

## The Effect of Recreational Fields on Multiple Intelligence of Alexandria University's Students.

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### Abstract

*This study aims to identify the effect of practicing recreational fields on multiple intelligences for Alexandria University's students. The researcher used the descriptive method with survey as they suit the nature of the study. Sample of the study was selected randomly from practitioners of recreational activities in Alexandria University. The researcher took into account that the sample represents the original community of the study (males and females), in terms of study (scientific and theoretical faculties – high and low score faculties), in terms of environment (rural and urban) and in terms of socioeconomic standard of students and patterns of recreational activities. Total sample of the study was (1599) students divided into (1521) for the main study and (63) to study first multiple intelligences, (15) for second exploratory study and legalizing the tool of the study. The researcher used multiple intelligences list as a tool of data collection. The researcher did the main study in the period from 19/3/2013 till 27/5/2013. The most important results are various recreational fields practiced by university students. The most practiced recreational fields were: social, commercial and free recreations. Other result is the ability to predict each individual's intelligence pattern by knowing their recreational activity, direction of individuals to suitable recreational activities to their abilities by knowing their intelligence pattern. Females excelled over males in logical, musical, personal and existential intelligences, while males excelled in natural intelligence. There are no statistically significant differences between males and females in linguistic, spatial, social and physical intelligences. Practitioners of sport recreation excelled in physical intelligence. Practitioners of social recreation excelled in the social intelligence. Practitioners of cultural recreation excelled in linguistic and logical intelligence. Practitioners of free recreation excelled in spatial and natural intelligence. Practitioners of medical recreation excelled in spatial and personal intelligence. Practitioners of artistic recreation excelled in musical intelligence. Practitioners of commercial recreation excelled in existential intelligence.*

### Introduction:

In every stage in his life, man needs to satisfy a lot of his desires and needs. This can be done through practicing different types of activities in which he can express himself and find personal happiness and joy. Workers in the recreational field agreed that these activities are called recreational activities.

Free time investment through recreational activities is one of the important matters which affect personality growth and development. Therefore, it is one of the main concerns of social, educational and sport institutions and organizations such as schools, universities and youth organizations. Recreation contributes to making man happy, achieving balance between his psychological, mental and physical requirements, acquiring cognitive patterns, experiences and skills, developing skills and taste and provides the opportunity for creativity and innovation. (4:5)

Mohamed Al Hamahmy and Aida Abdelaziz (2001) say that a lot of those who concern with recreation classified recreation activities at many levels according to each one's philosophy and orientation or according to the philosophy of their communities towards recreation activities, so there were many classifications of these activities.(31: 30)

Tahany Abdelsalam (2001), John Byl (2002) and Kamal Elsamanoudy (2003) agree that recreational fields are:

sport, cultural, leisure, medical, artistic and commercial fields.(40) , (23) ,(25)

Mental cognitive field is one of the fields which attracted the attention of many researchers in psychology. This led to the emergence of many trends and theories that attempted to understand and explain human mind. They were divided into three trends: ordinary trend represented in studying intelligence as a general mental ability, the trend of information formation or cognitive processes, and the trend of multiple intelligence.

The idea of multiplicity in intelligence study is not new as Binet asserted that intelligence is not a single narrow scope ability which can be measured by a single type of tests. Thorndike also differentiated between three types of intelligence: abstract, mechanical and social intelligences, and then Sternberg presented a ternary classification for intelligence: practical, innovative and analytical intelligences.

Gardner (1994) (16) adds that intelligence measured using traditional methods determines a certain field or organization, but multiple intelligence perspective views intelligence as a psychological biological ability that can be obtained on a greater or smaller scope as a result of cultural, motivational factors and experience that affects individuals. In addition, this perspective considers math, physics, language, plantation and music are fields within culture and any field can be achieved through the use of multiple intelligences. For instance, physics performance

field includes mathematical, logical, personal, physical and dynamic intelligences.

Fasko (1992) (8) thinks that initial results concerning the use of programs, which are based on multiple intelligences, show that young people can be motivated in a better way and those who suffer from learning difficulties can excel. Researches and studies emerged consecutively and another number of intelligences were added including natural and existential intelligences.

Abdelwahed Alfakehy (2003) (1) adds that there are twenty-five intelligences under research and the regulation us open which uncovers the wide range of human possibilities and abilities which have not been studied before in the form used by Gardner. Not any type intelligence can be considered among those types unless it has measures and signs representing theoretical and scientific principles of multiple intelligence theory.

Measures used by Gardner include the following factors: The ability to isolate intelligence as a result of brain damage, unusual children, special developmental history, a set of clear performances in experience, developmental history, support of psychological and empirical tasks, the ability of coding in a coding system and a pivotal process which can be distinguished or determined, a set of processes, procedures in addition to psychometric results. (14)

Multiple intelligence theory depended on a number of principles summarized by Gardner (1999) as follows:

- Intelligence is not the same, but it I multiple, various and governed by development and change.
- Each person is considered a system of many patterns of effective and dynamic intelligence.
- Each pattern of intelligence differs in terms of development among individuals.
- Multiple intelligence patterns are identifiable, measurable and determinable.
- Each person should have a chance to realize his intelligence patterns.
- One pattern of intelligence can be used to develop another pattern. (17:1)

According to Gardner, numbers of intelligence patterns can be counted as follows:

- 1- Linguistic Intelligence.
- 2- Logical-Mathematical Intelligence.
- 3- Intrapersonal Intelligence.
- 4- Interpersonal Intelligence.

- 5- Musical Intelligence.
- 6- Spatial Intelligence.
- 7- Bodily – Kinesthetic Intelligence.
- 8- Natural Intelligence.
- 9- Existential Intelligence.(18),(34)

Since intelligence has various types of importance, it was studied in terms of its nature, patterns which were seven then became nine patterns now after adding natural and existential intelligence (Juan L et al (2010)(24), Leandro S et al (2010) (27), Galya H. S. Al Sulim (2012) (15), Faramarz et al (2012) (7), Perihan Savas (2012) (36), Yalda Delgoshai, Neda Delavari (2012) (42), Nihal Kuruoglu Maccario (2012) (33), Jing Li, et al (2012) (22), Izzettin K k (2013) (20)). Results of these studies showed that students became able to choose professional goals and select different occupations after realizing their multiple intelligence levels which asserts the efficiency of multiple intelligence theory in predicting individuals' choices and professional preferences.

It is clear from the previous that multiple intelligence theories are and useful. Since individuals differ in terms of their trends, orientations, values, personalities and practices, they differ in terms of intelligence patterns which pave the way to caretakers to invest all activities practiced by these individuals and developing them. The theory of multiple intelligences may give us an explanation to the failure of many students if they are forced to practice a certain activity unsuitable to their intelligence and trends. In addition, they may fail in benefiting from differences at all recreational fields and how they are suitable to students' intelligence to ensure their success in fields they practice.

From referential survey, as far as the researcher knows, he did not find any Arabic study concerning multiple intelligences for practitioners of recreational activities. This motivated the researcher to apply this study as the student's knowledge of his intelligence pattern gives a chance to form his professional trends and distinction. It also gives a chance to parents and educators orient the student towards the recreational field which increases some weak intelligence patterns to raise them. Moreover, knowing intelligence pattern of students gives the chance to predict the field in which the student can excel scientifically, practically or recreationally.

#### **Aims of the Study:**

The study aims to identify the effect of practicing recreational fields on multiple intelligences for Alexandria University students, and this is through identifying:

- 1- Differences between males and females in multiple intelligences.
- 2- Differences in the different recreational fields and multiple intelligences patterns.

**Questions of the Study:**

- 1- Are there differences between males and females in multiple intelligences?
- 2- Are there differences in different recreational fields in multiple intelligences patterns?

**Procedures of the Study:****First – Methodology**

The researcher used the descriptive method with survey as it is suitable to the study.

**Second – Sample of the Study:**

Sample of the study was chosen randomly including practitioners of recreational activities in Alexandria University. The researcher wanted the sample should represent the original community of the study in terms of gender (males, females), study (practical and theoretical faculties – high and low score faculties), environment (rural, urban), socioeconomic standard of students and in terms of the practiced recreational activity. The total of study sample was (1599) students divided into (1521) for the first main study and (63) for the second exploratory study and legalize the tool of the study. The following table shows classification of study sample according to the gender and number of practitioners of recreational activities related to every recreational field.

**Table (1)**  
the study sample classification according to the kind and the number of the recreational activities practitioners concerning to each one the recreation fields

Athletic recreation		Social recreation		Cultural recreation		Cellular recreation		Rapeutically recreation		Artful recreation		Commercial recreation	
The Activity's type	No.	The Activity's type	No.	The Activity's type	No.	The Activity's type	No.	The Activity's type	No.	The Activity's type	No.	The Activity's type	No.
Soccer ball	61	Parties	47	Watching TV shows	47	Picnics	53	Dealing with disabled	64	Acting	35	Video clubs	72
Swimming	40	Computer games	45	Reading	35	Walking	33	Helping elders	56	Dancing	32	Theatre & cinema	53
Basket ball	19	Making friends	35	Writing	31	Hunting	25	Working at addiction treatment	27	Music	27	Shopping	43
running	17	Joining demonstrations	29	Study & discussion forums	25	having pets and birds	25	Working at thieves rehabilitation	17	Shooting	17	Buying cell phones	37
Volleyball	15	Helping others	22	Creation & invention	19	Camps	31			Singing	15	Tourism	25
Karate	13	backgammon	17	Teaching	15	Walking on beach	17			Sewing	9	Circus & amusements	17
Biking	13	tables	15	Listening to radio broadcast	13	Cooking ability	15			Ceramic works	7	Cafeterias & restaurants	11
Handball	11	Chats	13			Collecting things	13			sculpture	7	Buying and selling cars	7
Tennis	9	Dominoes	13			Agriculture	7			Designing clothes	7		
Tennis table	8	Educating kids	11			Cutting trees	3			woodworks	5		
Diving	7	Paper games	11			Formatting gardens	9			decoration	5		
		Chess	11							Brides' making up	5		
										Weaving and carpet works	5		

Athletic recreation		Social recreation		Cultural recreation		Cellular recreation		Rapeutically recreation		Artful recreation		Commercial recreation	
The Activity's type	No.	The Activity's type	No.	The Activity's type	No.	The Activity's type	No.	The Activity's type	No.	The Activity's type	No.	The Activity's type	No.
										painting	15		
										Wire works	3		
<b>Total</b>	<b>213</b>		<b>269</b>		<b>185</b>		<b>231</b>		<b>164</b>		<b>194</b>		<b>265</b>

No. = practitioners number

### Tool of the Study:

List of multiple intelligences, appendix (1):

This list was prepared by McKenzie (1999) (29) and he Arabized and legalized it to suit the Egyptian environment (Fathy Abdelhamid Abdelkader & Elsayed Mohamed Abu Hashem, 2007) (10). It consists of 90 items distributed on nine patterns of intelligence, nine items for each pattern, distributed randomly. All items are positive and in front of each item there are the following options: It absolutely suits me, mostly suits me, suits me a lot, suits me sometimes, suits me a little, never suits me. The given degrees are (1, 2, 3, 4, 5) respectively and each degrees are dealt with independently because the list does not have a total degree. The current list was chosen due to its distinction with high reliability coefficient and it suits university students and adds other patterns of multiple intelligences, while other lists were restricted to seven patterns only and did not contain natural and existential intelligences. The following table shows the distribution of items in multiple intelligences list:

**Table (2)**  
the division of vocabularies of the multiple intelligences measurement

The intelligence	The vocabularies
The linguistic	1,10,19,28,37,46,55,64,73,82
The logical	2,11,20,29,38,47,56,65,74,83
The spatial	3,12,21,30,39,48,57,66,75,84
The bodily	4,13,22,31,40,49,58,67,76,85
The musical	5,14,23,32,41,50,59,68,77,86
The individual	6,15,24,33,42,51,60,69,78,87
The social	7,16,25,34,43,52,61,70,79,88
The natural	8,17,26,35,44,53,62,72,80,89
The existential	9,18,27,36,45,54,63,73,81,90

### The first Pilot study :

The researcher made survey by applying the multiple intelligences list at the date 21/2/2013 on sample numbered 63 and this aimed to process the list scientific coefficients:

### The scientific coefficients of the multiple intelligences list:

#### First: validity :

#### Validity of the internal consistence:

The validity of the internal consistency was calculated through calculating the correlation coefficients between the scores of answers to the phrases and the total score on the scale.

**Table (3)**

Internal Consistency Coefficient (Correlation Coefficient of the Phrase with the Total Score on the Scale) N= 63

Intelligence type	Phrase No.	Internal consistency	Intelligence type	Phrase No.	Internal consistency	Intelligence type	Phrase No.	Internal consistency
The linguistic	1	0.628**	The bodily	4	0.720**	social	7	0.653**
	10	0.581**		13	0.672**		16	0.646**
	19	0.658**		22	0.577**		25	0.535**
	28	0.598**		31	0.705**		34	0.611**
	37	0.741**		40	0.677**		43	0.645**
	46	0.591**		49	0.636**		52	0.750**
	55	0.660**		58	0.609**		61	0.591**
	64	0.677**		67	0.595**		70	0.654**
	73	0.592**		76	0.631**		79	0.620**
	82	0.720**		85	0.651**		88	0.651**
The logical	2	0.643**	The musical	5	0.800**	natural	8	0.709**
	11	0.807**		14	0.670**		17	0.678**
	20	0.712**		23	0.557**		26	0.661**
	29	0.666**		32	0.617**		35	0.633**
	38	0.707**		41	0.629**		44	0.738**
	47	0.608**		50	0.635**		53	0.581**
	56	0.705**		59	0.754**		62	0.667**
	65	0.678**		68	0.668**		72	0.598**
	74	0.800**		77	0.738**		80	0.594**
	83	0.738**		86	0.611**		89	0.613**
The spatial	3	0.610**	The individual	6	0.654**	existential	9	0.661**
	12	0.660**		15	0.596**		18	0.751**
	21	0.598**		24	0.800**		27	0.666**
	30	0.568**		33	0.794**		36	0.649**
	39	0.625**		42	0.608**		45	0.612**
	48	0.663**		51	0.622**		54	0.649**
	57	0.737**		60	0.597**		63	0.772**
	66	0.701**		69	0.627**		73	0.727**
	75	0.607**		78	0.642**		81	0.647**
	84	0.738**		87	0.574**		90	0.776**

\*\*significance at the level 0.01= 0.325

\*Significance at the level 0.05 = 0.250

Previous table showed the increasing of the honesty value where the value of consistency coefficient ranged between (0.535 - 0.809), and those values are significant at the level 0.05.

**Second: Reliability :** Reliability was checked out in two ways:

#### A- Re- Test method :

Reliability of the form was calculated by testing and re-testing after a 15 days period, where the first test was conducted on 02 /21/2013 and the second 03/07/2013 on a sample of 63 subjects, randomly selected from the original community excluding the study sample.

**Table (4)**

The Significance of Differences between the First and Second Tests for finding the constancy of (the multiple intelligences types) N= 63

Statistical Significance Measurement	First Test		Second Test		Differences between the Two Means		T Value	Reliability Coefficient
	Mean	± Std Deviation	Mean	± Std Deviation	Mean	± Std Deviation		
The linguistic	19.784	1.845	19.865	1.890	0.081	1.628	0.428	0.878
The logical	22.946	2.789	22.351	2.671	0.595	3.347	1.528	0.918
The spatial	27.189	4.219	26.811	4.483	0.378	2.723	1.159	0.887
The bodily	47.541	2.336	47.622	2.137	0.081	2.310	0.302	0.932
The musical	27.676	4.201	27.108	4.227	0.568	3.554	1.374	0.901
The individual	40.676	1.386	41.054	1.133	0.378	1.914	1.701	0.932
The social	340270	1.762	34.108	1.759	0.162	1.453	0.960	0.942
The natural	26.811	2.408	26.486	2.115	0.324	1.784	1.564	0.909
The existential	27.243	1.727	27.135	1.846	0.108	1.795	0.518	0.942

\*significance at the level 0.05=2.00

Previous table shows the non-existing of statistically significant differences between the first and the second application that the calculated value of (C) ranged between (0.302- 1.701) and this value is lower than the value of the tabulated (C) at the level 0.05, as the correlation coefficient (constancy coefficient) between applications in all types ranged between (0.878 – 0.942) and those values are good indicators for the list constancy in case of it reapplied again.

#### **B – Calculating reliability using the Cronbach Coefficient Alpha value:**

factor is an indicator of equivalency. It gives the minimum of the estimated value of reliability coefficient of test scores; namely, the value of reliability coefficient in general is not lower than the value of Alfa coefficient.

**Table (5)**

Cronbach Coefficient Alpha to the phrases of the multiple intelligences types n= 63

The intelligence type	Cronbach Coefficient Alpha to the phrases	Cronbach Coefficient Alpha to multiple Intelligences type
Linguistic	0.705	0.831
Logical	0.674	
Spatial	0.720	
Bodily	0.742	
Musical	0.810	
Individual	0.742	
Social	0.804	
Natural	0.732	
Existential	0.715	

Considering the previous table which is concerned to the constancy calculation via Alpha lakronbac coefficient we figure that the constancy coefficient ranged between (0.674 – 0.831) and those values are significant at the level 0.01 what refers to the list constancy where the Alpha lakronbac values confirm that the phrases in every type are matched and homogeneous , and in all types act the structure of the type, that any addition or elimination to any phrase to each type may negatively affect on the type structure therefore the list structure.

#### **The second Pilot study :**

The researcher processed a pilot study on 14/3/2013 on a sample of 15 randomly chosen students from the society and out the study sample in order to get:

1. The understanding range of the study sample and the phrases clearness.
2. The assistants training.
3. Recognizing the data filling out method.

And was conducted to;

1. The obviousness and understanding of the survey study sample to most of the phrases.
2. The assistants' awareness about the work methodology.
3. Conducting to the data filling out table.

#### Statistical Treatments:

The researcher used the following statistical treatments: (percentage, correlation coefficient, intrinsic validity, Alpha Cronbach analysis, standard deviation, arithmetic mean, Ka2 Test, contrast analysis, LSD Test).

#### Results:

#### A-differences between males and females:

#### The Main Study:

The researcher did main study in the period from 19/3/2013 till 27/5/2013

**Table (6)**  
the differences between males and females in (multiple intelligences types)

The statistical indications variables	Males		Females		Differences between the Two Means	T Value
	Mean	± Std Deviation	Mean	± Std Deviation		
The linguistic intelligence	31.271	10.144	31.874	9.072	0.602	1.221
The logical intelligence	27.375	6.530	28.967	6.322	1.592	4.808*
The spatial intelligence	29.167	10.727	28.496	10.032	0.671	1.257
The bodily intelligence	34.142	10.907	34.101	9.473	0.040	0.077
The musical intelligence	33.518	7.295	36.715	7.604	3.197	8.291*
The individual intelligence	37.274	5.814	38.082	6.362	0.808	2.555*
The social intelligence	37.542	7.600	38.158	7.867	0.615	1.537*
The natural intelligence	27.528	10.836	26.129	9.649	1.399	2.659*
The existential intelligence	28.741	7.925	31.441	9.594	2.701	5.882*

\*significance at the level 0.05= 1.96

The previous table shows the existence of the statistically Significant differences standard in some types of intelligences.

#### B-The differences indication among the several recreational fields of the multiple intelligences types;

**Table (7)**  
the variation analysis among the different recreational fields of the multiple intelligences of the research sample.

The intelligence	Variation source	Freedom degrees	Sum of Squares	Mean of Squares	F value
Linguistic	Among fields	6	129025.618	21504.270	2399.143*
	Intra fields	1514	13570.458	8.963	
	summation	1520	142596.076		
logical	Among fields	6	46655.294	7775.882	681.523*
	Intra fields	1514	17274.080	11.410	
	summation	1520	63929.374		
spatial	Among fields	6	150276.213	25046.035	2530.802*
	Intra fields	1514	14983.272	9.896	
	summation	1520	165259.485		
bodily	Among fields	6	133216.409	22202.735	1207.158*
	Intra fields	1514	27846.354	18.393	
	summation	1520	161062.763		
musical	Among fields	6	66840.923	11140.154	805.873*

The intelligence	Variation source	Freedom degrees	Sum of Squares	Mean of Squares	F value
	Intra fields	1514	20929.102	13.824	
	summation	1520	87770.025		
individual	Among fields	6	40042.448	6673.741	630.099*
	Intra fields	1514	16035.635	10.592	
	summation	1520	56078.083		
social	Among fields	6	77709.184	12951.531	1514.819*
	Intra fields	1514	12944.532	8.550	
	summation	1520	90653.716		
natural	Among fields	6	148529.276	24754.879	2637.092*
	Intra fields	1514	14212.203	9.387	
	summation	1520	162741.479		
existential	Among fields	6	88192.436	14698.739	751.992*
	Intra fields	1514	29593.249	19.546	
	summation	1520	117785.686		

\*Significance F at the level 0.05 = 2.09

Previous table concerning to (the variation analysis among the different recreational fields to all multiple intelligences types of the research sample) shows the existence of statistically significant differences in all types that F value ranged between (630.099 – 2637.092) and those values are significant at the level 0.05 and to indicate the significance of the differences among the fields a lowest significant difference test had been used.

**Table (8-a)**

the difference significance among the different recreational fields of the multiple intelligences types of the research sample by using (LSD –test).

intelligence	recreational field	Arithmetic mean	Standard deviation	The differences significance among means					
				Social	Cultural	Cellular	therapeutically	Artful	commercial
linguistic	athletic	19.723	1.719	7.812*	29.358*	20.078*	17.460*	9.658*	4.009*
	social	27.535	3.850		21.546*	12.266*	9.648*	1.846*	3.803*
	cultural	49.081	1.215			9.280*	11.898*	19.700*	25.349*
	cellular	39.801	1.484				2.618*	10.419*	16.069*
	therapeutically	37.183	4.154					7.801*	13.451*
	artful	29.381	3.045						5.649*
	commercial	23.732	3.687						
logical	athletic	24.897	2.793	0.335	11.309*	4.395*	2.085	3.315*	10.828*
	social	24.561	3.059		11.644*	4.059*	2.420	3.650*	11.163*
	cultural	36.205	3.818			15.703*	9.224*	7.994*	0.481
	cellular	20.502	1.588				6.480*	7.709*	15.222*
	therapeutically	26.982	3.671					1.230	8.743*
	artful	28.211	2.963						7.513*
	commercial	35.725	4.751						
spatial	athletic	32.207	4.648	8.753*	10.704*	15.941*	7.408*	3.262*	14.490*
	social	23.454	3.024		1.951	24.694	1.345	12.016*	5.737*
	cultural	21.503	2.596			26.644*	3.296*	13.966*	3.786*
	cellular	48.147	2.450				23.348*	12.678*	30.430*



intelligence	recreational field	Arithmetic mean	Standard deviation	The differences significance among means					
				Social	Cultural	Cellular	therapeutically	Artful	commercial
	therapeutically	24.799	4.367					10.670*	7.082*
	artful	35.469	2.749						17.752*
	commercial	170717	1.701						
bodily	athletic	46.817	3.070	18.248*	26.390*	0.103	14.756*	8.683*	20.330*
	social	28.569	4.838		8.142*	18.146*	3.492*	9.565*	2.082
	cultural	20.427	2.335			26.287*	11.634*	17.707*	6.060*
	cellular	46.714	2.689				14.653*	8.580*	20.227*
	therapeutically	32.061	8.093					6.073*	5.574*
	artful	38.134	3.000						11.647*
musical	commercial	26.487	4.128						
	athletic	28.488	3.644	3.173*	1.196	8.841*	3.554*	20.620*	9.599*
	social	31.662	3.065		4.370*	5.667*	0.381	17.447*	6.425*
	cultural	27.292	2.964			10.037*	4.751*	21.816*	10.795*
	cellular	37.329	2.568				5.286*	11.779*	0.758
	therapeutically	32.043	7.535					17.066*	6.044*
	artful	49.108	1.348						11.021*
	commercial	38.087	3.290						

\*significant at the level  $0.05 = 2.5$

**Table (8-b)**

the differences significance among the different recreational fields of the multiple intelligences types to the research sample using (LSD test).

intelligence	Recreation field	Arithmetic mean	Standard deviation	The differences significance among means					
				Social	Cultural	Cellular	Therapeutically	Artful	commercial
individual	athletic	39.648	2.661	3.964*	13.010*	1.557	7.645*	1.333	0.867
	social	35.684	2.891		9.046*	2.407	11.609*	2.630*	3.097*
	cultural	26.638	2.351			11.453*	20.655*	11.677*	12.143*
	cellular	38.091	3.324				9.202*	0.224	0.690
	therapeutically	47.293	3.836					8.978*	8.512*
	artful	38.314	2.088						0.467
	commercial	38.781	4.563						
social	athletic	35.465	3.374	13.829*	12.340*	1.362	3.986*	1.350	3.422*
	social	49.294	2.609		26.169*	12.467*	9.842*	12.479*	10.407*
	cultural	23.124	2.175			13.703*	16.327*	13.690*	15.762*
	cellular	36.827	3.034				2.624*	0.012	2.060
	therapeutically	39.451	2.807					2.637*	0.564
	artful	36.814	2.421						2.072
	commercial	38.887	3.538						
Natural	athletic	25.732	2.163	6.684*	5.895*	22.133*	0.816	3.289*	7.966*
	social	19.048	3.666		12.579*	28.817	7.500*	3.395*	1.282
	cultural	31.627	3.492			16.239*	5.078*	9.184*	13.861*
	cellular	47.866	3.755				21.317*	25.423*	30.100*

intelligence	Recreation field	Arithmetic mean	Standard deviation	The differences significance among means					
				Social	Cultural	Cellular	Therapeutically	Artful	commercial
	therapeutically	26.549	2.734					4.105*	8.783*
	artful	22.443	3.067						4.677*
	commercial	17.766	2.039						
existential	athletic	25.122	3.435	2.510*	0.960	4.895*	3.396*	1.797	20.697*
	social	27.632	1.700		3.470*	2.385	0.886	4.307*	18.187*
	cultural	24.162	2.657			5.855*	4.356*	0.837	21.657*
	cellular	30.017	2.118				1.499	6.693*	15.802*
	therapeutically	28.518	4.147					5.194*	17.301*
	artful	23.325	6.743						22.494*
	commercial	45.819	6.855						

\*significant at the level 0.05 = 2.5

**Table (9)**

the intelligences types that the recreational fields' practitioners are characterized with.

	Recreation field	Linguistic	Logical	Spatial	Bodily	Musical	Individual	Social	Natural	existential
1	athletic									
2	social									
3	cultural									
4	cellular									
5	therapeutically									
6	artful									
7	commercial									

It is obvious from the tables ( 8 ) and (9) that concerned to the differences significance among the different recreational fields of the multiple intelligences types of the research sample by using (LSD test) , that there is statistically significant differences at the level 0.05 among the fields.

#### **Discussion:**

It is clear from previous presentation that intelligence consists of a great number of isolated elements. Each mental performance is a separate element from other elements, but it shares some features with them. Despite the difference in intelligence patterns, there should be a relation because there are few cases in which patterns are isolated from each other. Patterns are used simultaneously and usually complete each other to enhance skills. It is also clear that difference among people is not restricted to physical and sensation differences, but they also differ in mental and emotional abilities which are one of individual differences' features which are governed by careful mental measurement.

It is clear from table (6) that there are statistically significant differences between males and females as females excelled in logical, musical, personal, existential intelligence as the value average was (2.555 to 8.291). These values are bigger than the B value at level 0.05. Males excelled in natural intelligence as the T value was (2.659) which is bigger than the same value at level 0.05, while there are not any statistically significant differences between males and females in the rest of patterns. These results agree with results of many studies such as: Chan (2003) (3) , Akande and Furnham (2004) (12) , Furnham and Mottabu (2004) (13) and the study of Lorri (2005) (28) which asserted that there are differences between males and females in intelligence patterns.

Many skills emerged through the practice of recreational activities and orientation to hobbies which are shown by students whether at school, home, club or other places when they practice different sporting, musical, artistic, literary or scientific activities. Nevertheless, this exploration process requires the necessity of mastering the skill or the creative process, its elements and nature to

identify, explore skills, detect their indicators since an early age and how to take care of them in order not to be declined if did not receive suitable development and care.

Table (8) and (9) are about significance in difference among different recreational fields in levels of multiple intelligences using LSD Test on the sample. These tables show that there are statistically significant differences at level 0.05 among fields as follows: practitioners of sport recreation excelled in physical intelligence, practitioners of social recreation excelled in social intelligence, practitioners of cultural recreation excelled in linguistic and logical intelligence, practitioners of free recreation excelled in spatial and natural intelligence, practitioners of medical recreation excelled in personal intelligence, practitioners of artistic recreation excelled in musical intelligence and practitioners of commercial recreation excelled in existential intelligence. These results agree with results of many studies such as: Pamela K. Adelman (2005) (35), Safaa Saleh Hussein (2010) (39), Aghajani Hashtchin Tahmores (2011) (2), Jennifer C.H Min (2012) (21), Fatimah Talebzadeh, Parivash Jafari (2012) (9), Faik Ardahan (2012) (6), Melinda Asztalos et al (2012) (30), Richard Mitchell (2013) (38), Utcharee et al (2013) (41), and Nick Caddick, Brett Smith (2014) (32) which asserted that intelligence and mental abilities are developed for activity practitioners in many ways.

The theory of multiple intelligences extended its view to differences among humans, their types which helps to enrich society and increase its cultures by opening scope for every type of multiple intelligences to emerge and grow to produce a developmental meaning. Differences among individuals are clear in their different abilities in deriving relations and links. The more the individual is more able to derive more complicated and abstract relations, the bigger his intelligence level becomes. The more the educated are fully aware of their real abilities, the faster they will develop concerning understanding and perception.

Intelligence is not a certain mental process such as remembrance, inference or others; rather, it is a factor or general ability that affects all cognitive processes. Intelligence is the essence of mental activity and it appears in all behaviors in different proportions.

It is clear from this previous presentation that there are various recreational fields practiced by university students and the most used fields were social and commercial recreations. In this respect, Richard et al (1997) (37), Dale mode et al (1999) (5), and Furnham (2004) (11) say that practicing recreational activities provides a chance to try new experience, feel self-security and importance, offers chances to satisfy the desire of curiosity, self-expression

and simulation, raises mental health level, offers chances to develop social features, cooperation and competition.

Zakeya Kamel and Nawal Ibrahimi (2002) say that man used to practice sport, singing, dancing, painting, and carving and poetry activities to fill his free time. This dire need to develop, grow and acquire mental and psychological health enable man to live better life which is not easy if he does not have a hobby to love and practice to help him remove his stress and boredom of modern age. (43:144)

Kamal Darwish and Amin El Kholy (1990) say that the authorities admit that participation in some recreational activities expresses a psychological necessity for most people with the difficulty to show benefits of psychological recreation using definite proofs due to the difficulty of isolate incentives unless conditions help individuals some control such as in school, hospitals and similar institutions. (26:157)

Hussien Rashwan (2005) adds that recreation has basic functions and goals in man's life including preparation for future life physically and psychologically and achieving balance between different powers and some instincts. There are recreational systems which aim to organize and use free times to develop young people physically and psychologically. (19:191)

Psychological tests and scales are objective tools used by researchers and psychiatrists to measure general abilities (intelligence) and private abilities (such as numeral and verbal abilities). Moreover, tests of innovative thinking abilities are common methods nowadays in discovering talents among children, teenagers and young people. For instance, testing spatial relations has prediction ability in testing individuals in engineering, physics and arts. These tests also care with classification of individuals in terms of their different abilities or features to determine their suitable educational grades or selecting the best for different jobs.

Talented children face some problems or obstacles which their resources are parents or siblings. Among these problems, there is family's indifference of their son's mental or artistic talents so they ignore his activity, they even hate him because of these activities and do not offer any material or moral possibilities for practice even if they are simple activities. Therefore, families kill this talent in its beginning as talented children often withdraw and leave their hobbies after recurrent failures, especially in first stages and feeling of fear and threat of families and parents. This is may be due to their high sensitive feelings personally and socially.

**Conclusions:**

In the light of study objectives, discussions and results, the researcher concluded the following:

1. The ability to predict intelligence patterns of individuals by knowing their recreational activity and orient them to their suitable activities to their abilities by knowing their intelligence patterns.
2. Psychological scales and tests are concerned with classification of individuals according to their different abilities and features to determine their suitable educational grades or directing them towards different jobs or professions.
3. There are various recreational fields which are practiced by university students. The most practiced fields are social and commercial fields.
4. Talents appear through practicing recreational activities and trend to hobbies shown by students at home, school or other places while practicing different activities.
5. Intelligence consists of numerous separate elements as each mental performance is a separate element from other elements, but it shares some features with them.
6. Females excelled over males in logical, musical, personal and existential intelligences, while males excelled in natural intelligence.
7. There are no statistically significant differences between males and females in linguistic, spatial, social and physical intelligences.
8. Individuals differ in terms of their orientations, trends and, practices personal values and in intelligence patterns.
9. Practitioners of sport recreation excelled in physical intelligence.
10. Practitioners of social recreation excelled in the social intelligence.
11. Practitioners of cultural recreation excelled in linguistic and logical intelligence.
12. Practitioners of free recreation excelled in spatial and natural intelligence.
13. Practitioners of medical recreation excelled in spatial and personal intelligence.
14. Practitioners of artistic recreation excelled in musical intelligence.

15. Practitioners of commercial recreation excelled in existential intelligence.

**Recommendations:**

1. Doing similar studies to the current one to tackle different age stages.
2. Making use of results of the current study to predict intelligence patterns of individuals by knowing their recreational activity and orient them to their suitable activities to their abilities by knowing their intelligence patterns.
3. Educating planners and practitioners concerning importance and outcome of practicing recreational activities.
4. Encouraging children to practice different unusual activities inside or outside home.
5. Setting plans and programs related to improve the skillful at all age and education levels from kindergarten till higher educational stages.
6. Providing necessary material and human abilities to practice all recreational activities.
7. Making use of differences between boys and girls while planning recreational activities and during guiding children to activity pattern.
8. Providing sport, cultural programs and others to boys and girls as there is a contrast in their multiple intelligences.

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