

**Academic Achievement in Theory and Practical in Relation to Family  
Background: A Study of College Students**

**Anoj Raj**

Faculty of Education,  
Himgiri ZEE University, Dehradun.

Received: 23 Oct 2012

Accepted: 28 Nov 2012

**Abstract**

*Through this study, it was tried to find out the achievement of male and female students in theory and practical. For this purpose a sample of 264 male and female post-graduate science students from the three campuses of Garhwal University (Srinagar, Pauri and Tehri) were selected by proportionate allocation random technique. Therefore 88 individual were taken from each campus. The sample was distributed between four-allied discipline of science i.e. Physics, Chemistry, Zoology and Botany. The Examination Mark- Sheets and Family Background Information Blank were used. Result indicates that female students secured more achievement score in practical and theory than that of male students. Students' achievement is positively related to parental education, family income and family occupation.*

**Key words:** Academic Achievement, Theory, Practical in Relation

**Introduction**

During the last three and four decades, progress in the field of education has brought drastic changes in the lives of the people. So, Teachers, educationist, community leader, parents, families and schools are more involved in their children's academic growth. The main goal of recent educational policies is how to improve the students' achievement. Since independence, researchers and educators have conducted many studies and experiments to determine the factors, which effect students' achievement.

Salunki, R.B. (1979) Conducted a study on 693 students of the first years from four faculties Viz, Science, Commerce, Arts and Home Science of the M.S University of Baroda and it was observed that educational climate, educational facilities, socio-economic status and home environment contributed positively to the academic achievement of the students.

Harikrishnan, M. (1992), concluded in his investigation that (i) Girls obtained a higher mean in achievement than boys (ii) Socioeconomic status was significantly related to academic achievement. The affect that sex has on a student's academic has been debated research over the past several decades (Chambers and Schreiber 2004, Elite 2005). Raveena Thakur, Shubhangna Sharma and Raj Pathania (2006), explored that caste, family income, school and mother's education had a significant effect on the education of children.

A study by Grissmer (1994) cited in WEAC, 2005, also found that parents' level of education was important factor affecting student achievement. Phillips (1998) in his study found positive correlation between parental education and social economic status and student achievement. In his study, he also found that those students achieve at the highest levels whose parents were college-educated.

More especially the study aimed at answering the following questions:

- (i). Is there any gender difference on achievement in theory and practical.
- (ii). What is the effect of various family factors on the achievement in theory and practical. The family factors analyzed in this study are:

- Father's Education
- Mother's Education
- Parental Occupation
- Parents Income

Parenting education, occupation and income are the keys to raising successful children, creating competent, confident parents, and building strong families and communities.

### **Method of the study**

**Sample:** The sample consisted of 264 male and female science students from the H.N.B. Garhwal University. The sample was distributed between four allied discipline of science viz. Physics, Chemistry, Zoology and Botany. There are three established campuses of university; therefore 88 individuals were taken from each through stratified random sampling technique.

**Tools:** following tools were used for the present study:

- (i). University mark sheet.
- (ii). Family Background blank.

**Result:**

The data was analyzed using the mean value, standard deviation and 't-test'.

**(a). Analysis of Academic Achievement of Male & Female students in Practical and Theory**

**Table 1**

**Summary of Mean, SD, SE and 't' Values of Achievement Scores in Practical of Male & Female Students of Science Faculty**

Target Factor	Male(N=130)		Female(N=134)		SE	't' value	Remark
	M	SD	M	SD			
Practical	77.90	6.99	80.03	6.26	0.82	2.60	P<0.01
Theory	49.95	8.83	50.09	7.37	1.00	0.14	n.s.

It is significant to note from Table 1 that male students have obtained low achievement score (M=77.90) in practical as compared to the achievement score (M=80.03) of female students and difference between the two groups is significant (t=2.60, p<0.01). While, gender difference goes in favour of female students on achievement in theory in science subjects but it was not found significant. Male students have obtained low achievement score (M=49.95) in theory as compared to the achievement score (M=50.09) of female students.

Past research has indicated an academic gap between the sexes, with male students ahead of female students. However, more recent research shown that the achievement gap has been narrowing and that in some instant girls have higher academic achievement than boys decades (Chambers and Schreiber 2004). For example, girls have been found to exert more efforts at school, leading to better school performance (Ceballo, McLoyd, and Toyokawa 2004).

**(ii). Analysis of Academic Achievement of students in Practical and Theory & their Father's Education.**

**TABLE: 2**

**Summary of Mean, SD, SE and ‘t’ Values of Achievement Scores in Practical and Theory of Science Students belonging to Father’s Education**

Target factor	Gp.	Fathers’ Education	N	M	SD	Pair	SE	‘t’	remark
Practical	1.	Upto H.S.	38	76.68	8.22	1-2	1.42	1.71	n.s.
	2.	Upto UG	119	79.11	5.43	1-3	1.51	1.98	P<0.05
	3.	PG& Higher	107	79.66	7.27	2-3	0.86	0.64	n.s.
Theory	1.	Upto H.S.	38	48.33	6.25	1-2	1.18	0.95	n.s.
	2.	Upto UG	119	49.45	6.52	1-3	1.40	2.10	P<0.05
	3.	PG& Higher	107	51.27	9.96	2-3	1.13	1.61	n.s.

The data presented in Table 2 reveals that the effect of father’s educational qualification on the students achievement in practical and theory. The college students whose fathers’ education is high (Post-Graduate & higher) have scored high achievement in practical (M=79.66) and theory (M=51.27) while those, whose fathers have only a pre-college education secured the lowest achievement score in practical (M=76.68) and theory (M=48.33) both. The table 2 also shows that in case of father’s education, t-values for group (Upto HS vs. PG & Higher: Practical, t=1.98, and Theory t=2.10) are found significant at 0.05 level.

**(iii). Analysis of Academic Achievement of students in Practical and Theory & their Mother’s Education.**

**TABLE: 3**

**Summary of Mean, SD, SE and ‘t’ Values of Achievement Scores in Practical of Science Students belonging to Mother’s Education**

Target factor	Gp.	Mothers’ Education	N	M	SD	Pair	SE	‘t’	remark
Practical	1.	Upto H.S.	155	78.34	7.33	1-2	.89	0.73	n.s.
	2.	Upto UG	71	78.99	5.63	1-3	1.04	3.13	P<0.01
	3.	PG& Higher	38	81.59	5.27	2-3	1.08	2.40	P<0.05
Theory	1.	Upto H.S.	155	49.30	7.32	1-2	1.23	0.52	n.s.
	2.	Upto UG	71	49.49	9.13	1-3	1.46	3.21	P<0.01
	3.	PG& Higher	38	53.97	8.21	2-3	1.72	2.61	P<0.01

The data presented in Table 3 reveals that the effect of mother’s education on the achievement in practical and theory of science students. The college students whose mothers’ education is high (Post-Graduate & higher) have scored high achievement in practical (M=81.59) and theory (M=53.97) both, while those, whose mothers have a pre-college education secured the lowest achievement scored in practical (M=78.34) as well as in theory (M=49.30).

Further Table 3 indicates that difference between the achievement of students from group of low (Upto H.S.) and high (PG & Other) educated mother (Practical:  $t=3.13$ ,  $p < 0.01$ ; Theory:  $t=3.21$ ,  $p < 0.01$ ) and from group of average (Upto UG) and high (PG & Other) educated mother (Practical:  $t=2.40$ ,  $p < 0.05$ ; Theory:  $t=2.61$ ,  $p < 0.01$ ) are found statistically significant.

Table number 2 and 3 represent the influence of the qualification of mother and father on the academic achievement of children and in both the cases it was found that qualification of the parents positively influences the academic achievement of the child. But the impact of mother's education is more on the academic achievement of the child as compared to father.

The findings further concur with studies in San Francisco by Plomin, Defris and Mclean (1990) which found that parent's level of education could play an important role in determining a child's intellectual performance on academic achievement. This is supported by Peters and Mullis (1997) findings that parental education had a significant effect on academic achievement. The mother's education level had a 20% higher affect than the father's education level on the academic outcomes. The present findings revealed a positive relationship between the level of education and academic achievement, confirming their findings.

**(iv). Analysis of Academic Achievement of students in Practical and theory & their Parental Occupation**

**Table 4**

**Summary of Mean, SD, SE and 't' Values of Achievement Scores in Practical of Science Students belonging to Parental Occupation**

Target factor	Gp.	Parental Occupation	N	M	SD	Pair	SE	't'	remark
Practical	1.	Agriculture	32	76.24	6.69	1-2	1.60	1.66	n.s.
	2.	Pvt.	35	78.89	6.36	1-3	1.28	2.51	P<0.05
	3.	Govt. Job	197	79.44	6.69	2-3	1.18	0.47	n.s.
Theory	1.	Agriculture	32	48.33	6.23	1-2	1.44	0.06	n.s.
	2.	Pvt.	35	48.41	5.48	1-3	1.26	1.79	n.s.
	3.	Govt. Job	197	50.59	8.70	2-3	1.11	1.96	n.s.

It is apparent from Table 4 that parental occupation also shows some influence on student's achievement in practical and theory. Mean score of those students whose parents are working in government sectors (Practical:  $M=79.44$ ; Theory:  $M=50.59$ ) is higher than those students whose parents are working in private sectors (Practical:  $M=78.89$ ; Theory:  $M=48.41$ ) and agricultural sectors (Practical:  $M=76.24$ ; Theory:  $M=48.33$ ).

It is clear from the above table that mean differences in practical are not significant in case of two groups of students (Agriculture- Pvt.,  $t=1.66$ ,  $p > 0.05$  & Govt.-Pvt.,  $t=0.47$ ,  $p > 0.05$ ). Only t-value (2.51,  $p < 0.05$ ) for the students, whose parents are working in the government and agriculture sectors, is significant at 0.05 level. In case of achievement in theory t-values for all groups are not found significant.

So we conclude that occupation of the parents positively influences the academic achievement of the students. It was seen that students belonging to agricultural families obtained lowest scores in practical and theory. The mean scores of students belonging to this category were calculated 76.24 in practical and 48.33 in theory which were lowest among all other categories. Mean scores of government job parents were calculated 79.44 in practical and 50.59 in theory, which shows that occupation of parents influences the academic achievement of the students. This is supported by (Suman Bala, 2011) findings that occupation of the parents positively influences the academic achievement of the child.

**(v). Analysis of Academic Achievement of students in Practical and theory & their Parents' Income**

**Table 5**  
**Summary of Mean, SD, SE and 't' Values of Achievement Scores in Practical of Science Students belonging to Different levels of Parent's Income.**

Target factor	Gp.	Parents' Income	N	M	SD	Pair	SE	't'	remark
Practical	1.	Upto 5	59	78.41	5.35	1-2	0.90	0.41	n.s.
	2.	Upto 12	140	78.78	6.67	1-3	1.17	1.30	n.s.
	3.	>12	65	79.93	7.58	2-3	1.10	1.04	n.s.
Theory	1.	Upto 5	59	49.51	6.39	1-2	1.05	0.47	n.s.
	2.	Upto 12	140	49.02	7.62	1-3	1.48	2.13	$P < 0.05$
	3.	>12	65	52.66	9.88	2-3	1.38	2.63	$P < 0.01$

The data presented in the Table 5 reveals the effect of parents' monthly income on achievement in practical & theory. It becomes clear from the findings in the above table that though, in every sub-group, one category of students differed with other category of students in terms of mean values on their academic achievement in practical. The mean values of achievement score in practical indicate linear relationship with parents' monthly income.

On the other side, The mean value of achievement score in theory ( $M=52.66$ ) is higher for those students whose parents' monthly income is more than 12 thousand in comparison to the other groups of students ( $M=49.51$ , for monthly income  $<5$  thousand,  $M=49.02$ , for monthly income between 5 thousand to 12 thousand).

On the basis of this analysis, it can be concluded that family income produces a more difference into the student's achievement in theory rather than achievement in practical. It is clear from the above table that mean differences in theory are significant in case of two groups of students (Upto 5 thousand vs.  $>12$  thousand,  $t=2.13$ ,  $p<0.05$  and upto 12 thousand vs.  $>12$  thousand,  $t=2.63$ ,  $p<0.01$ ). Present results reveal that family income influences the performance of students in academic achievement in practical and theory examinations. This further confirms findings revealed by UNESCO (1994) and Kasante (1996) which showed that girl's academic achievement varied positively depending on their family's income. Omoraka (2001), noted that children with rich parents have certain needs, physical and sociological which when met contribute positively to their academic performance. The present findings revealed a positive relationship between the family income and student's academic achievement in theory and practical confirming their findings.

### **Conclusion**

On the basis of result, it may be concluded that achievement in theory and practical of female students is high in higher than male students especially in science subjects at university level. The study has significant evidence that parental education, family income and occupational affects the Achievement of students.

From this perspective, diagnosis of student learning difficulties cannot be made through the examination of a single specific skill. Rather students' achievements should be documented. The performance in the test should be discussed with the students and thus evaluation procedure should be made clear.

Both qualitative and statistical evidence suggests that performance of students should be evaluated on the basis of multiple dimension approaches of the assessment.

### **References**

Anderson, J.O. (1999). Modeling the development of student achievement. *Alberta Journal of Educational Research*, 45(3), 278-287.

- Carpenter, P.G. and Hayden, M. (1985). Academic achievement among Australian youth. *Australian journal of Australia. Sociology of Education*, 60, 156-167.
- Ceballo, Vonnie C. McLoyd, and Teru Toyokawa 2004. The influence of neighborhood quality on adolescents' educational values and school efforts. *Journal of Adolescent Research*, 19(6), 716-739.
- Chambers and Schreiber 2004, Girl's academic achievement: Varying associations of extracurricular activities. *Gender and Education*, 16(3), 327-346.
- Elite, Tamela McNulty. 2005. Do gender and race matter? Explaining the relationship between sports participation and achievement. *Sociological Spectrum*, 25(2), 177-195.
- Fifth Survey of Educational Research 1988-92. (1997). New Delhi: NCERT.
- Grissmer, etal.(1994).[http://www.weac.Org/resources/primer/variable .htm](http://www.weac.Org/resources/primer/variable.htm)
- Hammer, B. (2003). *ETS identifies affecting student achievement*-Washington update.
- Harikrishan, M. (1992), A study of academic achievers of the students of the higher secondary stage in relation to achievement-motivation and socio-economic status, M. Phil. Edu., Annamalai Univ.
- Kasante DH (1996). Process influencing gender differences in access to post secondary institutions in Uganda. Unpublished Doctorate of Philosophy Thesis, Kenyatta University, Nairobi. Juma et al. 309.
- Omoraka S (2001).The Effect of gender, socio-economic status and school location <http://www.fundarticles.com/p/articles/retrieve> on 26 august 2010.
- Papanastasiou, C. (2002). School, teaching and family influence on student attitudes towards science: Based on TIMSS data Cyprus. *Studies in Educational Evaluation*, 28, 71-86.
- Peters HE, Mullis NC (1997). The role of family income and sources of income in adolescent achievement. In Duncan, Brooks-Gunn (Eds.), *Consequences of Growing Up Poor*. New York: Russell Sage Foundation, pp 340-381.
- Phillips, M. (1998). *Family background, parenting practices, and the black-white test score gap*. *The black-white test score gap*, Washington, D.C., Brooking Institution Press.
- Plomin R, DeFris JC, Mclean GE (1990). *Behavioral Genetic, A Primer*, San Francisco: Freeman Publishers.



Salunke, R. B. (1979). *A study of the home and economic management in relation to the academic achievement of the first year college student of M.S. university, Baroda*, Ph.D., Edu., MSU, Baroda.

Suman Bala, 2011. Influence of parental education and parental occupation on academic achievement of students. *International Referred Research Journal*, 30(3).

Thakur, R.; Sharma, S. and Pathania, R. (2006). Affect of socio-economic and family related variables on education of children. *Praachi Journal of Psycho-Culture Dimensions*, 22(1), 57-61.

UNESCO (1994). *The challenge of achieving gender parity in basic education*, Paris, UNESCO.

WEAC, 2005. Variables affecting student research achievement. Available at <http://www.weac.org/resource/primer/variable.htm>.

