Since UNESCO accepted education as the birth right of the child many nations started making primary education universal. Along with making education universally available, it is essential to retain pupils in school at least for 4 years so as to make them literate and hold them back from elapsing into illiteracy, as the proportion of dropouts in developing countries is very high, particularly at the stage of primary education.

Many research projects have been carried out to find out causes for poor performance and as also for finding solutions to improve the performance of students.

English and Mathematics are important constituent of our curriculum. Being a foreign language, lot of problems are faced in imparting and learning English. The problem is really serious, when English is the medium of instruction and specially when students come from homes where English in not spoken.

Mathematics is also another problem subject for many students. In the following pages a brief review of some of the research projects undertaken in the field of teaching of English and Mathematics is given.
1. Bokil S.L. made a Failure Analysis in English (with tests) for the S.S.C. Examinations of March 1956 and March 1957 and Analyses in English (with tests) and Language, Higher level (with tests) for the S.S.C. Examination of March 1957, Research and Investigation Section, Maharashtra State Board of Secondary Education Poona - 1958.

The objectives of the investigation were to assess the performance of pupils in broad topics like text, composition, grammar etc. of the question paper in English and to find out the number of candidates attempting and passing successfully in there topics.

The important findings were -

(1) the percentages of failures in English were significantly different from group to group and also from year to year.

(2) the average percentage ratio for March 1957 was nearly two times higher than that of March 1956.

(3) Almost all the candidates who failed in English tried to attempt every topic.

2. Buch, Patel, Kotwal (1960) standardised achievement tests in English for Class VIII, IX and X.

In this study achievement tests in arithmetic were prepared to be constructed and standardised for Standard V, VI and VII. It was found that the performance girls of Standard V, VI and VII in arithmetic from non-municipal schools was superior to that of the girls of the respective standard from municipal schemes.


The aim of this study was to construct diagnostic tests in arithmetic for Standards IV to VII.

Syllabus in arithmetic and question papers set at the annual examinations of ten different schools for the selected classes formed. The basis for construction of the pretest studies.

The findings were -

(1) There was no significant difference between the results of boys and girls.
(2) Very few students seemed to have mastered the fundamental processes.

(3) Even those students who had mastered the four fundamental processes failed to apply the knowledge in solving mental problems.

5. George (1966) enquired into the scope and effectiveness of audio-visual instruction in improving English teaching. He found that the achievement of pupils taught by using audio-visual aids is greater than that of the pupils taught by usual methods and that the use of audio-visual aids does not require more time than what is required for ordinary teaching.

6. C.D. Indapurkar (1968) scientifically analyzed with up-to-date tools of modern descriptive linguistics the errors in English of the middle school pupils of Chandrapur town. The study should enlighten the teachers of English who, according to the researcher are responsible to a great extent for the mistakes committed by pupils.

7. Nagarajan (1970) after comparing under experimental conditions found that Bilingual methods is superior to the Direct method in teaching English. A similar experiment but with a different sample led Murthy (1968) to the same conclusion.
8. Late Dr. B.K. Sohoni the Ex-principal of SNDT College of Education for Women Pune and Prof. A.R. Dunekhe (1972) published a short research paper in which an analysis of answer-scripts in English of standard VI girl students of a high school in Pune was undertaken with a view to find out the deficiencies in learning the subject and with the intention of giving valuable suggestions to the teachers for improving the achievement of their pupils. They conclude that right comprehension of the teaching unit on the part of the pupils is a necessary pre-requisite for speaking or writing English satisfactorily. For teaching a unit a lesson, movement from a 'larger gestalt' to a 'smaller gestalt' is the proper principle which is to be followed by the teachers, according to these investigators.

9. Dr. R.S. Saraf, the former Director of the State Institute of English Teaching, Maharashtra State (1972) took a survey of teaching techniques, procedures and practices in English Teaching. He recommends the use of dictionaries and other reference material by the teachers and further expects that they must train pupils to learn to use the material.

10. Maharashtra State Board of Secondary Education undertook a survey of the teaching of English and Hindi in Secondary schools in Poona Division in 1964. It collected relevant data about different aspects such as qualifications of
teachers, academic and administrative, difficulties experienced by the heads of secondary schools in the way of effective teaching of the two subjects.

Some of the important draw-backs which were found were as follows:

1. Low standard of pupils owing to poor teaching in primary schools.

2. Heterogeneous and over-crowded classes.

3. Optional character of English subject.

4. Lack of interest on the part of pupils.

5. Unsuitable methods of teaching.

Some of the important suggestions put forth were as follows -

1. English should be compulsory for Standards V to XI.

2. Teaching should be entrusted to experienced and qualified teachers.

3. More emphasis should be given on grammar, spelling, comprehension, written work.

4. Seminars, Refresher courses, work-shops etc. should be organised for teacher.
5. The Text-book should contain sufficient notes for the guidance of teachers.

6. Appropriate teaching methods should be adopted.

7. Stress should be laid on grammar, recitation, written exercises and oral work in the subject.

11. Maharashtra State Board of Secondary Education undertook the Research - Project of scrutinising the answer scripts in English subject written by pupils at the S.S.C. Examination held in March 1977.

Question -wise analysis of the answer-scripts was done in order to know the common errors of the majority of pupils and to find out which questions are difficult for them.

The study revealed that the candidates lacked proficiency in the use of basic elements of the English language. It was observed that the situation demands a lot of remedial work in each standard ensuring pupils involvement in the process of learning by of vigorous practice in oral and written work.

12. V.G. Joshi. (1985) has made a scrutiny of Errors in written English and devised remedial programme to improve the performance level of children.
Some of the studies relating to Mathematics are -


The major finding was that, the students of modern mathematics possessed more critical thinking than those studying traditional mathematics curriculum.

Ghosh A.K. has made a study of the causes for the scholastic backwardness in the basic processes in Arithmetic (82).

The conclusions were -

(1) The experimental groups taught by the Piagetian methods achieved more than the control groups taught conventionally

(2) The experimental groups showed significantly better achievement than the control groups when both the groups were evaluated on the past test 15 days after the experiment.

(3) The experimental groups showed greater motivation in learning.

Karanatikar. S.P. has made a study of Mathematical concepts in syllabus and text books for standards II and VII. (73).
The major findings and conclusions of the study were:

1. All mathematical concepts in the syllabus for Standard II to VII, except those of time and space, were in consonance with the intellectual maturity of the pupils.

2. According to teachers, out of forty concepts in the mathematics syllabus for Standards II to VII, 20 were easy and 20 were difficult to teach.

3. Teachers hardly read the syllabus; they just followed the text books.

4. The presentation of concepts in the text books was logical rather than psychological.

5. Presentation gave little scope in concrete experiences and self effort by pupil.

6. In the syllabus, it was necessary to indicate the relationship between specific concepts and the objectives of teaching mathematics.

Mishra. R. has made a study of Attitude towards Mathematics of secondary school student, (1978). The main findings of the study are:

1. Boys whose parents were better qualified and in prestigious professions, had more favourable
attitude, towards mathematics than others but this was not there in the case of girls.

(2) Boys and girls from rich families had more favourable attitude towards mathematics than those from poor families.

(3) Boys and girls with study facilities had more favourable attitudes than others.

Paranjape. D.G. made a critical study of the changes in the objectives of teaching mathematics in the primary schools in Maharashtra.

The major findings of the investigations were -

(1) There were deficiencies in knowledge of reading and writing vulgar and decimal fractions, knowledge of reading and writing number, skill in the four fundamental processes, ability to handle personal money transactions and skill in drawing geometrical figures.

(2) The two objectives which were introduced for the first time in 1966 were to develop the concept of fractional notation and to lay a firm foundation for higher mathematical education.

(3) The disciplinary and vocational aims emphasised in some of the previous syllabus were dropped in 1966.
Two objectives which were greatly emphasised in the 1966 syllabus and which continued to be included were development of complete mastery over the four fundamental operators of arithmetic and development of deeper understanding of the basic concepts and structure of mathematics.

Sharma. M.M. has made a comparative study of teaching mathematics by the method of programmed Instruction and Conventional class-room method. (81).

The major findings were -

1. Programmed instruction was a more effective method than conventional teaching not only in relation to achievement but also in relation to retention.

2. Intelligence had a significant effect on achievement and no significant effect on retention of achievement.

3. Good study habits had significant effect on retention of achievement but no significant effect on immediate achievement.

4. The flexibility achieved higher through the programmed instruction and the rigidity achieved higher through the conventional method of teaching.
An UNESCO sponsored project was carried out in Maharashtra through M.S.C.E.R.T. Pune to raise achievement level of children in primary education. (86-87).

Under this project, various activities such as orientation programmes, workshops for preparation of instructional material, school visits, spot guidance, sensitisation of parents were carried out.

The treatment was given to 17 primary schools selected from Satara District. The final results showed that schools, in 'A' category have gone from 0 to 6, 'B' category from 5 to 10, in 'C' category from 11 to 1 and 'D' category from 1 to nil.

The performance in Marathi, Maths and General Science also improved significantly. The calculated values of 't' were

<table>
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<th>Subject</th>
<th>Value</th>
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<tr>
<td>Maths</td>
<td>4.7221</td>
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<td>General Science</td>
<td>3.7735</td>
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</table>


This particular project will however be different from the research work that have already been carried out. This will involve two subjects - English and Arithmetic and it will be keeping with Maharashtra syllabus. Remedial
measures will be adopted after analysing the errors committed by students. All concerned are aware of the problem area so tackling the problem can be done in an organised manner. The teacher is now aware where the students commit errors and so can accordingly try and remove it. This is a feasible project for all schools. It can be carried out within the given school timing and framework by just allotting a few remedial period for different subjects. The same research work can be extended to all other subjects as well.