

Comparison of multiple intelligence fields of physical education and sports college students

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Abstract

Aim of this study was to identify and compare the areas of multiple intelligence of School of Physical Education and Sports students according to some parameters. Research group consists of 185 people, chosen randomly, who studied at Sakarya and Gaziantep University School of Physical Education and Sports during the academic year of 2014–2015. In this research "Self-Evaluation Survey in Multiple Intelligence" developed by Gardner and adapted to Turkish and customized the validity and reliability of this survey by Saban was used as a data collection tool. "Anova Test" was used to determine the differences between intelligence scores, and "Tukey HSD Test" was used to define the different group. The data collected by using survey was analyzed by using Spss 21 for Windows package program. As a result of the this study, In contrast to students' social, physical, inherent and naturist intelligence, there is a significant difference between linguistic, visual and musical intelligence in favor of the female students and logical intelligence in favor of the males students. In addition linguistic intelligence of subjects was found significantly different according to their department variables. Logical, visual, physical, musical, social, inherent and naturist intelligence were found at the same level. School of Physical Education and Sports students were found significantly higher level of logical, visual, physical and naturist intelligence areas. Moreover, department of Sports Management students were showed higher level of linguistic, musical, social and inherent intelligence areas, in comparison to other School of Physical Education and Sports departments' students.

Keywords: School of Physical Education and Sports, Multiple Intelligences, Student.

INTRODUCTION

The concept of intelligence is not peculiar to students who are getting an education or a high-rank worker. People make use of their intelligence throughout their daily lives such as walking, talking, shopping, etc.

Generally speaking, intelligence is considered as an ability to learn, indication is something that a person learns being more and more intelligent than the ones who learn less (17). Throughout centuries, scientists, psychologists, educational experts and others have discovered various aspects of intelligence. Piaget, for example, defined intelligence as the changes and innovations of the conscious mind, whereas Thorndike claimed that intelligence is three dimensional such as abstract intelligence, mechanical intelligence and social intelligence (19).

A learning specialist in the name of Howard Gardner stated that: Being a successful chess player, a violin virtuoso or even a successful athlete can

come into our minds. These great minds do deserve special recognition. Do you think that these people are intelligent? Even if they are, how come our test cannot predict their intelligence? If even they are not smart what makes these people so successful? Speaking in general how these people with all their efforts can be so successful; do they take this into consideration? These have been taken into consideration and have been researched in different dimensions (9).

Also being taken into consideration, it has been researched and monitored of those who have suffered from accidents and suffered brain damage (23). After these various studies, in order to determine the different types of intellectual concepts, sorting them out into different categories and choosing the ones that's are suitable, Gardner and his colleagues first decided on the 7 intellectual concepts and afterwards adding another have theorized the multiple intelligence theory (23). In the

scope of the multiple intelligence theory, spatial visual intelligence, bodily kinesthetic (physical) intelligence, naturalist, logical and mathematical intelligence are connected to our imaginations having us revive and animate these different intelligences. Verbal linguistic intelligence and musical intelligence, being independent in their own fields, have an acoustic structure and are patterning to each other. In the area of interpersonal intelligence we see the individual being more connected to each and being in communication with their surroundings (3). According to this research each person who is born has these eight intelligences; these intelligences can be improved over time (18).

The purpose of traditional intelligence is to solve problems and take into consideration of how individuals use traditional intelligence in the multiple intelligence theory, this being of the basis of this understanding (23). Having the individuals tested it shows us how they can be affected by their surroundings and the perspectives of their families. This also affects their success in the future as well (8). The multiple intelligence theory expresses the individual's intelligences and their criteria. If the individuals intelligence is not developed this theory proves that it can be developed. Instead of having them impressed and put into patterns, we can spread each of these intelligences into equal sections helping them improve their basis. If we can choose intelligence theory based on their specialties individuals will be able to come to a standard level (3).

We can see many differences according to the age, gender, education background, and the capacity of understanding. We can see individual differences of the person and their major intelligence can affect the less minor intelligence of the individual, this having a negative effect on the development of the individual. In this process we can give a great example on the existence of the field of intelligence and how it has a negative development; one of these being an impairment to the learning of a language. At the end of this observation we can see how there are different specialties (5).

At the end of the observation of these special gifted students the purpose of this study is to show the differences between the School of Physical Education and Sports, and the multiply intelligence

theory can affect individuals according to different variances.

MATERIAL & METHOD

In this research the students of School of Physical Education and Sports have been taken into a descriptive survey model according to gender, age, major, and class. The descriptive survey modal is used as a modal that has many students participate despite their variances, this helps us reach a decision in an universal environment, it also helps us put the participies in a group according to the survey that has been done (13).

According to the survey between the years of 2014-2015 there are a total of 1540 students at the University of Gaziantep and Sakarya, at the ages of 18 or above, and different genders at the Department of Physical Education and Sports Faculty.

In the examples of the study between the years of 2014-2015 in the spring semester at the University of Gaziantep and Sakarya with the participation of 1, 2, 3 and 4 levels students, a total of 185 students have participated voluntarily from the Department of Physical Education and Sports Faculty in this survey.

In this research, in order to specify the Self-Assessment Inventory in Multiple Intelligence Areas Theory which has been developed by Gardner and translated into Turkish by Saban is consisted of 10 questions learning on the 8 intelligence fields with a total of 80 questions. In this research, the survey is consisted of 8 intelligence fields which are the following: verbal, logical, visual, musical, physical, social, conservationist and internal intelligence. The survey's inventory consists of the following 5 rating system: 0= not suitable, 1= rarely suitable, 2= less suitable, 3= somewhat suitable, 4= completely suitable. The intelligence fields are consisted of the following: 33-40 are highly advanced, 25-32 are advanced, 9-16 are average, and 0-8 is underdeveloped.

Anova Test was used to determine the differences between intelligence scores, and Tukey HSD Test was used to define the different group, and $\alpha=0.05$ was based on as level of significance. The data collected by using survey was analyzed by using Spss 21 for Windows package program.

RESULTS

In Table 1, the following students have participated from the department of Physical Education and Sports Department which are the follow: 29.2% Physical Education Teaching, 28.6% Coaching Education, 30.3% Sports Management, 11.9% Recreation Education. 50.3% of the participants are female, 49.7% is male.

As shown in Table 2, the student's age participating in the research, verbal ($r=.087, p=.240$), logical($r=.138, p=.061$), visual ($r=-.045, p=.547$), natural ($r=.131, p=.075$), social ($r=-.070, p=.343$), social ($r=-.058, p=.434$) ve internal ($r=-.022, p=.763$) while there is no logical meaning between the IQ score, there is negative relationship between the musical logical ($r=-.012, p=.820$).

As shown in Table 3, the number of females participating in the research gender ($F=4.685, p=.032<.05$) and major variances ($F=3.902, p=.010<.05$) have shown no differences. The students in the Department of Physical Education and Sports who have switched majors and the students who have taken the "Tukey HSD Test" have shown discrepancy difference of the IQ scores. According to the gender variances logical ($F=7.216, p=.008<.05$), visual ($F=7.031, p=.009<.05$) and musical ($F=12.218, p=.001<.05$) have shown no difference in the IQ scoring section.

As shown in Table 4, the number of students participating in the research gender and intelligence varriances have shown no difference in the IQ scoring section.

Table 1. The frequency bar charts of the students participating from the physical education and sports department.

Variables	Sub-Categories	n	%	Total
Department	Physical Education and Sports Teacher	54	29.2	185
	Coaching Education	53	28.6	
	Sports Management	56	30.3	
	Recreation Education	22	11.9	
Gender	Female	93	50.3	185
	Male	92	49.7	

Table 2. The IQ scores of the students participating students from the physical education and sports department (Pearson Correlation Coefficient).

	Linguistic	Logical	Visual	Musical	Naturist	Social	Physical	Inherent
Pearson Correlation	.087	.138	-.045	-.148	.131	-.070	.058	-.022
Sig. (2-tailed)	.240	.061	.547	.044*	.075	.343	.434	.763
N	185	185	185	185	185	185	185	185

Table 3. The IQ comparison of the students of the department of physical education and sport department Verbal - Linguistic, Logical - Mathematical, Visual - Spatial and Musical- Rhythmic Intelligences comparisons (Dual factor Anova Test).

Intelligence Areas	Gender	Department	N	Mean	SD	Variables	F	P			
Verbal-Linguistic Intelligence	Female	Teaching Öğretmenliği	28	27.89	5.520	Gender	4.685	.032*			
		Coaching	26	23.77	6.383						
		Management	28	28.82	5.186						
		Recreation	11	27.73	6.182						
		Total	93	27.00	6.027						
		Total	26	26.15	4.839						
	Male	Teaching	27	24.19	6.165	Department	3.902	.010*			
		Coaching	28	25.54	4.582						
		Management	11	24.82	4.579						
		Recreation	92	25.23	5.142						
		Total	54	27.06	5.228						
		Total	53	23.98	6.216						
Total	Management	56	27.18	5.124	Department* Gender	1.141	.334				
	Recreation	22	26.27	5.513							
	Total	185	26.12	5.659							
	Female	Teaching	28	22.68				8.129	Gender	7.216	.008*
		Coaching	26	17.38				7.200			
		Management	28	20.82				9.573			
Recreation		11	17.64	5.297							
Total		93	20.04	8.271							
Total		26	23.12	8.131							
Male	Teaching	27	21.41	7.469	Department	1.893	.132				
	Coaching	28	22.68	6.689							
	Management	11	24.55	7.090							
	Recreation	92	22.65	7.339							
	Total	54	22.89	8.056							
	Total	53	19.43	7.546							
Total	Management	56	21.75	8.236	Department* Gender	1.106	.348				
	Recreation	22	21.09	7.057							
	Total	185	21.34	7.909							
	Female	Teaching	28	31.96				5.764	Gender	7.031	.009*
		Coaching	26	30.96				5.126			
		Management	28	31.89				6.280			
Recreation		11	30.82	7.305							
Total		93	31.53	5.875							
Total		26	31.23	5.324							
Male	Teaching	27	26.89	7.084	Department	1.805	.148				
	Coaching	28	28.79	5.934							
	Management	11	28.55	6.056							
	Recreation	92	28.89	6.275							
	Total	54	31.61	5.516							
	Total	53	28.89	6.477							
Total	Management	56	30.34	6.253	Department* Gender	.727	.537				
	Recreation	22	29.68	6.650							
	Total	185	30.22	6.203							
	Female	Teaching	28	29.86				7.541	Gender	12.218	.001*
		Coaching	26	27.54				7.458			
		Management	28	29.39				6.822			
Recreation		11	29.55	6.948							
Total		93	29.03	7.185							
Total		26	25.62	7.548							
Male	Teaching	27	23.59	6.488	Department	1.142	.334				
	Coaching	28	26.43	8.153							
	Management	11	24.45	7.118							
	Recreation	92	25.13	7.370							
	Total	54	27.81	7.773							
	Total	53	25.53	7.194							
Total	Management	56	27.91	7.597	Department* Gender	.134	.939				
	Recreation	22	27.00	7.342							
	Total	185	27.09	7.516							

Table 4. The comparison of the students of the physical education and sports department according to the gender and the naturist, social, physical, and internal intelligences (Dual factor Anova Test).

Intelligence Areas	Gender	Department	N	Mean	SD	Variables	F	P
Naturist Intelligence	Female	Teaching	28	28.46	8.025	Gender	.584	.446
		Coaching	26	25.04	9.093			
		Management	28	28.16	8.887			
		Recreation	11	25.73	9.155			
		Total	93	27.09	8.717			
	Male	Teaching	26	28.23	8.959	Department	1.961	.122
		Coaching	27	24.64	8.545			
		Management	28	28.14	8.123			
		Recreation	11	30.55	7.954			
		Total	92	27.43	8.559			
	Total	Teaching	54	28.35	8.407	Department*	.557	.644
		Coaching	53	24.84	8.735			
		Management	56	28.15	8.436			
Interpersonal-Social Intelligence	Female	Recreation	22	28.14	8.725	Gender	.443	.507
		Total	185	27.26	8.617			
		Teaching	28	32.86	5.205			
		Coaching	26	33.69	4.203			
		Management	28	34.57	4.451			
	Male	Recreation	11	31.82	5.076	Department	.324	.808
		Total	93	33.48	4.710			
		Teaching	26	33.19	5.960			
		Coaching	27	31.63	5.307			
		Management	28	32.54	6.251			
	Total	Recreation	11	33.36	4.864	Department*	1.081	.358
		Total	92	32.55	5.696			
		Teaching	54	33.02	5.530			
Bodily Kinesthetic Intelligence	Female	Coaching	53	32.64	4.864	Gender	.219	.641
		Management	56	33.55	5.474			
		Recreation	22	32.59	4.915			
		Total	185	33.02	5.231			
		Teaching	28	34.07	5.235			
	Male	Coaching	26	34.00	4.400	Department	.848	.469
		Management	28	33.36	5.369			
		Recreation	11	27.09	9.148			
		Total	93	33.01	5.975			
		Teaching	26	31.96	4.737			
	Total	Coaching	27	30.74	6.010	Department*	5.242	.002
		Management	28	32.68	6.452			
		Recreation	11	34.82	4.490			
Inherent Intelligence	Female	Total	92	32.16	5.710	Gender	.190	.663
		Teaching	54	33.06	5.067			
		Coaching	53	32.34	5.484			
		Management	56	33.02	5.891			
		Recreation	22	30.95	8.068			
	Male	Total	185	32.59	5.844	Department	1.078	.360
		Teaching	28	31.14	4.949			
		Coaching	26	29.62	4.419			
		Management	28	31.39	4.391			
		Recreation	11	29.73	6.710			
	Total	Total	93	30.62	4.868	Department*	.206	.892
		Teaching	26	29.69	5.712			
		Coaching	27	29.26	6.230			
Total	Management	28	31.21	6.903	Gender	.206	.892	
	Recreation	11	30.18	4.167				
	Total	92	30.09	6.061				
	Teaching	54	30.44	5.329				
	Coaching	53	29.43	5.369				
Total	Management	56	31.30	5.733	Gender	.206	.892	
	Recreation	22	29.95	5.455				
	Total	185	30.36	5.485				

DISCUSSION

While there isn't any kind of relationship between the students of Physical Education and Sports Department in the intelligence areas of verbal, logical, visual, social, physical, internal, and natural intelligences however, we have discovered that there is weak and strong relationship in the musical intelligence area also seeing a negative effect between the students.

Between the intelligence areas of athletes in the study of Altınmakas (1), we have come to a conclusion that there is a weak relationship between the students with physical intelligences in a negative way and how their ages are in effect.

In Table 3, there is a major difference between the students that are well in the verbal, logical, visual and musical intelligence area. According to the variances there is a major difference between genders in the verbal, logical, musical, and visual intelligences; there is also a male countenance to the female students. There is a major verbal intelligence difference between the students who are in Coaching Education to Physical Education and Sports Teaching, this also shows that there is a logical and musical intelligence between Physical Education and Sports Teaching, also there is verbal and musical difference between the intelligence areas of the students at the Physical and Education and Sports Department.

In the studies Ürgüp (22) has shown major differences in the study ($p < 0,05$); while Güllü and Tekin (10) are have shown a higher IQ ($X=26,34$) compared to the general of high school students in the verbal intelligence area. ($X=23,41$) Studies done by Tekin (20) the students who are is in an intermediate level according to the gender variances have shown a major difference in the logical intelligence areas, also Altınok (2), according to the switching of majors have shown a difference in the

At the end of this study we have found variances between the students with different genders with verbal, visual, and musical intelligences for the female students, while logical intelligences has been found for the male students. According to the research students who have switched majors have shown a greater improvement than the Physical Education and Sports Teaching and the School of Physical Education and Sports Department. While not finding any differences between the age and the IQ of the students, we have

logical intelligence area. According to Hoşgörür and Katrancı (11) major differences have been discovered according of the students in the field of visual intelligence and gender in the Physical Education and Sports Department ($t=2,144$; $p < 0,05$). Tural (21) has come to the conclusion of not finding any variances in the visual intelligence area. The research that has been done by İzci and Sucu (12) showed a difference in the musical intelligence area according to gender. ($p < 0,05$). Altınok (2) has come to conclusion that there isn't a difference in the musical intelligence area of the students in this department.

In Table 4, there isn't any variances between the students according to the natural, social, physical and internal intelligences. There is a difference between the genders between the male students who have natural and internal intelligences among the male students, while there is a major difference between the students of physical education and sports department with the physical and natural intelligents.

According to Çinkılıç and Soyer (4) there is a difference between the prospect students with natural intelligences ($t=1,090$; $p=0,278 > 0,05$). Kartal (14) has found a difference among students who do and don't sports. Tekin (20) and Altınok (2) has come to the conclusion that students ($p > 0,05$); who don't do sports haven't shown any differences. Kaya and friends (15) came to the conclusion that students with physical intelligences haven't shown any differences in any intelligence fields. Ermiş and friends (7) haven't found any differences between the students of School of Physical Education and Sports and Police Vocational School of Higher Education in their IQ scores. Ermiş (6) the study of the students who play sports according to gender variable ($p=0,521$) ($t=0,643$); and Tural (21) haven't found any differences in internal intelligences of the students.

come to a conclusion that the students with musical intelligence have shown a negative effect.

The studens of School of Physical Education and Sports have shown great improvement in the variances of the 8 intelligence fields, this being in order of social, physical, internal, and visual, while the lowest being logical, and verbal. While being recorded by Kul and friends (16) the prospect students of School of Physical Education and Sports having the greater intelligence fields which are social and physical while the lowest being verbal

and musical. These studies have proven to be parallel. Also it shows that females have a higher IQ score than the males. It has also showed that the students that are in sport teaching and sports management majors have an higher IQ than those who are in School of Physical Education and Sports.

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