

## Academic Achievement in Mathematics Subject among Secondary School Students in Madurai, Tamil Nadu

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### ABSTRACT

A descriptive research study was aimed to find and compare secondary school student's mathematics achievement of students studying in Tamil medium and students studying in English medium conducted in Madurai, Tamil Nadu, India. Eighty students were selected from simple random sampling techniques- 40 students studying in Tamil medium from government aided school and 40 students studying in English medium from private school. Academic achievement of mathematics subject was assessed by conducting screening test. The investigator prepared 25 questions from mathematics subject. Each question carried four marks and total mark was 100. The results revealed that students studying in English medium were performed better academic achievement in mathematics subject than the students studying in Tamil medium. Students studying in private school were performed better academic achievement in mathematics subject than the students studying in government aided school. Students of literate parents were performed better academic achievement in mathematics than the students of illiterate parents.

**Keywords:** *Academic achievement, Secondary school, Tamil Medium, English Medium, Government school, Private school.*

An individual starts first to learn from his family then social environment and he goes to school for getting his formal education. Educational institutions perform a significant function of providing learning experience to lead their students from darkness of ignorance to the light of knowledge. Academic achievement or academic performance is the outcome of education and it extends to which a student, teacher or institution has achieved their educational goals. Academic achievement is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested or which aspects are most important-procedural

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knowledge such as skills or declarative knowledge such as facts. Also, academic achievement refers to a person's strong performance in a given academic field. Academic achievement generally refers to how well a student is accomplishing his or her tasks and studies. The most well-known indicator of academic achievement is the student's 'score' for their classes and overall period of academic year.

Researchers are doing more number of comparative studies on students studying in English medium and students studying in Vernacular medium. However, still need more quality research to explore the possible way to improve the vernacular medium studies compare to the English medium. Academic achievement in mathematics subject among students studying in Tamil medium and English medium has been conducted few studies in the educational sciences, sociology and economics, especially in developing countries like India. India had a multicultural nation with multi language states. Early academic achievement enhances the later academic achievement.

Therefore, this study was aimed to compare secondary school students' mathematics achievement of students studying in Tamil medium and students studying in English medium.

### **METHODS**

Descriptive research study was conducted in two schools in Madurai metro city, Tamil Nadu, India. The secondary schools students who were studying in class ninth standard and followed the Tamil Nadu State Board syllabus were selected for this study. Eighty students were selected from simple random sampling techniques- 40 students studying in Tamil medium from Government aided school and 40 students studying in English medium from Private school. The investigator prepared a question sheet from mathematics subject and assessed their academic achievement. The questions sheet had 25 questions and each question carried four marks and total marks were 100. The screening test was conducted in end of the academic year before students appearing in their annual examination.

#### ***Procedure:***

The investigator obtained permission from the principals of both schools and fixed the programme. Prior to conducting test, the students were explained detail about the study and all the students were voluntarily participated in this programme. The questions sheet were dispatched to the students and asked them to submit the filled answer sheet. Maximum of 30 minutes time given to the student to fill the answer. The collected data were entered in to Microsoft excel database sheet and analysed. The mean, cross tabulation, standard deviation and t-test were used for the data analysis.

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The study was approved by the Research team and Principal, Thiagarajar College of Preceptors, Madurai, Tamil Nadu, India.

**RESULTS**

Among 80 participant students, 51 of the student parents were illiterate; of this 34 were parents of Tamil medium students. In screening test among the Tamil medium students 20 were obtained marks from 40 to 60, 14 were from 20 to 40 and six students were obtained marks from 60 to 80. Among the English medium students 29 were obtained marks from 60 -80, nine were from 40 to 60 and two students were obtained from 80 to 100. Overall 35 students were obtained marks from 60 to 80 and 29 students were from 40 to 60 (Shown in **Table.1**).

*Table 1: Parents education and marks obtained in screening test*

| Variables                        |            | Medium of Language |         | Total | p-value |
|----------------------------------|------------|--------------------|---------|-------|---------|
|                                  |            | Tamil              | English |       |         |
| Parents Education                | Literate   | 6                  | 23      | 29    | 0.000*  |
|                                  | Illiterate | 34                 | 17      | 51    |         |
| Obtained marks in screening test | 20 - 40    | 14                 | 0       | 14    | 0.000*  |
|                                  | 40 - 60    | 20                 | 9       | 29    |         |
|                                  | 60 - 80    | 6                  | 29      | 35    |         |
|                                  | 80 - 100   | 0                  | 2       | 2     |         |

*Table 2: Comparison between literate and ill literate parents of Tamil medium students*

| Medium of language | Parents Education | N  | Mean  | Std. Deviation | t value | p value |
|--------------------|-------------------|----|-------|----------------|---------|---------|
| Tamil              | Literate          | 6  | 56.00 | 8.390          | 1.937   | 0.060   |
|                    | Illiterate        | 34 | 45.41 | 12.835         |         |         |

The mean score of students studying in Tamil medium shows that student of literate parent (56) were obtained more marks than the students of illiterate parent (45.41). However, students studying in Tamil medium explains that there is no statistically significant present between students of literate parents and illiterate parents (p value, 0.060), Shown in **Table.2**.

*Table.3: Comparison between literate and illiterate parents of English medium students*

| Medium of language | Parents Education | N  | Mean  | Std. Deviation | t value | p value |
|--------------------|-------------------|----|-------|----------------|---------|---------|
| English            | Literate          | 23 | 68.52 | 10.112         | -0.054  | 0.957   |
|                    | Illiterate        | 17 | 68.71 | 11.246         |         |         |

The mean score of students studying in English medium shows that similar mark obtained both students of literate and illiterate parents. Students studying in English medium shows that there is

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no statistically significant difference between students of literate parents and illiterate parents (p value, 0.060), Shown in **Table.3**.

**Table.4: Comparison between Tamil medium students and English medium learning students**

| Status             |         | N  | Mean  | Std. Deviation | t value | p value |
|--------------------|---------|----|-------|----------------|---------|---------|
| Medium of language | Tamil   | 40 | 47.00 | 12.770         | -8.237  | 0.000   |
|                    | English | 40 | 68.60 | 10.468         |         |         |

In this study, students studying in English medium (68.6) were obtained more marks than the students studying in Tamil medium (47). There is a highly statistical significant present between students studying in Tamil medium and English medium students (p value, 0.000), Shown in

**Table.5: Comparison between Literate and Illiterate parents**

| Status            |            | N  | Mean  | Std. Deviation | t value | p value |
|-------------------|------------|----|-------|----------------|---------|---------|
| Parents Education | Literate   | 29 | 65.93 | 10.935         | 3.719   | 0.000   |
|                   | Illiterate | 51 | 53.18 | 16.498         |         |         |

In this study, students of literate parents (65.93) were obtained more marks than the students of illiterate parents (53.18). There is a highly statistical significant present between students of literate parents and illiterate parents (p value, 0.000), Shown in **Table.5**.

## **DISCUSSION**

A student attends in type of school either government or government aided school and private school has profound influence on his academic achievement found in several studies by Sociologist, Psychologists and Educationists. Study habits are determinants of academic performance. Good study habits may determine in systematic and efficient way. It also has positive effect on academic achievement. Surapur (2015) indicated the private school students with high study habit have more influence on students' performance. A recent study from India found that the private school students have higher critical thinking levels and study habits than the government school students. Besides that private school provided better services in comparison with government schools.

This study revealed that students attended in private school were performed better academic achievement in mathematics than the government aided school. A similar study also found that the students of unaided private schools have recorded highest achievement than students of government aided private schools and government schools (Leela, 2016). Singh ,(2014) done a study in Imphal, State of Manipur, India, found a significant difference between the overall academic achievements of the students of private and government high schools examination.

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The reasons for low academic achievement of government schools are: lack of supervision by government authorities, lack of more dedicated teachers and lack of competition among students, lack of involvement of parents in the education of students, lack of professional qualifications among teachers and improper teaching methods and not systematic and regular.<sup>7</sup> A study from United States (U.S) also found that academic achievements of private schools were performed better than the public schools. Similar study done in Nigeria also found that private schools students performed significantly better than their public school students.

Many studies found that the medium of instruction has an influence on students' achievement (Balasubramanian, 1997, Radha, 1998, Gurubasappa, 2009 and Sarsani et al., 2010; cited by Lella, 2016). English Medium has recorded a higher level of academic achievement than students of Tamil medium (Leela, 2016). Similar findings found in this study showed that students studying in English medium were performed better academic achievement in mathematics than students studying in Tamil medium. Students' backgrounds certainly has influence on the achievement of students. Educational Qualification of the Parent has direct relationship with students' academic achievement (Sunitha, 2005, Gurubasappa, 2009 and Farkhanda, 2013; cited by Leela, 2016). Students whose parents are more educated have recorded highest academic achievement (Leela, 2016).

This study shows that there is no significant difference of literate parents and illiterate parents of students studying in English medium. In students studying in Tamil medium, the students of literate parents mean score of mathematics screening test was highest than the students of illiterate parents. However, there is no statistical significant difference found among literate parents and illiterate parents of students studying in Tamil medium. In overall study participants, the students of literate parents were performed better academic achievement in mathematics than the students of illiterate parents.

In a study carried out in the Jammu and Kashmir by Shah et al (2013) found that government secondary school teachers have higher attitude towards their teaching profession than private secondary school teachers.<sup>14</sup> However, most of the studies showed that academic achievement of private schools are performed better than the government schools. The Government are continuously establishing educational system in government schools to competitive with the private schools and trying to improve performs of the students studying in government and government aided schools.

This study had few limitations. This study was intentionally done only the subject of mathematics achievement in students' studies in Tamil medium and students studies in English medium. The study was carried in one school from Tamil Medium and one school from English

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medium. Further it needs more research to identify the achievement in all subjects compare with learning in Tamil medium and English medium.

### CONCLUSION

Students studying in English medium were performed better academic achievement in mathematics subject than the students studying in Tamil medium. Students studying in private school were performed better academic achievement in mathematics subject than the students studying in government aided school. Students of literate parents were performed better academic achievement in mathematics than the students of illiterate parents. The Government of Tamil Nadu are continuously establishing educational system in government schools to competitive with the private schools and trying to improve performs of the students studying in government and government aided schools.

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### Author Contributions

Miss. Baraneeswari Paulpandi involved in study conceptualization and preparing the screening test questionnaires, obtaining permission for conducting study, conducting the programme, data collection and comments on manuscript.

Mr. Pitchaimani Govindharaj, was involved in study design, data analysis and interpretation and drafting first draft of manuscript and manuscript writing.

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