# Mathematıcs Achıevement of Secondary School Students' As a Functıon of Gender and Parental Occupatıon

**Shaheen Bano**
M.Sc., M.Ed., Jrf
Guest Assıstant Professor
Department Of Teacher Educatıon
Shıblı Natıonal College, Azamgarh (U.P) 276001

**Abstract**

*The present study was conducted with an objective to find out relationship between gender, parental occupation and mathematics achievement of secondary school students. A sample of 454 students randomly selected from different school of Aligarh. Mathematics achievement scores were recorded on the basis of their result of successive school examination. The data was collected and subjected to 't' test. The statistical result indicated that male and female students had equal mathematics achievement. The results also revealed that there was a significant difference between the mathematics achievements of children in relation to their parental occupation.*

**Keywords:** gender, mathematics achievement and parental occupation.

## Introductıon

Education as a discipline has been steadily growing in its size, significanceand scope over the years in response to the needs of an ever- increasingpopulation and the diverse developmental demands. Education has always been associated with providing a better quality of life for human beings. It has been regarded as a major means of imparting knowledge and skill to individual and helping the process of social transformation. It not only enhances the quality of life and provides more opportunities for the individual's in society but it also brings about the cultural transformation of a society. The process of education involves the transfer or communication of knowledge and skills from one point (the source) to another (the receiver).

Science and mathematics in the modern age has become the part and parcel of our educational system with how achieving it no one can imagine to progress and proper development in any field. Science and mathematics education has done a lot in removing evils prevailing in the societies from centuries and thus made the man rational in thinking, feeling, doing etc. Mathematics

teaching is responsible for a country development. It broadens the mental horizon of the students, it developed the scientific attitude thus with the help of better teaching of mathematic, students are able to live their life on the scientific attitude.

The National Policy Of Education (1986) also emphasizes that mathematics should be visualized as the vehicle to train a child to think, reason, analyze and articulate logically, apart from being a specific subject it should be treated as concomitant to any subject involving analysis and reasoning. And yet many school students find difficulty with learning of mathematics and fail in mathematics. A major reason of this failure is that the teachers quite often pay no attention to the basic concepts. The object is to develop the skill and methods of solving questions with cramped up formulae.

Researches in mathematics education at higher level are almost negligible. Vision 2020 for school mathematics, Tata Institute Of Fundamental Research (TIFR) Paranjape, 1995 also states "The job of teaching and exposing is one area where TIFR has not contributed much as yet. One of the distributing aspects of mathematics education in India and also the rest of the world is that of the lack of mathematical sophistication in the education provided to non – mathematics. Most of the mathematics taught to non – mathematics centres during the development of the previous century". With respect to research findings in mathematics education in India, Kapoor (1997) commented "Quality of research is good but quantity is poor."He further remarked that in mathematics education both research and development should go together and it was time that the utilization of research should be considered as important as research.

According to C.V.Good (1973) academic achievement is the knowledge attained or skills developed in the school subjects usually designed by test scores or markes assigned by the teacher, or both. Hawes (1982) has defined achievement as successful accomplishment or performance in a particular subject area or course usually by reasons of skills, hard work and interest; typically summarized various types of grades marks, scores or descriptive commentary. A substantial body of research has accumulated in the last three decades that has examined the correlates of success in academic achievement in general and mathematics and science in particular. . Research has suggested that achievement in mathematics is a function of many inters – related variables.

Mathematics is thought moving in the sphere of complete abstraction from any particular intense of what it is talking about. Mathematics Achievement is the achievement of a learner in mathematics or the performance of a learner in mathematics. By mathematics achievement we mean the performance of a learner after a course of instructions and measures in terms of marks and grades obtained in mathematics after undergoing a program of instruction.

When gender differences in mathematics achievement are found, they tend to favor males (Leder, 1992). Efforts to explain these gender differences are often found on specific types of affective measures. Meyer and Koehler (1990) summarize report that in studies of secondary students, when male students have higher achievement they also see mathematics as more useful than female students do. Fennema and Peterson (1985) summarized much of the research on gender differences in affect and achievement by proposing that gender differences in achievement result because males learn to become more autonomous learners than females. Boys performed significantly better than the girls on the mathematics achievement test (Schreiber, 2002). Evidence supports that the needs for successful inclusion and involvement of parents in a variety of roles and areas it recognizes the advantage of being parents as partner in the education of the children.

For year's question of the impact of various factors such as gender, parental occupation, students' mathematics achievement is of great interest to the researchers in education, economics and other social sciences. Having a number of indications about this relationship, it seems, however, that not much research has been done in this field. It is for this reason that investigator attempts to investigate the relationship between gender, parental occupation and mathematics achievement of secondary school students.

**Method**

**Sample and Procedure:** The sample of the present study consisted of 454 students from 5 secondary schools of Aligarh. Out of 454 students, 260 were male and 194 were females. The simple random sampling method was used for the selection from these schools. For studying the effect of parental occupation on the mathematics achievement of their children, parental occupations were divided into two groups:

**(a)Father's occupation:**

Father's occupation is further categorized into three categories:

*Low occupational status*, the children whose fathers were servants, clerks , carpenters, fruits/vegetable sellers, tailors and farmers were placed in this category. *Medium occupational status*, the children whose fathers were business man .*High occupational status*, the children whose fathers were teachers, lectures, professors, doctors, engineers, managers and I.A.S officers were placed in this category.

**(b)Mother's occupation:**

Mother's occupation is further categorized into two categories:

*Housewife,* this category includes all those mothers who are not an earning member of this family and remains at home for taking care of their family. *In- service,* all those mothers who are engaged in some economic activity for earning money or in other words are the earning member of their family are included in this category.

**Result and Discussion**

TABLE I: Comparison of mean mathematics achievement scores on the basis of gender.

| Gender | Students | M | SD | df | t-value | Sig./Not-Sig. |
|---|---|---|---|---|---|---|
| Male | **260** | **71.44** | **15.65** | **452** | **1.70** | **Not-Sig.** |
| Female | **194** | **68.93** | **15.35** | | | |

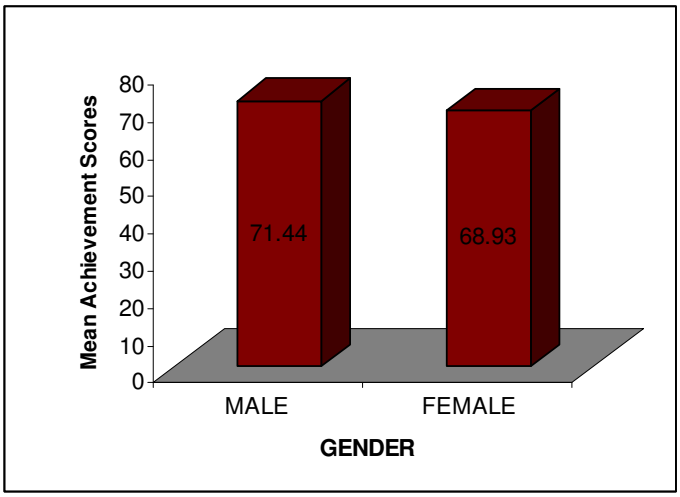


Figure I: Graphical representation of mean mathematics achievement scores on the basis of gender.

It is evident from table I that the numbers of male and female secondary school students were 260 and 194 respectively. The mean achievement scores of male students was 71.44 and SD = 15.65, while the mean achievement scores of female students was 68.93 and SD = 15.35. The calculated t- value obtained is 1.70 which is not-significant. This clearly indicates that there is no significant difference between the mean mathematics achievement scores of male and female students. The results of the analysis showed that the male students as well as female students were equal in mathematics achievement. The graphical representation of mathematics achievement of male and female students is given in figure I.

Table II: Comparison of mean mathematics achievement scores on the basis of fathers' occupation

| Father's Occupation | Students | M | SD | t- value | | |
|---|---|---|---|---|---|---|
| | | | | Others | Business | Professional |
| Others | 151 | 64.42 | 14.45 | | | |
| Business | 156 | 67.24 | 15.77 | 1.63 | | |
| Professional | 147 | 79.80 | 11.65 | 10.10** | 7.84** | |

**Significant at 0.01 level

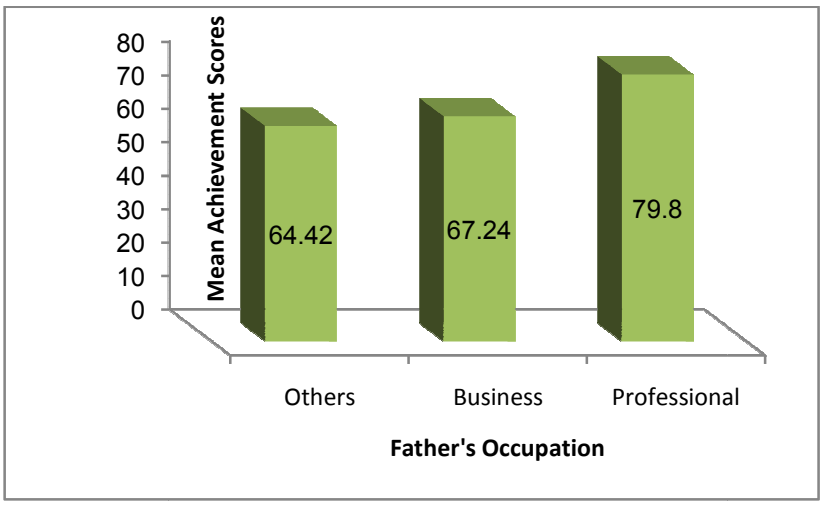


**Figure II :** Graphical representation of mean mathematics achievement scores on the basis of fathers' occupation

It is clear from the Table II that the numbers of children of professional, business and others were 151, 156 and 147 respectively. The mean achievement score of the children of fathers placed in the category of others was 64.42 and SD =14.45, the mean achievement score of business category was 67.24 and SD = 15.77and of professional category was 79.80and SD = 11.65. The calculated t- values obtained are 1.63 of others and business categories, 10.10 of professional and others and 7.84 of professional and business. The calculated t-value of 10.10and 7.84 was to be significant at 0.01 level. This result indicates that there is significant difference between the means of achievement scores of the children of professional and others groups, business and professional groups and business and others groups. The graphical representation of mean mathematics achievement scores of children of different occupational groups of fathers (others, business and professional) is given in figure II.

TABLE III: Comparison of mean mathematics achievement scores on the basis of mothers' occupation.

| Mother's Occupation | Students | M | SD | df | t-value | Sig./Not-Sig. |
|---|---|---|---|---|---|---|
| Housewife | **420** | **69.77** | **15.80** | **452** | **2.87**** | **P< 0.01** |
| In-service | **34** | **77.79** | **9.60** | | | |

** **Sig. at 0.01 levels**

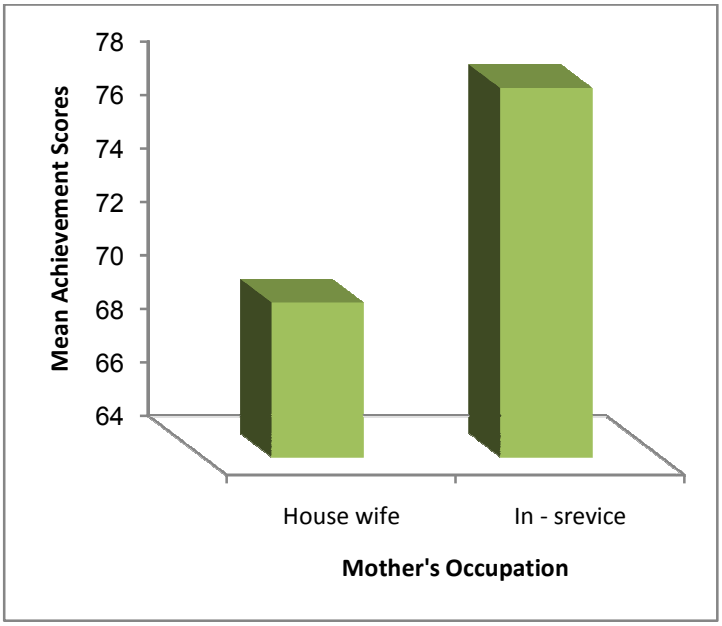


Figure III: Graphical representation of mean mathematics achievement scores on the basis of mothers' occupation

It is clear from the table III that the number of children of housewife and in-service mothers were 420 and 34 respectively. The mean achievement scores of the children of housewife mothers was 69.77 and SD = 15.80 while the mean achievement scores of the children of in-service mothers was 77.79 and SD = 9.60.The calculated t- value obtained is 2.87 which is significant at 0.01 level with df = 451. This result shows that there is significant difference between the means of achievement scores of the children of housewife and in-service mothers. Thus the children of in- service mothers have high mathematics achievement as compared to the children of housewife mothers. The graphical representation of mean mathematics achievement scores of children of housewife and in-service mothers is given in figure III.

**Conclusion**

When the data were analyzed to make a comparative study of mathematics achievement of male and female secondary school students, no difference was found between male and female secondary school students in their mathematics achievement. *Thus this result shows that there was no significant difference between mathematics achievement of male and female students.* The reason may be the equality of educational opportunity provided to the students irrespective of gender, and other factors. The parents are now open- minded, have rational thinking and consider boys and girls to be equal. Girls are now given opportunity and freedom to choose subjects according to their own interest, abilities. They know the importance of mathematics and show interest and achievement in this subject

The statistical results indicated that the children whose father belongs to other and business groups had low mathematic achievement as compared to the children of professionals. *From the above result it is clear that occupational status of the father influences the mathematic achievement of their children.* The reason may be that the high occupational status of fathers increases the socio-economic conditions of their families. The statistical results indicated that the children of in-service mothers had high mathematic achievement as compared to the children of housewife mother. *From the above result it is clear that occupational status of the mother influences the mathematic achievement of their children.* In other words, it can be said that there was a positive correlation between the mothers' education and mathematics achievement of their children.

**References**


- **Akpan,A.Asuquo (1991):** *A path – analysis model of mathematics problem solving for secondary school students*, Fifth Survey of Educational Research in Education,1988- 92, Vol II, p. 1274.
- **Buch, M.B:** *Sixth Survey of Educational Research*,1993-2000, Vol. II, p. 316,362-363
- **Good, C.V. (1973):** *Dictionary of Education*, McGraw Hill Company, New York.
- **Hawes, G.R. and Hawes, L.S. (1982***): The Concise Dictionary of Education*, Van Nostrand Reinhold Company, New York
- **Khan,A.(2004):** *Gender differences in academic achievement in science and mathematics at the primary and secondary level*, M.Ed Dissertation, A.M.U., Aligarh.
- **Khan, Y.(2010):** *Secondary school students attitude towards mathematics in relation to their achievement and professional choice*, M.Ed. Dissertation, A.M.U., Aligarh.