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# Impact of theoretical courses on physical health performance

Mohammed Zerf

## Abstract:

**BACKGROUND:** Physical activity, health fitness, and academic results are very important goals in student life. However, success lies in academic subjects in educational establishments. Our background reveals the contradictions between two philosophers who approved the importance of physical education (PE) as a component of the curriculum and others who reiterated that PE and sports would never be a component of the curriculum as is the case in Algerian universities.

**METHODS:** The research samples were selected by the intentional manner which included sixty students, aged around 18 years. Twenty girls who will pass the baccalaureate, twenty girls of the 1<sup>st</sup> year department languages, and twenty girls of the 1<sup>st</sup> year PE and sports for the academic year 2014–2015 were included in the study. They were tested based on the field tests developed by the Canadian Society for Exercise Physiology.

**RESULTS:** Our results confirm that the absence of PE lessons and sport case department languages leads to loss of fitness in the opposite of high-school and students of the Institute of Sports, where the effects return to the absence of the session of physical education and sport.

**CONCLUSION:** Physical activities are very important in the life of our scholar girls, where the sport practice is a physical as well as a mental effort which is the key to a healthier life.

## Key words:

Physical health performance, scholar girls, theoretical courses

Physical education (PE) is an educational course related to the physique of the human body. It is taken during primary and secondary education and encourages psychomotor learning in a play or movement exploration setting to promote health.<sup>[1]</sup> However, this practice differs from one country to another, for example, in France, PE has been a compulsory subject since 1880 and 1882. Every week, the pupils are taught 3 h of PE in primary school, 4 h in the first form of secondary school, and then 3 h in high school;<sup>[2]</sup> while in South America (including Caribbean countries), 73 min in primary schools and 87 min in secondary schools;<sup>[3]</sup> whereas in Algeria, 2 h/weeks in middle and high school<sup>[4]</sup> and absent in university programs other than in the PE and Sports Institute. This difference leads us to two philosophies, one which indicates that the reduced time of physical activity improves the academic results<sup>[5]</sup> and second which opines that increased time in structured PE does not reduce academic achievement.<sup>[6]</sup>

From this perspective, our outcome in this study would reveal the result of these contradictions between the two philosophies, one which agrees upon the importance of PE as a component of the curriculum<sup>[7]</sup> whereas the other reiterates that PE and sports would never be a component of the curriculum.<sup>[8]</sup>

Literature reveals that researchers discovered that exercise influenced specific measures of cognition and academic achievement.<sup>[9-13]</sup>

Based on the absence of PE and sport in the university programs,<sup>[14,15]</sup> our objectives in this study line on to prove the beneficial effects of PE within and beyond the curriculum, and thenceforth, to successfully participate in physical activity throughout life, a fact confirmed by Haydn-Davies and Kaitell<sup>[16]</sup> and Loef *et al.*<sup>[17]</sup> At the same time, the effect of physical inactivity contributes substantially to global burden of disease as confirmed by Sallis and Carlson,<sup>[18]</sup> Pate and Buchner,<sup>[19]</sup> and Lee *et al.*<sup>[20]</sup>

According to the review of literature, sport is fundamentally a social phenomenon that

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Sports Training,  
Physical Education  
Institute Laboratory  
OPAPS, University  
of Mostaganem,  
Mostaganem 27000,  
Algeria

## Address for correspondence:

Dr. Mohammed Zerf,  
Physical Education  
Institute Laboratory  
OPAPS, University  
of Mostaganem,  
Mostaganem 27000,  
Algeria.  
E-mail: [biomeca.zerf@outlook.com](mailto:biomeca.zerf@outlook.com)

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encompasses all social forms of human activity.<sup>[21]</sup> Studies<sup>[22-25]</sup> also confirm the effect of physical activity on prevention of major physical health disabilities. Studies also show the impact of the physical activity as a lifestyle, which reduces pain and contribute to an improved physiological, emotional, and social functioning in everyday life.

Our address in this study examines the effects of the nature and timing courses in the physical health performance on the academic program courses and hence the quality of life of a school student.

## Methods

### Study population and design

This study was conducted in the Laboratory OPAPS "PE Institute" University of Mostaganem for academic year 2014–2015. The research samples were selected by intentional manner which included sixty students aged around 18 years. Twenty girls who will pass the baccalaureate, twenty girls of the 1<sup>st</sup> year department languages, and twenty girls of the 1<sup>st</sup> year PE and sports for the academic year 2014–2015 were included in the study. All participants were healthy with good habits not taking any medication on a regular basis. They were informed about procedures and all participants provided their written consent. The study protocol was accepted by the Institute of PE. The study was conducted based on the field tests developed by the Canadian Society for Exercise Physiology:

- First test: Balance on one leg (static equilibrium); purpose: to measure the effectiveness of postural control on a reduced surface support<sup>[26]</sup>
- Second test: Flexion front trunk (flexibility before standing); purpose: to measure the flexibility of the trunk and lower limbs posterior chain<sup>[27]</sup>
- Third test: Measurement of the isometric strength of the muscles of the hand and forearm (grip strength); purpose: to measure the maximum force gripping by dynamometer<sup>[28]</sup>
- Fourth test: Test stand-sit 30 s (strength in the lower limbs); purpose: to measure the strength of the lower limbs and the ability of muscles to contract to produce movement<sup>[29]</sup>
- Fifth test: 6 min walk test (allows an evaluation of the endurance ability); purpose: to evaluate the cardiovascular endurance and mobility<sup>[30]</sup>
- Sixth test: Body mass index (BMI) calculate your BMI = weight/square meter size.<sup>[31]</sup>

After evaluation for each test,<sup>[32]</sup> the mean value is 3.

If they have a majority:

- 1 and 2, it is time to resume physical activity or increase your current activity level
- 3 and 4, you are in pretty good shape, but you still have room for improvement
- 4 and 5, BRAVO! Keep doing this!

### Statistical analysis

The homogeneity in tests was calculated based on ANOVA one-way and Levene Statistic. Regression analysis was used to predict the impact of courses and to analyze the relationship between BMI and physical performance.

## Results

The homogeneity in tests was calculated based on ANOVA one-way and Levene Statistic which showed no significance in all comparisons [Table 1].

All the relationships analyzed between independent variables and predictors are significant at  $P \leq 0.05$ . From the regression analyses, in Model 1, the program showed that muscular force was able to explain the changes in the BMI, where F and T are significant at  $P < 0.001$  and form an equation:  $BMI = 0.215 + 0.711$  muscular force. In Model 2, the program showed that muscular force and endurance were able to explain the changes in the BMI, where F and T are significant at  $P < 0.001$  and form an equation:  $BMI = 0.704 + 0.647$  muscular force +  $0.274$  endurance [Table 2].

BMI varied in different groups of participants [Figure 1].

## Discussion

The results of the present study showed that the theoretical courses only increased the body mass as observed in the language students, which decreased their physical health performance, a fact supported by the studies concerning the health risk.<sup>[33]</sup> It was observed that the mean BMI varied between the group samples, which is in the benefit of group language due to the lack of subject PE and sport as a unit educator in the program of department of literature and languages. Based on the regression analyses relating BMI and physical performance, we confirm our hypothesis that inactive course and lack of sport are predictors of health problems which may lead to severe consequences.<sup>[37]</sup> Regular practice of physical activity, as in Earth and Planetary Sciences (EPS) and Bac girls, helps develop the Healthy Physical Abilities, which promote health.<sup>[38]</sup> Otherwise, our models of regression show that muscular strength and endurance are the most important fitness elements that affect the level of physical fitness. Based on these findings, we agreed with the principle that the physical activity increases the functioning capacity which reflects upon the quality of life. Based on these results, we recommend the subject of PE as a treatment to an inactive course. Similar studies show that student engaged in daily physical activity show better motor activity and academic performance,<sup>[39]</sup> which has been approved by the Committee on Physical Activity<sup>[40]</sup> and Graham *et al.*<sup>[39,41]</sup>

However, the inactive courses and lack of sport are elements recognized as an important risk factor for multiple causes<sup>[42]</sup> such as increases of stroke, cardiovascular, high blood pressure, low HDL ("good") cholesterol, and diabetes.<sup>[42,43]</sup>

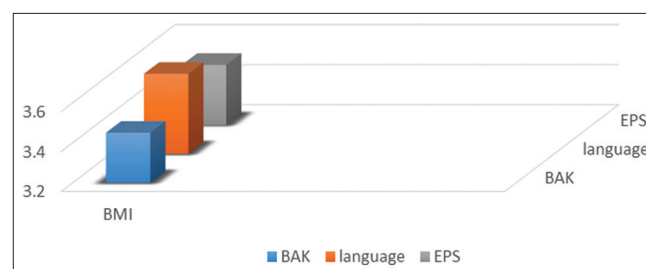


Figure 1: Body mass index characteristic in total sample

**Table 1: Homogeneity of variances of the participants**

Variables	n	Mean±SD	F	Significant	W	P≤0.05
<b>Balanced</b>						
Baccalaureate (Bac)	20	4.30±0.80	0.31	0.74	0.28	0.75
Department languages	20	4.20±0.83				
Physical Education and Sports Institute EPS	20	4.10±0.78				
Total	60	4.20±0.79				
<b>Flexibility</b>						
Baccalaureate (Bac)	20	4.15±0.81	0.03	0.97	0.19	0.82
Department languages	20	4.10±0.79				
Physical Education and Sports Institute EPS	20	4.15±0.75				
Total	60	4.13±0.77				
<b>Muscular force</b>						
Baccalaureate (Bac)	20	3.50±0.51	0.06	0.94	0.19	0.82
Department languages	20	3.55±0.51				
Physical Education and Sports Institute EPS	20	3.50±0.51				
Total	60	3.51±0.50				
<b>Endurance</b>						
Baccalaureate (Bac)	20	3.25±0.72	0.03	0.97	0.09	0.91
Department languages	20	3.30±0.66				
Physical Education and Sports Institute EPS	20	3.25±0.72				
Total	60	3.26±0.68				
<b>Body mass index</b>						
Baccalaureate (Bac)	20	3.45±0.51	0.36	0.70	20.42	0.10
Department languages	20	3.60±0.68				
Physical education and sports Institute EPS	20	3.50±0.51				
Total	60	3.52±0.57				

SD=Standard deviation, EPS=Earth and Planetary Sciences

**Table 2: Regression analyses relating body mass index and physical performance**

Model stepwise	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Coefficients <sup>a</sup>	t	P	F	P
1	0.71 <sup>a</sup>	0.51	0.49	Constant	1.91	0.06	59.14	0.00
				Muscular force	7.69	0.00		
2	0.76 <sup>b</sup>	0.58	0.56	Constant	0.56	0.57	38.69	0.00
				Muscular force	7.29	0.00		
				Endurance	3.09	0.00		

Dependent variable: BMI, predictors in the Model 1: (constant), muscular force, predictors in the Model 2: (constant), muscular force, endurance. BMI=Body mass index

From the proofs, we agreed the judgment of Biddle *et al.*<sup>[34]</sup> that we must get serious importance about improving the health of the nation by affirming our commitment to healthy physical activity by integrating EPS subject in the university programs of different academic specialties such as high school 2 h/weeks. For reasons, we confirm that the relationship of physical activity and cognitive competence has been approached primarily in the context of intellectual development and academic achievement as confirmed by Nicholas G. Norgan<sup>[35]</sup> and Biddle *et al.*<sup>[36]</sup>

In addition, our finding is consistent with the proofs that physical activities improves endurance and strength,<sup>[44,45]</sup> allowing the practitioner to perform activities more effectively and for longer pruderities<sup>[46,47]</sup> from that our result line in. The investigation of the relationships between improving academic results, physical activity, fitness, and health is an important research field<sup>[48-50]</sup> to improve the health fitness by

integrating physical activities sitting in different academic specialties.

Sharon A. Plowman *et al.*<sup>[51]</sup> confirm that the physical fitness is composed of components representing as a vital component of the PE curriculum confirmed by Williams *et al.*<sup>[52]</sup> and Porcari *et al.*<sup>[53]</sup> However, the insufficient physical activity levels as is the case in department languages risk a severe healthy consequence in the nearest future. Our results also line with the findings of Chaffin (1974) according to Cook<sup>[54]</sup> that any work demands some strength and physical capacity<sup>[55]</sup> emphasizing on the relationship between fitness and the education programs.<sup>[56]</sup>

## Conclusions

The training is designed to change the behavior of the student to stimulate efficiency and higher performance standards from that, we agreed that, the quality of Human Resource is an asset to any organization and as a result training. Through the success of all the samples in their academic studies in the opposite of the level of physical performance, we confirm that sport is fundamentally a social phenomenon that encompasses all of the social forms of human activity where the physical activity required to maintain optimal health is regular, planned, and structured with the aim of improving or maintaining one or more aspects of physical fitness. Accordingly, to the results of the current study, we refer to fitness rating help which determine health-related agility, balance, body composition, cardiorespiratory endurance as physical health abilities.

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### Conflicts of interest

There are no conflicts of interest.

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