

Intelligence and Academic Achievement of Secondary School Students of Arunachal Pradesh

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Abstract: *The present study investigated the Intelligence and Academic Achievement of Secondary School Students of Arunachal Pradesh. The study was conducted on eight hundred (800) class-X students by giving due representation to boys and girls as well as rural and urban localities of two districts in Arunachal Pradesh, namely: East Siang and Lohit. The schools were selected using stratified random sampling technique, and students were selected using simple random sampling technique. The selected schools belong to the category of government as well as private schools which are affiliated to CBSE i.e., Central Board of Secondary Education, New Delhi and controlled and supervised by the Department of Education, Govt. of Arunachal Pradesh. The descriptive survey method is used for data collection. As far as intelligence was measured by using the group test of mental ability constructed and standardized by Dr. S. Jalota and the academic achievement of the students was concerned for the purpose of the present study, the investigators visited the selected schools and collected the school records of the selected students i.e. mark's obtained by the students in the last annual examination, 2015 (i.e. Class IX annual examination). The findings of the study reported that the comparison of all the students on intelligence and academic achievement separately showed that they were bright on intelligence and average on academic achievement; There is no significant mean difference on intelligence between male/female and rural/urban areas students but significant real difference was found between government and private school students of both the districts of Arunachal Pradesh; and There is significant mean difference on academic achievement between male/female, rural/urban and government/ private secondary school students for both the districts (total sample).*

Keywords: Intelligence, Academic Achievement and Secondary School Students.

1. Introduction

Education is the key factor in the development of human potentialities. Every country gives due importance to her education system through which all types of challenges are possible to be faced. It is possible to reach all the people with the benefit of economic and technical developments through well planned and well implemented system of education. Education is a process which leads to harmonious development of an individual in terms of cognitive, affective and psychomotor facilities. Education helps not only in building personality, character and intelligence but also his productive capacity and his ability to perform his shared work more efficiently. Education develops a child to be a person who is physically strong mentally well equipped, emotionally balanced and with right attitude towards life.

Introduction of the Variables under Study

In the present study, two important variables namely; Intelligence and Academic Achievement are studied. The variables are described along with the relationship between these in the context of secondary school students in Arunachal Pradesh.

Intelligence

Intelligence is power or faculty which helps us in understanding thinking and reasoning about the things. Intelligence is the only word which makes the human being different from animal. God has given us with certain cognitive ability to man, by which man becomes a rational being. David

Wechsler said, "Intelligence is the aggregate or global capacity of an individual to act purposefully, to think rationally and to deal effectively with his environment." Our learning and thinking are possible through intelligence only. It is an organization comprising the abilities of readiness, correctness and of understanding complicated and abstract things and with its help a person shows necessary mental control and action in solving problems. Intelligence is a term describing one or more capacities of the mind. In different contexts the term intelligence can be defined in different ways, including the capacities for abstract thought, understanding, communication, reasoning, learning, planning, emotional intelligence and problem solving. Intelligence is most widely studied in human, but it is also observed in animals and plants.

Intelligence is the necessary condition for achievement. It is impossible to achieve without corresponding intelligence which is comprised of mental abilities. Ability is about the quality of being able to do something which serves as the foundation of achievement.

The process of achievement fosters the development of intelligence. Kornhaber, Krechevsky and Gardner (1990) are convinced of intelligence as the product of a dynamic process involving individual abilities, the values and opportunities afforded by society. This statement emphasizes that the development of individual abilities infers the development of intelligence in a given social environment. The development of intelligence is correlated with the development of individual abilities through individual experience in a particular environment. The process of achievement is an

important individual experience and displays directly the development of individual competencies.

Intelligence is evidenced by past and present achievement used for predicting future achievement. Intelligence sets up the foundation of achievement. The occurrence of achievement requires not only the corresponding intelligence but also motivated and the supported by appropriate academically congenial environment.

Academic Achievement

Achievement means performance. The Dictionary meaning of the word achievement is "to perform successfully". Academic Achievement refers to the educational performance of students studying in schools. How far they are successful in acquiring knowledge, understanding and skills in different subjects presented to them for study through the curriculum is to be reflected as an index of their Academic Achievement. Academic Achievement implies the accomplishment of the performance carried out successfully by students in their academic life. It is a multidimensional activity and a central concept in the area of educational psychology. Thus, it can be concluded that the academic achievement is said to be level of proficiency attained in academic work or formally acquired knowledge in school subjects. This is often represented by marks/grades in examinations. In view of this, the factors affecting it play an important role in determining an individual's position and status in the reference group.

Brief History of Secondary Education in India

The secondary education has a special role to play and as the system as a whole moves toward universalizing secondary education. In our country, secondary education is regarded as the connecting link between the primary and the higher education. According to Secondary Education Commission (1952-1953), four aims of secondary education are : (i) Development of democratic education (ii) All-round development of personality (iii) Development of vocational efficiency and (iv) Development of leadership quality. Secondary education helps the children to become a full member of a complex modern society of today. It develops the highest potentiality of child's ability, aptitudes, interests and qualities of character.

The mass scale provision of elementary education and an increasing aspiration for secondary education during the post independent period have resulted in tremendous growth of secondary education in India. The constitution analyzed the various problems facing secondary education and has suggested suitable remedies for them. Two major tendencies discernable at the secondary stage since 1950, via a gradual transition of traditional pattern of bookish education into a vocational one and attempt to make secondary education a self-contained stage. The education commission (1964-66) has also recommended a rapid vocationalization of secondary education. This leads to making the secondary stage a self-contained one in itself and related more and more to the life of the individuals as well as to the community. The national education policy has also recommended in 1968 a structural change in the formal secondary in the country by adopting

the 10+2+3 structure. The All India Education Council for Secondary education was set up in August 1955. The main functions of the council were to review from time to time the progress of secondary education throughout the country and to serve as an expert body to advise the state and central governments on the improvement and expansion of secondary education are being presented with the change of language .A long list of aims of first ten years of school education are presented in the national curriculum of framework prepared by NCERT in 2000. In the national curriculum framework 2005 more emphasis has been laid on rational values and secularism. At present the aims of secondary education are as follows:

- 1) To train children to look after their health and develop it.
- 2) To provide children knowledge of different subjects and to make them proficient in thinking, imagination and decision making.
- 3) To socialize children knowledge and to bring about necessary social change.
- 4) To provide children knowledge of different cultures and develops cultural tolerance among them.
- 5) To inculcate social, cultural, moral and rational values among children to guide them to behave accordingly and to develop their character and morality.
- 6) To guide children to do some physical work according to their interest, ability and need.
- 7) To provide children knowledge about principles of democratic system of governance and to train them in democratic way of living.
- 8) To make children aware about the rational goals-conservation of environment and population in control and to develop among them scientific attitudes, national integration and feeling of internationalism.
- 9) To provide children general information about the main religions of the world and to develop religious tolerance.

Now, it is clear that the role of education is no longer considered as a mechanism for the perpetuation of the best with traditions above but it is now being viewed as an investment in social transformation, human resource development and in advancing revolutionary development in the field of science and technology for the life of mankind as a whole. Secondary school level of education is significantly important as it is a period of intense vibrancy and energy. UNESCO's recently published global monitoring report discovers systematic standards as the appropriate context of the quality debate. From this point of view the child's performance needs to be treated as an indicator of systematic quality as reflected in national curriculum framework 2005. The thrust objective of secondary education during the tenth plan has been achieved only partly and therefore the 11th plan (2007-11) aims to:

- 1) Raise the minimum levels of education to class X and accordingly universalize access to secondary education for all.
- 2) Ensure good quality secondary education with focus on science, mathematics and English and
- 3) Remove disparities and education in gender, social, regional gaps in enrolment, dropout and secondary retentions.

The norm will be to provide a secondary school within 5 kms and a higher secondary school within 7 kms of every cluster

of habitation. The gross enrolment ratio (GER) in secondary education is targeted to increase from 52% in 2004-05 to 75% by 2011-12 and higher secondary GER from 40% to 60% in the same periods.

An amount of Rs 5000 crores is being provided during the 11th plan for providing ICT (information communication technology) infrastructure in secondary schools. In order to bridge social gaps in secondary education in respect of 'SC', 'ST', minorities and OBC, the eleventh plan addressed specific areas including:

- 1) Upgradation of elementary schools to secondary schools in geographic concentration areas relevant to social groups.
- 2) Supply of free uniforms, textbooks and foot wears.
- 3) Supply of bicycles and wheel chairs.
- 4) Hostels for boys and girls.
- 5) Stipends to the deserving children.
- 6) Support to all madrasas for adaptation of general education.
- 7) Pre-metric and post metric scholarships.
- 8) Special remedial coaching with in local area schools for weaker students
- 9) An area intensive approach with community participation.

2. Review of Related Literature

Benjamin (1953) studied the relationship between intelligence test performance and school achievement and found: 1. Intelligence test performance is highly correlated with success at the school certificate examination and with success in school of grammar school type. 2. Of the more commonly used predicative measures (teacher's estimates, performance in English and arithmetic, intelligence tests) intelligence test is most effective single predictor. 3. A battery consisting of tests of intelligence, arithmetic, and English (weighted equally) is more effective than the intelligence test taken alone.

Deshpande (1984) found that the students from the high achieving schools were higher in intelligence and other variables explained much of the variance between the high and low achieving schools.

Dixit (1985) conducted a comparative study of intelligence and academic achievement of adolescent boys and girls in classes IX and XI. The main findings of study were: 1. among class XI students there was no difference in the academic achievement of intellectually superior and intellectually very superior boys and girls. 2. At all other intellectual levels, the academic achievement of the girls was superior to that of the boys. 3. Among class X students there was no difference in the academic achievement of intellectually very superior and intellectually superior boys and girls. 4. At all the other intellectual levels the academic achievement of the girls was superior to that of boys. 5. In general the intelligence test scores of the boys were higher than those for the girls. 6. In case of the boys there was very high correlation between intelligence tests scores and academic achievement. 7. In the case of girls, there was an average correlation between intelligence tests scores and academic achievement.

Varte, Zokaitluangi and Lahunlawma (2006) studied intelligence and academic achievement in relation to parents-child relationship in Mizo adolescents. Parental behaviour as perceived by the child have more importance and emerged to be explanatory than characterization of such behaviour by independent observers. 140 Mizo adolescents from a school were sampled. The low and high scores on parent child relationship respectively designated as restrictive and permissive parenting styles were screened out and their academic achievement scores were analyzed. Results indicated no gender difference on parent-child relationship, intelligence and academic achievement. 2×2 ANOVA 'indicated significant' parenting effect whereas gender x parenting interaction resulted non-significant. *F*-ratio means comparisons in significant 'parenting effect revealed greater intelligence in 'permissive' than 'restrictive'.

Habibolla, N. and Abdullah, H. (2010) in their study entitled "Intelligence and Academic Achievement: An investigation of gender differences" found that there existed a significant relationship between intelligence and academic achievement for both male and female separately and in total sample.

Yomgam, Bige (2009) undertook a study to find out the academic achievement of secondary students in Arunachal Pradesh, and found that there was a wide gap among the different categories of students viz., Male, Female, Tribal and Non-tribal in their academic achievement in the subject namely, English, Hindi,

Parveen, Danista (2014) in her study entitled "relationship between intelligence and academic achievement of secondary level students" found that (1) There is significant and positive correlation found between intelligence and academic achievement of secondary level students. It was found that students from low intelligence have lower academic achievement as compared to the academic achievement of students from higher intelligence level. (2) There is significant and positive correlation found between intelligence and academic achievement of secondary level students on male and female sample. It was found that male and female students from low intelligence level have lower academic achievement as compared to the academic achievement of both male and female students from higher intelligence level.

Gogoi, Nitul, Dutta, Jadab & Soni, J.C, (2016) "A Comparative Study on Academic Achievement and Intelligence of Class X Students of Jawahar Navodaya Vidyalaya and Kendriya Vidyalaya in Lakhimpur District, Assam". The data were collected from 120 students (60 JNV and 60 KV). Group Test of Mental Ability by Dr. S. Jalota (1976) was used to find out intelligence of students and for measuring academic achievement the Board Examination marks of the students were used. The main finding of the study was

- 1) There is no true difference between the students of JNV and KV on academic achievement.
- 2) There is no true difference between JNV and KV students for both males and females on academic achievement.
- 3) There is no true difference between JNV and KV rural and urban students on academic achievement.

- 4) There is no significant difference between JNV and KV female students on intelligence.
- 5) There is significant difference between the students of JNV and KV on intelligence in the whole sample.
- 6) There is significant difference between the students of JNV and KV rural and urban students on intelligence and
- 7) There is significant difference between JNV and KV male students on intelligence.

3. Rationale of the Study

The present study has been designed to study the intelligence and academic achievement of secondary school students of Arunachal Pradesh. Educated men are considered as the real asset for development of any state or nation. But there is individual difference and every individual in the society has his own mental ability, creativity and personality patterns and perform his duty accordingly. Arunachal Pradesh, the erstwhile North-East Frontier Agency (NEFA) shares international boundaries with Bhutan, Tibet, China and Myanmar to the west, north-east, north and east respectively, and state boundaries with Assam and Nagaland in the south and south-east. The modern history of Arunachal Pradesh

begins with the inception of British rule in Assam after the treaty of Yandaboo, concluded on 24 February 1826. Before 1962, the area was popularly known as the NEFA, and was constitutionally a part of Assam. Because of its strategic importance, however, it was administered by the Ministry of External Affairs until 1965, and subsequently by the Ministry of Home Affairs, through the Governor of Assam. In 1972, it was constituted as a Union Territory and renamed Arunachal Pradesh. On 20 February 1987, it became the 24th state of the Indian Union. The state is situated between latitude 26 30' N and 29 30' and longitude 91 30' E, with Itanagar as its capital located at an altitude of 530 metres above MSL. The total area of the state has 83743 sq. km. It is named after Itafort meaning fort of bricks, built in 14th century A.D. Arunachal Pradesh was the most backward state in terms of socio-economic, literacy and employment opportunities. But after the attainment of statehood, Arunachal Pradesh has shown a fabulous progress in various fields including education. The people have realised the importance of education and as a result the state has made tremendous progress in literacy. The population and literacy characteristics of Arunachal Pradesh are shown in Table-1.

Table 1: The Population and Literacy Characteristics of Arunachal Pradesh

Sl No.	Year	Population			Literacy (%)			S.R (per 1000 male)	P.D Per sq. Km
		Male	Female	Total	Male (%)	Female (%)	Total (%)		
1	1961	1,77,680	1,58,878	3,36,558	12.24	1.24	7.23	894	4
2	1971	2,51,231	2,16,280	4,67,511	17.82	3.71	11.29	861	6
3	1981	3,39,322	2,92,517	6,31,839	35.11	14.01	25.54	862	8
4	1991	4,65,004	3,99,544	8,64,558	51.45	29.69	41.59	859	10
5	2001	5,79,968	5,78,027	10,97,968	65.43	40.23	54.34	901	13
6	2011	7,20,232	6,62,379	13,82,611	73.69	59.57	66.95	920	17

Source: Reports of census of India 1961, 1971, 1981, 1991, 2001 and 2011.

In terms of number of educational institutions, the state has progressed steadily. There are 2 Universities, 2 Polytechnic colleges and 32 affiliated colleges.

Now-a-days even the educated parents and uneducated parents are well aware of the significance of education for all sorts of development. They are sending their children to schools for receiving education to lead a happy life in future. Though the main focus of education is the all-round development of an individual and pleads for successful adjustment to modern life yet, it is to be realized by the secondary school students in the state of Arunachal Pradesh.

Intelligence is an important factor in academic achievement. Intelligence may be explained as the capacity for knowledge and understanding especially as applied to the handling of novel situation; the power of meeting novel situation successfully by adjusting behaviour to the total situation. It is an organization comprising of the abilities to readily,

correctly, understand complicated and abstract things. It is an inborn natural power that makes a man capable of overcoming difficulties and problems of life. Intelligence is a variable contributes towards creativity. The present study seeks to investigate if their exist any relationship between intelligence in one hand and academic achievement of secondary school students on the other the hand.

Academic Achievement refers to the performance of examinees in the H.S.L.C examination conducted by CBSE. This study will try to give a picture of the performance of secondary students in H.S.L.C examination by taking into account the marks obtained by them in all subjects. The performance will be analysed quantitatively and comparison of performance of males and females as well as urban and rural schools will be done. Academic achievement is a variable contribute towards intelligence and the evidence is presented by a large number of researches. In this study researchers did lots of related studies in various sources like

journals, survey books, Ph.D. thesis and other internet sources. Some of the studies show positive relationships between intelligence and academic achievement. From the survey of related studies, it is evident that very few studies are conducted in North Eastern part of India is general and Arunachal Pradesh in particular. At the same time hardly any study is conducted in relation to these variables on secondary school students of Arunachal Pradesh. So, the investigator is motivated to take up a comparative study and to investigate the relationship between select variables for secondary school students of two district of Arunachal Pradesh namely- East Siang and Lohit.

4. Statement of the Problem

The problem under study is stated as “**Intelligence and Academic Achievement of Secondary School Students of Arunachal Pradesh**”.

Objectives of the Study

The study was designed to achieve the following objectives:

- 1) To Study the Intelligence and Academic Achievement of Secondary School Students in total sample of both the districts of Arunachal Pradesh.
- 2) To compare the Intelligence and Academic Achievement of Secondary School Students of East Siang and Lohit districts separately.
- 3) To compare the Intelligence and Academic Achievement between male and female Secondary School Students of East Siang and Lohit districts separately.
- 4) To Compare the Intelligence and Academic Achievement between rural and urban Secondary School Students of East Siang and Lohit districts separately.
- 5) To Compare the Intelligence and Academic Achievement between government and private Secondary School Students of East Siang and Lohit districts separately.
- 6) To test the significance of the mean differences on Intelligence of (a) male and female (b) rural and urban (c) government and private secondary school students of East Siang and Lohit districts (total sample) of Arunachal Pradesh.
- 7) To test the significance of the mean differences on Academic Achievement of (a) male and female (b) rural and urban (c) government and private secondary school students of East Siang and Lohit districts (total sample) of Arunachal Pradesh.
- 8) To examine the relationship between intelligence and academic achievement of secondary school students of both districts (total sample) of Arunachal Pradesh.

Hypotheses of the Study

In view of the objectives of the study the investigator formulated the following hypothesis:

H:01. There is no significant difference in the mean scores of intelligence between (a) male and female (b) urban and rural (c) government and private secondary school students in East Siang and Lohit districts of Arunachal Pradesh.

H:02. There is no significant difference in the mean scores of academic achievement between (a) male and female (b) urban and rural (c) government and private secondary school students in East Siang and Lohit districts of Arunachal Pradesh.

Methodology of the Study

The Descriptive Survey Method is used in the study. It describes the current position of the research work. It involves interpretation, comparison, measurement, classification, evaluation and generalization. All these direct towards a proper understanding solution of significant educational problem. The present study attempted to find Intelligence and Academic Achievement of Secondary School Students of Arunachal Pradesh. Keeping in view the nature of the study, the survey method was found to be more suitable.

Population of the Study

The population of the present study constituted all the class X students studying in secondary schools of East Siang and Lohit districts of Arunachal Pradesh.

Selection of Schools and Final Sample

In Arunachal Pradesh two districts were considered for this present study. From these two districts two stratified groups namely rural and urban schools were selected. After completion of stratification with respect to rural and urban schools, sample was selected randomly with equal proportion from the said stratified groups (rural and urban). The selected schools belong to the category of government as well as private schools which are affiliated to CBSE i.e., Central Board of Secondary Education, New Delhi and controlled and supervised by the Department of Education, Govt. of Arunachal Pradesh.

However, the data are collected from all the students in selected schools who are studying in class X. The investigator considered for study only 800 whose questionnaires and information were complete in all respects. The break-up of the final sample is shown in **Table – 2**.

Table 2: Break up of Sample in terms of districts, locality and sample size wise

	East Siang		Lohit		
Schools	Rural	Urban	Rural	Urban	Total
N	4	6	4	6	20
Male	75	125	75	125	400
Female	75	125	75	125	400
Total	150	150	150	250	800

Tools Used

In order to fulfill the objectives of the present study the following tools were used:

- i) Intelligence Test
- ii) Academic Achievement

The tools are described in the following sections:

Intelligence Test

First variable in the study is intelligence. The researcher used Dr. S. Jalota's Intelligence test meant for secondary school students. The group test of mental ability was constructed and standardized by Dr. S. S. Jalota. This Intelligence Test comprises of five separate categories of twenty tasks each, namely: (i) Vocabulary (ii) Classification (iii) Number Series

(iv) Analysis and (v) Reasoning. Only 1hour 15 minutes were given to administer it to the students. This test was employed by the researchers for the purpose of data collection.

The Students Performance Record from the Schools (Academic Achievement)

Achievement means performance. Academic achievement refers to Educational performances of students studying in schools. How far they are successful in acquiring knowledge, understanding, and skill in different subjects presented to them for study through the curriculum is to be reflected in their Academic Achievement. As far as academic achievement of the students was concerned for the purpose of the present study, the investigator visited the selected schools and collected the school records of the selected students i.e. marks obtained by the students in the last annual examination, 2015 (i.e. Class IX annual examination).

Statistical Techniques Used

In this study various statistical measures such as Mean, SD, t-test and correlation were used for analysing and interpreting data.

Analysis of Data

After collecting data the investigators used the mean, standard deviation and t-test for analysing the data. The calculations were done by using Microsoft Excel in computer. The analysis is carried out hypothesis wise.

Objective -1: To Study the Intelligence and Academic Achievement of Secondary School Students in total sample of both the districts of Arunachal Pradesh.

Table -3

Showing the mean and standard deviation on intelligence and academic achievement of secondary school students in total sample of both the districts (N= 800)

Variable	N	Mean	Standard Deviation
Intelligence	800	64.68	11.78
Academic Achievement	800	231.18	62.58

The **Table -3** show the mean scores on intelligence and academic achievement are 64.68 and 231.18, respectively with the S.D as 11.78 and 62.58 for the same variables in order for the whole sample.

Therefore, the above table depicted that the secondary school students in both East Siang and Lohit districts were categorized as 'bright' on the basis of intelligence scores (64.68). Whereas looking into the norms of the academic achievement scores in both districts the secondary school students were found to be average on academic achievement in terms of their mean scores.

Objective -2: To compare the Intelligence and Academic Achievement of Secondary School Students of East Siang and Lohit districts separately.

Table 4

Showing the mean and standard deviation of the intelligence and academic achievement of secondary school students of East Siang and Lohit districts of Arunachal Pradesh

Variables	Areas				
	East Siang			Lohit	
	N	Mean	SD	Mean	SD
Intelligence	400	62.79	11.69	66.62	11.58
Academic Achievement	400	233.81	72.85	228.55	50.23

The **Table-4** shows the comparison of the mean scores of secondary school students on intelligence and academic achievement for both the districts separately. The mean scores on the above variables in East Siang district were 62.79 and 233.81, whereas for Lohit district 66.62 and 228.55 respectively. The comparison shows that except for intelligence the mean scores on academic achievement are higher in case of students of East Siang district than that of Lohit district.

Objective -3: To compare the Intelligence and Academic Achievement between male and female Secondary School Students of East Siang and Lohit districts separately.

Table 5

Showing the mean and standard deviation of the intelligence and academic achievement between male and female secondary school students of East Siang and Lohit districts of Arunachal Pradesh

Variables	Areas							
	East Siang				Lohit			
	Male (200)		Female (200)		Male (200)		Female (200)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Intelligence	59.89	10.27	88.5	11.35	63.25	10.66	62.47	10.36
Academic Achievement	198.69	27.44	207.70	30.65	211.77	33.53	218.53	45.54

The **Table-5** shows the mean scores and standard deviation of male and female students for intelligence of East Siang and Lohit districts respectively viz-a-viz for Males (M=59.89, S.D=10.27; M=63.25, S.D=10.66), and Females (M=88.5, S.D=11.35; M=62.47, S.D=10.36). It indicated that Lohit district male students mean scores were higher than that of East Siang district. It also indicated that East Siang district female students mean scores were higher than the Lohit district female students. The females of East Siang were categorized as 'excellent' but the remaining males and females of both the districts were superior on intelligence separately.

The comparison of mean scores and standard deviation of male and female students for academic achievement of East Siang and Lohit districts respectively viz-a-viz for Males (M=198.69, S.D=27.44; M=211.77, S.D=33.53), and Females (M=207.70, S.D=30.65; M=218.53, S.D=45.54). It indicated that Lohit district male and female students mean scores were higher than that of their East Siang district counterparts but East Siang male student academic achievement was below average compared to the female students of East Siang and male and female students of Lohit district.

Objective -4: To Compare the Intelligence and Academic Achievement between rural and urban Secondary School Students of East Siang and Lohit districts separately.

Table 6

Showing the mean and standard deviation of the intelligence and academic achievement between rural and urban secondary school students of East Siang and Lohit districts of Arunachal Pradesh

Variables	Areas							
	East Siang				Lohit			
	Rural (150)		Urban (250)		Rural (150)		Urban (250)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Intelligence	62.49	12.13	62.99	11.23	68.23	11.18	65.47	11.77
Academic Achievement	194.1	25.89	290.74	96.57	212.42	41.96	244.67	52.67

The **Table-6** shows that the mean and SD scores on intelligence of Rural (M=62.49, S.D=12.13; M=68.23, S.D=11.18), and Urban (M=62.99, S.D=11.23; M=65.47, S.D=11.77) of East Siang and Lohit districts students respectively showed that for both rural and urban students of Lohit district have higher score than that of East Siang district students.

The comparison of mean scores and standard deviation of rural and urban students for academic achievement of East Siang and Lohit districts respectively for Rural (M=194.1, S.D=25.89; M=212.42, S.D=41.96), and for Urban (M=290.74, S.D=96.57; M=244.67, S.D=52.67). It indicated that Lohit district rural school students mean scores were higher than that of their counterparts in East Siang district. It also indicated that East Siang district urban students mean scores were higher than the Lohit district urban students.

Objective -5: To Compare the Intelligence and Academic Achievement between government and private Secondary School Students of East Siang and Lohit districts separately.

Table 7

Showing the mean and standard deviation of the intelligence and academic achievement between government and private secondary school students of East Siang and Lohit districts of Arunachal Pradesh

Variables	Areas							
	East Siang				Lohit			
	Govt. (300)		Private(100)		Govt. (300)		Private(100)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Intelligence	59.196	10.83	73.38	6.56	62.86	10.49	77.91	6.00
Academic Achievement	202.88	29.34	326.6	84.80	215.15	40.92	268.73	54.18

The **Table -7** it showed that the mean and standard deviation scores on intelligence for government (M=59.196, S.D=10.83; M=62.86, S.D=10.499), and private (M=73.38, S.D=6.56; M=77.91, S.D=6.00) of East Siang and Lohit districts respectively showed that secondary students of Lohit district for both government and private have higher mean values than that of East Siang district.

The above **Table** it also was seen that the mean scores and standard deviation of government and private students for academic achievement of East Siang and Lohit districts respectively such as the government (M=202.88, S.D=29.34; M=215.15, S.D=40.92), private (M=326.6, S.D=84.80; M=268.736, S.D=54.18). It indicated that Lohit district government school students mean scores were higher than

that of East Siang district. It also indicated that East Siang district private school students mean scores higher than the Lohit district female students.

Objective -6: To test the significance of the mean differences on Intelligence of (a) male and female (b) rural and urban (c) government and private secondary school students of East Siang and Lohit districts (total sample) of Arunachal Pradesh.

Hypothesis-1: There is no significant difference in the mean scores of intelligence between (a) male and female (b) urban and rural (c) government and private secondary school students of East Siang and Lohit districts (total sample) of Arunachal Pradesh.

Showing the mean, standard deviation and t-value of the intelligence between (a) male and female (b) urban and rural (c) government and private secondary school students in East Siang and Lohit districts of Arunachal Pradesh

Table 8

Variable	Group	N	Mean	Standard deviation	t-value	Remark
Intelligence	Male	400	65.36	12.00	1.64	Not significant
	Female	400	64.00	11.53		
	Rural	300	61.57	10.58	1.37	Not significant
	Urban	500	60.49	11.03		
	Government	600	61.03	10.81	22.81	Highly significant
	Private	200	75.63	6.675		

The results from **Table-8** showed that the mean scores on intelligence of male and female students in the whole sample were 65.36 and 64.00 respectively. When the t-test was applied to compare the mean scores of both the groups, it was found that the calculated t-value 1.64 is less than the table value 1.96 at 0.05 level of significance and the null hypothesis is accepted. This means there was no significant mean difference between male and female secondary students of both the districts.

From the above **Table** again it can be observed that the mean scores of both rural and urban students were 61.57 and 60.49 respectively. When the t-test was applied to compare the mean scores of both the groups, it was found that the calculated t-value (1.37) is less than the table value 1.96 at 0.05 level of significance. This means that the mean difference is not significant. Hence, hypothesis is accepted. This further means that rural and urban secondary school students have similar level of intelligence in the total sample of both the districts.

The mean scores of both government and private students were 61.03 and 75.63 respectively. The computed CR (t) between their mean differences is 22.81. This is found to be significant at 0.05 level. Hence hypothesis is rejected. This means that there is a great difference in intelligence of government and private secondary students of both the districts.

Objective -7: To test the significance of the mean differences on Academic Achievement of (a) male and female (b) rural and urban (c) government and private

secondary school students of East Siang and Lohit districts (total sample) of Arunachal Pradesh.

female (b) urban and rural (c) government and private secondary school students of East Siang and Lohit districts (total sample) of Arunachal Pradesh.

Hypothesis-2: There is no significant difference in the mean scores of academic achievement between (a) male and

Table 9

Variable	Group	N	Mean	Standard deviation	t-value	Remark
Academic Achievement	Male	400	205.23	32.36	2.98	Significant
	Female	400	212.80	39.18		
	Rural	300	203.26	36.01	15.42	Highly significant
	Urban	500	207.71	81.04		
	Government	600	209.02	36.098	15.774	Highly significant
	Private	200	297.67	76.68		

Showing the mean, Standard deviation and t-value of the academic achievement between (a) male and female (b) urban and rural (c) government and private secondary school students in East Siang and Lohit districts of Arunachal Pradesh

Table 10

Variables	Correlation (r)	Level of Correlation
Intelligence	0.35	Low Positive Correlation
Academic Achievement		

The result from **Table-9** shows that the mean scores on academic achievement of male and female students were 205.23 and 212.80 respectively. The computed CR (t) between their mean differences is 2.98. This was found significant at 0.05 level. Hence, hypothesis is rejected. This means that there is a real difference on academic performance difference of male and female secondary students of both the districts (total sample).

The mean scores on academic achievement of both rural and urban students were 203.26 and 207.71 respectively. When the t-test was applied to compare the mean scores of both the groups, it was found that the calculated t-value 15.42 was greater than the table value of 1.96 at the 0.05 level of significance. Hence hypothesis is rejected. This means that there is a real difference between academic performance of rural and urban secondary school students of both the districts (total sample).

From the above **Table** it can be observed that the mean scores of both government and private students are 209.02 and 297.67 respectively. When the t-test was applied to compare the mean scores of both the groups, it was found that the calculated t-value (15.774) is greater than the table value 1.96 at 0.05 level of significance. This means that the mean difference is highly significant. Hence hypothesis is rejected. This further means that government and private secondary school students differ in their academic performance level of all subjects combined together.

Objective -8: To examine the relationship between intelligence and academic achievement of secondary school students of both districts (total sample) of Arunachal Pradesh.

Show that correlation between intelligence and creativity, intelligence and academic achievement and creativity and academic achievement of secondary school students in both districts total sample of Arunachal Pradesh

5. Findings of the Study

- 1) The comparison of all the students on intelligence and academic achievement separately showed that they were bright on intelligence and average on academic achievement.
- 2) The students of both the districts separately were found bright on intelligence and average on academic achievement.
- 3) The male and female comparison on intelligence of both the districts showed that Lohit district male student's mental ability scores were better than that of East Siang district students. However, the female students of East Siang district on intelligence were higher than that of their Lohit district counterparts. Further, The male and female of Lohit district students were found academically higher compared to the east Siang district counterparts.
- 4) The rural and urban students on intelligence and academic achievement showed that the intelligence mean scores of Lohit district for both rural and urban students were better than the East Siang district students, but Lohit district rural students were better than East Siang district rural students on academic achievement and contrary to this East Siang district urban students were better than that the Lohit district urban students. However, students of both the districts scored average marks on academic achievement.
- 5) The mean scores of private school students of both the districts on intelligence and academic achievement were higher than that of government school students. The academic achievement of private school of East Siang district was categorized as 'above average' performance but that of government as 'average' in both the districts.
- 6) There is no significant mean difference on intelligence between male/female and rural/urban areas students but significant real difference was found between government and private school students of both the districts of Arunachal Pradesh.
- 7) There is significant mean difference on academic achievement between male/female, rural/urban and

government/ private secondary school students for both the districts (total sample).

- 8) Low positive correlation was found with intelligence and academic achievement in the total sample (N=800) of both the districts.

6. Conclusion

The present study was mainly concerned with the comparison of intelligence and academic achievement of secondary school students of Arunachal Pradesh. From analysis and interpretations of this study the researchers found that the low intelligence and low academic performance of both the districts in Arunachal Pradesh. Most of the people of Arunachal Pradesh live in a rural area. They are economically poor as compared to others, this lead to poor foundation of students in their educational carrier. Secondly, most of the parents are uneducated. Generally uneducated parents are unaware about the scientific knowledge in the modern world of today. Even the educated parents could not give sufficient time for their children to guide them in their educational field. Thirdly, the government of Arunachal Pradesh cannot provide sufficient fund for the school development. Fourthly, due to lack of proper supervision from education department, local teachers remain absent from their duty. The numbers of teachers are less in remote rural areas. Fifthly, many schools have not sufficient infrastructural facilities. Even the teachers are untrained, no library, no proper guidance and counseling center, no special classes for weaker students, no proper co-curricular and extra-curricular activities etc. which add to their causes of poor academic performance as well as mental development.

7. Recommendations of the Study

The present study is basically on intelligence and academic achievement of secondary school students of Arunachal Pradesh. The findings of the study are having different recommendation and those are put as under.

- 1) On the basis of the results of the study it can be concluded that any students should not be encountered with lack of mental health. Lack of sound mental health can be lead to problem for the students in their educational carrier. Therefore, teacher can look into the matter and provide necessary guidance to both parents and child.
- 2) Parents and teacher should provide easily accessible library facilities for intellectual growth an update of knowledge through books and newspaper.
- 3) Guidance and counselling centre should be opened in schools. So that students can avail helped to solve educational problems.
- 4) Curriculum of the school should be authentic, job oriented, legitimacy, productivity etc.
- 5) Organize various personality development programmes and arrange science exhibitions or educational tours.

8. Suggestion for further Study

In view of the nature of the present study and the enriched research experience, the researchers feels like to suggest

some of the research areas, which can be taken further for research studies. Some of the significant suggestions are put as under:

- 1) The present study is on the intelligence and academic achievement of secondary school students and further, the research study may be conducted on college and university students.
- 2) The present study has been delimited to two districts of Arunachal Pradesh. Further a study may be conducted by taking up other four or five districts of Arunachal Pradesh.
- 3) Study can also be carried out in relation to intelligence and academic achievement with respect to students at secondary level coming from deprived society.

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