

## A pragmatic theory based educational program and its effects on high school student's physical competencies

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### ABSTRACT

This paper aims to try to find out the impact of an educational program built according to the principles of pragmatic theory in the curriculum in terms of construction and application, in achieving the students' physical competencies of the activities practiced (relay running, volleyball), we assumed that the educational program has a positive effect in acquiring the target physical competencies, represented by the explosive power, flexibility, reaction speed, and maximum speed. In our study, we relied on a sample of 30 students in the second year of high school, who were chosen randomly and divided randomly into two groups, one experimental and the other control, after doing the pretests represented in the physical performance tests for the previously identified physical characteristics, and doing the educational program for a period of 12 weeks, and after doing the post-tests, it was concluded that (a) the traditional program has an effect on achieving physical competencies through the presence of statistically significant differences between the pre-test and the post-test in favor of the post-test for the control group. (b) the educational program has an effect on achieving physical competencies through the presence of statistically significant differences between the pre-test and the post-test in favor of the post-test for the experimental group. (c) the educational program has a greater effect in terms of the level of physical competencies of the students, after there were statistically significant differences between the two post-tests of the experimental and control groups, in favor of the experimental group. This is after statistical analysis of the data according to parametric and non-parametric tests

**Keywords:** curriculum; physical qualities; physical activities; teaching planning; teaching goals; teaching methods

### 01 - INTRODUCTION:

The pragmatic philosophy in the curriculum considers the human experience and the reality of the society in which a person lives, and its followers as a basis for reaching the truth, and accordingly the goals and content engineering are chosen based on integrated experiences of the human nature, and his social environment, and the needs, desires and preparations of the learners. (Al-Aoun, 2017, p. 106).

Pragmatism as a philosophy of education, has only come into its own in the very late nineteenth and the twentieth century's, For Dewey - the man who best combined the roles of educator and philosopher- a democratic society must be mobile and dynamic, it is a society in which teachers know that what works for one student might not work for another, therefore, the theory and practice of education is based on two main principles : education should have a social function, and education should provide real-life experience to the child. (Sharma, 2018), since one of the most important and lofty goals of education is to achieve human happiness, all the obstacles and problems that prevent the individual from reaching the desired happiness, are the source of his goals. Confronting and modifying behavior or acquiring behavior through actual experience, as the view of pragmatic philosophy stems from society through the need for the student to interact with it, through various channels such as cooperation, communication, and resolving contradictions. (Al-Aoun, 2017).

We cannot deny the contributions of pragmatic theory as an educational theory in schools, by providing effective models for educational programs capable of reaching the learner to the desired goals of the curricula, here Elsamman Marwan emphasized the effectiveness of educational programs built according to the principles of pragmatic theory in his study tagged with 'A Program Based on the Pragmatic Theory to Develop Grammatical Structure Comprehension Skills for Foreign Learners of Arabic' with regard to building and developing knowledge (Elsamman, 2014). Through this, we see the contributions of physical and sports education curricula based on the principles of pragmatic theory, in achieving comprehensive development in the various aspects of the student's personality, from contributions to the development of the mental and cognitive side, such as acquiring knowledge and information related to health security, safety, international rules and specifications for proper performance, through its contributions to the development of social and emotional aspects such as building values, principles, ideals, and ethics, to its contributions to the development of the psycho-motor side, which is concerned with the formation and

development of skills and the ability to perform tasks efficiently and adapt under various circumstances. (Mohamad, 2016, pp. 92 - 94)

Planning for teaching is an organized and purposeful process that leads to achieving the desired goals effectively and efficiently. Teaching is the most complex and important human field, as Sharaf (2014) says "Planning for teaching is a rational and logical process or a series of steps capable of moving the educational organization to ensure its success. It is a future process based on prediction and relies on it as a cornerstone." (Abd-Al\_Hamid, 2014, p. 27), And since planning is a rational, logical process and speaks the language of the future, it was necessary for the teacher to resort to it, to confront the educational situation with all its factors and variables, in a practical way that leads to achieving the goals. (Khafaja & Shaltout, 2007, p. 56).

The planning for teaching is consistent and its content with the principles of the curriculum theories, and their philosophy, that it is a scientific work that has its goals, and contains many procedures, and intertwined relationships that make it a project that is not suitable, but rather does not arise properly away from planning processes, with solid foundations and starting from an educational philosophy that confirms the relationship between the planning process, education, and productive work on one hand, and closer communication between education and the lives of learners, and the reality of the environment in which they live on the other hand. (Salim, Mina, & Shahata, 2013), teaching according to the competencies approach must be carried out according to a strategy known as the strategy of teaching and learning by the competencies approach, as this strategy is derived from behavioral psychology, cognitive psychology, and structural psychology, through its association with the problem-solving processes assigned to the subject, and depends on harnessing the knowledge associated with it, as it is a scientific method, it relies primarily on planning to study a situation, phenomenon, or problem, and to identify the size and dimensions of all available capabilities, in order to harness them to achieve goals. (Ata-Allah, Zitouni, & Ben\_Quannab, 2009, pp. 72 - 73). However, many studies have shown that teachers are unable to reach the learner to achieve the targeted competencies, and they face a set of difficulties, with regard to the hourly volume, the level of availability of means and tools, and the possibility of realizing the content on the ground, where Hazhazi Kamal (2010) confirmed that there is a unified perception among the teachers of the two stages, regarding the difficulty of applying the content of the curriculum, as well as the lack of educational means, which the teachers unanimously agreed on, which is considered one of the most prominent obstacle to the application of teaching according to competencies in the physical education class. (Hazhazi, 2010), on the other hand, Brahimi Mohamad (2017) concluded that there are obstacles related to the subject curricula, the most important of which are: the curriculum units are not suitable for the level of students' abilities, its content is far from the students' reality, the insufficient documents accompanying the curriculum, the time size of the class is insufficient to practice the activities, and the means are not sufficiently available. (Brahimi & Behnas, 2017), meanwhile, Bahri Saber (2017) mentioned that there are several obstacles related, according to primary school teachers, to the implementation and evaluation of the lesson (Bahri & Kharmouch, 2017),

Here, we can notice that the teacher of physical and sports education, in particular, faces difficulties in the process of implementing the educational goals and converting them into educational situations capable of bringing about the desired changes in the learners and providing them with the targeted competencies in the class, whether cognitive, sensory, kinesthetic or social, and this is due to the responses of the teachers in the studies that dealt with the topic, that the content of the curriculum is expensive in terms of its material requirements (pedagogical means and tools), and knowledge, as well as the weekly hourly volume is not sufficient to achieve. So, through all of the above, we decided to ask the following question :

- What is the effect of an educational program based on the principles of the pragmatic theory of the curriculum in achieving the students' physical competencies in physical education class?

We assumed that :

1. The educational program has an effect on improving the explosive power of the study sample.
2. The educational program has an effect on improving the maximum speed of the study sample.
3. The educational program has an effect on improving the motor flexibility of the study sample.
4. The educational program has an effect on improving the motor response speed of the study sample.

## 02 - METHODS:

1. **Research community:** The research community consisted of all 677 students of a secondary school in the city of Biskra (Algeria).
2. **Research sample:** We took 30 students from the second year of secondary school, who were randomly selected, where they were also divided randomly to form two groups of equal number, provided that one of them is an experimental group subject to the proposed educational program, and the other remains a control group that works in the traditional program.

**3. Study methodology:** Since we are in the process of knowing the effect of a previously prepared educational program, and this is on a previously selected sample as well, the methodology of the study must be experimental using the two equal groups.

**4. Sample homogeneity:**

Table (01) shows the homogeneity of the research sample

Variables	experimental group				control group				t student	
	M	S D	s-w test	Sig	M	SD	s-w test	sig level	T value	Sig
<b>Height(m)</b>	177.3	6.7	0.19	0.17	173.3	5.6	0.1	0.2	1.84	0.087
<b>Weight(kg)</b>	64.6	13.9	0.18	0.18	66.6	9.2	0.14	0.2	0.44	0.66
<b>Age(mth)</b>	199.1	3.5	0.13	0.2	198.5	3.1	0.16	0.2	0.48	0.63

Note: Sig level: 0.05 / (N=15) for each group / df = 14

It can be seen from the table, and after applying the Shapiro-Wilk normality test, the results showed that the statistical value of the test came with (p-value > Sig level: 0.05), and from it, it can be said that the data are distributed normally, after calculating the means and standard deviations for both groups, in all the variables, it was found that they are closely similar between the two groups, and this was confirmed by the results of the T test, where the test results were not statistically significant in each of the variables of height, weight and age between the two groups, which indicates that there are no differences between the two groups in the variables, which indicates that there are no differences between the two groups in the variables under study, and this is evidence of the homogeneity of the sample in these variables.

**5. Normality of data distribution:** In order to determine the nature of the tests to be used to analyze the data, the nature of the data distribution must be ascertained, If the data are distributed normally, then we can use parametric tests, but if it is the other way around, we must use non-parametric tests.

Table(02) : values for the normality of the distribution test for the two research groups

tests	Shapiro-wilk			
	Experimental group		control group	
	statistic	Sig	statistic	P-value
<b>Standing Broad Jump</b>	0.942	0.412	0.932	0.297
<b>Vertical Arm Pull</b>	0.785	0.002	0.904	0.110
<b>45.7m dash test</b>	0.909	0.131	0.858	0.023
<b>Back extension</b>	0.974	0.910	0.955	0.606
<b>Nelson Choice – Responce –</b>	–	0.931	0.286	0.924
			0.924	0.225

Note: Sig level: 0.05 / (N=15) for each group

Through the table, we see that 3 out of 5 tests are distributed normally, after the results showed that the value of the test came in which the value of significance p was greater than the level of significance 0.05, (p-value > Sig level), Except for the Vertical Arm Pull, where (p-value=0.002 < Sig level=0.05) for the experimental sample, and the 45.7m dash test, where (p-value=0.023 < Sig level=0.05) for the control group, which necessitates relying on non-parametric tests for these two tests.

6. **Samples parity:** In order to return the differences to the experimental factor, the parity of the two research groups was verified in the tests, using the T test, where the table showed the following:

Table (03) shows the parity of the two research groups (normal distribution)

tests	Experimental group		control group		t student	
	M	SD	M	SD	T value	p-value
<b>Standing Broad Jump</b>	2.158	0.182	2.058	0.188	2.597	0.21
<b>Back Extension</b>	27.27	6.734	30.60	3.776	1.804	0.093
<b>Nelson Choice Responce Movement /</b>	1.568	0.098	1.575	0.101	0.241	0.813

Note: Sig level: 0.05 / (N=15) for each group / df = 14

Through the results of the table above, we see that the results of the T value have a p-value greater than the sig level, (p-value > Sig level), and this means that there are no statistically significant differences between the results of the experimental group and the control group in the pre-tests, and this indicates that the level of the two samples in the tests to be performed is equivalent, which means that the two groups are equal in these tests.

Table (04) shows the parity of the two research groups (non-normal distribution)

tests	Experime-ntal group		control group		Wilcoxon Ranks	Signed
	M	SD	M	SD	Z value	p-value
<b>Vertical Arm Pull 45.7m dash test</b>	50.33	13.89	51.47	12.28	0.345	0.730
	7.334	0.293	7.496	0.428	1.037	0.300

Note: Sig level: 0.05 / (N=15) for each group

Through the results of the table above, we see that the results of the Z value have a p-value greater than the sig level, (p-value > Sig level), and this means that there are no statistically significant differences between the results of the experimental group and the control group in the pre-tests, and this indicates that the level of the two samples in the tests to be performed is equivalent, which means that the two groups are equal in these tests.

7. **Data collection tools:** For the purpose of data collection, we relied on a set of physical performance tests, which are as follows :

**Standing Broad Jump :** the purpose of the test is to measure explosive leg power.



Figure1 : Explains the technical stages of doing the standing broad jump test, downloaded from (<https://thetedytheory.blogspot.com/2019/11/20-fantastic-ideas-diagram-standing.html>)

**Vertical Arm Pull :** the purpose of the test is to measure the muscular power of the arms and shoulders.

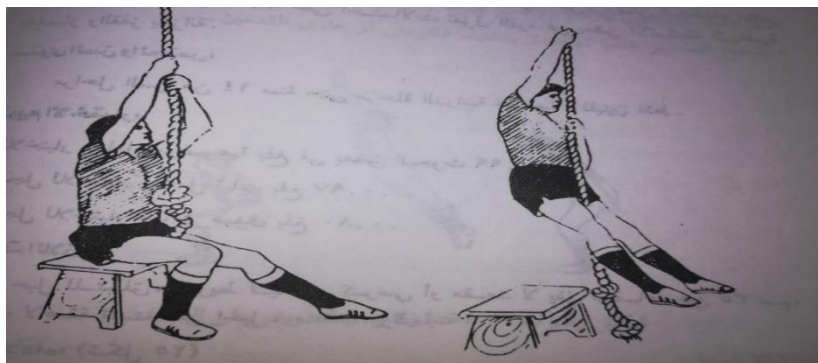


Figure2 : Explains the technical stages of doing the vertical arm pull test. (Allaoui, 2001, pp. 79 - 81)

**Trunk Extension :** the purpose of the test is to measure the ability to lengthen the torso (arching backwards from a prone position).

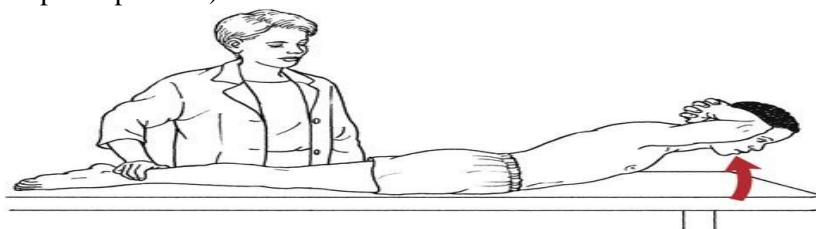


Figure3 : Explains the technical stages of doing the trunk extension test, downloaded from <https://musculoskeletalkey.com/testing-the-muscles-of-the-trunk-and-pelvic-floor>

**Nelson Choice – Response – Movement :** the purpose of the test is to measure the ability to respond and move quickly and accurately according to the chosen stimulus.

**8. The educational program:** The educational program was applied over a period of 12 weeks, with two sessions per week, each session lasting 50 minutes. The educational units were built on the principles of pragmatic philosophy, which states that knowledge can only be acquired through experience and experimentation. Knowledge formation within the pragmatic approach is through the exploratory method or the problem-solving method. Therefore, the basic principle in the applied educational program is to give the main objective of the lesson, to give the expected output of the learner to reach it, to provide various means and tools to the learners and to leave the freedom for the learner to carry out the activity and try to solve the problem before him, which is to reach the optimal performance and achieve the goal through trying and repetition, knowing the weaknesses and strengths in his performance, and trying to correct it through feedback of all kinds.

The following table shows the division of educational program objectives and educational activities on the classes.

It should be noted that the current study was conducted on the activities of relay running and volleyball.

Table (05) shows the educational program content

WEEK	FIRST LESSON		SECOND LESSON	
	purpose	content	purpose	content
WEEK 01	A theoretical lesson contains history of the game, various tournaments, basic law, rules of arbitration			
WEEK 02	Improve explosive power, reaction speed	Jump Squats + Reactive Drill	Improve explosive power, top speed	Plate Jump + Sprints Drills

WEEK 03	Improve explosive power, flexibility	Jumping Lunges + Back Extension	Improve reaction speed, top speed	Four-Cone Reaction Drill + Sled Push	Color
WEEK 04	Improve reaction speed, flexibility	Wave Drill+ Lizard Pose	Improve explosive power, top speed	Lateral Sled Drag + Sprint Drills (abc	
WEEK 05	Improve explosive power, flexibility	Box Squat Jumps + Wide Fold	Improve reaction speed, top speed	Shuffle Reaction Ball drill + Ladder Drills	
WEEK 06	Improve, explosive power, flexibility	Lateral Sled Drag + Seated Forward Fold	Improve reaction speed, top speed	Wave Drill + Interval Runs	
WEEK 07	A theoretical lesson contains physical and skill requirements of the game, common injuries and how to treat them.				
WEEK 08	Improve explosive power, flexibility	Plate Jump + Wide Straddle	Improve explosive power, reaction speed	Box Squat Jumps + Reactive Gear Drill	
WEEK 09	Improve reaction speed, flexibility	shuffle reaction ball drill + Seated Forward Fold	Improve reaction speed, top speed	T-drill Exercise + Sprints Drills	
WEEK10	Improve reaction speed, flexibility	Four-Cone Color Reaction Drill + Side Bends	Improve explosive power, top speed	Jumping Lunges + Sled Push	
WEEK 11	Improve explosive power, flexibility	Jumping Lunges + Back Extension	Improve reaction speed, top speed	Tennis Ball Explosive Starts + Sprint drills (abc)	
WEEK 12	Improve reaction speed, flexibility	wave drill+ Lizard Pose	Improve reaction speed, top speed	Jump Squats + Interval Runs	

**9. Tests standardization :**

Table(06) shows the results of the reliability tests

Tests	Correlations	P-value
<b>Standing Broad Jump Test</b>	Pearson Correlation=0.677**	0.006
<b>Back Extension</b>	Pearson Correlation=0.656**	0.008
<b>Nelson Choice – Responce – Movement Test</b>	Pearson Correlation=0.535*	0.020
<b>Vertical Arm Pull</b>	spearman correlation=0.517*	0.048
<b>45.7m dash test</b>	spearman correlation=0.859*	0.020

Note: \* : significant at the 5% level / \*\* : significant at the 1% level / (N=10)

Through the table, we see that the tests have a good degree of reliability, after the results showed that there is a statistically significant correlation between the results of the pre and post tests.

**03 - Presentation and Analysis of Results:**

**1<sup>st</sup> hypothesis:** The educational program has an effect on improving the explosive power of the study sample.

Table(07) shows the results of the Paired Samples t-test of the 1st hypothesis

Standing Broad Jump Test results

	M	SD	T value	df	Sig
<b>control group (pre-test) &amp; control group (post-test)</b>	2.058	0.188	6.589	14	0.000
	2.149	0.220			
<b>experimental group (pre-test) &amp; experimental group (post-test).</b>	2.158	0.182	9.120	14	0.000
	2.526	0.184			
<b>experimental group (post-test) &amp; control group (post-test)</b>	2.526	0.184	6.180	14	0.000
	2.149	0.220			

Note : Sig level : 0.05



Through the results of the table, we see that there are statistically significant differences between the pre-test and the post-test for the control sample with regard to the standing broad jump test, where the value of T came 6.589 where (P-value=0.000 < Sig level=0.05) and returning to the arithmetic means, we see that the mean of the post-test reached 2.149 while the mean of the pre-test was 2.058, therefore, the differences are in favor of the post-test, and accordingly it can be said that the traditional program improved the physical quality to be measured, which is the explosive power, the same for the experimental group, where the value of T reached 9.120 where (P-value=0.000 < Sig level=0.05) and returning to the arithmetic means, we see that (post-test= 2.526> pre-test= 2.158), and from it, the proposed educational program had an effect on improving the physical quality to be measured, however, by comparing the results of the two post-tests of the experimental group and the control group, we find that the value of T reached 6.180 with (P-value=0.000 < Sig level=0.05)., which means that there are statistically significant differences between the two tests, based uponwe, can say there are differences in the level of the measured physical quality, which is standing broad jump\_between the experimental group and the control group, and returning to the arithmetic means, we find that the mean of the experimental group has reached 2.526, and 2.149 for the control group. Which means that the differences are in favor of the experimental group, and therefore, it can be said that the improvement rate of the explosive power was in a better degree for the experimental group that underwent the proposed educational program.

Table(08) shows the results of the Wilcoxon signed-rank test of the 1st hypothesis

		Vertical Arm Pull test			
		M	SD	Z value	Sig
control group (pre-test) &	control group (post-test)	51.47	12.282	3.228	0.006
		52.00	12.323		
experimental group (pre-test) &	experimental group (post-test).	50.33	13.896	3.493	0.000
		52.80	14.388		
experimental group (post-test) &	control group (post-test)	52.80	14.388	0.534	0.593
		52.00	12.323		

Note : Sig level : 0.05

Through the results of the table, we see that there are statistically significant differences between the pre-test and the post-test for the control group with regard to vertical arm pull test, where the value of Z came 3.228 with (P-value=0.006 < Sig level=0.05) and returning to the arithmetic means, we see that the mean of the post-test reached 52.00 while the arithmetic mean of the pre-test was 51.47, therefore, the differences are in favor of the post-test, and accordingly, it can be said that the traditional program improved the physical quality to be measured, which is the explosive power for arms and shoulders, the same for the experimental group, where the Z value reached -3.493 with (P-value=0.000 < Sig level=0.05) and returning to the arithmetic means, we see that (post-test= 52.80> pre-test= 50.33), and from it, the proposed educational program had an effect on improving the physical quality to be measured, however, by comparing the results of the two post-tests of the experimental group and the control group, we find that the value of Z reached -0.53 with(P-value=0.593> Sig level=0.05)., which means that there are no statistically significant differences between the two tests, based uponwe can say there are no differences in the level of the measured physical quality, which is the explosive power for arms and shoulders between the experimental group and the control group, however by returning to the arithmetic means, we find that the mean of the experimental group has reached 52.80 grater then, 52.00 for the control group. Therefore, it can be said that the improvement rate for explosive power of the arms and the shoulders was in a better degree for the experimental group that underwent the proposed educational program with no statistically significant differences.

**2<sup>nd</sup> hypothesis:** The educational program has an effect on improving the maximum speed of the study sample.

Table(09) shows the results of the Wilcoxon signed-rank of the 2nd hypothesis

		45.7m dash test			
		M	SD	Z value	Sig
control group (pre-test) &	control group (post-test)	7.496	0.428	3.410	0.001
		7.346	0.420		
experimental group (pre-test) &	experimental group (post-test).	7.344	0.293	96.759	0.000
		6.976	0.279		
experimental group (post-test) &	experimental group (post-test)	6.976	0.279	2.499	0.012

<b>&amp; control group (post-test)</b>	7.346	0.420
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Note : Sig level : 0.05

Through the results of the table, we see that there are statistically significant differences between the pre-test and the post-test for the control sample with regard to 45.7m dash test, where the value of Z came 3.410 with (P-value=0.001 < Sig level=0.05) and, returning to the arithmetic means, we see that the mean of the post-test reached 7.346 while the mean of the pre-test was 7.496, therefore, the differences are in favor of the post-test, and accordingly, it can be said that the traditional program improved the physical quality to be measured, which is the maximum speed from a standing start, the same for the experimental group, where the Z value reached 96.759 with (P-value=0.000 < Sig level=0.05) and returning to the arithmetic means, we see that (post-test=6.976 < pre-test=7.344), and from it, the proposed educational program had an effect on improving the physical quality to be measured, however, by comparing the results of the two post-tests of the experimental group and the control group, we find that the value of Z reached 2.499 with (P-value=0.012 < Sig level=0.05). which means that there are statistically significant differences between the two tests, based upon, and by returning to the arithmetic means, we find that (experimental group post-test mean=6.976) meanwhile (control group post-test=7.346). Therefore, it can be said that the improvement rate in the maximum speed from a standing start was in a better degree for the experimental group that underwent the proposed educational program with statistically significant differences.

**3<sup>rd</sup> hypothesis:** The educational program has an effect on improving the motor flexibility of the study sample.

Table(10) shows the results of the Paired Samples t-test of the 3rd hypothesis

		<u>Trunk Extension test</u>			
		<u>M</u>	<u>SD</u>	<u>T value</u>	<u>Sig</u>
<b>control group (pre-test) &amp;</b>		27.27	6.734	3.162	0.007
<b>control group (post-test)</b>		27.93	6.881		
<b>experimental group (pre-test) &amp;</b>		30.73	3.712	3.327	0.005
<b>experimental group (post-test).</b>		33.27	3.348		
<b>experimental group (post-test) &amp;</b>		33.27	3.348	2.761	0.015
<b>&amp; control group (post-test)</b>		27.93	6.881		

Note : Sig level : 0.05

Through the results of the table, we see that there are statistically significant differences between the pre-test and the post-test for the control group with regard to the Trunk\_Extension test, where the value of T came 3.162 with (P-value=0.007 < Sig level=0.05) and returning to the arithmetic means, we see that the mean of the post-test reached 27.93 while the mean of the pre-test was 27.27, therefore, the differences are in favor of the post-test, and accordingly, it can be said that the traditional program improved the physical quality to be measured, which is the motor flexibility, the same for the experimental group, where the T value reached 3.327 with (P-value=0.005 < Sig level=0.05) and returning to the arithmetic means, we see that (post-test=33.27 < pre-test=30.73), and from it, the proposed educational program had an effect on improving the physical quality to be measured, however, by comparing the results of the two post-tests of the experimental group and the control group, we find that the value of T reached 2.761 with (P-value=0.015 < Sig level=0.05). Which means that there are statistically significant differences between the two tests, by returning to the arithmetic means, we find that (experimental group post-test mean=33.27) meanwhile (control group post-test=27.93). Therefore, it can be said that the improvement rate in the motor flexibility was in a better degree for the experimental group that underwent the proposed educational program with statistically significant differences.

**4<sup>th</sup> hypothesis:** The educational program has an effect on improving the motor response speed of the study sample.

Table(11) shows the results of the Paired Samples t-test of the 4th hypothesis

Nelson Choice – Responce – Movement Test

		<u>M</u>	<u>SD</u>	<u>T value</u>	<u>Sig</u>
<b>control group (pre-test) &amp;</b>		1.575	0.101	60.248	0.000
<b>control group (post-test)</b>		1.528	0.098		
<b>experimental group (pre-test) &amp;</b>		1.568	0.098	9.317	0.000
<b>experimental group (post-test).</b>		1.445	0.899		



<b>experimental group (post-test)</b>	1.445	0.899	2.417	0.003
<b>&amp; control group (post-test)</b>	1.528	0.098		

Note : Sig level : 0.05

Through the results of the table, we see that there are statistically significant differences between the pre-test and the post-test for the control group with regard to the Nelson Choice – Responce – Movement Test, where the value of T came 60.248 with (P-value=0.000 < Sig level=0.05) and returning to the arithmetic means, we see that the mean of the post-test reached 1.528 while the mean of the pre-test was 1.575, therefore, the differences are in favor of the post-test, and accordingly, it can be said that the traditional program improved the physical quality to be measured, which is the motor response speed, the same for the experimental group, where the T value reached 9.317 with (P-value=0.000 < Sig level=0.05) and returning to the arithmetic means, we see that (post-test= 1.445 < pre-test= 1.568), and from it, the proposed educational program had an effect on improving the physical quality to be measured, however, by comparing the results of the two post-tests of the experimental group and the control group, we find that the value of T reached 2.417 with (P-value=0.003 < Sig level=0.05). which means that there are statistically significant differences between the two tests, by returning to the arithmetic means, we find that (experimental group post-test mean=1.445) meanwhile (control group post-test=1.528). Therefore, it can be said that the improvement rate in the motor response speed was in a better degree for the experimental group that underwent the proposed educational program with statistically significant differences.

#### 04 - Discussion

It is well known that the role of physical and sports education in general and its objectives in particular should not stop at playing or spending a good time. The objectives of physical education and what the learner must reach in terms of physical, skill, social and psychological aspects must be taken into account, Tristan L. Wallhead indicates that that Physical education can be a powerful influence on promoting youth physical activity, by applying physical education-based physical activity, promotion programs that were successful in increasing out-of-school physical activity applied a pedagogical framework, targeting variables associated with motivation (Tristan & Buckworth, 2004), Senlin Chen and others reached that PE displayed a positive contribution to increasing daily MVPA and decreasing daily sedentary time among youth. Active participation in PE classes increases the chance to be more active and less sedentary beyond PE among youth. ( Senlin, Youngwon, & Gao, 2014), moreover, Llorrente-Cantarero and Gil Lozano (2020) concluded that students who practice physical activities get better results than sedentary students, in terms of cardiorespiratory and BMI indexes. (Cantanero & Lozano, 2020), meanwhile Salas-Sanchez and others (2020) emphasize the importance of intervention to organize the student's free time in order to include more physical activities for its role in improving the school atmosphere in general. (Salas-Sanchez, Muntaner-Mas, & Vidal-Conti, 2020), in the social aspect, González J and others (2019) emphasize the role of physical education in the development of prosocial behaviour and changes in the emotional intelligence's components of the study subjects. Also, offers an effective way of training aspects of prosocial personality, through activities that can be approached through teaching in physical education. (González, Cayuela, & López-Mora, 2019), the practice of physical education can also play a role in decreasing proportions of aggressiveness (Pino-Juste, Portela-Pino, & Soto-Carballo, 2019), or the positive relations between the practice of physical education and mental health. (Nixdorf, Beckmann, Oberhoffer, Weberruß, & Nixdorf, 2021)

One of the most important things that must be taken into account during the planning process for physical education and sports lessons is the development of the physical characteristics of the student, given that this is a physical education lesson, and among its loftiest goals, is the development of the student's physical characteristics, As the latter may be linked to the health aspect of the student by helping to raise the physical efficiency, or those who suffer from health complications such as obesity, where Nouasria Mouna found that there are statistically significant differences between those who suffer from obesity, who are practitioners and non-practitioners of school physical and sports activities, as it was confirmed that physical education and sports have a role in helping those who suffer from obesity to lose weight. (Nouasria, 2022), as well as the study of Gomis-Gomis and others (2022) indicates that intervention programs based on games contribute to promote health for students with sedentary and/or overweight problems. (Gomis-Gomis, Chacon-Borrego, & Pérez-Turpin, 2022)

We have taken into account the basic physical characteristics that most learners need, in order to practice the activities chosen in the educational program (explosive power, flexibility, reaction speed, maximum speed), The results obtained proved the effectiveness of the educational program in reaching the

learner to achieve the ruler physical competencies, and the results, also demonstrated the superiority of the educational program, in terms of scoring rates and improvement in physical qualities that were measured over the traditional program, where we found that there are differences regarding the level of explosive force between the two groups due to the practice of the educational program, and this result is consistent with the findings of a study by Falces Prieto and others (2020), where the main results of the study showed a significant increase in the countermovement jump performance due to the practice of the strength training programme, (Falces, et al., 2020), and the study of Álvarez-Zúñiga and others (2019), The results were statistically significant for time and height variables, showing that there are changes in these parameters of the vertical jump after HIIT training (Álvarez-Zúñiga, et al., 2019), meanwhile, regarding the flexibility variable, the study of Monteiro and others (2019) has proven that All of the three different types of training have a significant impact on upper body flexibility. (Monteiro, Bartolomeu, Forte, & Carvalho, 2019), on the other hand, a study by Loureiro and others (2020) showed that the applied exercise program did not have the expected impact on the flexibility variables, which is not consistent with the findings of our study. (Loureiro, Morais, & Leal, 2020).

The researcher attributes this to a group of elements that had an impact on this results.

- a) **Teaching planning** : teachers and classrooms, rarely function effectively without some kind of planning. There are many reasons why its so important and essential to plan for the coming terms, many educational researchers have contended that the most important teaching skill is decision making. (Yinger, 1980), the ability to make the right decisions in the different situations that a teacher encounters while performing his duties can only be the result of planning processes, however, the importance of planning for teaching appears in the results to be reached, as well as the means and methods of teaching adopted by the teacher, in addition to the requirements of the teaching subject, Penelope L Peterson and others confirm that the greatest proportion of planning statements concerned the subject matter, with the presence of other related links that may make the difference with regard to teaching, represented in the different planning method between teachers, the cognitive methods adopted by the teacher, as well as professional experience (Peterson, 1978), while John A. Zahorik emphasizes the pivotal role that planning plays in reaching goals, so if the lesson is to be effective, the teacher needs to make decisions in these areas before the lesson. He needs to identify the objectives he intends to develop the knowledge or subject-matter objectives as well as the process and affective objectives. He needs to select and organize pupil learning experiences that will develop the objectives. He needs to make decisions about activities to be used, materials to be gathered, amount of time to be spent, and other matters. Finally, he needs to decide what methods or instruments to use to determine whether the teaching accomplished the objectives of the lesson. (Zahorik, 1970). In our educational program, we have taken all these considerations with great importance, since the physical education class is an applied class that requires precise identification of goals, educational methods, space for practice and the time required for application. On this basis, the results of the current study is consistent with the study of Casado-Robles and others (2021) Through which they showed the importance of planning in reaching the learner to know the role of the playing environment. (Casado-Robles, Viciano, Guijarro-Romero, & Mayorga-Vega, 2021)
- b) **Instructional materials**: Instructional materials refer to those alternative channels of communication, which a classroom teacher can use to concretize a concept during teaching and learning process (Amadioha, 2009). The importance of Instructional Materials in any teaching/learning process can not be over-emphasized, this is for the fact that such materials enhance, facilitate and make teaching/learning easy, (Olawale, 2021), Ajok (2017) found that there is a statistically significant difference in the performance of students taught with the use of visual instructional materials and those taught without the use of instructional materials, where students in the experimental group that were taught with visual instructional materials performed better than those in the control group that were taught without instructional materials, (Ajoke, 2017), moreover, instructional materials have proven their importance in improving the level of the learner, where a study by Effiong (2015) concluded that there is a positive achievement in students taught by highly qualified biology teachers and those exposed to instructional materials during lessons (Effiong, 2015). In our educational program, we relied on a set of instructional materials in the process of planning the program, after we made a general inventory of all the means available at the institution level, with the aim of building educational activities according to the means and facilities available in it. On this basis, the results of the current study is consistent with each Rodríguez-Fernández (2020) study, which emphasizes the positive role played by the use of equipments

and spaces in the development of movements and basic skills of children (Rodríguez-Fernández, Pereira, Condessa, & Pereira, 2020), and the study of

- c) The teaching environment: teaching environment differs according to the teaching method used by the teacher, which naturally leads to a difference in the acquisition of knowledge in terms of quantity and quality. In assignment-based teaching, guided self-study is the main learning concept. Compared to traditional teaching, there are fewer lectures, however, in problem-based learning (PBL), students work in small groups of about 10 trying to understand, explain and solve problems, project-centred learning is a project assignment or problem, this concerns authentic, real-life assignments that are often directly derived from professional practice. (Vermunt, 2007), while others think that creating an interactive and responsive teaching environment is the key, by foster discussions between students, the creation of technological resources and the design of feedback systems. Feedback provides students with the opportunity to gauge their understanding of the class and to improve. (Paladino, 2008) In general, we can say that the suitable teaching environment should be characterised by a focus on understanding, the active participation of students in learning activities, a coherent curriculum, and assessment which focused on analytical skills critical thinking, self-managed learning, adaptability, problem solving, communication skills, and interpersonal skills and groupwork. (Kember, 2005). In our educational program, the prevailing teaching environment was generally based on the principle of practice, initiative, and questioning without prejudice to the essence of the class, which gives both the student and the teacher powers that each of them does not exceed, taking into account that the center of the learning process is the student, while the teacher is a guide, encourager, and assistant to the student to acquire competencies. On this basis, the results of the current study is consistent with the study of Bravo-Sanzana and others (2019), Which emphasized the role of the teacher in general and the physical education teacher in particular in enhancing the teaching environment, and reducing stress levels among students, (Bravo-Sanzana, Miranda-Zapata, Huaiquián, & Miranda, 2019) while the study of Bennàsser M, and Vidal-Conti J (2021) confirms the value of the home characteristics and environment that encourage the practice of physical education, and the increase in the rates of its practice, which leads to a decrease in the level of disease, in addition to the rise of health indexes. (Bennàsser & Vidal-Conti, 2021)
- d) learning orientation: educational researchers have long acknowledged the importance of student motivation in classroom, The term "learning orientation" was used to describe the predominant attitude held by those students who approach a particular class or activity as an opportunity to acquire knowledge and to obtain personal and educational enlightenment (EISON, 1979), in addition, it provides a useful construct for understanding a student's personal context for study. It encapsulates the complex nature of a student's aims, attitudes, and purposes for studying. Moreover, learning orientation is not an invariable property ascribed to a student. It describes the relationship between the individual and both the course of study, the institution and indeed the world beyond. (Beaty, 1997), In our educational program, the student's orientations and desires were taken into account, as we took their opinions regarding the activities included in the educational program (relay running, volleyball), and they were also consulted regarding the timing of practice, as well as the division of educational sessions and the duration of the program, where they accepted voluntary participation.
- e) The teaching methods : A teaching method is characterised by a set of principles, procedures or strategies to be implemented by teachers to achieve desired learning in students (Westwood, 2008), the traditional passive view of learning, involves situations where material is delivered to students using a lecture-based format. In contrast, a more modern view of learning is constructivism, where students are expected to be active in the learning process by participating in discussion and/or collaborative activities, a study by Caprariis, Barman, & Magee (2001) suggest that lecture leads to the ability to recall facts, but discussion produces higher level comprehension. Further, research on group-oriented discussion methods has shown that team learning and student-led discussions not only produce favorable student performance outcomes, but also foster greater participation. (Carpenter, 2006), In fact, we cannot be certain of the effectiveness of one teaching method from another, as each method has its advantages, and students' desires and preferences differ between the methods, a study by Sajjad S shwos that most of the students rated lecture method as the best teaching method. Reasons included; teacher provides all knowledge related to topic, time saving, students attentively listen lecture and take notes. (Sajjad, 2010), whereas the study of Ganyaupfu. E. M demonstrates that teacher student interactive method was the most effective teaching method, followed by student-centered method while the teacher centered approach was the least effective teaching method. (Ganyaupfu, 2013), on the other hand, most studies on teaching strategies for moral

education recommend a problem-based approach to instruction whereby students work in small groups. This approach gives room for dialogue and interaction between students, which is considered to be crucial for their moral and prosocial development. (Schuitema, 2008), when it comes to Physical Education teacher's views of effective teaching methods, Aktop A and Karahan N see that there was an incongruity between PE teacher's views, and there was a significant gender difference in preference of teaching methods, where men PE teachers prefer practice style, unlike women PE teachers who said command style came with the best results. (Aktop & Karahan, 2012). In our educational program, we adopted the exploratory method and the problem-solving method, where the teacher only gives a general idea of the skill or activity to be performed, while putting at the disposal of the student all the means to try with his colleagues to reach a solution to the problem before him, which is to reach the optimum performance the educational situation through practice, repetition and feedback, while the role of the professor here remains limited to guidance, assistance and correcting performance mistakes.

### Conclusion

Through results analysis and interpretation, we concluded that the proposed educational program, which was built according to the principles of pragmatic theory in the curriculum in terms of construction and application, has an effect on achieving physical competencies related to practiced activities, which we considered as physical competencies for practiced activities, by making sure that there are statistically significant differences between the group applying the program and the control group, where the results were in favor of the experimental group in four out of five physical tests, while it is worth noting the importance of quality in the teaching process, especially physical and sports activities, and trying to build programs that are in line with the reality of sports practice in the school in order to reach the student to the desired changes either in his personality or in his body.

### Notes :

1. It should be noted that the current study was conducted on the activities of relay running and volleyball.
2. It should be noted also that the educational program contained physical competencies (by acquiring elements of physical fitness related to the practiced activities), as well as the skill competencies of the activities practiced, measured through skill performance tests for the basic skills of the practice activities, prepared by the researchers, as well as the social aspect represented in measuring the level of social interaction through the application of the social interaction scale.
3. the research paper in our hands only dealt with physical competencies.

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### Conflict-of-interest

The authors certify that they have No Conflict of Interest to declare in the subject matter or materials discussed in this manuscript.

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