

PARENTAL INVOLVEMENT AND SCIENCE ACHIEVEMENT OF SECONDARY SCHOOL STUDENTS IN KOHIMA, NAGALAND

Elina Swu¹ & Surendra Yadav², Ph. D.

¹Scholar, Department of Teacher Education, Nagaland University, Kohima campus

²Assistant Professor, Department of Teacher Education, Nagaland University, Kohima campus, Email: surendrayadav@nagalanduniversity.ac.in

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Abstract

Unlike olden days, the trending world nowadays demands a lot of involvement of parents in the education of their children and there is widespread support for the same, in order to enhance academic achievement. Schools today are no longer considered to be the only source providing education to the students, but parents are thought to play an integral role in the entire education process. The main aim of this study was to explore the level of parental involvement and academic achievement in science subject among secondary school students. The study was conducted on a sample of 160 students selected from rural and urban schools of Kohima district in Nagaland. Statistical techniques t-test and Karl Pearson's Product Moment Correlation (r) was used to analyse the data. Findings of the study revealed that Parental Involvement of the students was very high in majority of the students (76.25%) and the Achievement level in Science was found to be below average with a mean value of 21.6. Positive correlation was found between the two variables ($r = 0.165, p < 0.05$).

Keywords: Parental Involvement, Academic Achievement, Science, Secondary school students



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INTRODUCTION

It is often said that "Home is the primary school and parents are the primary teachers." As first teachers and home educators, parents play a really significant role in their child's development, learning and success in school and in their life. Parents are considered as an imperative web available to any child. They provide the foundation for learning and helps prepare their children to be ready and able to learn. Children's interests, values, educational aspirations and goals are nurtured by parents. Extensive research within the area of family / parental involvement overwhelmingly supports the fact that children of involved

parents have a way greater chance to be developed into healthy, knowledgeable, responsible, and caring adults.

Parental Involvement

Of late, the term “*Parental involvement*” has gained an essential standing within the field of education and has become a progressively central issue for discussion and analysis to boost student attainment and cut back academic inequities. Parental involvement means the participation of parents in the educational processes, experiences and towards the welfare of their children. It encompasses the extent of participation, involvement and contribution of parents within the academic attainments of child through direct specific activities and indirect emotional behaviours; and includes a range of practices by the parent toward their children that are intended to promote the latter’s motivation and academic accomplishment like discussing school with children and monitoring children’s progress. According to Vandergrift and Greene (1992), there are two key elements that work together to make up the concept of parental involvement. One of these is a level of commitment to parental support which includes such things as encouraging the student, being sympathetic, reassuring, and understanding. The other element needed is a level of parental participation and activities, such as doing something that is observable. "This combination of level of commitment and active participation is what makes an involved parent".

Parental Involvement and Academic Achievement

Academic achievement is an accomplishment of proficiency of performance in given skills or knowledge usually designed by the test scores or marks given by the teacher and is closely related to learning (Ornstein, 1990). It is a multifaceted construct that is determined by varied factors like environment, and quality of teaching – learning activities, study habits, family involvement, heredity and intelligence of the individual. Among these factors, family/parental involvement is one among the necessary factors that have direct and indirect impact on students’ achievement which is further confounded by varied alternative factors. The influence of family factors on children’s education is well established and plenty of research findings demonstrates that parental involvement in child’s learning is positively related to achievement. Parent-teacher partnership is seen to form an incredible impact on children’s education. There is consistent evidence that engaging parents is positively correlated with children’s academic achievement, even when prior ability and family social context factors are taken into account (Fan & Chen, 2001). Besides socio-economic, family and child-related

characteristics, parental participation in home and school is seen as a vital predictor of education and development among children in both developed and developing countries.

REVIEW OF LITERATURE

Olatoye & Ojunkola (2008) investigated the relative and combined influences of parental involvement and interest in schooling on science achievement of selected Junior Secondary School students in Ogun State, Nigeria. Findings of the study reveals a significant relationship between parental involvement and science achievement ($r=+0.167$, $p<0.05$) as well as between interest in schooling and science achievement ($r=+0.253$, $p<0.05$). Hafiz Rafi et al. (2013) explored the effect of parental involvement in the academic achievement of their children in Allama Iqbal Town, Lahore city. Results of the study indicated that parental involvement has significant effect in better academic performance of their children and also proved that parental involvement enhanced the academic achievements of their children. Kaur (2013) showed the high level of Parental involvement among high achievers and low level of parental involvement among low achievers. Vijaya, et al. (2016) conducted a study on Parental involvement and academic achievement among high school students. The research demonstrated that parent involvement in children's learning is positively related to achievement and it also showed that the more intensively parents are involved in their children's learning the more beneficial are the achievement effects. Talluri and Suneela (2017) studied the Impact of Parental Involvement on Academic Achievement of secondary school students and found that there is a significant impact of Parental Involvement on Academic Achievement of the secondary school students. Positive correlation was found between Parental Involvement and Academic Achievement of the secondary school student. The study findings of Hussain et al. (2018) revealed that there was strong positive and significant relationship between parental involvement and academic performance of students.

Objectives of the Study

1. To explore the level of parental involvement and science achievement of secondary school students.
2. To examine the parental involvement of secondary school students with regard to gender, locale and type of school.
3. To examine the academic achievement in science of secondary school students with regard to gender, locale and type of school.

4. To find out the relationship between parental involvement and academic achievement in Science of secondary school students.

HYPOTHESES OF THE STUDY

1. There is no significant difference in parental involvement of male and female secondary school students.
2. There is no significant difference in parental involvement of urban and rural secondary school students.
3. There is no significant difference in parental involvement of private and government secondary school students.
4. There is no significant difference in academic achievement in science of male and female secondary school students.
5. There is no significant difference in academic achievement in science of urban and rural Secondary school students.
6. There is no significant difference in academic achievement in science of private and government secondary school students.
7. There is no significant correlation between parental involvement and academic achievement in science of Secondary school students.

Sample of the Study

The Sample of the study comprised of 160 Class IX students studying in secondary schools of Kohima district, Nagaland.

Breakup of the sample in terms of demographic variables

Variables	N =160
Gender	Male =80; Female =80
Locale	Urban=80; Rural= 80
Type of school	Private =80; Govt.=80

Tools and Statistical Techniques

Following tools were used to collect the relevant data:

1. Parental Involvement Scale developed by Vijay Laxmi Chauhan and Gunjan Ganotra Arora (with slight modification as per the need and suitability of the study).
2. An achievement test in science developed by the investigator to assess the achievement of the students in science subject. It consisted of 45 items– MCQ (with one correct answer and three distracters).

The analysis of the data was carried out on the basis of objectives of the study and hypotheses formulated by employing appropriate statistical techniques. Statistical techniques, t-test and Product Moment Coefficient Correlation were employed to test the hypotheses.

Result of Analysis and Interpretation of the Data

Result of the data analysis is presented in the following sections. On the basis of objectives of the study, analysis is performed and results are presented in tables accordingly:

Table 1: Overall level of Parental involvement of secondary school students (N=160)

Sl. No	PI level	Score	Frequency	Percentage
1	Very low	30-80	1	0.62%
2	Low	81-90	6	3.75%
3	Average	91-94	6	3.75%
4	High	95-101	16	10%
5	Very high	102-129	122	76.25%
6	Extremely high	130-150	9	5.62%
Total			160	100%

The perusal of the table reveals that out of 160 secondary school students in Kohima district, 5.62% showed extremely high parental involvement, 76.25% showed very high parental involvement, 10% showed high parental involvement, 3.75% showed average parental involvement, 3.75% showed low parental involvement and only 0.62% showed very low parental involvement.

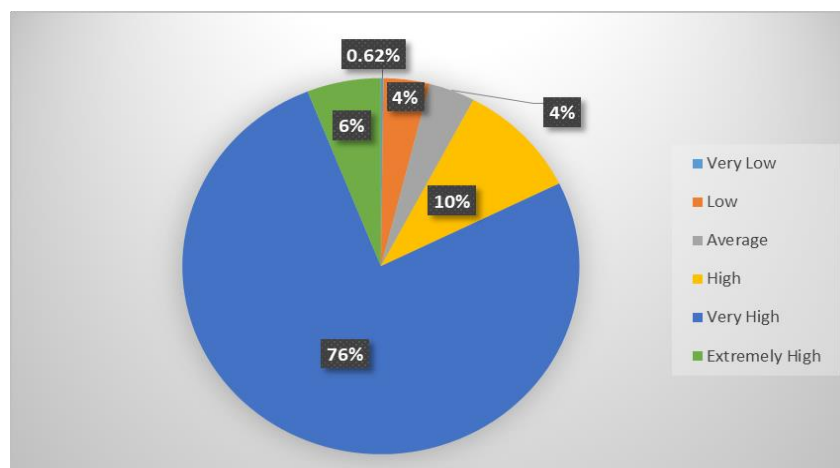


Fig 1: Overall level of Parental involvement of secondary school students

Table 2: Overall Academic Achievement level in Science of secondary school students (N=160)

Sl. No	Levels of achievement in science	Range of raw scores	Frequency	Percentage
1	Very low	5-10	8	5%
2	Low	10-15	40	25%
3	Below Average	15-20	31	19.37%
4	Average	20-25	27	16.87%
5	Above average	25-30	25	15.62%
6	High	30-35	23	14.37%
7	Very high	35-40	6	3.75%
8	Excellent	40-45	Nil	Nil
Total			160	100%

The glance at the above table (Table:2) reveals that out of the total sample N=160, 25% of the students' achievement level in science is low; 3.75% of the students show very high level of achievement; 14.37% high; 15.62% above average; 16.87% average; 19.37% below average; 25% low; 5% very low. None of the students' achievement level falls under the excellent category.

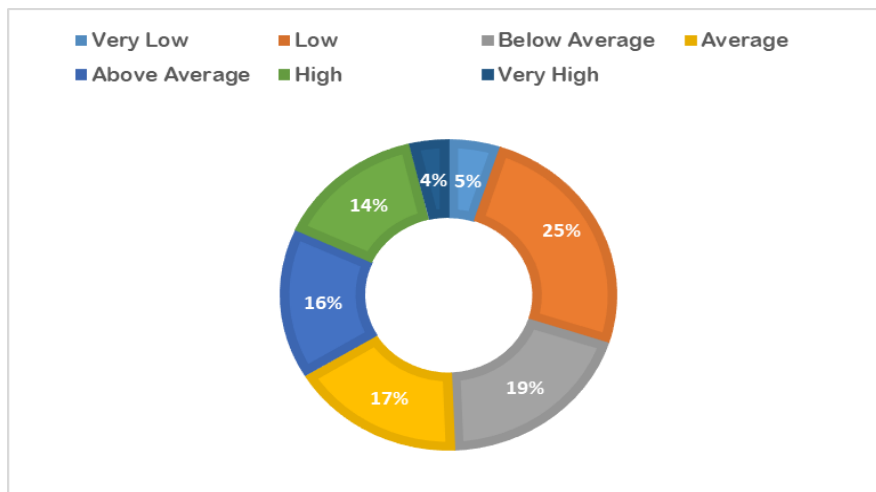


Fig 2: Overall level of Academic Achievement in Science of secondary school students

Null Hypothesis 1: There is no significant difference in Parental Involvement of Male and Female secondary school students.

Table 3: Mean comparison between Male and Female secondary school students in Parental Involvement (N=160)

Variables	N	Mean	SD	t- value	S/NS at 0.05 level
Male	80	110	11.1	1.46	NS
Female	80	113	11.6		

The above table (Table: 3) depicts the mean comparison between male and female secondary school students on parental involvement. From the table, it can be revealed that the mean scores of 110 and 113 by male and female respectively shows a very little difference of parental involvement according to gender.

The “t” value 1.46 shows that there is no significant mean difference between male students and female students at 0.05 level of significance. Hence, the null hypothesis which reads *“There is no significant difference in Parental involvement of Male and Female Secondary school students”* is not rejected.

Null Hypothesis 2: There is no significant difference in Parental Involvement of Urban and Rural secondary school students.

Table 4: Mean comparison between Urban and Rural Secondary school students in Parental Involvement (N=160)

Variables	N	Mean	SD	t- value	S/NS at 0.05 level
Urban	80	111	11.5	0.899	NS
Rural	80	112	11.3		

From the table (Table: 4), it is clear that computed t-value (0.899) is lesser than the table value (1.96) at 0.05 level of significance. Therefore, the null hypothesis that *“There is no significant difference in Parental involvement of Urban and Rural Secondary school students”* is not rejected. Both Urban and Rural students have same level of parental involvement.

Null hypothesis 3: There is no significant difference in Parental Involvement of Private and Government secondary school students.

Table 5: Mean comparison between private and government secondary school students in Parental Involvement (N=160)

Variables	N	Mean	SD	t- value	S/NS at 0.05 level
Private	80	112	12.3	0.816	NS
Government	80	111	10.5		

The computed “t” value (0.816) is lesser than the table value (1.96) at 0.05 level of significance which shows that there is no significant difference between government and private students on Parental involvement. Hence, the null hypothesis *“There is no significant difference in Parental involvement of Government and Private school”* is not rejected. Hence, both private and government schools students have same level of parental involvement.

Null Hypothesis 4: There is no significant difference in Academic Achievement of Male and female secondary school students.

Table 6: Mean comparison between male and female secondary school students on academic achievement in science

Variables	N	Mean	SD	t- value	S/NS at 0.05 level
Male	80	19.9	8.31	2.75	S
Female	80	23.3	7.62		

The above table (Table: 6) depicts that the computed t-value (2.75) is more than the table value (1.96) to be significant at 0.05 level of significance. Therefore the null hypothesis that *“There is no significant difference on Academic Achievement in science of male and female secondary school students”* is rejected. Female students’ achievement mean (23.3) is significantly higher than the achievement mean of male students (19.9), which reveals that female students have better academic achievement than male students in science subject. Hence both male and female students’ academic achievement is significantly different.

Null Hypothesis 5: There is no significant difference in academic achievement in science of Urban and Rural secondary school students.

Table 7: Mean comparison between urban and rural secondary school students achievement in science

Variables	N	Mean	SD	t- value	S/NS at 0.05 level
Urban	80	22.2	7.70	1.02	NS
Rural	80	20.9	8.54		

The table (Table:7) shows the mean comparison between urban and rural secondary school students achievement in science. From the results of t-test for the significant difference between academic achievement of urban and rural students it is clear that calculated t-value (1.02) is less than the table value (1.96) at 158 df. Therefore the null hypothesis that there is no significant difference on academic achievement of Urban and Rural secondary school students is not rejected at 0.05 level of significance. Hence both rural and urban secondary school students' academic achievement is same in science subject.

Null hypothesis 6: There is no significant difference in academic achievement in science of private and government secondary school students.

Table 8: Mean comparison between private and government secondary school students achievement in science

Variables	N	Mean	SD	t- value	S/NS at 0.05 level
Private	80	21.8	7.16	0.378	NS
Government	80	21.3	9.04		

The above table (Table 8) shows the mean comparison between private and government secondary school students' achievement in science. From the results of t-test for the significant difference between academic achievement of private and government students it is clear that calculated t-value (0.378) is less than the table value (1.96) at 158 df. Therefore the null hypothesis that *“There is no significant difference on Academic Achievement in science of private and government secondary school students”* is not rejected at 0.05 level of significance.

Null hypothesis 7: There is no significant relationship between parental involvement and academic achievement in science of secondary school students.

Table 9: Correlation between parental involvement and academic achievement in science of secondary school students

Variables	‘r’ value	‘p’ value	Remarks
PIS vs. Academic Achievement	0.165	0.037	Significant at 0.05 level

From the table 9, it is seen that the correlation coefficient is significant at 0.05 level ($r = 0.165$, $p < 0.05$). Therefore the null hypothesis that *“There is no significant correlation between Parental involvement and academic achievement of Secondary school students”* is rejected. Hence, it can be concluded that parental involvement and academic achievement of secondary school students have significant positive relationship at 0.05 level of significance.

FINDINGS OF THE STUDY

The main findings of the study are given as- Parental Involvement, Academic Achievement in Science and Correlation between the variables:

Parental Involvement

1. The level of parental involvement among the secondary school students was found to be under the following levels: 5.62% = extremely high level of Parental Involvement; 76.25% = very high, 10% = high, 3.75% = average, 3.75% = low and 0.625% = very low category of parental involvement. From the result it is evident that the level of parental involvement on majority of the secondary school students in Kohima district is very high.
2. It was found that there is no significant difference in parental involvement of male and female students; which shows that both male and female students have similar level of parental involvement.
3. It was found that there is no significant difference in parental involvement of the rural and urban students. Both urban and rural school students have similar level of parental involvement.

4. It was found that there is no significant difference between parental involvement of private and government students. Both urban and rural school students have similar level of parental involvement.

Academic Achievement in Science

1. The level of science achievement among the students was found to be under the following levels: very low=5%; low =25%; below average = 19.37%; average = 16.87%; above average =15.62%; high =14.37%; very high= 3.75%; Excellent = Nil.
2. The mean achievement score of 21.6 in Science test among the students reveals that the achievement level is below average because the maximum obtainable score in the science test administered is 45.
3. Significant difference was found between male and female students on their achievement in science test. Female students were found to have better academic achievement with a mean score of 23.3 than the male students' mean score of 19.9. The computed t-value (2.75) is significant at 0.05 level of significance. Therefore, it is concluded that there is significant difference in science achievement of male and female students.
4. No significant difference was found between the urban and rural students in their achievement in science. Both rural and urban students' achievement in science subject is similar.
5. The study also found that there is no significant mean difference between the government and private students in their science achievement. Both private and government students' achievement in science subject is similar.

Correlation between the variables

It was found that there is a positive and significant relationship between Parental involvement and science achievement of Class IX students in Kohima district ($r = 0.165, p < 0.05$).

RECOMMENDATIONS

For Parents

1. Parent's acceptance, support and cooperation is the first and foremost need for the enrolment, retention and achievement of the children. A parent's interest and support not only enhances academic performance but also affect the child's attitude towards school, classroom conduct, self-esteem, motivation and absenteeism. Thus parents

ought to attempt to build a more sensible relationship with their children and support them in all aspects of their life.

2. Parents should create a safe, engaging and positive environment. A positive and engaging environment encourages children as they feel supported for learning at home.
3. Parents should make sure they complement teachers' efforts in school by monitoring and supervising their children's academic activities and should regularly seek out information about the progress of their child.

For Schools

1. In view of the importance of parental involvement for academic progress, school authorities should seek for means for ensuring maximum parental involvement by organizing programs / meetings that will bring about parents, teachers and students interaction which will create a forum for discussion. In this way, parents will know what they are expected to do to complement teacher's efforts.
2. Schools can have a system to choose parent leaders and representatives by active Parent Teacher Associations or other parent organizations, advisory councils, or school management committees. Also, by establishing networks to link all families with parent representatives, consensus decisions can be taken on important aspects. Parents can also be encouraged to do volunteering in their child's school.
3. Schools should provide an environment inclusive for all parents and their children, regardless of their socio-economic status or educational background. Parent's illiteracy can be a barrier to participation, for which school should provide them additional support. Some parents illiteracy makes them feel inadequate and incapable. Such parents lack the confidence to interact with teachers and avoid PTMs or any other school activities. It is important for schools to make such parents realize their responsibility towards their children's learning and their immense potential to help in their children's education even without being educated. When school personnel exhibit positive attitude toward parents/ families they feel more welcome to school.

For Improving Science Achievement

1. Positive attitude towards the subject should be instilled from a really young age. Parents need to influence their children by increasing familiarity and interest in the subject. Parents can engage them in activities that can stimulate their interest in science and develop friendly attitude towards the subject. Acquiring scientific literature, reading or

watching documentaries based on scientific topics, visit to museum, science centre or botanical gardens etc. can help develop familiarity and interest in science.

2. Poor infrastructure facilities is one amongst the foremost contributor of poor performance. The government, department, school administrators, parents and the society at large should work together to ensure that the teaching and learning for teachers and students is conducive for effective learning to take place. They should support by providing proper funding for infrastructure development and other the necessary materials and equipment required for effective implementation of curriculum like well-equipped laboratories and materials.
3. The low achievement level of the students demands for a revolutionary ideas to motivate students in learning the subject. Teachers should be innovative and creative in their teaching approach like adopting technological innovations (ICT), inquiry method, learning by doing, project method etc. so as to motivate and sustain students' interest in the subject.
4. Opportunities should be provided to the teachers to undergo in-service trainings so as to equip them with the modern teaching methodologies and to develop their professional competence.

CONCLUSION

The result of the study shows that there is a significant positive relationship between parental involvement and academic achievement. In depth analysis within the field also supports the very fact that when both parents and teachers work along as partners, it contributes to children's learning, boosts academic achievement and ensures their well-being. Therefore, parents or caregivers of the family should make every effort to be actively involved in their child's life and education.

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