

## IS IT ESSENTIAL TO MEASURE INTELLIGENCE ALONG WITH APTITUDE TEST FOR CAREER GUIDANCE

*Dr. Gopal Chandra Mahakud,*

Assistant Professor,  
Dept. of Psychology, Keshav Mahavidyalaya,  
University of Delhi, Delhi, India.

### ABSTRACT

Today aptitude test for career assessment becomes more common among the young adults. Among the numbers of available aptitude tests, Differential Aptitude Test (DAT) is a widely used one. The more scientific way of career choice usually follows aptitude test next to intelligence, personality and interest tests. As it is not quite possible to administer the entire above mentioned tests, it can be possible to administer the aptitude test and intelligence test for a better career choice. Therefore this study was planned to found out the relationship of Aptitude and Intelligence Quotient for better career guidance. A total of 40 subjects have selected randomly from various undergraduate courses studying in Keshav Mahavidyalaya, University of Delhi. After taking their consent for the study and detailing the objective, all the participants were assessed SPM first. After a rest interval of 15 minutes, the DAT was administered. This study indicates that except the Perceptual Speed accuracy, Mechanical Reasoning and Spelling ( $P=0.01$ ), there is no significant relationship exist between the other subtests of DAT with the Intelligence Quotient ( $P=0.01$ ). The result also reveals that Intelligence Quotient (IQ) is significantly related to the most important subtest of DAT: Abstract Reasoning and Educational Aptitude. In this regard can be said that, although there is no significant relationship exist between the all the subtests of DAT with SPM but it is satisfying the relationship with abstract reasoning and educational aptitude. Therefore Aptitude test with intelligence may be suggested a better assessment for career guidance especially in educational set up.

**Keywords:** Educational aptitude, Abstract reasoning, Intelligence quotient, Career choice.

## INTRODUCTION:

Career guidance is a common measure before career choice in all developed countries. But still it is neglect in most of the developing and underdeveloped countries. Therefore in the recent time, career guidance is an emergent method of career choice for the career aspirants. The method of career guidance is not only helpful for the job aspirants but also for the job providing firms only to satisfy the purpose of right person for right job. It will directly help to improve the production and performance of the organization and indirectly help the economy of countries. Besides these above benefits, the employee's job satisfaction and work motivation level will be increased.

Choice of a career in developing and underdeveloped countries are still with the pressure of family without giving importance to the abilities (aptitude) and intelligence of the personnel who will be assigned a career. In some cases peer pressure also play a vital role for career choice. As the result, un-employability increased and in some cases due to inappropriate choice of career leads to frustration in job or loss of job. In this regard a scientific method of career choice following career guidance and career counseling using the scientific measures can help a young aspirant better career choice.

## REVIEW OF LITERATURE:

Scientific measure of career choice can only augment the chance of better academic performance and employability in an adolescent's future life. In this regards Cohen and Swerdlik (2002) avowed that to achieve the academic and eventual career goals, it is necessary to determine the factors that facilitate scholastic achievement in general and academic skills in particular. The purpose can be satisfied with use of psychological measures such as test of aptitude, intelligence, personality and interest (Vasanth 1977; Yadav 1979). But in many cases it is not possible to measure all above mentioned tests. Therefore aptitude test suggested as the only option for career guidance.

The concept of aptitude may be defined as the capacity which tends the people to work actively, rationally and scientifically. It is the quality of human being to show themselves in a better way. Webster's Medical Dictionary, (2002) defined aptitude "a natural or acquired capacity or ability especially a tendency, capacity or inclination to learn or understand" the things in a reasonable and meaningful way. The test of aptitude indicates the probability of success of an individual with or without training in a certain type of situation Meyer, von Meduna, Brosowski and Hayer (2013). Therefore it can be said that aptitude could differentiate the person in different situation according to their performance of work skills.

Similarly the concept of Intelligence Quotient (IQ) is use as the synonyme of Intelligence. In general IQ levels play the role of predictors of job performance and the assignment of works (Schmidt & Hunter, 1998; Hunter, & Hunter, 1984; and Duckworth & Seligman, 2005). Therefore it can be said that intelligence quotient is a widely used research approach to in practical setting for career choices and guidance. In an exception, IQ may fail to act as an accurate measure of intelligence in the sense of creativity and/or emotional intelligence. In this regard Neisser et al. (1996) and Brooks (2007) argue that however, the base concept of intelligence followed IQ test scores alone, still it ignores many important aspects of mental abilities. Still intelligence and aptitudes are two important cognitive factors which tell apart the persons learning and working skills at different conditions differently. Intelligence usually seen as general complex problem solving capacities (g-factor), where as aptitude tells about specific abilities (s-factor) involved in certain domain or skill. In this context De Bruin (1997) stated that the level of g (general factors) is very high in the measure of specific abilities (s-factor).

Educational aptitude subtest in DAT included both the subtest of Verbal reasoning and numerical reasoning. In some cases the educational aptitude is also used the term scholastic aptitude. In this context Frey and Detterman (2003) analyzed the correlation of SAT scores with intelligence test scores. They found SAT scores to be highly correlated with general mental ability, or g ( $r=.82$  in their sample). The correlation between SAT scores and scores on the Raven's Advanced Progressive Matrices was .483 (.72 corrected for restricted range). They concluded that the SAT is primarily a test of g. Beaujean and colleagues (2006) have reached similar conclusions.

Intelligence test measures the global capacity of the person for his/her day to day life for better adjustment and adaptability. Measures of aptitude using some of the multiple aptitude tests e.g. Differential Aptitude Test (DAT) helps the career counselor to access numbers of abilities of the client. And in many situations it is not possible to administer all the four tests (i.e. Aptitude, Intelligence, Interest, and Personality) for career guidance purpose. Therefore these two psychological measures (i.e. aptitude and intelligence) may be suggested in the field of career counseling to satisfy the client's interest for career choices. To find out the relationship of

aptitude and intelligence for career guidance the present study was planned.

**AIMS:**

To found out the relationship between Aptitude and intelligence quotient of college graduates in regard to career guidance.

**HYPOTHESIS:**

- (a) Clients aptitude and intelligence (IQ) are significantly related with each other.
- (b) High intelligence quotient (IQ) positively influences educational aptitude.
- (c) Abstract reasoning is positively correlated with intelligence quotient (IQ).
- (d) The different abilities of participants can be measured appropriately through the help of various subtests of DAT.

**SAMPLE:**

A total of 40 participants have selected from Keshav Mahavidyalaya, University of Delhi, Delhi, India to satisfy the objective of the study. All the participants were undergraduate students' age ranging 18 to 20 following the median age 19 years old grading from Graduate 1<sup>st</sup> year to 3<sup>rd</sup> year from different streams of educational qualification.

**SETTING:**

All the participants of the study were administered in the laboratory condition of Department Psychology, Keshav Mahavidyalaya, University of Delhi, H-4-5 Zone, Pitampura, Delhi, India. Both Differential Aptitude Test (DAT) and Raven's Standard Progressive Matrices (SPM) data were collected individually from the subject during their leisure time.

**DESIGN:**

The study followed a random sampling process where all the participants were selected randomly for the study. Individual administration of both Differential Aptitude Test (DAT) and Intelligence Quotient (IQ) test using Raven's Standard Progressive Matrices (SPM, Raven, 1998) were conducted one after another during the free time of the participants.

**MATERIAL USED: DAT:**

- 1. Test Booklet, Manual, Scoring, Key of Differential Aptitude Test (DAT, Hyde & Trickey, 1995)
- 2. Test Booklet, Manual, Scoring, Key of Raven's Standard Progressive Matrices, (Raven, Raven and Court, 1998).
- 3. Other relevant materials like, paper, pencil, Stopwatch, Screen.

**STATISTICAL ANALYSIS:**

All the data of the study have been analyzed by using SPSS 15.0. The students' 't' tests have been taken into consideration for data analysis as the sample size was (N=40) for each variable (i.e. DAT and SPM).

**PROCEDURE:**

The selection of participants followed the random technique procedure. After administering the SPM, the participants were selected for DAT test. To avoid the participants with learning disabilities and to found out a matched group of participants, participants scored IQ level equal or/and above average ( $IQ \geq 70$ ) were selected for the test of DAT. The consents from all participants were taken before the conduction of the study. They all were detailed about the study and were acknowledged to inform them about their score in both DAT and IQ of SPM test after conduction of both tests. The participants were instructed following the instruction of the manual of Raven's Standard Progressive Matrices (Raven, 1998) to fill up the missing gaps for each item in SPM test for all five sets starting from 'Set A' to 'Set E'. The timing for SPM test was not more than 30 minutes. After Conduction of SPM test, the participants were given a 15 minutes rest interval including 5 minutes rest interval for each sets of items. Then similarly the conduction of DAT test was followed 10 minutes rest interval after

each and every subtest because the items in each subtest were lengthy in number. The timing for each subtest and the instruction for each subtest followed the DAT Manual (Hyde & Trickey, 1995). All the participants were treated individually. Besides the rest interval after each subtest, the participants were also provided assistance and rest during the time of conduction whenever they were feeling burden and fatigue.

### SCORING PROCEDURE AND DATA ANALYSIS:

The scoring procedure only followed the total correct response of SPM as the raw score for each participant. The Percentile of IQ score referred Indian Delhi, norm. The grades were followed Raven' Standard Progressive Matrices manual (Raven, 1998). Calculation of IQ score directly from raw score followed (Burke, 1972). Similarly the correct score in each subtest of DAT considered as the raw score for each participant. The percentile, student's 't' score and Stanine score referred DAT manual. Norm table 8c (Further Education Combined gender) have considered for percentile and T score of DAT subtests as to avoid the biasness of gender. The data analysis was done by taking only the percentile score of each subtest of DAT and the total percentile of IQ of SPM test to maintain the uniformity of the results. For the remarks of DAT test Stanine score and remarks following the T score of norm table 8c was done for all participants. Besides the descriptive statistics the researcher also done Analysis of Variance (ANOVA, one way) to compare the IQ percentile score with each of the DAT subtest percentile scores.

### RESULT AND DISCUSSION:

As the participants for the study were selected randomly, out of the total participants (N=40), the male participants were 15 (37.5%) and the female (25, 62.5%) of participants were participated in this study (Table-1). Although the age ranges of the participants were purposive (18-20 years, Class: Graduation 1<sup>st</sup> year to 3<sup>rd</sup> year), still they were distributed such as, 17, (42.5%) participants were aged 18 followed by 10 (25%) aged 19 years and 13 (32.5%) were aged 20 years old (Table-2).

The comparison result (Table-3) between the SPM score and the subtests of DAT scores indicated that the 'F' comparison value between the verbal reasoning score and IQ  $df^{13}_{26}=4.745$  at ( $P=0.000$ ). This result indicated that there is no significant relationship exists between the verbal reasoning subtest score of DAT and IQ score of SPM. The comparison value of 'F' between IQ and numerical reasoning  $df^{13}_{26}=2.949$  at ( $P=0.009$ ) indicated that there is a significant relationship exists between IQ and the numerical reasoning subtest score of DAT ( $P=0.05$ ) but there is no significant relationship exist at ( $P=0.01$ ). The 'F' comparison value between IQ and abstract reasoning  $df^{13}_{26}=4.938$  at ( $P=0.000$ ) indicated that both AR and IQ have no significant relationship. The 'F' comparison value between IQ and perceptual speed accuracy  $df^{13}_{26}=2.548$  at ( $P=0.020$ ) indicated that both PSA and IQ have significant relationship only at ( $P=0.05$ ) but not at ( $p=0.01$ ) level of significance. The comparison value of 'F' between IQ and mechanical reasoning  $df^{13}_{26}=2.877$  at ( $P=0.011$ ) indicated that there is a significant relationship exists between IQ and the mechanical reasoning subtest score of DAT ( $P=0.05$ ) but there is no significant relationship exist at ( $P=0.01$ ) level of significance. The comparison 'F' value of SR subtest of DAT and IQ  $df^{13}_{26}=3.258$  at ( $P=0.005$ ) stated that there is no significant relationship exist between space relation score and IQ score. The comparison 'F' value of spelling and IQ  $df^{13}_{26}=2.392$  at ( $P=0.028$ ) indicated that there is a significant relationship exists between IQ and the spelling subtest score of DAT ( $P=0.05$ ) but it is not significant at ( $P=0.01$ ) level of significance. The language usage and IQ comparison indicated the 'F' value  $df^{13}_{26}=3.521$  at ( $P=0.003$ ) indicated no significant relationship between these two. The educational aptitude (VR+NR) compare with IQ 'F' of  $df^{13}_{26}=6.923$  at ( $P=0.000$ ) indicated no significant relationship between educational aptitude and IQ score. In this regard it can be stated that beside a minor relationship established with perceptual speed accuracy skills, mechanical reasoning skills and spelling skills with IQ score there are no significant relationship between the subtests of DAT with IQ score. The first hypothesis: clients aptitude and intelligence (IQ) are significantly related with each other, is accepted partially for half of the subtest of DAT (NR, PSA, MR and Spelling) only at ( $P=0.05$ ) level of significance but rejected at ( $P=0.01$ ) level of significance. Following the above results, the second hypothesis: high intelligence quotient (IQ) positively influences educational aptitude, is also rejected as there is no such significant relationship established. From the above results it can be stated that the third hypothesis: abstract reasoning is positively correlated with intelligence quotient (IQ) also rejected. The cause might be that SPM measures the nonverbal skills rather the other skills. The subtests related to non-verbal skills such as e.g. numerical reasoning, perceptual speed accuracy, mechanical reasoning and spelling are significant at ( $P=0.05$ ) level may be due to its relationship with non-verbal intelligence which the SPM measures. In this regard the test of SPM (IQ) may be suggested with DAT



test for career guidance and counseling as to measure an additional skill of the aspirant for career choice. The researchers e.g. McLaughlin, (1990); Obler, (1989) and Skehan, (1989) viewed as term *aptitude* is an in contradistinction to IQ. They stated that aptitude is something both independent and unrelated to IQ. Still they suggested that for better academic performance the IQ may be taken as an added test with aptitude. Till date as there is a few studies conducted to found out the relationship between DAT test and SPM there the researcher found no supportive studies in this regard. As the study was conducted with a large sample cases (N=40) and as the SPM measures especially the nonverbal intelligence of the participants, the SPM may be suggested with DAT test for career guidance and counseling

The relationship among verbal reasoning subtest with other subtests of DAT indicated no such relationship such as VR score with NR score 'F' of  $df^{15}_{24}=31.326$  at ( $P=0.000$ ) followed by VR score with AR score 'F' of  $df^{15}_{24}=6.777$  at ( $P=0.000$ ); VR score with PSA score 'F' of  $df^{15}_{24}=60.287$  at ( $P=0.000$ ); VR score with MR score 'F' of  $df^{15}_{24}=3.985$  at ( $P=0.001$ ); VR score with SR score 'F' of  $df^{15}_{24}=4.495$  at ( $P=0.001$ ); VR score with Spelling score 'F' of  $df^{15}_{24}=4.441$  at ( $P=0.001$ ) and VR of LU score 'F' of  $df^{15}_{24}=12.384$  at ( $P=0.000$ ). The results indicated verbal reasoning skills and other skills measured by DAT (Table-4). In this regard fourth hypothesis: the different abilities of participants can be measured appropriately through the help of various subtests of DAT is accepted. The comparison results between NR with other subtest of DAT indicated that there are relationship established between NR scores with MR score 'F' of  $df^{11}_{28}=1.258$  at ( $P=0.298$ ) and NR scores with SR score 'F' of  $df^{11}_{28}=2.265$  at ( $P=0.018$ ) but at ( $P=0.01$ ) there are no significant relationship between numerical reasoning and all other subtests of DAT (Table-5). The results of (Table-6): the comparison of abstract reasoning with other subtests of DAT such as PSA comprised the 'F' of value  $df^{15}_{24}=3.210$  at ( $P=0.005$ ), following AR score with MR score ('F' value of  $df^{15}_{24}=3.922$ ,  $P=0.001$ ); AR score with SR score ('F' value of  $df^{15}_{24}=4.266$ ,  $P=0.001$ ); AR score with Spelling score ('F' value of  $df^{15}_{24}=2.559$  at ( $P=0.019$ ), AR score with Language usage score ('F' value of  $df^{15}_{24}=11.481$   $P=0.000$ ) and AR score with Educational aptitude score ('F' value  $df^{15}_{24}=7.821$ ,  $P=0.000$ ). The results indicated that, there is no such significant relationship existed between AR and other subtests of DAT at ( $P=0.01$ ). But the result indicated that there is a significant relationship between AR with spelling subtest score of DAT at ( $P=0.05$ ) level of significance. The result of the study also indicated similarly the same result found by the inter-correlation of DAT Manual (Hyde and Trickey, 1995) which stated that there is a high correlation between the verbal reasoning subtest score of DAT with the educational aptitude test score. The cause might be that the educational aptitude is the sum total of verbal reasoning and numerical reasoning. The study of Martin and Rourke (1984) with 15 participants of post primary school children also found no significant relationship between VR with NR and VR with educational aptitude score. The DAT subtest of spatial relation and mechanical reasoning has been studied by Casey, Nuttall, and Pezaris (2001) to found out the relationship with mathematical score of 187 Grade 8 students. In this study the researchers also found no significant relationship between the spatial relation subtest score and mechanical reasoning subtest score.

The comparison result of perceptual speed accuracy with other remaining subtests of DAT comprised no significant relationship with MR score 'F' of  $df^{16}_{23}=64.891$  at ( $P=0.000$ ), SR score 'F' of  $df^{16}_{23}=7.027$  at ( $P=0.000$ ), Language usage 'F' of  $df^{16}_{23}=6.412$  at ( $P=0.000$ ), and educational aptitude score 'F' of  $df^{16}_{23}=5.962$  at ( $P=0.000$ ). But the negligible relationship exist between the PSA with Spelling 'F' of  $df^{16}_{23}=2.767$  at ( $P=0.013$ ) which indicated no relationship between ( $P=0.01$ ) level of significance (Table-7). The result of mechanical reasoning score compared with SR ('F'= 6.565,  $df^{12}_{27}$  at ( $P=0.000$ ) followed by Spelling score ('F'= 2.717,  $df^{12}_{27}$  at ( $P=0.015$ ); Language usage ('F'= 5.685,  $df^{12}_{27}$  at ( $P=0.000$ ) and with Educational score ('F'= 1.987,  $df^{12}_{27}$  at ( $P=0.068$ ) indicated that the mechanical reasoning score is significantly different to SR score and Language usage score. But the there is a positive relationship of mechanical reasoning with educational aptitude both at ( $P=0.01$ ) and ( $P=0.05$ ) level of significance. The relationship is positive between MR score with spelling score at ( $P=0.05$ ) level of significance but not at ( $p=0.01$ ) level (Table-8). Table-9 depicts the comparison results of SR with spelling subtest score ('F'= 2.777,  $df^{13}_{26}$  at ( $P=0.013$ ) followed by SR score with LU score ('F'= 7.086,  $df^{13}_{26}$  at ( $P=0.000$ ); and SR score with educational aptitude score ('F'= 3.771,  $df^{13}_{26}$  at ( $P=0.002$ ). The results indicated that there is a significant difference between the Space relation subtest score of DAT with spelling subtest score, language usage score and educational aptitude score at ( $P=0.01$ ) level of significant but very negligibly SR score is related with spelling ( $P=0.013$ ). The spelling subtest score of DAT related not significantly with Language usage subtest score ('F'= 4.751,  $df^{17}_{22}$  at ( $P=0.000$ ) and with educational subtest score ('F'= 4.309,  $df^{17}_{22}$  at ( $P=0.001$ ) of DAT test (Table-10). The comparison of Language use subtest score with Educational aptitude subtest score of DAT followed One Sample 't' test. The results indicate that the mean average score of language usage was (M 32.50) and educational aptitude score (M 61.17) of df 39. The

students't' score (6.511), which indicated no relationship between language use subtest scores of and Educational aptitude subtest of DAT test at both ( $P=0.05$ ) and ( $P=0.01$ ) level of significant (Table-11). From the above results of comparison of each and every subtest of DAT with each other indicated that the subtests of DAT measure the individual attribute of participants. In this regard the fourth hypothesis: The different abilities of participants can be measured appropriately through the help of various subtests of DAT satisfied.

From the results of this study it can be concluded that although there is no such significant relationship existed with intelligence quotient and all the subtests of differential aptitude of participants still some subtests of DAT are significantly related with IQ level measured through SPM. Therefore it can be suggested that for a better career choice and guidance the career counselor can measure both the aptitude and IQ test to maintain the career guidance and career choices more scientific. From the introduction it is obvious to say that, in all cases it is not possible to measure personality test, interest test, intelligence test and aptitude test with the person come for career guidance. Therefore at least these two important psychological measures can be suggested for an effective career guidance and counseling.

**Table-1: Gender Distribution of Participants**

Categories	Frequencies	Percentage
Male	15	37.5%
Female	25	62.5%

**Table-2: Age Distribution of Participants**

Age	Frequencies	Percentage
18 Years	17	42.5%
19 years	10	25%
20 years	13	32.5%

**Table-3: ANOVA between IQ scores and the scores of subtests of DAT**

Categories	Variables	Sum of Squares	df	Mean Square	F	Sig. P-value
VR Score	Between Groups	23179.775	13	1783.060	4.745	0.000
	Within Groups	9771.000	26	375.808		
	<b>Total</b>	<b>32950.775</b>	<b>39</b>			
NR Score	Between Groups	14856.138	13	1142.780	2.949	0.009
	Within Groups	10076.962	26	387.575		
	<b>Total</b>	<b>24933.100</b>	<b>39</b>			
AR Score	Between Groups	29581.061	13	2275.466	4.938	0.000
	Within Groups	11981.914	26	460.843		
	<b>Total</b>	<b>41562.975</b>	<b>39</b>			
PSA Score	Between Groups	26692.118	13	2053.240	2.548	0.020*
	Within Groups	20950.857	26	805.802		
	<b>Total</b>	<b>47642.975</b>	<b>39</b>			
MR Score	Between Groups	16516.210	13	1270.478	2.877	0.011*
	Within Groups	11480.190	26	441.546		
	<b>Total</b>	<b>27996.400</b>	<b>39</b>			
SR Score	Between Groups	9226.238	13	709.711	3.258	0.005
	Within Groups	5663.762	26	217.837		
	<b>Total</b>	<b>14890.000</b>	<b>39</b>			
Spelling Score	Between Groups	14086.071	13	1083.544	2.392	0.028*
	Within Groups	11775.429	26	452.901		
	<b>Total</b>	<b>25861.500</b>	<b>39</b>			
Language Usage Score	Between Groups	16063.261	13	1235.635	3.521	0.003
	Within Groups	9123.714	26	350.912		
	<b>Total</b>	<b>25186.975</b>	<b>39</b>			
Educational	Between Groups	20600.638	13	1584.664	6.923	0.000

Aptitude Score	Within Groups	5951.762	26	228.914		
	<b>Total</b>	<b>26552.400</b>	<b>39</b>			

**Table-4: ANOVA between Verbal Reasoning subtest score and other remaining subtests scores of DAT**

Categories	Variable	Sum of Squares	df	Mean Square	F	Sig. P-value
NR Score	Between Groups	23721.517	15	1581.434	31.326	0.000
	Within Groups	1211.583	24	50.483		
	<b>Total</b>	<b>24933.100</b>	<b>39</b>			
AR Score	Between Groups	33624.892	15	2241.659	6.777	0.000
	Within Groups	7938.083	24	330.753		
	<b>Total</b>	<b>41562.975</b>	<b>39</b>			
PSA Score	Between Groups	46411.225	15	3094.082	60.287	0.000
	Within Groups	1231.750	24	51.323		
	<b>Total</b>	<b>47642.975</b>	<b>39</b>			
MR Score	Between Groups	19975.233	15	1331.682	3.985	0.001
	Within Groups	8021.167	24	334.215		
	<b>Total</b>	<b>27996.400</b>	<b>39</b>			
SR Score	Between Groups	10980.917	15	732.061	4.495	0.001
	Within Groups	3909.083	24	162.878		
	<b>Total</b>	<b>14890.000</b>	<b>39</b>			
Spelling Score	Between Groups	19011.583	15	1267.439	4.441	0.001
	Within Groups	6849.917	24	285.413		
	<b>Total</b>	<b>25861.500</b>	<b>39</b>			
Language Usage Score	Between Groups	22305.142	15	1487.009	12.384	0.000
	Within Groups	2881.833	24	120.076		
	<b>Total</b>	<b>25186.975</b>	<b>39</b>			
Educational Aptitude Score	Between Groups	24542.483	15	1636.166	19.537	0.000
	Within Groups	2009.917	24	83.747		
	<b>Total</b>	<b>26552.400</b>	<b>39</b>			

**Table-5: ANOVA between Numerical Reasoning subtest score and other remaining subtest scores of DAT**

Categories	Variable	Sum of Squares	df	Mean Square	F	Sig. P-value
AR Score	Between Groups	27668.380	11	2515.307	5.069	0.000
	Within Groups	13894.595	28	496.236		
	<b>Total</b>	<b>41562.975</b>	<b>39</b>			
PSA Score	Between Groups	29448.594	11	2677.145	4.120	0.001
	Within Groups	18194.381	28	649.799		
	<b>Total</b>	<b>47642.975</b>	<b>39</b>			
MR Score	Between Groups	9259.305	11	841.755	1.258	0.298*
	Within Groups	18737.095	28	669.182		
	<b>Total</b>	<b>27996.400</b>	<b>39</b>			
SR Score	Between Groups	7602.786	11	691.162	2.656	0.018*
	Within Groups	7287.214	28	260.258		
	<b>Total</b>	<b>14890.000</b>	<b>39</b>			
Spelling Score	Between Groups	13961.286	11	1269.208	2.986	0.009
	Within Groups	11900.214	28	425.008		
	<b>Total</b>	<b>25861.500</b>	<b>39</b>			

Language Usage Score	Between Groups	18821.451	11	1711.041	7.526	.000
	Within Groups	6365.524	28	227.340		
	<b>Total</b>	<b>25186.975</b>	<b>39</b>			
Educational Aptitude Score	Between Groups	23295.567	11	2117.779	18.207	.000
	Within Groups	3256.833	28	116.315		
	<b>Total</b>	<b>26552.400</b>	<b>39</b>			

**Table-6: ANOVA between Abstract Reasoning subtest score and other remaining subtests scores of DAT**

Categories	Variable	Sum of Squares	df	Mean Square	F	Sig.
PSA Score	Between Groups	31793.642	15	2119.576	3.210	.005
	Within Groups	15849.333	24	660.389		
	<b>Total</b>	<b>47642.975</b>	<b>39</b>			
MR Score	Between Groups	19884.767	15	1325.651	3.922	.001
	Within Groups	8111.633	24	337.985		
	<b>Total</b>	<b>27996.400</b>	<b>39</b>			
SR Score	Between Groups	10828.667	15	721.911	4.266	.001
	Within Groups	4061.333	24	169.222		
	<b>Total</b>	<b>14890.000</b>	<b>39</b>			
Spelling Score	Between Groups	15911.833	15	1060.789	2.559	.019*
	Within Groups	9949.667	24	414.569		
	<b>Total</b>	<b>25861.500</b>	<b>39</b>			
Language Usage Score	Between Groups	22106.142	15	1473.743	11.481	.000
	Within Groups	3080.833	24	128.368		
	<b>Total</b>	<b>25186.975</b>	<b>39</b>			
Educational Aptitude Score	Between Groups	22042.733	15	1469.516	7.821	.000
	Within Groups	4509.667	24	187.903		
	<b>Total</b>	<b>26552.400</b>	<b>39</b>			

**Table-7: ANOVA between Perceptual Speed Accuracy subtest score and other remaining subtests scores of DAT**

Categories	Variable	Sum of Squares	df	Mean Square	F	Sig. P-value
MR Score	Between Groups	27389.650	16	1711.853	64.891	.000
	Within Groups	606.750	23	26.380		
	<b>Total</b>	<b>27996.400</b>	<b>39</b>			
SR Score	Between Groups	12361.250	16	772.578	7.027	.000
	Within Groups	2528.750	23	109.946		
	<b>Total</b>	<b>14890.000</b>	<b>39</b>			
Spelling Score	Between Groups	17019.833	16	1063.740	2.767	.013
	Within Groups	8841.667	23	384.420		
	<b>Total</b>	<b>25861.500</b>	<b>39</b>			
Language Usage Score	Between Groups	20574.642	16	1285.915	6.412	.000
	Within Groups	4612.333	23	200.536		
	<b>Total</b>	<b>25186.975</b>	<b>39</b>			
Educational Aptitude Score	Between Groups	21394.400	16	1337.150	5.962	.000
	Within Groups	5158.000	23	224.261		
	<b>Total</b>	<b>26552.400</b>	<b>39</b>			

**Table-8: ANOVA between Mechanical Reasoning subtest score and other remaining subtests scores of DAT**



Categories	Variable	Sum of Squares	df	Mean Square	F	Sig.
SR Score	Between Groups	11089.343	12	924.112	6.565	.000
	Within Groups	3800.657	27	140.765		
	<b>Total</b>	<b>14890.000</b>	<b>39</b>			
Spelling Score	Between Groups	14145.490	12	1178.791	2.717	.015*
	Within Groups	11716.010	27	433.926		
	<b>Total</b>	<b>25861.500</b>	<b>39</b>			
Language Usage Score	Between Groups	18045.251	12	1503.771	5.685	.000
	Within Groups	7141.724	27	264.508		
	<b>Total</b>	<b>25186.975</b>	<b>39</b>			
Educational Aptitude Score	Between Groups	12452.457	12	1037.705	1.987	.068*
	Within Groups	14099.943	27	522.220		
	<b>Total</b>	<b>26552.400</b>	<b>39</b>			

**Table-9: ANOVA between Space Relation subtest and other remaining subtests scores of DAT**

Categories	Variable	Sum of Squares	df	Mean Square	F	Sig. P-value
Spelling Score	Between Groups	15033.167	13	1156.397	2.777	0.013
	Within Groups	10828.333	26	416.474		
	<b>Total</b>	<b>25861.500</b>	<b>39</b>			
Language Usage Score	Between Groups	19643.142	13	1511.011	7.086	0.000
	Within Groups	5543.833	26	213.224		
	<b>Total</b>	<b>25186.975</b>	<b>39</b>			
Educational Aptitude Score	Between Groups	17350.067	13	1334.621	3.771	0.002
	Within Groups	9202.333	26	353.936		
	<b>Total</b>	<b>26552.400</b>	<b>39</b>			

**Table-10: ANOVA between Spelling subtest score and other remaining subtests scores of DAT**

Categories	Variable	Sum of Squares	df	Mean Square	F	Sig. P-value
Language Usage Score	Between Groups	19795.308	17	1164.430	4.751	0.000
	Within Groups	5391.667	22	245.076		
	<b>Total</b>	<b>25186.975</b>	<b>39</b>			
Educational Aptitude Score	Between Groups	20420.067	17	1201.180	4.309	0.001
	Within Groups	6132.333	22	278.742		
	<b>Total</b>	<b>26552.400</b>	<b>39</b>			

**Table-11: One-Sample Test “t” test between Language Usage subtest score and other Educational Aptitude scores of DAT**

	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
	Lower	Upper	Lower	Upper	Lower	Upper
Language Usage Score	6.511	39	.000	32.50000	22.1747	42.8253
Educational Aptitude Score	11.063	39	.000	61.16667	49.7288	72.6045

## CONCLUSION:

From this present study it can be said that for a better career choices it is important to follow the career guidance and career counseling, which in future can help the personnel to avoid work place stress and frustration in work place. The improvement on future career of adolescents, it is important to know the aptitude, intelligence, interest and personality before selection of any particular profession. As in some cases it not possible to measure the all above mentioned related tests for career guidance but any two of the measures (Especially aptitude and intelligence) can guide the young aspirants' a better career choices for their future life. The presents study indicates that most of the subtests of Differential Aptitude Test (DAT) are significantly related to intelligence test (SPM), therefore it can be suggested that use of DAT and SPM can be the better choices for career guidance and counseling. If possible, besides these two measures (aptitude and intelligence), other measures such as career interest inventories and personality test may be suggested.

## REFERENCES:

- [1] Beaujean, A. A.; Firmin, M. W.; Knoop, A. J.; Michonski, J. D.; Berry, T. B.; Lowrie, R. E. (2006). "Validation of the Frey and Detterman (2004) IQ prediction equations using the Reynolds Intellectual Assessment Scales". *Personality and Individual Differences* 41: 353–357.
- [2] Bingham, W. V. (1937). *Aptitudes and aptitude testing*. New York: Harper & Brothers.
- [3] Brooks, D. (2007). *The Waning of I.Q.* (<http://select.nytimes.com/2007/09/14/opinion/14brooks.html>) by David Brooks, The New York Times. [http://shodhganga.inflibnet.ac.in/bitstream/10603/1552/9/09\\_chapter%202.pdf](http://shodhganga.inflibnet.ac.in/bitstream/10603/1552/9/09_chapter%202.pdf).
- [4] Casey, M. B., Nuttall, R. L., Pezaris, E. (2001). Spatial-Mechanical Reasoning Skills versus Mathematics Self-Confidence as Mediators of Gender Differences on Mathematics Subtests Using Cross-National Gender-Based items. *Journal for Research in Mathematics Education*, 32, (1), 28-57.
- [5] Cohen, R. J., & Swerdlik, M. E. (2002). *Psychological Testing and Assessment: An Introduction to Test and Measurement*. 5<sup>th</sup> Edition, Boston, McGraw-Hill.
- [6] De Bruin, G. P. (1997). Spearman se G en die faktorstrukture van die senior aanlegtoetse en die algemene skoolastiese aanlegtoets. *Tydeskryf vir Bedryfsielkunde*, 23 (2): 14-18.
- [7] Duckworth, A. L. & Seligman, M. E. P (2005). Self-Discipline Outdoes IQ in Predicting Academic Performance of Adolescents. *Psychological Science*, 16:939-944.
- [8] Frey, M. C.; Detterman, D. K. (2003). "Scholastic Assessment or g? The Relationship Between the Scholastic Assessment Test and General Cognitive Ability". *Psychological Science* 15 (6): 373–378.
- [9] Hunter, John E.; Hunter, Ronda F. (1984). "Validity and utility of alternative predictors of job performance". *Psychological Bulletin* 96 (1): 72–98.
- [10] Hyde, G. & Trickey, G. (1995). *Differential Aptitude Test (DAT) for Guidance Manual*. Harcourt Assessment, Great Britain.
- [11] Martin, M. O & Rourke, B. O. (1984). The Validity of the DAT as a Measure of Scholastic Aptitude in Irish Post-Primary Schools. *The Irish Journal of Education / Iris Eireannach an Oideachais*, 18, (1), 3-22.
- [12] McLaughlin, B. (1990). The relationship between first and second languages: Language proficiency and language aptitude. In B. Harley, P. Allen, J. Cummins, & M. Swain (Eds.), *The development of second language proficiency* (pp.158-178). New York: Cambridge University Press.
- [13] Meyer, G., von Meduna, M., Brosowski, T. & Hayer, T (2013). Is poker a game of skill or chance? A quasi-experimental study. *Journal of Gambling Studies*. 29 (3): 535-50.
- [14] Neisser U (1997). Rising Scores on Intelligence Tests. (<http://www.americanscientist.org/issues/feature/rising-scores-on-intelligence-tests/> 1). *American Scientist* 85: 440–447.
- [15] Neisser, Ulric; Boodoo, Gwyneth; Bouchard, Thomas J., Jr.; Boykin, A. Wade; Brody, Nathan; Ceci, Stephen J.; Halpern, Diane F.; Loehlin, John C. et al (1996). "Intelligence: Knowns and unknowns" ([http://internal.psychology.illinois.edu/~broberts/Neisser et al, 1996, intelligence. pdf](http://internal.psychology.illinois.edu/~broberts/Neisser%20et%20al,%201996,%20intelligence.pdf)). *American Psychologist* 51 (2): 77–101.
- [16] Obler, L. (1989). Exceptional second language learners. In S. Gass, C. Madden, D. Preston, & L. Selinker (Eds.), *Variation in Second Language Acquisition, Vol. II: Psycholinguistic Issues* (pp. 141-149).
- [17] Raven J., Raven, J. C., & Court, J. H. (1998). *Raven's Standard Progressive Matrices*. Oxford Psychologist Press, Oxford.
- [18] Schmidt, Frank L.; Hunter, John E. (1998). "The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings". *Psychological Bulletin* 124 (2): 262–74.

- [19] Skehan, P. (1989). *Individual differences in second language learning*. London: Edward Arnold.
- [20] Vasantha, A. (1977) A socio-economic study of work values. *Journal of Psychological Researches* 21, 2 , 119-121.
- [21] Webster, M. (2002). Merriam-Webster Medical Desk Dictionary Revised Edition: Revised Edition, Delmar Cengage Learning, ISBN-10: 1401879683, ISBN-13: 978-1401879686.
- [22] Yadav, R. K. (1979) A study of motives for the vocational preferences of adolescents. *Indian Educational Review* 29, 2, 78-79.

----