

# Effect of Intelligence on Achievement in English of The Students of Secondary School

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## Abstract

The present study was conducted with a view to assess the effect of Intelligence on achievement in English of secondary students studying in X standard. The purpose of the study was to explore the effect the level of intelligence of secondary students, if any, in terms of gender and locality. A sample of 715 students who were studying in X standard of different schools were randomly selected from urban and rural areas of Chickballpur and Kolar district of Karnataka. Both boys and girls were included in the study. The result showed that the students with higher level of intelligence achieved better in English than the students who had less intelligence; and there was no significance correlation between intelligence and achievement scores among the boys and girls of urban and rural area.

**Keywords:** Interest, Intelligence, Creativity, Urban, Rural and Achievement in English

## Introduction

English language is the global lingua-franca which is being used globally in the present era for communication, administration, diplomacy, cultural exchange, business, education, research and advancement of science and technology. English is spoken in maximum countries of the world as their mother tongue and the maximum numbers of countries of the world have English as their national language. "It is the mother tongue of more than 200,000,000 people. Information about recent advances in sciences and technology is available to us through the medium of English. In our country English continues to be the official language at the Centre. It is now an important link-language in a multi-lingual country like ours. It is no wonder that the English language continues to occupy a prominent place in our school curriculum" (Rao, 1987).

For India, English is a foreign language which entered into this country in the seventeenth century along with the British trades who represented British East India Company. English language made an inroad into this country as language of trade, but once the British traders established their rule in India in 1857, English language became the sole language for administration of this country. It is in the interest of their business and rule; the British rulers introduced English education and established educational institutions in the country for teaching and learning of English. Gradually English language spread lips and bounds in the country among the people. English gradually became the single-most language for educated native Indians in the vast sub-continent for communication, cultural unification and socio political movements.

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It was English which was, to a large measure, responsible to make the Indian struggle of independence possible. When India became independent in 1947, the constitution of India adopted English as an associate official language of the Union (Gupta, 1998).

It is believed that learning a foreign language at the earliest possible age, and learning of English for Educational reasons between 4 and 5 years old – that is at nursery and primary school – opens up a whole new dimension for children and it greatly benefits their reading and writing in their own language. It is evident that, like musical education, it contributes significantly to the development of individual's intelligence and it concretely improves overall results at school (Matussek, 2003).

### Concept of Intelligence

Intelligence is the innate ability of a person to learn and utilize what he has learned, in accordance with the new situations. It relates to the ability of solving new problems. Intelligence, as a concept, has been understood in different ways by different psychologists and therefore, there prevails a wide variety of definitions.

- According to Random House Dictionary (1976), Intelligence is the capacity of reasoning, understanding and for similar forms of mental activity, ability of gathering knowledge, and ability to draw evaluated conclusions from the set of information.
- According to Stein (1976), intelligence is the capacity of reasoning, understanding and ability of gathering knowledge to draw evaluated conclusions from a set of information.
- According to Herbert Gardner (1998), "It is the potential to develop an ability of value in one or more settings. It is the ability to make things of value in particular culture. It deals with solving problems and creating products. It's like a ballet between potential and environment".
- According to Martinez (2002), "Traditional views assume that intellect is an intrinsic quality, like height or hair colour, something we can measure and that we will carry with us for the rest of our lives".
- According to Anil Kumar (2007), "Intelligence is not something which we are born with. It develops at every stage of development."
- According to Binet (2008), the qualities like "Concentration of attention, ability to adjust in new environment and the faculty of self-introspection" are the essential traits of intelligence.
- According to Garrett (2008), "the abilities demanded in the solution of problems which require the comprehension and use of symbols".
- According to Termas (2008), the qualities like "Thinking about abstract objects, Understanding the inter-

relationship between different things and Solving Problems" are associate with intelligence.

- According to Wells (2008), "Intelligence is property of recombining our behavior patterns so as to act better in a novel situation".
- According to William Sterns (2008), "Intelligence is the ability to adjust one-self to new new situation".
- According to Naresh Babu (2014), "Intelligence means the manner with which an individual deals with facts and situations."

Generally, the verbal reasoning test, framed in words, measure the ability intelligence of a person. It evaluates the students' ability to comprehend, generalize and to think constructively rather than at simple fluency or vocabulary recognition. Certain tests are generally designed to predict with reasonable accuracy the measure the intelligence of the people.

### Review of Related Literature

The relation between intelligence and achievement was considered to the one of the most prolific areas of educational research during the first half of the present century. It is virtually impossible to cover the entire range of studies on this theme. Therefore, only a few representatives of recent studies have been covered in the present review.

Ajwani (1978) found out in his study that high intelligence proved to be better problem-solvers than those with low intelligence and it increased with an increase in age. He did not find any significant effect of sex in the ability to solve problems and intellectual ability.

Sharma (1978) studied the attributes of underachievement of undergraduate students. The application of regression equation of academic achievement on intelligence resulted in 177 underachievers. This study revealed that withdrawal tendency, inferiority complex, emotional instability, poor study habits and poor socio-economic status are related to academic under achievements of undergraduate students.

Pandey (1980)'s mathematical aptitude is found to be significantly and positively correlated with verbal intelligence in all the four group of students he has studied. He has found in his study that the mathematical aptitude has positive but low correlation with non-verbal intelligence of all the four groups and the verbal intelligence test scores has a higher correlation with mathematical aptitude scores than the non-verbal intelligence test scores.

Senapati (1980)'s findings that emerged from the study was that the intelligence and interest taken together are a better predictor of achievement in science than interest or intelligence alone.

Srivastava (1980) finds substantial correlation between

intelligence and achievement.

Kenneth (1983) had studied the popularity, SES, Intelligence and academic achievement of 110 secondary school children of Jallunder city and found them to be correlated. Girls have been found to be more advanced than boys in their ability to perceive details quickly and accurately. Boys ordinarily do better than Girls in numerical reasoning and problem solving but the girls usually surpass boys in mechanics of computation excelling in both speed and accuracy.

Mian, Shamshada (1988), have attempted to compare boys and girls with regard to intelligence, and scholastic achievement. The sample consisted of 1008 students of X standard of Siliguri district. The major findings of the study have been that the girls have been superior to boys in intelligence and scholastic achievement; on the other hand boys compared to girls have a higher score on achievement motivation.

### Significance of The Study

In the globalised India, English has become ever more important. The current generation students are in need of acquiring higher level of writing, speaking and comprehension skills in English for their education, personality development and career. With the Liberalization, Privatization and Globalization (LPG) more number of present generation Indians are facing the need of going for their job with multinational companies. They are feeling the necessity of having higher level of skill in English to maintain higher level of professional efficiency, as in their workplace there is a requirement of team work with people coming from different linguistic background. English plays a vital role to provide common medium for communication and holds the pride of place as the world language today.

### Objective of Study

- To study of the effect of intelligence on achievement in English of secondary level students.
- To study of the effect of intelligence on achievement in English of secondary students when they are classified as boys and girls.
- To study of the effect of intelligence on achievement in English of secondary students when they are classified as urban and rural area students.

### Hypotheses of Study

- H<sub>1</sub> There is no significant difference between male and female students of secondary school with regards to Intelligence scores and achievement in English.
- H<sub>2</sub> There is no significant difference between urban and rural students of secondary school with regard to intelligence score and achievement in English.

### variables of study

- Location of Schools (Urban and Rural)
- Gender of the Students (Boys and Girls)

### Material and Method of Study

A cross sectional study was conducted among students of secondary schools of Chikballapur and Kolar districts in Karnataka. Randomly selected stratified sample of 715 students was taken from eight schools from two districts of Karnataka. The samples covered the students of X standard from urban and rural areas both boys and girls, which was about 40% of the total secondary students' population of the area. The details of the sample are placed at Table No. 1 below:

Table 1. School wise sample showing location and gender

Sl. No	Name of the School, Location & District	Locality	Gender		Number of samples Studied
			Boy	Girl	
1	BGS World School, Chickballapur Dt. Chickballapur	Urban	31	---	49
			---	18	
2	Sri KV English Schoool, Chickballapur Dt. Chickballapur		32	---	65
			---	33	
3	Vidyanidhi Public School, Gouribidnur Dt. Chickballapur	Rural	54	---	99
			---	45	
4	Sri Venu Central School, Srinivaspura Dt. Kolar		16	---	22
			---	6	
5	BGS English School, Chickballapur Dt. Chickballapur	Urban	67	---	152
			---	85	
6	BGS Vidyanikethana, Manchanbele Dt. Chcikballapur		29	---	47
			---	18	
7	BGS Public School, Gouribidnur, Dt. Chickballapur	Rural	83	---	146
			---	63	
8	Sri Bhairabya Vidya Nikethan Srinivaspura, Dt. Kolar		76	---	135
			---	59	
Total			388	327	715
Boys (388) + Girls (327) = 715					
Urban (313) + Rural (402) = 715					

## Study Tools

The following tools were used for the study:

1. A questionnaire titled - 'General Group Tests of Intelligence (GGTI)', meant for study of intelligence of the age group of 13-17 year, designed by Dr. G. C. Ahuja (2012).
2. Achievement Test for English Language (ATELg), designed by the researcher.
3. Achievement Test for English Literature (ATELit), designed by the researcher.

## Development of Achievement Test Tools

The researcher has designed two sets of questionnaires to test achievement of English of the students. One set of questionnaire was prepared for English Grammar (Language) and the other set of question paper was prepared for test of knowledge of English Literature. The English Language questionnaire comprised of punctuation, reading and comprehension questions to be answered by writing short answers taking from the given passage, writing summary, providing appropriate title of the summarized passage, grammar questions to be answered by filling in the blanks and rewriting the incorrect sentence correctly. The questionnaires were designed in a class appropriate

manner. The Literature questionnaire was set to test the knowledge of the students in prose and poetry as per their syllabus.

## Generic Group Test of Intelligence (GGTI)

The Generic Group Test of Intelligence (GGTI) is a test which is an objective, organized and statistically refined instrument or method to measure some specific skills, behaviour or set of characteristics under standardized conditions. The construction and standardization of such a test is largely a creative undertaking which is constructed in accordance with defined principles. The present test was devised in order to meet the requirement of a group tests meant for the students from 13 to 17 years of age studying in classes VIII to XI through English Medium Secondary Schools of Greater Bombay (Ahuja, 2009).

As the samples of this survey, have been taken students of X class the above tool has been used to measure the level of intelligence of the students.

This test questionnaire consists of eight sub tests covering the areas like - Classification, Analogy, Arithmetic Reasoning, Vocabulary, Comprehension and Series. A total of 135 questions have been presented to be completed in 32 minutes i.e., about 4 minutes for each section. The questions

of Sections I to IV, VI and VIII are of multiple choice types, where five options are given for each question. In Section V, there are three choices of suggested answer given in the questionnaire such as – ‘same’, ‘opposite’ and ‘neither’. In question number VII, the students have been asked to fill up a blank in the series of five or six information.

### Construction of Tools

The researcher designed the following two sets of English questionnaires to test skills and knowledge of the students in English. The questions were set as per the syllabus of the students of their secondary class literature section and language section. The tools have been named as the following:-

- Achievement Test for English Language (ATELg)
- Achievement Test for English Literature (ATELit)

#### Achievement in English Language (ATELg)

The English Language questionnaire has been prepared to check students' linguistic skills. The questionnaire comprised the questions on reading and comprehension, punctuation, grammar which include elements like tense, voice, narration, phrases and idioms, filling in the blanks using appropriate preposition and converting incorrect sentences into correct form. The test carried 50 marks. The students were given credit for expression and use of appropriate words. They were given negative marks for spelling and punctuation errors.

#### Achievement in English Literature (ATELit)

The English Literature questions were set to test the achievement of students in English literature. The questions emphasized on testing the leaning outcome of literature among students based on the syllabus which was covered in the class, in the academic session of the test. It was to test as how far the students understood the central theme

poems and stories; and how far they had appreciated the meanings of the selected poems and short stories including the metaphors and similes etc.

### Data Collection and Scoring of The Data

For collection of date, the researcher visited all eight schools and conducted the tests personally after explaining the students the purpose of the study and relevant instructions to fill the questionnaire. The achievement test was conducted twice keeping two months of gap between two assessments. The scores were calculated after correction.

### Ethical Considerations

All students were informed about the purpose of the study before collecting data. Prior permission was taken from parents and school authorities. All data was used only for research purpose and confidentiality was maintained.

### Statistical Analysis

The data collected were analyzed using Epi Info software. Data was presented in mean and standard deviation for quantitative variables and in proportions for qualitative variables. Statistical association was determined by using chi-square and 't' test. P value less than 0.05 was considered statistically significant.

### Results

A total of 715 students participated in the study. Out of 715, 388 (54.3%) were males and 327 (45.7%) were females. 313 (43.8%) students were from urban area and 402 (56.2%) were from rural area.

#### Null Hypothesis 1

H<sub>1</sub> There is no significant difference between male and female students of secondary school with regards to

**Table 2. Correlation of Intelligence and achievement of students in English**

study variables	Academic Test July				Total (n=715)	P value
	1-25 (n=224)	26-50 (n=344)	51-80 (n=135)	81-100 (n=12)		
Intelligence						
1-25	3(1.3%)	0(0%)	0(0%)	0(0%)	3(0.4%)	<0.001**
26-50	24(10.7%)	9(2.6%)	2(1.5%)	0(0%)	35(4.9%)	
51-80	130(58%)	53(15.4%)	11(8.1%)	4(33.3%)	198(27.7%)	
81-100	67(29.9%)	282(82%)	122(90.4%)	8(66.7%)	479(67%)	

Chi-Square/ Fisher Exact Test

Intelligence scores.

The hypothesis proves that there was no significant difference between male and female students of secondary school with regards to intelligence scores.

#### Null Hypothesis 2

H<sub>2</sub> There is no significant difference between urban and rural students of secondary school with regards to Interest scores.

Table 3. Correlation of Intelligence and achievement of students in English

study variables	Academic Test September				Total (n=715)	P value
	1-25 (n=57)	26-50 (n=443)	51-80 (n=194)	81-100 (n=21)		
Intelligence						
1-25	0(0%)	2(0.5%)	1(0.5%)	0(0%)	3(0.4%)	<0.001**
26-50	4(7%)	29(6.5%)	2(1%)	0(0%)	35(4.9%)	
51-80	33(57.9%)	147(33.2%)	18(9.3%)	0(0%)	198(27.7%)	
81-100	20(35.1%)	265(59.8%)	173(89.2%)	21(100%)	479(67%)	

Chi-Square/ Fisher Exact Test

As shown in table 3, there was no significant difference between urban and rural students of secondary school with regards to intelligence scores A and B. For interest score

B, the score of urban and rural students were significantly higher than those of students of rural area ( $p_{0.05}$ ).

Table 4. Relation between test scores among students

Characteristics		Pre-Test Scores	Post - Test Scores
Urban (n = 313)	Mean	40.6038	45.1821
	Std. Deviation	19.32838	15.77370
Rural (n = 402)	Mean	33.4851	43.8383
	Std. Deviation	17.50457	14.54312
	P value	0.01	0.23
Total (n = 715)	Mean	36.6014	44.4266
	Std. Deviation	18.65008	15.09813
Male (n = 388)	Mean	41.3660	49.8918
	Std. Deviation	16.33848	14.82276
Female (n = 327)	Mean	30.9480	37.9419
	Std. Deviation	19.64252	12.67696
	P value	0.01	0.01
Total (n = 715)	Mean	36.6014	44.4266
	Std. Deviation	18.65008	15.09813

As shown in table 4, there was no significant effect of intelligence score in English among school students in urban and rural area in Post-Test ( $p>0.05$ ); but score were significantly higher among students of urban area than rural area students in Pre-Test score ( $p<0.05$ ). The scores were significantly different between male and female students with male students getting higher score than female students in both tests ( $p<0.05$ ).

### Findings of The Study

The present study showed that there was no significant difference in intelligence score among male and female students between urban and rural students. The student those who had the higher level of intelligence had better level of achievement in English scores. The students of the urban locality have better achievement in English score that the rural students. It may be because of the fact that the students of urban area have better access

to the facilities like news paper and recreational facilities etc. and they get better opportunities of interaction with educated and English speaking people. The urban students also get the opportunities to hear better quality of spoken English. There was significant difference in achievement in English between boys and girls with boys getting higher score than girls.

### Recommendation for Further Study

- The study was confined only to the students of X standard and it could have been extended to other classes.
- The study was confined to English medium students only and it could have been carried out on the students of Kannada medium students also.
- The study was confined to only variables like sex and locality of stay of students and that could have been extended to the other factors also.



- This study could be carried out to the students of residential schools also.

### Limitation of The Study

- The study was confined only to the students of X class. Other classes would have been taken.
- The study was limited to the English Medium students which may have resulted in bias. Kannada medium students would have been taken.
- The study was limited to eight schools located in the Talukas of Chickballapur and Kolar district of Karnataka. More schools of other areas would have been taken.
- Variables apart from sex and locality of stay could have been taken.
- The emotional intelligence in relationship with interest and creativity to measure achievement in English of the students and the other factors could have been studied.

### Conclusion

It could be concluded that it is the intelligence of a person which makes him achieve higher score in English. The study brings out that that besides interest, creativity and intelligence also contribute in higher achievement in English, and higher achievement of English in turn provides better communication skill. It is also known that the better communication skill enhances better personality of a person and leads him to succeed in life.

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