of the study of Jassem & Shaker (2005), study of Zaghloul (1989) which suggests that curriculum of physical education and sports do not give much importance to mental and intellectual aspects that must be taught to students, they also recommended the need to focus on the acquisition of knowledge, concepts related to physical activity and sport by students and integrate them in the curriculum. study of Tan (2006) shows

that the Singaporean curriculum has focused on developing thinking skills through the publication of a document entitled "Schools Thinker ... an Educated Nation". While study of Nafie (2002) confirms that teaching thinking skills in the Arab world is still inadequate, and many students are unable to provide evidence beyond the superficial understanding of concepts and relationships.

Study proposals

- It is necessary to pay more attention to the reasoning skills according the bloom's taxonomy and to include them in the physical and sports education curriculum for middle school and to teach them to students.

- The need to respect the principle of hierarchy in the thinking the reasoning skills according the bloom's taxonomy by focusing on each of them according to the priority.

- the physical and sports education curriculum in middle school education must contain specific knowledge that teachers commit to pass on to students.

- Using the results of this study when planning the physical and sports education curriculum in middle school.

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