

Goa Sarva Shiksha Abhiyan

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GOVERNMENT OF GOA

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CLASS VII

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SURVEY
CLASS VII

GOA STATE

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PREFACE

After the enactment of the RTE Act 2009, the emphasis of the 12th Five Year Plan is to further improve the Quality of Education in general and elementary education in particular. In order to achieve the vision of 12th Five Year Plan, knowledge of learning trends amongst the students is essential. There is also a need to understand possible impact of various inputs like schooling facility, Teaching Methodology, Teacher Training etc. on students' academic attainment.

In view of the above, it was proposed to conduct a survey to measure the academic achievement of students of Class VII along the lines of the NAS conducted by NCERT. It was proposed to cover both the districts of Goa with a total sample of 100 schools, 50 schools from each district, both Government and Aided schools.

Purpose of the SLAS was earmarked as under:

1. To assess the learning level of students of Class VII in the subjects of English, Mathematics, Science, Social Science.
2. To study the difference in achievement levels in respect of gender, location, language spoken at home, school management and social categories like SC, ST, OBC and General.
3. To include suggested interventions for enhancement of learning in Class VII in respective subjects.
4. To use the results of SLAS for the proposals of AWP&B under Quality Enhancement Programme for the ensuing year.

PAB approved the above proposal for assessing the learning achievement in the State for Class VII, at a total cost of Rs. 6.97 Lakhs. For effective planning and implementation of the SLAS, State Level Steering Committee was constituted and approved in the 23rd Executive Committee meeting of GSSA held on 2nd December 2013. The EC also approved State Council of Educational Research and Training (SCERT) as the State Institute for the purpose of SLAS. The Steering Committee and The State Institute were notified in official Gazette of the Government of Goa on 16th January 2014.

MHRD desired that the State should create her own capabilities to design and manage SLAS independently. Hence, CRPs and BRPs of GSSA were trained extensively with practicals for two days and prepared them for the Field Investigation.

Achievement tests were constructed in all the four subjects using subject experts and evaluation experts from SCERT and GSSA. Questionnaires for Students, Teachers and Headmaster / Headmistress were also designed by experts as per guidelines provided by MHRD. The Field Investigators administered the test in the identified sample schools under the guidance and supervision of the respective DPOs and DPCs in the last week of the academic year 2013-14; thereby fully ensuring that the schools have covered the entire syllabus in the subjects.

Data entry of responses in all subjects and responses in Pupil Questionnaire (PQ), Teacher Questionnaire (TQ) and School Questionnaire (SQ) was another voluminous and meticulous task. It commenced in the first week of May 2014 in Quality Cell of GSSA with the help of MIS Coordinators. Thereafter, data entry, cross checks and sample checks lasted for about 3 months. Dr. G.C.Pradhan of SCERT undertook analysis of the data in August 2014 and prepared a comprehensive report on achievement levels of the students of Class VII vis-a-vis the responses in PQ, TQ and SQ. The report occupies about 550 pages in A4 size, with appropriate graphic representation of data, analysis and findings. MHRD recommended software for IRT was unavailable, and hence data analysis was done using CTT (Classical Test Theory). This consumed a lot of time. It is indeed a matter of great satisfaction that the report is ready and the same is placed before the EC meeting held on 22nd December 2014. I would not only complement all those involved in this arduous task for the past one year but also congratulate them for creating first-ever capability in the State for future endeavors.

It is hoped that this survey will provide a snapshot of what students have learnt in each of the subjects mentioned above. It will also provide a baseline against which changes in educational standards can be monitored in future. It will help policy makers, planners and other academic practitioners. It will provide performance status for development of proposed curriculum for the state.

In addition to measuring students' achievement in main curricular areas, questionnaires were administered to students, teachers and the School Headmasters, to collect information about a wide range of students, teachers and school related variables and their impact on students learning in different subjects.

Goa Sarva Shiksha Abhiyan is grateful to the Secretary Education/Chairman EC, Shri D. P. Dwivedi, IAS, for his invaluable support and encouragement in this endeavour by GSSA.

My thanks are due to MHRD and NCERT for providing financial and administrative support and guidance. The SLAS could not have been completed without the participation of the Directorate of Education and the State Council of Educational Research and Training (SCERT), Government of Goa.

I am also thankful to the Director of Education Shri Gajanan Bhat, the Director of SCERT Shri Nagraj Honnekeri and the Ex-Director of Education Shri Anil Powar for their valuable guidance in conducting this State Learning Achievement Survey for our State.

Dr. G.C. Pradhan of SCERT, Goa has been a great resource to accomplish this arduous task. I am grateful to him for his valuable guidance from time to time and for analyzing the data and preparing the report of the survey.

I am thankful to all Members of the Executive Committee (EC) of GSSA for their suggestions and support. I whole-heartedly acknowledge the contribution of the members of the Steering Committee and the Subject committees for giving their valuable suggestions and expertise in constructing tools.

I would like to extend my sincere gratitude to the following Officers and Officials in the Quality cell of Goa Sarva Shiksha Abhiyan who managed the SLAS by their meticulous planning and hard work.

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Further, my thanks are due to all the CRPs and BRPs for administering the data collection tools effectively in the Schools and all the Staff of SPO, DPOs and Blocks, particularly MIS Co-ordinators and DEOs for compiling SLAS details.

Date: 22/12/2014

Place: Porvorim - Goa

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State Project Director
Goa Sarva Shiksha Abhiyan

CHAPTER I

INTRODUCTION

1.0 Background

Goa is located on the West Coast of India bounded by Maharashtra on the North, Karnataka on the South –West and Arabian Sea on the West. Goa was liberated from the Portuguese rule on 19th December 1961 and treated as a union territory until 30th May, 1987 when it was granted statehood and became 25th State of the country. It is a small state spread across 3,702 sq.kms. The State has only two districts: North Goa and South Goa. The State comprised of 12 Talukas.

Elementary Education in Goa is comprised of two stages: Primary (Classes I-IV) and Middle /Upper Primary (Classes V-VII). Class VIII is considered as part of the secondary education for all practical purposes. Schools in Goa are mainly of three types on the basis of Management, viz: Government schools, aided schools (schools

managed and administered by private bodies/trusts but receive grants from the Government) and private unaided schools. On the basis of levels of education provided, schools are of three categories, viz: Primary schools (having Classes I-IV), Middle Schools (having Classes V-VII) and High Schools (having Classes V-X). At present there are 448 schools in Goa having Class-VII, out of which 264 are in North Goa and 184 in South Goa district. Out of these schools 123 are Government, 306 are aided and 19 are unaided.

This survey reports the findings of the State Learning Achievement Survey (SLAS) of Class-VII students conducted in 2014 by Goa Sarva Shiksha Abhiyan (GSSA). It is based on the data collected using achievement tests and questionnaires administered to students of 102 schools of both North Goa and South Goa districts of the State of Goa. The subjects covered were English, Mathematics, Science and Social Science. Also, information collected from teachers and Principals/ Headmasters/ Headmistress of these schools by administering questionnaires formed integral part of this report.

1.1 Objectives of the Project

The project was undertaken with the following objectives in mind.

1. To study the overall performance of students of Class-VII of North Goa district, South Goa district and the State of Goa in English language, Mathematics, Science and Social Science.
2. To study the variation, if any, in performance of students in each of the four subjects between (a) male and female students (b) students belonging different castes/categories, (c) students speaking different languages at home, (d) rural and urban school students, (e) students from BPL and APL families, (f) students attending and not private tuition classes, and (g) physically challenged and physically normal students.

3. To find out what the students of Class-VII of Goa know and can do in English language, Mathematics, Science and Social Science.
4. To study the effect/influence of student-related factors on students' academic attainment in different subjects.
5. To study the effect/influence of various teacher-related variables on academic performance of students in different subjects.
6. To study the effect/influence of various school-related factors on academic performance of students in different subjects.

1.2 Methodology

1.2.1 Development of Achievement Tests

The detail regarding the development of achievement tests is given below.

Item writing workshops were conducted separately for each subject. It included the following:

- Plenary sessions on principles of test development
- Preparation of test specifications (Test-blue Print)
- Writing of test items
- Reviewing/editing and arrangement of test items
- Preparation of directions for the test
- Preparation of test booklets

i) Test in English Language

The English language test consisted of three components, viz: textual knowledge (20 percent), expression (40 percent) and reading comprehension (40 percent). The initial test consisted of 60 items all multiple choice types. The stem of the items were either in question form or in incomplete sentence form. There were four choices

under each stem and a student was required to select the correct one by encircling the serial number of the option/choice. Four unseen passages were included in the reading comprehension test and certain number of multiple choices test items were framed under each passage.

The tool was pretested / administered on a sample of 120 students of Class-VII studying in four schools located in North Goa district. Item analysis was carried out and based on the Item Difficulty Index and Item Discriminating power, some of the items were rejected and the final form of the test was made ready which consisted of 50 items, out of which 10 measuring textual knowledge, 20 measuring expression and the remaining 20 measuring reading comprehension.

ii) Mathematics

The achievement test in Mathematics intended to measure out comes in knowledge, understanding/comprehension and application. The initial test consisted of 60 multiple choice type items. The stem of the items were either in question form or in incomplete sentence form. There were four choices under each stem and a student was required to select the correct one by encircling the alphabet of the option/choice.

The test was pretested / administered on a sample of 110 students of Class-VII studying in four schools located in North Goa district. Item analysis was carried out and based on the Item Difficulty Index and Item Discriminating Index, some items were rejected and the final form of the test was made ready which consisted of 50 items, 5 measuring knowledge, 23 measuring understanding and 22 measuring application.

iii) Science

The test in Science included learning outcomes in three areas such as knowing, understanding and applying. There were 60 multiple choice (four choices) test items

in the initial form of the test. The stem of the items were either in question form or in incomplete sentence form. There were four choices/options under each stem and a student was required to select the correct one by encircling the serial number of the option/choice.

The initial test was pretested / administered on a sample of 118 students of Class-VII studying in four schools located in North Goa district. Item analysis was carried out and based on the Item Difficulty Index and Item Discriminating Index, some items were rejected and the final form of the test consisted of 50 items, 20 measuring knowledge, 23 measuring understanding and 7 measuring application.

iv) Social Science

The achievement test in Social Science covered three content areas: History, Social and Political Life and Geography. The learning outcomes measured in the test; included knowledge and understanding in History and in Social and Political life; and knowledge, understanding and application in Geography. The initial form of the test consisted of 60 multiple choice test items having four options. The stem of the items were either in question or in incomplete sentence form. There were four choices/options under each stem and a student was required to select the correct one by encircling the serial number of the option/choice.

The initial form of the test was administered on a sample of 116 students of Class-VII of four schools located in North Goa district. Item analysis was carried out and based on the Item Difficulty Index and Item Discriminating Index, 10 items were rejected and the final form of the test consisting of 50 items, 18 in History, 7 in Social and Political life and 25 in Geography.

1.2.2 Preparation of Questionnaires

Three questionnaires were prepared and used in the survey, viz: Student Questionnaire, Teacher Questionnaire and School Questionnaire. Mainly two types of items/questions were included in the questionnaires, selection type and supply type. In supply types of items the respondents were required to write their response on the space provided, either a specific number or word. The selection type questions required the respondents to select the appropriate alternative/s by putting a tick mark on the space (box) provided for the purpose. There were some items in the questionnaires containing statements and each statement required the respondents to mark their response on a 3- points (agree, disagree, can't say/ Always, sometimes, Never / not a problem, minor problem, serious problem) or 4-points (daily, once in a week, once in a month and never / strongly agree, agree, disagree and strongly disagree / none, a little, some and a lot) or 5-point (very low, low, medium, high and very high / never, rarely, monthly, weekly and daily) scale/continuum.

The sample questionnaires provided in the Guidelines for Large Scale Achievement Survey by Educational Survey Division, NCERT, New Delhi and State Learning Achievement Survey- Standard Operating Procedures by SSA, MHRD and NCERT were referred extensively in preparing the questionnaire for the present survey.

i) Student Questionnaire

The student questionnaire contained 36 questions. There were questions relating to student's details, home/family background which included parents educational qualifications, occupations of parents, family economic condition, facilities/resources available for study at home, help available at home from family members for studies, domestic works done by the students and mode of conveyance to reach school. Also there were questions pertaining to absenteeism, incidents happened with the student in school, use of computer and library facilities, frequency of homework assigned by teachers etc. There were questions pertaining to attitudes of students towards different school subjects and various activities conducted by students in different subjects/activities in which students participated.

ii) Teacher Questionnaires

It consisted of 22 questions/items. The questionnaire sought information about teachers on gender, age, caste/category, academic and professional qualifications, employment status, teaching experience, workload, in-service programmes attended, availability of instructional materials, academic support received, teaching and evaluation practices, opinion about different problems/issues concerning school/students/parents, interaction with other teachers/principal, job satisfaction etc.

iii) School Questionnaire

School questionnaire consisted of 31 questions/items. It comprised of questions on the location of school, management and structure, enrolment, working days, background of students, infrastructure facilities, availability of resources and instructional materials, evaluation of teacher practices, ability grouping of students and remedial/enrichment programmes. There were also questions concerning time spent on different activities, asking parents to contribute in different ways, opinion about teachers/parents/students, involvement in professional development, opinion about problem behaviour among students and opinion about shortage/inadequacy of infrastructural and instructional facilities affecting schools functioning etc.

1.2.3 Selection of Sample

There were 448 schools in Goa in 2013-14 having Class-VII. The schools located in North Goa and South Goa districts were listed separately by allotting 7-digit codes to each school. This was done after allotting codes to the districts of the State, Talukas within district and schools within Taluka. The sample of schools was selected randomly from each district. Altogether 52 schools and 50 schools from North Goa

and South Goa districts respectively were selected, which formed the invited as well as data producing sample of Schools.

All the students of Class-VII of all those schools having only one division/section were included in the sample. The schools having two or more divisions, only the students of one division (selected randomly) formed the invited sample of students. Altogether, 1240 students of the North Goa district and 1167 students of the South Goa district formed the data producing sample. But it was found that due to some or other reasons all these students were not present during administration of all the tests and the questionnaire. Hence, the same number of students did not respond to all the tests and questionnaire. Therefore, only the students who had responded to all the four tests as well as the questionnaire were considered as final data producing sample of students. The final sample consisted of 1178 students from North Goa district and 1115 students from South Goa district.

All the principals/headmasters/headmistress of 102 schools formed the sample of heads of institutions. From each school 4 teachers, one each teaching English, Mathematics, Science and Social Science were selected. Altogether 405 teachers (206 from North Goa and 199 from South Goa district) participated in the survey.

1.2.4 Administration of Tools

The tools were administered in the month of March 2014 to the respondents of the selected schools. The BRPs and CRPs were appointed as field investigators (FIs) for this purpose. They were provided one day training on techniques of administration of tests and questionnaires. Two FIs were assigned the task in each school. On the first day, tests in English and Science were administered. On the same day Teacher Questionnaires and School Questionnaires were administered. On the second day, achievement tests in Mathematics and Social Science and Student Questionnaires were administered to the students. Time duration of each test was 75 minutes minus

the time taken for instruction/explanation. No time limit was prescribed for answering the questionnaires.

1.2.5 Scoring and Tabulation of Data

Response sheets were prepared for each subject and supplied to the FIs who entered/recorded the responses of the students subject-wise for each school separately. From the response sheets, the data of all the students of all the schools were then transferred to a master sheet. This was done for North Goa and South Goa districts separately. Subject-wise and component-wise total scores of each student were calculated. Item-wise responses of the students were also estimated for certain items as per requirements. Responses of the respondents (Students, teachers and principals) to the questionnaires were coded and recorded after devising appropriate coding system. All types of data were tabulated keeping in mind the objectives of the study and the type of data analysis required.

1.2.6 Data Analysis Methods/Techniques

Initially it was planned to analyse the data using both Classical Test Theory (CTT) and Item Response Theory (IRT). But due to unavoidable circumstances BILOG- MG 3 could not be procured. Therefore, data were analysed using CTT only. The following data analysis methods/techniques were employed to analyse the data.

- Percentage analysis
- One way ANOVA
- t-test
- Regression Analysis

Regression analysis was done to find out the effect/influence of underlying variables in details. The variables analysed under student, teacher and school related were of three types, viz: dichotomous variables (having only two discrete values), categorical variables (having more than two discrete values) and quasi-continuous variables (having a wide range of possible values across a numerical scale). The treatment given to student, teacher and school related variables used in regression analysis are specified below under section 1.2.7.

1.2.7 Student, Teacher and School Related Variables and its Treatment in Regression Analysis

i) Student-Related Variables

The details about the student related variables included in the study for regression analysis are given in Table 1.2.1.

Table 1.2.1: Student-Related Variables and its Treatment in Regression Analysis

Variables	Categories	Treatment
Gender	a) Girls b) Boys	'Boys' as base category.
Caste/Category	a) SCs, b) STs, c) OBC, d) General/others	'General/others' as base category.
Physical Health Status	a) Physically Challenged, b) Not Physically Challenged	'Not Physically Challenged' as

		base category.
Educational Status of Parents	a) Illiterate, b) Literate, c) Primary, d) Secondary, e) Higher Secondary, e) Bachelor's deg. f) Master's deg.	'Illiterate' as base category.
Facilities at Home	a) Calculator, b) Computer, c) Study desk, d) Dictionary, e) Internet, f) News Paper, g) Magazine	'Not having each' as base category.
Number of books at home	a) 1-10, b) 11-25, c) more than 25, d) No books	'No books' as base category.
Mode of Conveyance	a) Walk, b) Cycle, c) Public Bus, d) School bus, e) Own Vehicle	'Walk' as base category.
Incidence happened to students in school	a) something of the student stolen in school, b) students hit/hurt by others, c) making students do something against wish, d) called by name/made fun, e) leaving students out of activities by fellow students	"No incident" of each type as base category.
Absent from school	a) less than 5 days, b) 5-15 days, c) 16-30 days, d) more than 30 days, e) None	'None' as base category.
Use of Computer in school	a) Never, b) Frequently, c) Once in a Week, d) Once in a Month	'Never' as base category.
Borrowing of books from library	a) Once in a Week, b) Once or twice in a Month, c) Few times in a year, d) Never	'Never' as base category.
Private Tuition	a) Private Tuition, b) No private tuition	'No private tuition' as base category

Reading of materials other than course material	a)Comic Books, b)Stories/novels, c)Books that explain things, d)Magazines, e)News Paper, f) books on Directions/ Instructions	As quasi-continuous variable (each separately)
Activities outside the school	a)watching TV and videos, b)working with computer, c) Interaction with friends about study matters, d) reading other books for enjoyment, e)doing homework regularly after school, f) Playing of games/ sports, g) use of internet, h) Discussion with friends about learning in school i) Telling family members about what was learnt in school	As quasi-continuous variable (each separately)
Attitude towards School Subject	<p>English: a) You enjoy learning English, b) English is easier for you than other subjects, c) English is easier for you than other students, d) you read silently on your own, e) you use dictionary, f) English language is boring for you.</p> <p>Mathematics: a) You usually do well in Maths b) You like to do more Maths. in school, c) You enjoy learning Maths., d)Maths. is harder for you than your classmates, e) you learn things quickly in Maths, f) Maths is boring, g) Maths is better than other subjects.</p> <p>Science: a) You usually do well in Science, b) You like to do more Science in school, c) You enjoy learning Science, d) Science is harder for you than your classmates, e) you learn things</p>	Sum total of the points allotted to the responses to all the statements of the item. (separately each subjects)

	<p>quickly in Science, f) Science is boring, g) you like to ask questions in Science Class, h) Science is better than other subjects.</p> <p>Social Science: a) You usually do well in Social Science, b) You like to do more Social Science in school, c) You enjoy learning Social Science, d) Social Science is harder for you than your classmates, e) you learn quickly in Social Science, f) Social Science is boring, g) you like to ask questions in Social Science Class, h) Your Social Science teacher ask you questions in class.</p>	
Activities in School subjects	<p>English: 4 activities listed, responses recorded on a 3-point scale</p> <p>Mathematics: 7 activities listed, responses recorded on a 3-point scale</p> <p>Science and Social science: 9 activities, responses recorded on a 3-point scale</p>	Sum total of points allotted to the responses to all the statements (separately each subjects).
Domestic Work	a) Looking after family members, b) Preparation of food at home, c) Cleaning of own house	As quasi-continuous variable (each separately)

ii) Teacher-Related Variables

The details about the teacher-related variables included in the study for regression analysis are given in Table 1.2.2.

Table1.2.2: Teacher-Related Variables and its Treatment in Regression Analysis.

Variables	Categories	Treatment
Age	a) below 30 years, b) 31-40 years, c) 41-50 years, d) 51-60 years	As quasi-continuous variable
Educational Qualifications	a)Higher Secondary b) Bachelor's degree, c) Master's degree	As quasi-continuous variable
Professional Qualifications	a) primary/Elementary Teaching//Diploma, b) Graduate Training, c) M.Ed. and others	As quasi-continuous variable
Employment Status	a) Regular full time, b)Temporary/ Adhoc / Para teachers,	'Temporary/ Adhoc / Para teachers' as base category.
In-service training programmes	a)One, b) Two, c)Three, d) Four, e) Five, e) More than five, f) None	As quasi-continuous variable
Assignment of Home work	a)Regularly, b) Sometimes, c) Never	As quasi-continuous variable
Teacher's Diary	a)Maintained , b) Not maintained	Not maintained'

		as base category.
Instructional Aids	a)Teacher's Handbooks, b) TLM, c) Audio Video Facilities	'Not having each' as base category.
Academic support from source persons/ officials	a)Once, b) Twice, c)Thrice, d) Four times, e) Five times, e) More than five times, f) Not at all	As quasi-continuous variable
Problems perceived by teachers	a) School building requiring significant repair, b) Overcrowded class rooms, c) Inadequate work space for teachers, d)Non availability materials for experiments	As quasi-continuous variable (each separately)
Perception about self, teachers , parents and students	a) Teacher's Job satisfaction, b) Teacher' understanding of curricular goal, c) Teacher's success in implementing curriculum, d) Teacher's expectation for student achievement, e) Parental support for student achievement, f) Parents' involvement in school activities, g) Students' regard for school properties, h) Students' desire to do well	As quasi-continuous variable (each separately)

	in school	
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iii) School-Related Variables

The details about the school-related factors included in the study for regression analysis are given in Table 1.2.3.

Table 1.2.3: School-Related Variables and its Treatment in Regression Analysis

Variables	Categories	Treatment
Management	a) Government, b) Private Aided c) Local Body	'Government' as base category.
Attachment of Pre-school	a) Attached b) Not attached	'Not attached' as base category.
School Inspection	a) Inspected, b) Not inspected	'Not inspected' as base category.
Students' Economic background	a) Economically Disadvantaged, b) Economically Affluent	As quasi-continuous variable (each separately)
Infrastructural Facilities	Twenty-six items were listed	A scale was created by adding the number of

		'Yes' responses.
Instructional Materials	a) text books, b) workbooks, c) teachers' handbooks, d) TLM	As quasi-continuous variable
Asking parents for participation	a) Attend special events, b) Raising of funds for the school, c) Ensure completion of homework by their children, d) Serve on school committees	A scale was created by adding the number of 'Yes' responses.
School Perception	a) Teachers' job satisfaction, b) Teachers' understanding of curricular goals, c) Teacher's degree of success in implementing curriculum, d) Teacher's expectation for students' achievement, e) Parental support for student achievement, f) Parental involvement in school activities, g) Students' regard for school property, h) students' desire to do well in school	As quasi-continuous variable (each separately)
Ability grouping in Science and Mathematics	a) Grouping by ability, b) No ability grouping	'No ability grouping' as base category.
Remedial and Enrichment Programme in Science and Maths.	a) Organised, b) Not organised	'Not organised' as base category.
Professional	A list of six professional development	Sum total of

Development (Mathematics and Science teachers)	areas was prepared each having five responses/ options.	the points allotted to the responses to all the statements (areas).
Behaviour problems	A list of 13 problem behaviour of students was prepared each to be responded on a five point scale.	Sum total of the points allotted to the responses to all the statements.
Inadequacy/shortage of Facilities	Seventeen items were listed each followed by four responses/options, any one selected by the respondents.	Sum total of the points allotted to the responses to all the 17 items.
Access to Internet	a) Access, b) No access	'No access' as base category.
Evaluation of Teachers' Practices	a) Observation by Principal, b) Observation by Inspectors, c) Student Achievement, d) Teacher Peer review	'No' such practice as base category for each.

1.3 Organisation of the Report

The report contains eight chapters as stated below.

Academic Attainment of Students: Chapters II, III, IV and V present achievement of students in English language, Mathematics, Science and Social Science respectively. The overall achievement of students of both the districts and of the State are presented. Also difference in performance of students in each of the four subjects between (a) male and female students (b) students belonging different castes/categories, (c) students speaking different languages at home, (d) rural and urban school students, (e) students from BPL and APL families, (f) students attending and not attending private tuition classes, and (g) physically challenged and physically normal students are explained in these chapters. Findings are presented in Tabular form and using graphs as per necessity for clarity. The last part of each chapter presents the conclusions.

What Students Know and can do: Chapter VI describes what the students of Class-VII know and can do in English language, Mathematics, Science and Social Science. The details are presented using tables and graphs.

Effect/Influence of Student, Teacher and School related Variables on Academic Achievement of Students: Chapters VII contains the detail about all the student-related variables and the effect/influence of these variables on the academic achievement of students using regression analysis. Chapters VIII and IX contain the detail about teacher and school related variables respectively along with the effect/influence of these variables on the academic performance of students. Based on the findings conclusions are presented at the end of each chapter.

CHAPTER II

ACHIEVEMENT OF STUDENTS IN ENGLISH LANGUAGE

2.0 Introduction

The English language test used in this project consisted of 50 multiple choice type test items. The items were designed to measure different learning outcomes such as textual knowledge, expression and reading comprehension. Data were analysed by taking in to consideration the overall score in English and the performance of students in each of the three areas was subjected to secondary analysis. Mean scores of different samples were calculated and used for comparison between groups employing t-test. This Chapter presents the findings relating to the overall

performance in English of the students of both the districts of the State, academic attainment of students in relation to gender, locale, language background, financial position of the family, physical health status and private tuition. The findings relating to each of the variables are presented for each district separately and then for the State of Goa as a whole. The last part of the chapter contains the conclusions drawn based on the findings.

2.1 Performance of Students in English Language

2.1.1 North Goa District

The Mean score in English language of the students of North Goa district was only 22.37 (Table 2.1.1). Since there were 50 test items in the test the maximum possible score could be 50. The observed mean score indicated that the entire group of students studying in schools of North Goa district answered 44.7 percent of the items of the test in English correctly.

2.1.2 South Goa District

The average score of the students of South Goa district was 23.28. Since the test consisted of 50 multiple choice test items each carrying a weight-age of 1 point, the obtained Mean score of the students of South Goa district indicated that they scored 46.6 percent in English.

2.1.3 Goa State

It was found that the Mean score of the students of the State of Goa in English was 22.30 (Table 2.1.2). The score indicated that the students of Goa scored 46.6 percent in English.

2.1.4 Difference between North Goa and South Goa Districts, North Goa and Goa State and South Goa and Goa State

Table 2.1.1 shows that the average score of the students of South Goa District was significantly higher than their counterparts of North Goa district. It revealed that the students of South Goa district performed better than the Students of North Goa district in English language. No significant difference was observed between the mean score of the students of North Goa district and the State of Goa (Table 2.1.2). But the average score of the students of South Goa district was found significantly higher than the State's average score. It indicates that the average performance of the students of South Goa was better than their counter parts of North Goa district and that of the State of Goa. The mean scores of all the three groups are shown in Figure 2.1.1.

Table 2.1.1: Difference in Mean Scores in English between the Students of North Goa and South Goa Districts

District	Mean	SD	t- ratio	Level of Significance
North Goa	22.37	6.53	6.45	0.01
South Goa	23.28	7.57		

Table 2.1.2 Difference in Mean Scores in English between the Students of North Goa district and Goa state

Group	Mean	SD	t- ratio	Level of Significance
North Goa	22.37	6.53	0.29	N.S.
Goa State	22.30	7.11		

N.S – Not significant at 0.05 level

Table 2.1.3 Difference in Mean Scores in English between the Students of South Goa district and Goa State

Group	Mean	SD	t- ratio	Level of Significance
South Goa	23.28	7.57	6.63	0.01
Goa State	22.30	7.11		

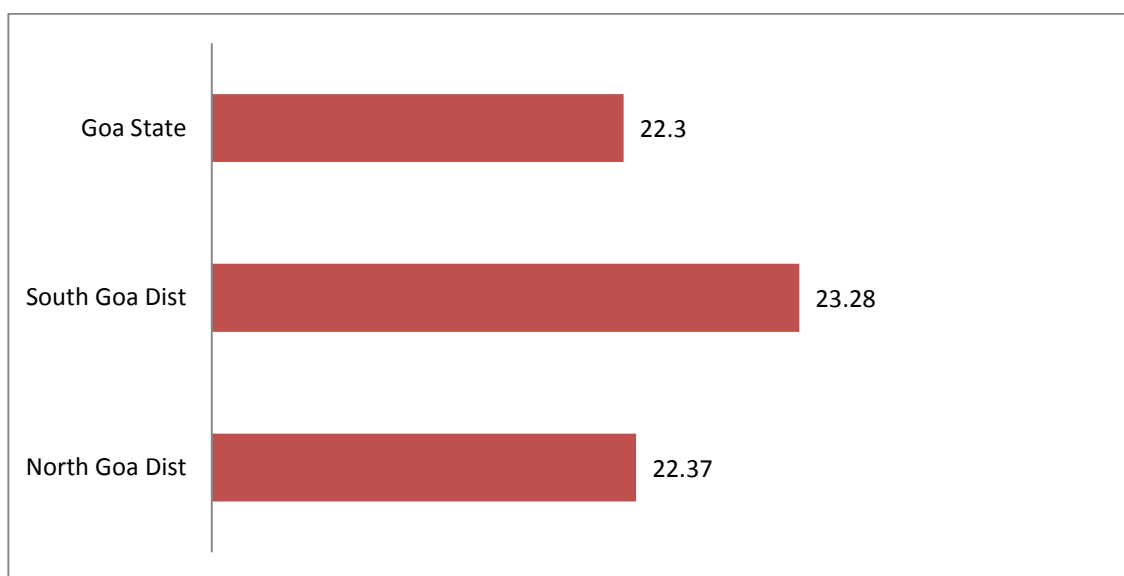


Fig. 2.1.1: Mean English Scores of Students of North Goa District, South Goa District and Goa State

2.2 Performance in English Language in relation to Gender

2.2.1 North Goa District

Table 2.2.1 shows that there existed no significant difference in performance in English language between boys and girls of North Goa district. It indicated that both boys and girls scored equal score in English language.

Table 2.2.1: Difference in Mean Scores in English between the Boys and Girls of North Goa District

Gender	Mean	SD	t- ratio	Level of Significance
Boys	21.48	6.57	0.39	N.S.
Girls	21.28	6.49		

N.S. - Not significant at 0.05 level

2.2.2 South Goa District

No significant difference was found in Mean scores in English language between boys and girls of South Goa district (Table 2.2.2). Though the mean score of girls was slightly higher than the boys, the difference was statistically not significant.

Table 2.2.2: Difference in Mean Scores in English between the Boys and Girls of South Goa district

Gender	Mean	SD	t- ratio	Level of Significance
Boys	23.12	7.46	0.69	N.S.
Girls	23.43	7.68		

N.S.- Not significant at 0.05 level

2.2.3 Goa State

There existed no significant difference in performance in English language between boys and girls of the State of Goa (Table 2.2.3). It means boys and girls of Class- VII of Goa did not differ significantly in their achievement in English.

Table 2.2.3: Difference in Mean Scores in English between the Boys and Girls of Goa State

Gender	Mean	SD	t- ratio	Level of Significance
Boys	22.31	7.24	0.39	N.S.
Girls	22.28	7.17		

N.S.- Not significant at 0.05 level

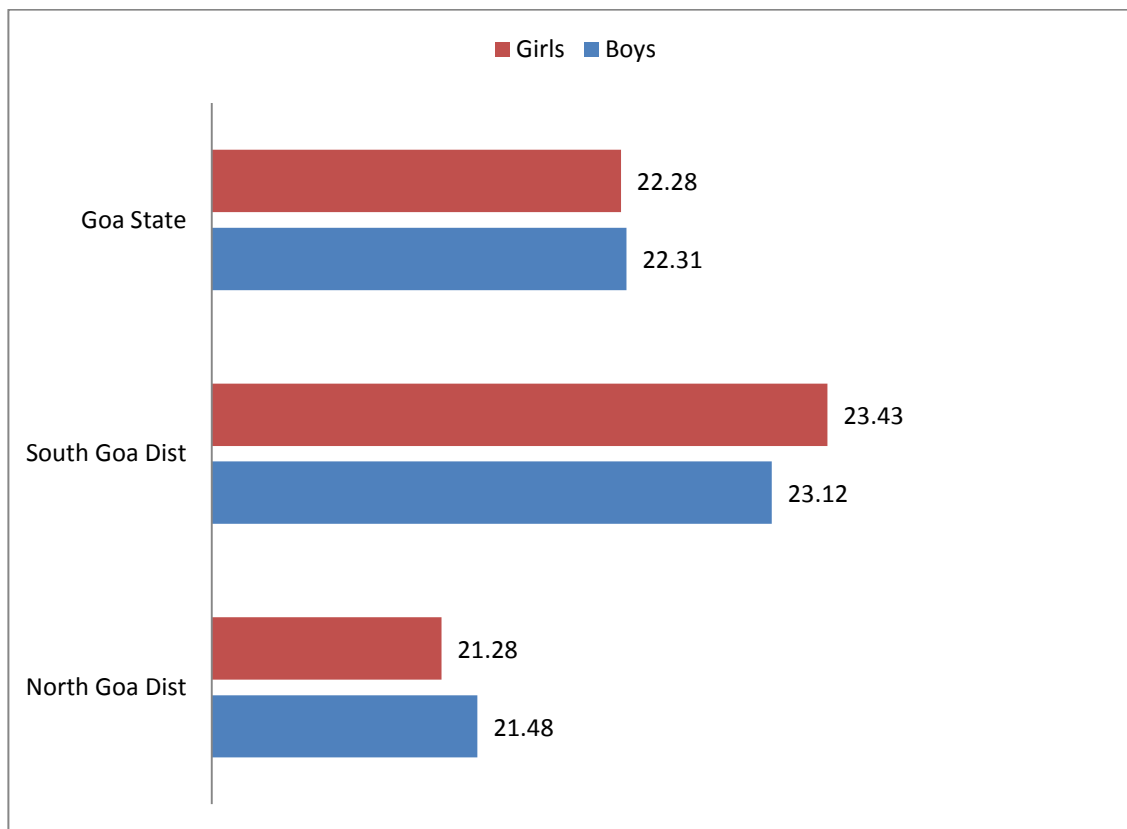


Fig. 2.2.1: Comparative Mean Scores of Boys and Girls of North Goa District, South Goa District and Goa State

The above findings indicated no significant difference in performance in English language between boys and girls of North Goa district, South Goa district and Goa

State. The mean scores of boys and girls in each of the comparison were almost equal. It indicates that gender of a student does not make any difference as far as performance in English is concerned. All the pairs of comparison are shown in Fig.2.2.1.

2.3 Performance in English in relation to Category/Caste

2.3.1 North Goa District

The ANOVA results in Table 2.3.1 show that there existed no significant difference in Mean scores in English language between different categories of students of North Goa district. i.e. students belonging to different castes. It shows that the students of North Goa district belonging to the four categories exhibited equal performance in English. The mean scores of these groups are graphically represented in Figure 2.3.1.

Table 2.3.1: ANOVA Results: Achievement in English in relation to Categories/ Castes (North Goa District).

Source of Variation	SS	df	MS	F- ratio
Between Groups	126.78	3	42.26	0.99 (N.S.)
Between Groups	50051	1174	42.63	

N.S.- Not significant at 0.05 level

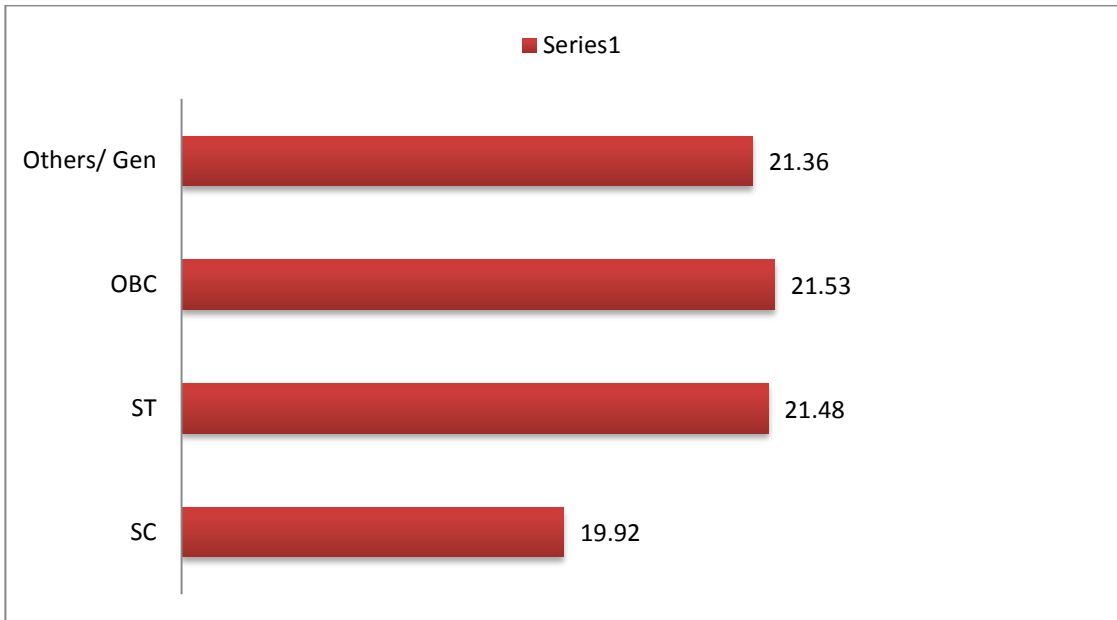


Fig. 2.3.1: Mean Score in English of Students of Different Categories/Castes (North Goa District)

2.3.2 South Goa District

Students of South Goa district belonging to different castes/categories differed significantly in their performance in English (Table 2.3.2). The t-test results in Table 2.3.3 show that though the mean score of the SC students was lower than all the other three categories of students, none of the differences was found statistically significant. The mean score of the ST students was significantly lower than the general category students (Table 2.3.3). No significant difference in mean scores was observed between ST and OBC students, and OBC and General category students. Comparative mean scores in English of the four categories of students of South Goa district are represented in Figure 2.3.2.

Table 2.3.2: ANOVA Results: Achievement in English in relation to Categories/Castes (South Goa District).

Source of Variation	SS	df	MS	F- ratio

Between Groups	453.1	3	151.02	2.62 *
Between Groups	63356	1111	57.02	

* Significant at 0.05 level.

Table 2.3.3: t-test Results: Difference in Mean Score between different Groups (Pairs) (South Goa District)

Pair of Comparison	Difference Between Means	t – ratio
SC – ST	$21.6 - 22.39 = 0.79$	0.39 (N.S)
SC – OBC	$21.6 - 23.13 = 1.53$	0.66 (N.S)
SC – Others/General	$21.6 - 23.84 = 2.24$	1.30 (N.S)
ST – OBC	$22.39 - 23.13 = 0.74$	1.04 (N.S)
ST - Others/General	$22.39 - 23.84 = 1.45$	2.84 *
OBC - Others/General	$23.13 - 23.84 = 0.71$	1.09 (N.S)

*significant at 0.05 level

N.S. – Not significant

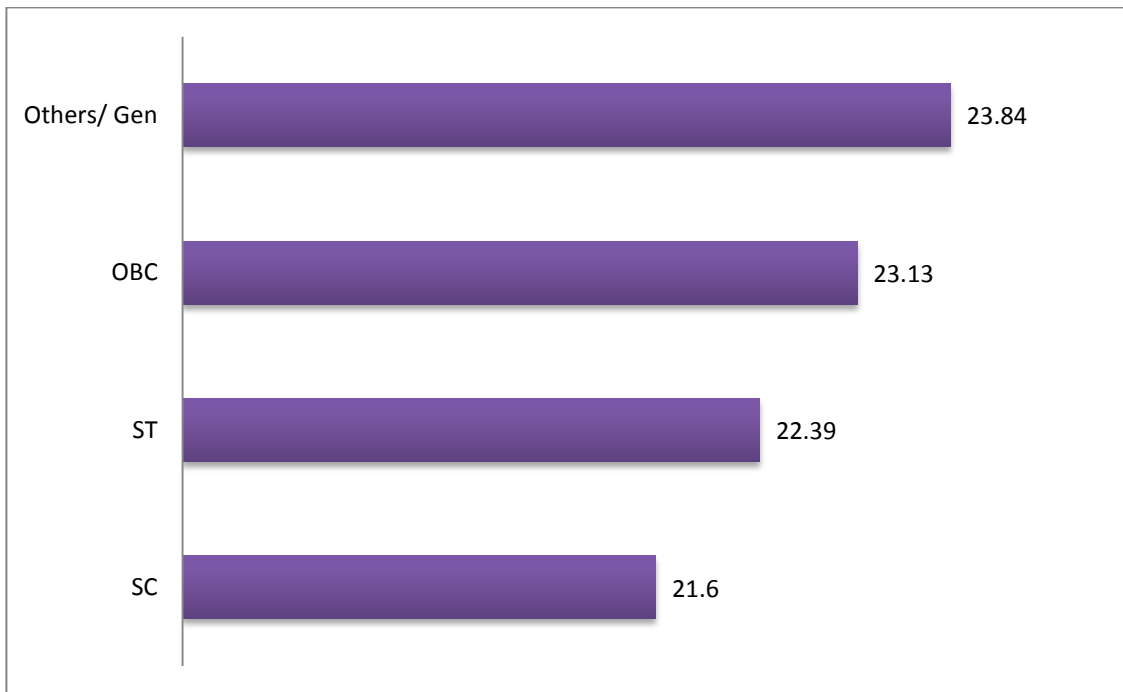


Fig. 2.3.2: Mean Score in English of Students of Different Categories/Castes (South Goa District)

2.3.3 Goa State

Table 2.3.4 shows that there existed significant difference in performance in English among the students of the state of Goa belonging to different categories/castes. Table 2.3.5 shows that the mean score of the SC students was significantly lower than the ST, OBC and general category students. No significant difference was found in mean scores in English between ST and OBC students, ST and General category students and OBC and general category students. The findings indicate that caste of student is a factor associated with the performance of the students. In English, SC students perform lower than the students belonging to other castes/ categories. Comparative mean scores in English of the four categories of students of South Goa district are represented in Figure 2.3.3.

Table 2.3.4: ANOVA Results: Achievement in English in relation to Categories/ Caste
(Goa State)

Source of Variation	SS	df	MS	F- ratio
Between Groups	307.7	3	102.6	2.56 *
Between Groups	91789	2289	40.1	

* Significant at 0.05 level

Table 2.3.5: t-test Results: Difference in Mean Score between different Groups
(Pairs) (Goa State)

Pair of Comparison	Difference Between Means	t – ratio
SC – ST	$19.92 - 22.13 = 2.21$	2.04 *
SC – OBC	$19.92 - 22.08 = 2.16$	2.00 *
SC – Others/General	$19.92 - 22.51 = 2.59$	2.19 *
ST – OBC	$22.13 - 22.08 = 0.05$	(N.S)
ST - Others/General	$22.13 - 22.51 = 0.38$	(N.S)
OBC - Others/General	$22.08 - 22.51 = 0.43$	1.30 (N.S)

*significant at 0.05 level

N.S. – Not significant

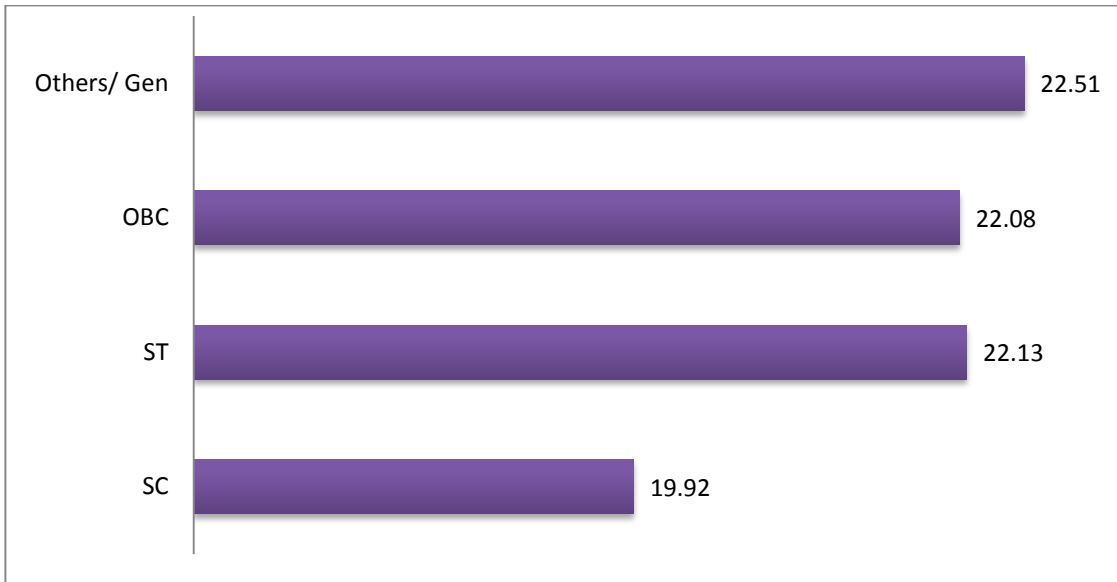


Fig. 2.3.3: Mean Scores in English of Students of Different Categories/Castes (Goa State)

2.4 Performance in English Language in relation to Language Background (Language Spoken at Home)

2.4.1 North Goa District

Table 2.4.1 indicates that there existed significant difference in performance in English language between the students of North Goa district schools coming from different language backgrounds. The mean scores of all the groups are represented in Figure 2.4.1. Differences between different pairs in Mean Score are given in Table 2.4.2. It was observed that the Mean score in English language of the students speaking in English at home was higher than the students speaking other languages at home. But except one, no other differences were found statistically significant. The mean score of the English speaking background students was significantly higher than the students who use Hindi language at home. Also it was found that the students speaking in Urdu at home scored higher in English compared to the Hindi

language background students. In fact it was observed that the mean score in English of the students speaking in Urdu at home was higher than the students speaking other languages at home, though the same were not significant statistically.

Table 2.4.1: ANOVA Results: Achievement in English in relation to Language background (North Goa District)

Source of Variation	SS	df	MS	F- ratio
Between Groups	501.5	5	100.2	2.36*
Between Groups	49618.9	1171	42.37	

* Significant at 0.05 level

Table 2.4.2: t-test Results: Difference in Mean Scores between different Groups (Pairs) (North Goa District)

Pair of Comparison	Difference Between Means	t - ratio
English – Konkani	24.75 – 21.37 = 3.38	1.36 (N.S)
English – Marathi	24.75 – 22.33 = 2.42	1.02 (N.S)
English – Hindi	24.75 – 19.77 = 4.98	2.29*
English – Kannada	24.75 – 20.10 = 4.65	1.98(N.S)
English – Urdu	24.75 – 25.00 = 0.25	0.07(N.S)
Urdu– Marathi	25.00 – 22.33 = 2.67	0.96 (N.S)
Urdu –Kannada	25.00 –20.10 = 4.90	1.97(N.S)
Urdu – Hindi	25.00 –19.77 = 5.23	1.99 *
Urdu – Konkani	25.0 – 21.37 = 3.63	1.54(N.S)

*Significant at 0.05 level

N.S.- Not significant at 0.05 level

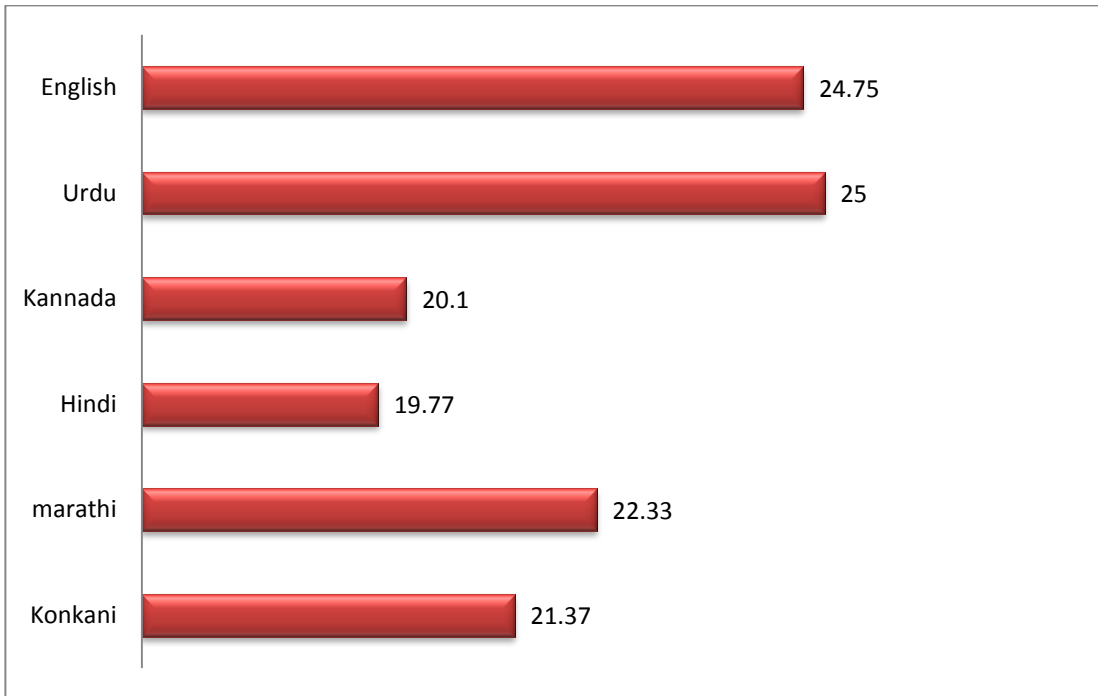


Fig. 2.4.1: Mean Scores in English of the Students Speaking Different Languages at Home (North Goa District)

2.4.2 South Goa District

In the case of South Goa district, the ANOVA results in Table 2.4.3 and the subsequent t-test results in Table 2.4.4 indicated that the students using English language at home scored significantly higher in English compared to the students speaking other languages such as Hindi, Konkani, Marathi, Kannada and Urdu. The comparative Mean scores in English of the students of South Goa district belonging to various language backgrounds are presented in Fig.2.4.2.

Table 2.4.3: ANOVA Results: Achievement in English in relation to Language background (South Goa District)

Source of Variation	SS	df	MS	F- ratio
Between Groups	2165.4	5	433.08	7.78 **
Between Groups	61699.9	1109	55.64	

**Significant at 0.01 level

Table 2.4.4: t-test Results: Difference in Mean Scores in English between different Groups (Pairs) (South Goa District)

Pair of Comparison	Difference Between Means	t - ratio
English – Konkani	$30.6 - 23.45 = 7.15$	5.18 **
English – Marathi	$30.6 - 22.62 = 7.98$	4.83 **
English – Hindi	$30.6 - 21.79 = 8.81$	5.76 **
English – Kannada	$30.6 - 21.89 = 8.71$	5.21 **
English – Urdu	$30.6 - 21.93 = 8.67$	3.19 **
Konkani – Marathi	$23.45 - 22.62 = 0.83$	0.84 (N.S)
Konkani –Kannada	$23.45 - 21.89 = 1.56$	1.47 (N.S)
Konkani – Urdu	$23.45 - 21.90 = 1.55$	0.65 (N.S)

*Significant at 0.05 level

N.S.- Not significant at 0.05 level

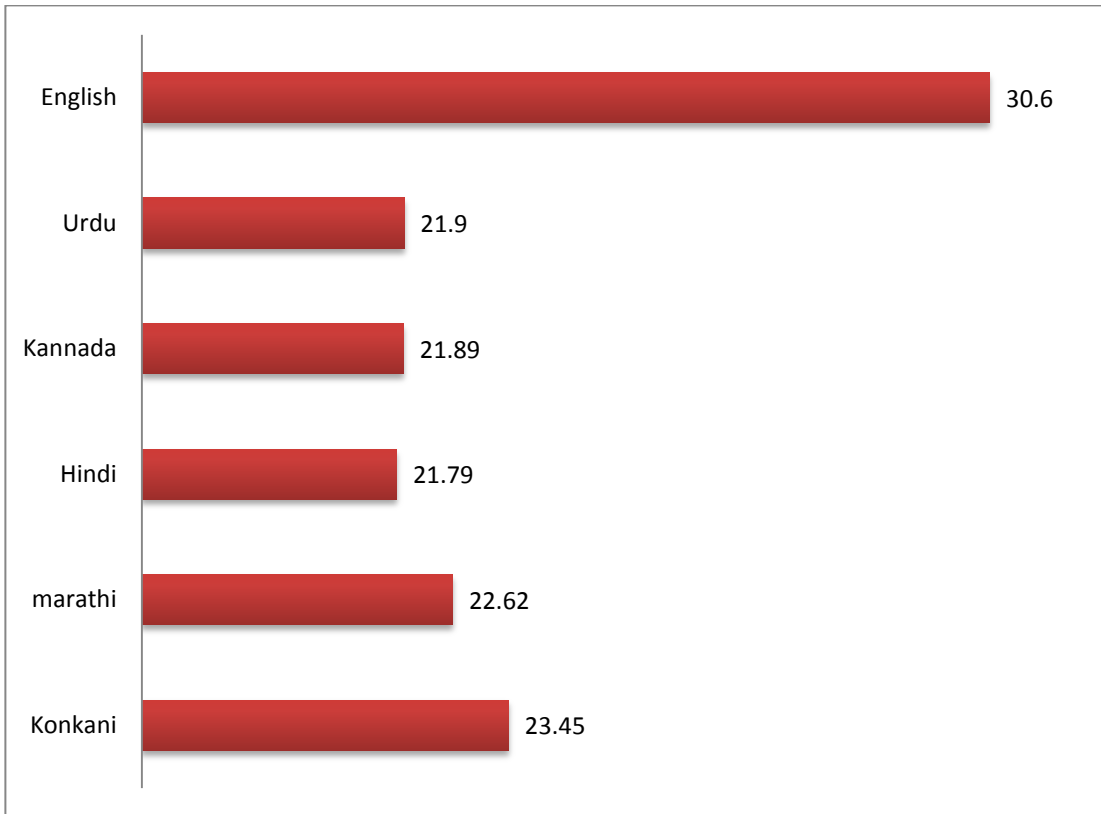


Fig. 2.4.2: Mean Scores in English of the Students Speaking Different Languages at Home (South Goa District)

2.4.3 Goa State

Table 2.4.5: ANOVA Results: Achievement in English in relation to Language background (Goa State)

Source of Variation	SS	df	MS	F- ratio
Between Groups	2439.1	5	487.80	9.82**
Between Groups	113596.3	2287	49.67	

**Significant at 0.01 level

Table 2.4.5 shows that there existed significant difference in Mean scores between the students of the state of Goa speaking different languages at home. From the t-

test results in Table 2.4.6 it is clear that the Mean score of students speaking at home in English was significantly higher than the students speaking in other languages at home. No significant difference was found between mean score of any other pairs of comparison (Table 2.4.6). Comparative Mean scores in English of the students of Goa state speaking different languages at home are graphically represented in Fig.2.4.3.

Table 2.4.6: t-test Results: Difference in Mean Scores in English between different Groups (Pairs) (Goa State)

Pair of Comparison	Difference Between Means	t – ratio
English – Konkani	29.91 – 22.34 = 7.57	6.20 **
English – Marathi	29.91 – 22.44 = 7.47	5.65 **
English – Hindi	29.91 – 20.92 = 8.99	6.86 **
English – Kannada	29.91 – 21.46 = 8.45	5.83 **
English – Urdu	29.91 – 22.93 = 6.98	3.20 **
Urdu – Marathi	22.93 – 22.44 = 0.49	0.17 (N.S.)
Urdu –Kannada	22.93 – 21.46 = 1.47	0.74 (N.S.)
Urdu – Konkani	22.93 – 22.34 = 0.59	0.32 (N.S.)

**Significant at 0.01 level

N.S.- Not significant at 0.05 level

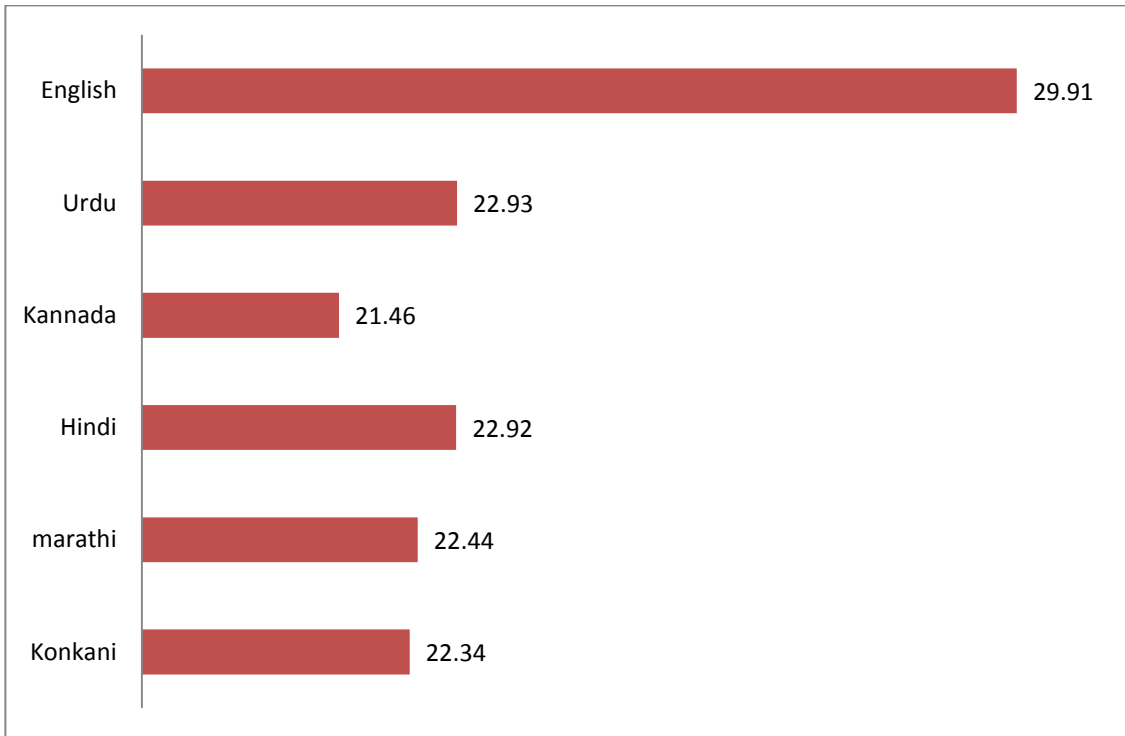


Fig. 2.4.3: Mean Scores in English of the Students Speaking Different Languages at Home (Goa State)

The above findings indicate that language background of the students plays an important role in their academic performance. The students using English language at home performed better in English language in school than the students speaking in other languages (Indian languages) at home.

2.5 Achievement in English in Relation to Location

2.5.1 North Goa District

Table 2.5.1 shows that Mean score in English of the students of North Goa district studying in urban schools (i.e. 22.77) was significantly higher than the mean score of the rural school students (i.e. 21.0). It shows that the students of urban schools are better than their counterparts in rural schools as far as their performance in English language is concerned. The comparative Mean score of rural and urban schools students is shown in Figure 2.5.1.

Table 2.5.1: Difference in Mean Scores in English between the Students of Rural and Urban Schools of North Goa District.

Locale	Mean	SD	t- ratio	Level of Significance
Rural	21.0	6.25	8.43	0.01
Urban	22.77	7.32		

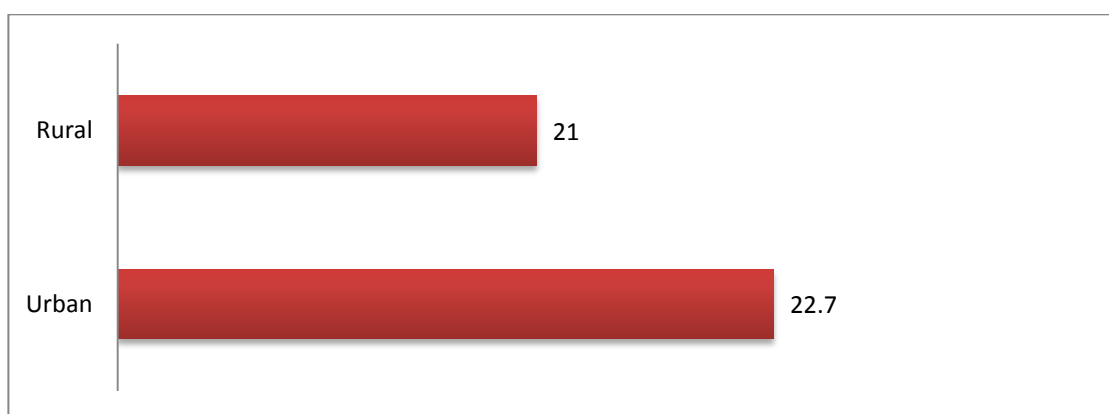


Fig.2.5.1: Comparative Mean Scores in English of Rural and Urban School Students of North Goa District

2.5.2 South Goa District

The mean score in English of rural schools students was found significantly lower than those of the urban school students (Table 2.5.1). It shows that the students of urban schools are better than the rural school students in English. The Mean scores of the two groups are graphically represented in Figure 2.5.2.

Table 2.5.2: Difference in Mean Scores in English between the Students of Rural and Urban Schools of South Goa District

Locale	Mean	SD	t- ratio	Level of Significance
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Rural	22.75	7.60	3.74	0.01
Urban	24.58	7.33		

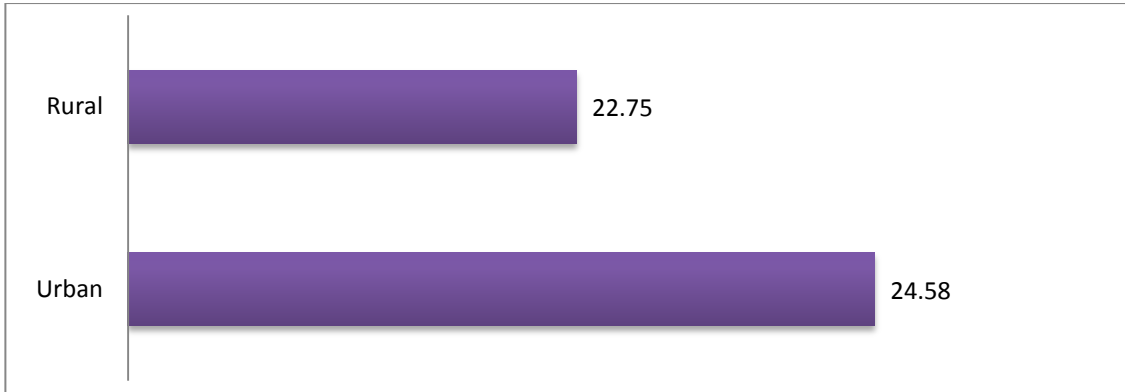


Fig.2.5.2: Comparative Mean Scores in English of Rural and Urban School Students of South Goa District

2.5.3 Goa State

The mean scores in English of the urban and rural schools students were 23.79 and 21.81 respectively. The t-test result (Table 2.5.3) indicates that the urban school students performed better than the rural schools students in English. Mean scores of both the groups are shown in Figure 2.5.3.

Table 2.5.3: Difference in Mean Scores in English between the Students of Rural and Urban Schools of Goa State

Locale	Mean	SD	t- ratio	Level of Significance
Rural	21.81	6.96	5.66	0.01
Urban	23.79	7.37		

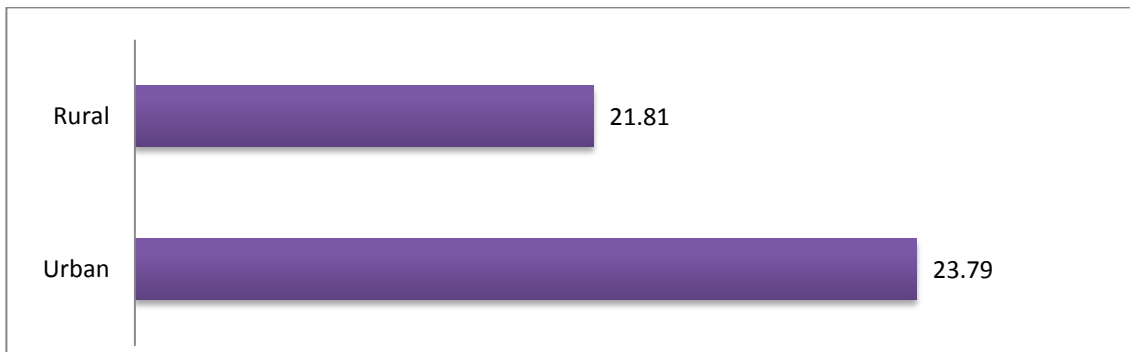


Fig.2.5.3: Comparative Mean Scores in English of Rural and Urban School Students of Goa State

The findings presented above showed that in all the three cases the students of the urban schools scored higher than the students of rural schools in English language. The findings indicated that location is a factor associated with performance of students of Class-VII in English. The urban school students are better than the rural school students.

2.6 Achievement in English in Relation to Poverty Line Status of the Family

2.6.1 North Goa District

The mean score in English of the students of North Goa district belonging to BPL families (Mean = 20.0) was found significantly lower than the mean score (22.50) of students from APL families (Table 2.6.1). Comparative mean scores of the two groups are represented in Figure 2.6.1.

Table 2.6.1: Difference in Mean Scores in English between the Students belonging to BPL families and APL families (North Goa District)

Poverty Line	Mean	SD	t- ratio	Level of Significance

BPL	20.0	5.98	5.10	0.01
APL	22.50	7.10		

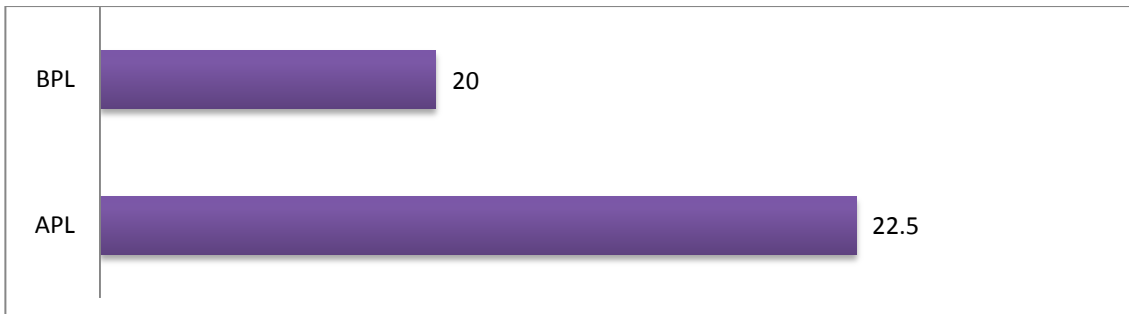


Fig.2.6.1: Comparative Mean Scores in English of Students from BPL and APL families of North Goa District

2.6.2 South Goa District

Data in Table 2.6.2 shows that the mean score in English of the children from BPL families (Mean = 21.10) was significantly lower than the children from APL families (Mean = 25.38). Figure 2.6.2 clearly shows the difference between the performances of the two groups.

Table 2.6.2: Difference in Mean Scores in English between the Students belonging to BPL families and APL families (South Goa District)

Poverty Line	Mean	SD	t- ratio	Level of Significance
BPL	21.10	7.04	6.29	0.01
APL	25.38	8.46		

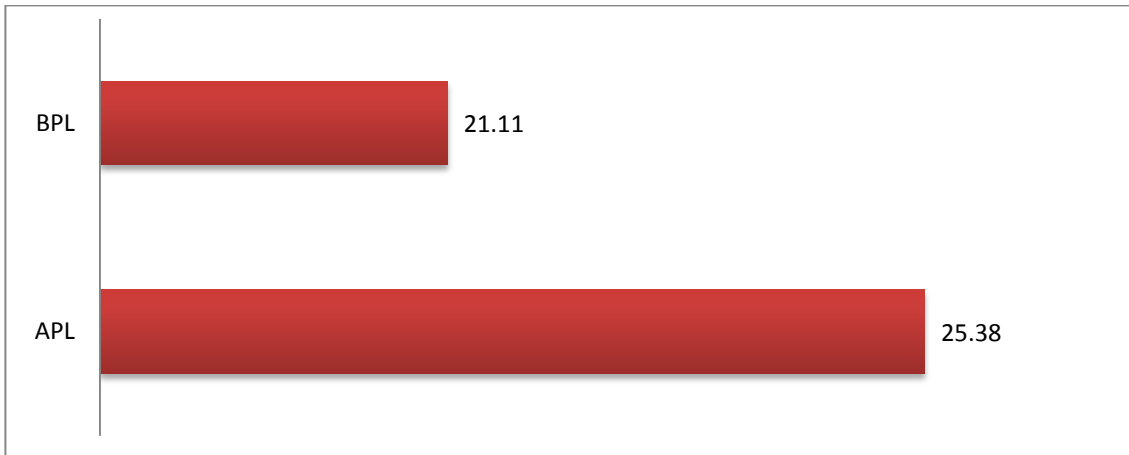


Fig.2.6.2: Comparative Mean Scores in English of Students from BPL and APL families of South Goa District

2.6.3 Goa State

The average score in English of the children coming from BPL families was significantly lower than the children coming from APL families (Table 2.6.3). The difference in Mean scores between the two groups is clearly seen in Figure 2.6.3.

Table 2.6.3: Difference in Mean Scores in English between the Students belonging to BPL families and APL families (Goa State)

Poverty Line	Mean	SD	t- ratio	Level of Significance
BPL	20.42	6.44	8.43	0.01
APL	23.88	7.91		

The findings presented in this section revealed that the children belonging to BPL families of North Goa District, South Goa District and the entire State of Goa scored significantly lower than their counter parts from APL families. It indicated that economic condition of the family is a factor influencing achievement of students in

English. The Children from APL families perform better in English compared to the children belonging to BPL families.

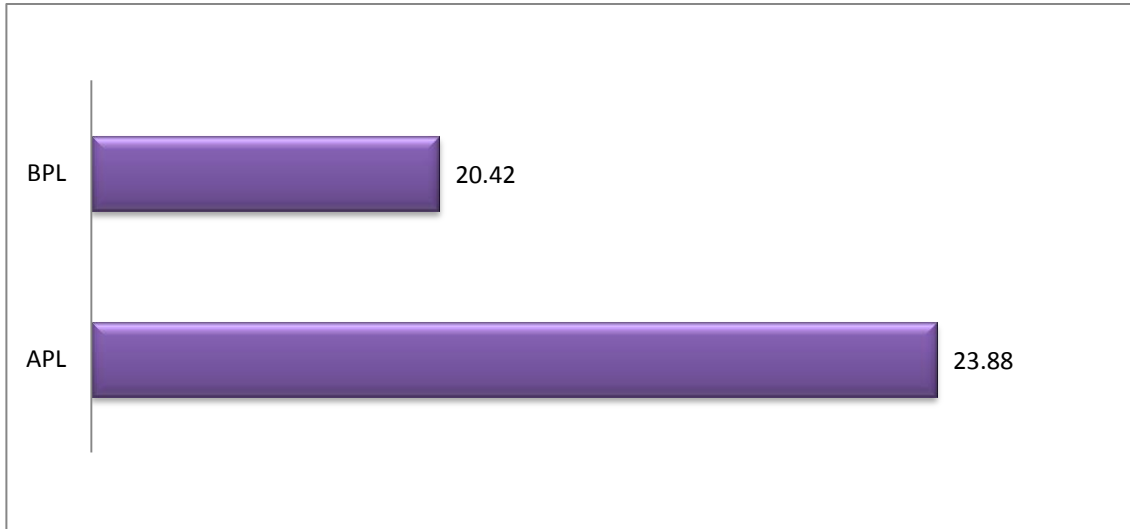


Fig.2.6.3: Comparative Mean Scores in English of Students from BPL and APL families of Goa State

2.7 Achievement in English in Relation to Private Tuition

2.7.1 North Goa District

Table 2.7.1 shows that the students of North Goa Schools who were taking private tuition scored significantly less than the students who had not joined private tuition classes. It means academic achievement of the students in English language without private tuition was better than those who had taken private tuition. The mean scores of the two groups are represented in Figure 2.7.1.

Table 2.7.1: Difference in Mean Scores in English between the Students joined Private Tuition and those without Private Tuition (North Goa District)

Group	Mean	SD	t- ratio	Level of Significance

Private Tuition	20.34	5.37	3.17	0.01
No Pvt. Tuition	21.64	6.73		

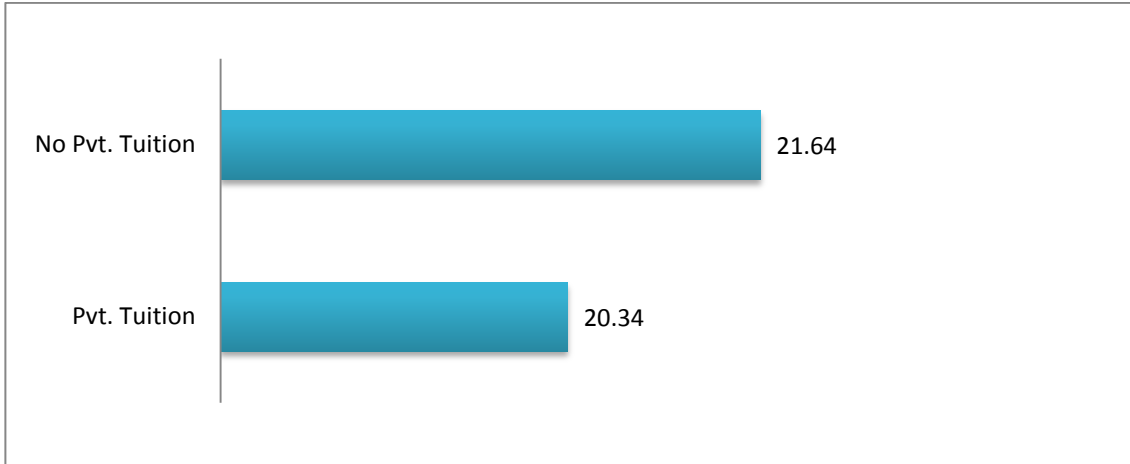


Fig. 2.7.1: Mean Scores in English of the Students taking and not taking Private Tuition (North Goa District)

2.7.2 South Goa District

In the South Goa district sample, no significant difference was found between the mean scores of the students who used to take private tuition and those who did not (Table 2.7.2). It indicated that the students of South Goa district who joined private tuition classes and those without joining such classes scored equally in English language. Figure 2.7.2 represents the mean scores of the two groups.

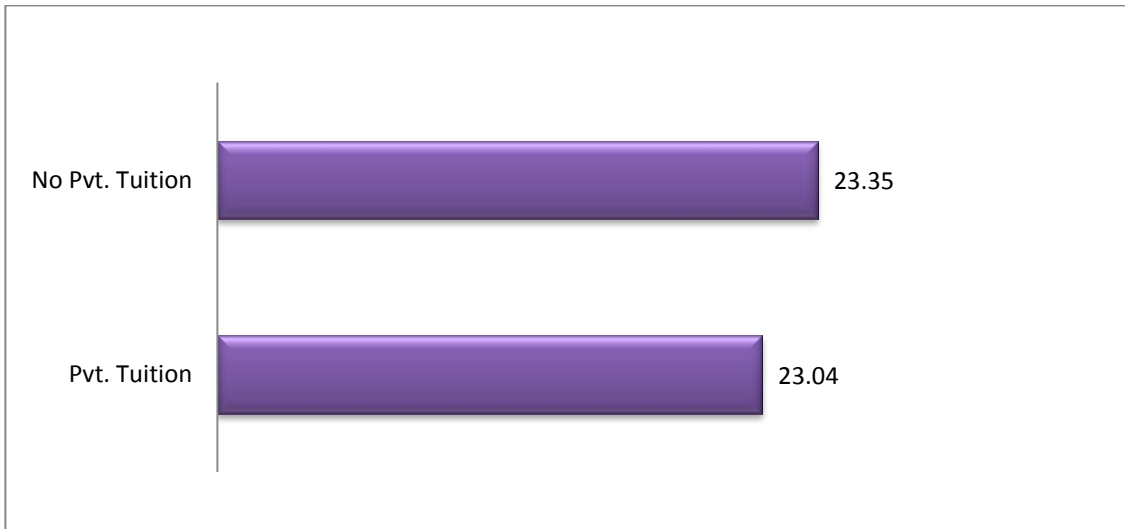


Fig. 2.7.2: Mean Scores in English of the Students taking and not taking Private Tuition (South Goa District)

Table 2.7.2: Difference in Mean Scores in English between the Students joined Private Tuition and those without Private Tuition (South Goa District)

Group	Mean	SD	t- ratio	Level of Significance
Private Tuition	23.04	7.08	0.63	N.S.
No Pvt. Tuition	23.35	7.73		

N.S.- Not significant

2.7.3 Goa State

The students of Goa State who were attending private tuition and those not attending the same did not differ significantly in their performance in English (Table 2.7.3). Though the mean score of the students not attended private tuition was higher than those who used to attend private tuition, the difference was statistically not significant. Figure 2.7.3 represents the Mean scores of the two groups.

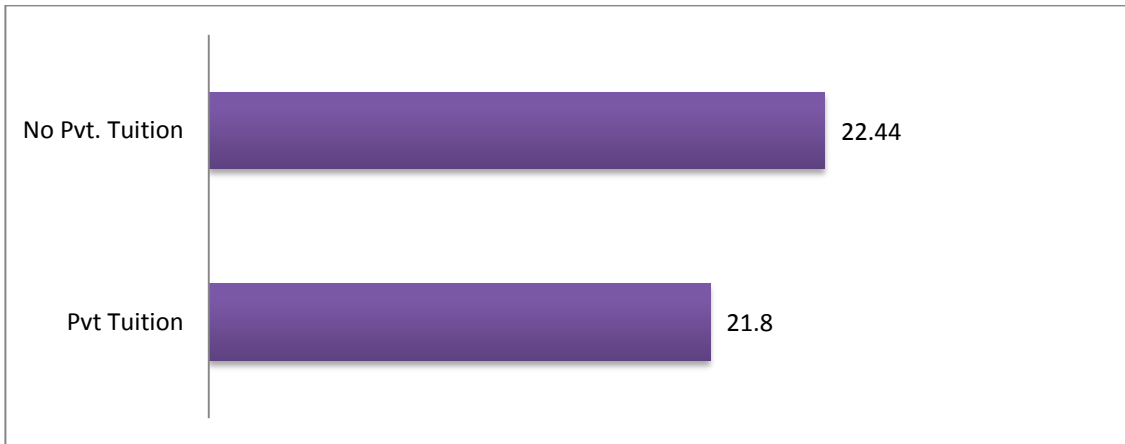


Fig. 2.7.3: Mean Scores in English of the Students taking and not taking Private Tuition (Goa State)

The findings presented above showed that in North Goa district the students not attending private tuition scored significantly higher than the students attending private tuition. But in the case of South Goa District, no such difference was observed. Also when students of the entire State was considered no difference was found between the performances of the two groups. The findings indicated that students taking private tuition do not perform better than the students who do not attend private tuition.

Table 2.7.3: Difference in Mean Scores in English between the Students joined Private Tuition and those without Private Tuition (Goa State)

Group	Mean	SD	t- ratio	Level of Significance
Private Tuition	21.82	6.57	1.87	N.S.
No Pvt. Tuition	22.44	7.27		

N.S.- Not significant

2.8 Achievement in English in Relation Physical Health Status of Students

2.8.1 North Goa District

Table 2.8.1 shows no significant difference in achievement in English between the students who were physically challenged and those who were not so. In other words, the normal students and the physically challenged students of North Goa district exhibited equal performance in English. The data are represented in Figure 2.8.1

Table 2.8.1: Difference in Mean Scores in English between the physically challenged and Normal Children of North Goa District

Group	Mean	SD	t- ratio	Level of Significance
Physically challenged	20.27	6.35	0.80	N.S.
Not Physically challenged	21.40	6.53		

N.S.- Not significant

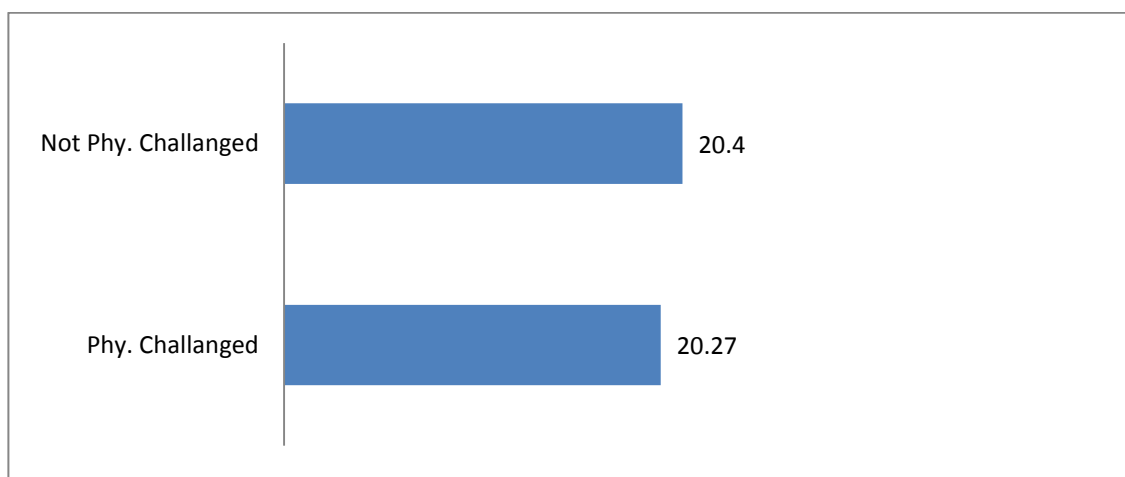


Fig. 2.8.1: Mean Scores in English of the Physically Challenged and Normal Students of North Goa District

2.8.2 South Goa District

Table 2.8.2: Difference in Mean Scores in English between the Physically challenged and Normal Children of South Goa District

Group	Mean	SD	t- ratio	Level of Significance
Physically challenged	19.18	4.17	5.62	0.01
Not Physically challenged	23.40	7.62		

NS. - Not significant

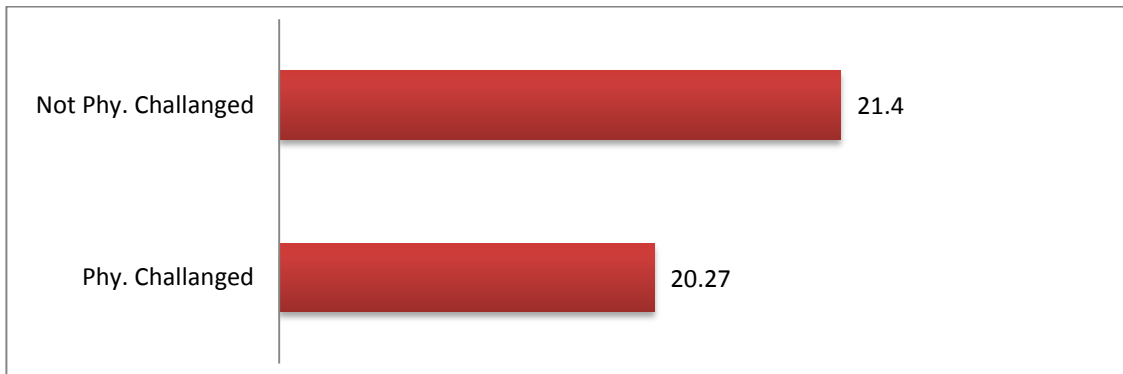


Fig. 2.8.2: Mean Scores in English of the Physically Challenged and Normal Students of South Goa District

It was found that the students of South Goa district who were physically challenged obtained significantly lower mean score in English compared to the normal children (Table 2.8.2). It means the normal students scored higher in English language than the physically challenged ones. Figure 2.8.2 represents the mean scores of both the groups of students.

2.8.3 Goa State

Table 2.8.3 shows the significance of difference in Mean score in English of the physically challenged and normal students of State of Goa. The mean score of the physically challenged students was significantly lower than the normal students. Figure 2.8.3 represents the comparative mean score of both groups of students.

Table 2.8.3: Difference in Mean Scores in English between the Physically challenged and Normal Children of Goa State

Group	Mean	SD	t- ratio	Level of Significance
Physically challenged	19.61	5.11	2.76	0.01
Not Physically challenged	22.37	7.15		

N.S. - Not significant

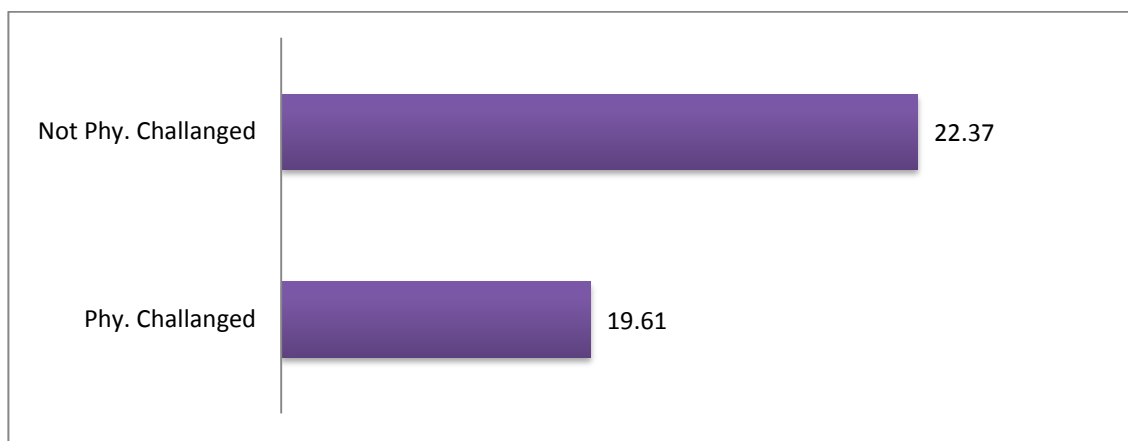


Fig. 2.8.3 Mean Scores in English of the Physically Challenged and Normal Students of Goa State

The findings presented above shows that the normal students exhibited higher performance in English in comparison to the physically challenged students. In other words, the findings indicated that physically challenged students lag behind compared to the normal students as far as their performance in English language is concerned.

2.9 Conclusions

Based on the findings presented above, the following conclusions were drawn.

1. The average scores in English of the students of Class-VII of North Goa, South Goa and Goa State were 22.4, 23.3 and 22.3 respectively.
2. The students studying in schools located in South Goa district perform better in English language compared to their counterparts of North Goa district.
3. Boys and girls do not differ significantly in academic attainment in English language.
4. SC students of Class VII scored significantly lower than the ST, OBC and general castes/categories students in English language.
5. Language background of students affects their performance in English. Students using English language at home score higher in English at school compared to students speaking other languages at home. And students coming from Urdu language background perform better in English than the students speaking at home in Hindi.
6. Students studying in schools located in urban areas perform significantly higher in English language than the students studying rural Schools.
7. Students coming from BPL families score significantly lower in English than their counterparts from ABL families.
8. Students who attend private tuition classes and those who do not do so perform equally in English language.
9. The physically challenged students score significantly lower than the physically normal students in English language.

CHAPTER III

ACHIEVEMENT OF STUDENTS IN MATHEMATICS

3.0 Introduction

The achievement test in Mathematics used in this case consisted of 50 test items; all are of multiple choice types having four options in each. The test items were designed to test a range of relevant cognitive processes such as knowledge, understanding and application in Mathematics. This Chapter presents the findings relating to the overall performance (mean scores) of the students in Mathematics of both the districts of the State, academic attainment of students in Mathematics in relation to gender, locale, language background, financial position of family, physical health status and private tuition. The findings relating to each of the variables are presented for each district separately and for the State of Goa as a whole. Conclusions drawn based on the findings are presented at the end of the chapter.

3.1 Performance of Students in Mathematics

3.1.1 North Goa District

The Mean score in Mathematics of the students of North Goa district was only 17.73. Since there were 50 test items in the test the maximum possible score was 50. An

average score of 17.73 indicated that the students of North Goa district as one unit answered 35 percent of the items in Mathematics correctly.

3.1.2 South Goa District

The average score of the students of South Goa district was 18.83 only. Since there were 50 items in the test administered to the students each carrying a weight-age of 1 point, the observed performance indicated that the students of South Goa district answered 38 percent of the items in the test correctly.

3.1.3 Goa State

It was found that the Mean score of the students of the State of Goa in Mathematics was 18.27. It revealed that considering the students of the State as one unit, they scored 36.5 percent in the achievement test in Mathematics.

3.1.4 Difference between North Goa and South Goa Districts, North Goa and Goa State and South Goa and Goa State

Table 3.1.1 shows that the Mean score of the students of South Goa District was significantly higher than their counterparts of north Goa district. It indicated that the students of South Goa district were better than the Students of north Goa district in Mathematics. Also the performance of the students of North Goa district was significantly lower compared to the students of the State (Table 3.1.2). The average performance of the students of South Goa was not only higher than that of the North Goa district but also higher than the Average score of the students of the entire State (Table 3.1.3). The Mean scores of the students of North Goa district, South Goa district and Goa state are represented Figure 3.1.1.

Table 3.1.1: Difference in Mean Scores in Mathematics between the Students of North Goa and South Goa Districts

District	Mean	SD	t- ratio	Level of Significance
North Goa	17.73	5.86	4.33	0.01
South Goa	18.83	6.28		

Table 3.1.2: Difference in Mean Scores in Mathematics between the Students of North Goa District and Goa state

Group	Mean	SD	t- ratio	Level of Significance
North Goa	17.73	5.86	2.47	0.01
Goa State	18.27	6.09		

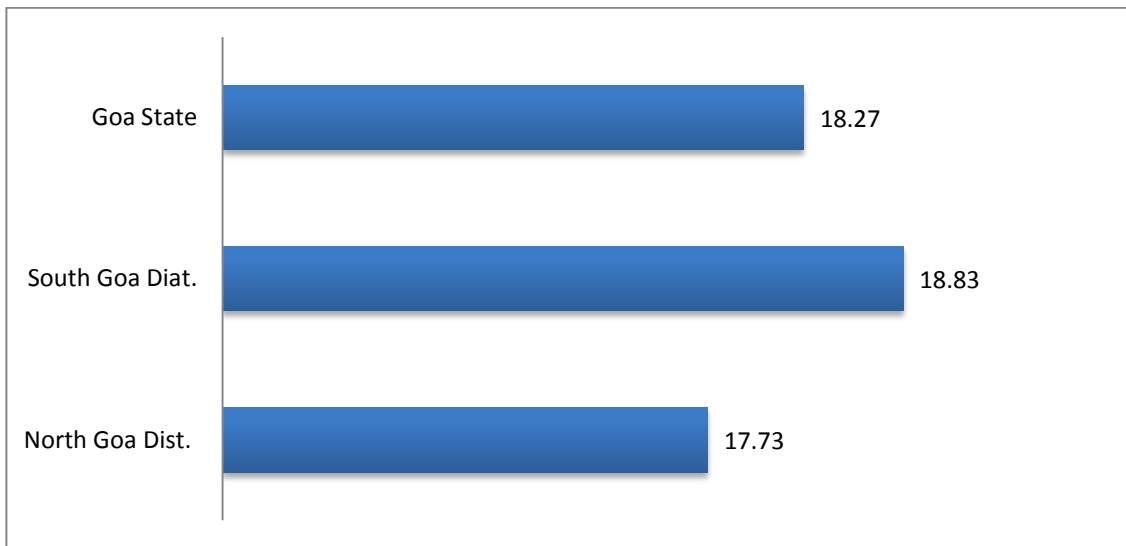


Fig. 3.1.1: Mean Scores in Mathematics of Students of North Goa District, South Goa District and Goa State

Table 3.1.3: Difference in Mean Scores in Mathematics between the Students of South Goa District and Goa State

Group	Mean	SD	t- ratio	Level of Significance
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South Goa	18.83	6.28	2.35	0.05
Goa State	18.27	6.09		

3.2 Performance in Mathematics in relation to Gender

3.2.1 North Goa District

The mean scores of boys and girls in Mathematics were 17.92 and 17.57 respectively. Table 3.2.1 shows that there existed no significant difference in Mean scores in Mathematics between boys and girls of North Goa district. In other words, performance of boys and girls in Mathematics were equal.

Table 3.2.1: Difference in Mean Scores in Mathematics between the Boys and Girls of North Goa District

Gender	Mean	SD	t- ratio	Level of Significance
Boys	17.92	6.08	1.03	Not Significant
Girls	17.57	5.66		

3.2.2 South Goa District

Though the mean score of boys (19.18) was higher than Mean score of the girls (18.47), the difference was statically not significant (Table 3.2.2). It indicated that both boys and girls of South Goa district exhibited equal performance in Mathematics.

Table 3.2.2: Difference in Mean Scores in Mathematics between the Boys and Girls of South Goa District

Gender	Mean	SD	t- ratio	Level of Significance
Boys	19.18	6.59	1.63	Not Significant
Girls	18.47	5.93		

3.2.3 Goa State

Table 3.2.3 shows that the Mean score in Mathematics of the male students of Class-VII of the State was 18.51 and those of the girls' was 18.00. The difference between the two Mean values was not found statistically significant; indicating the fact that both boys and girls are equal as far as their performance in Mathematics is concerned.

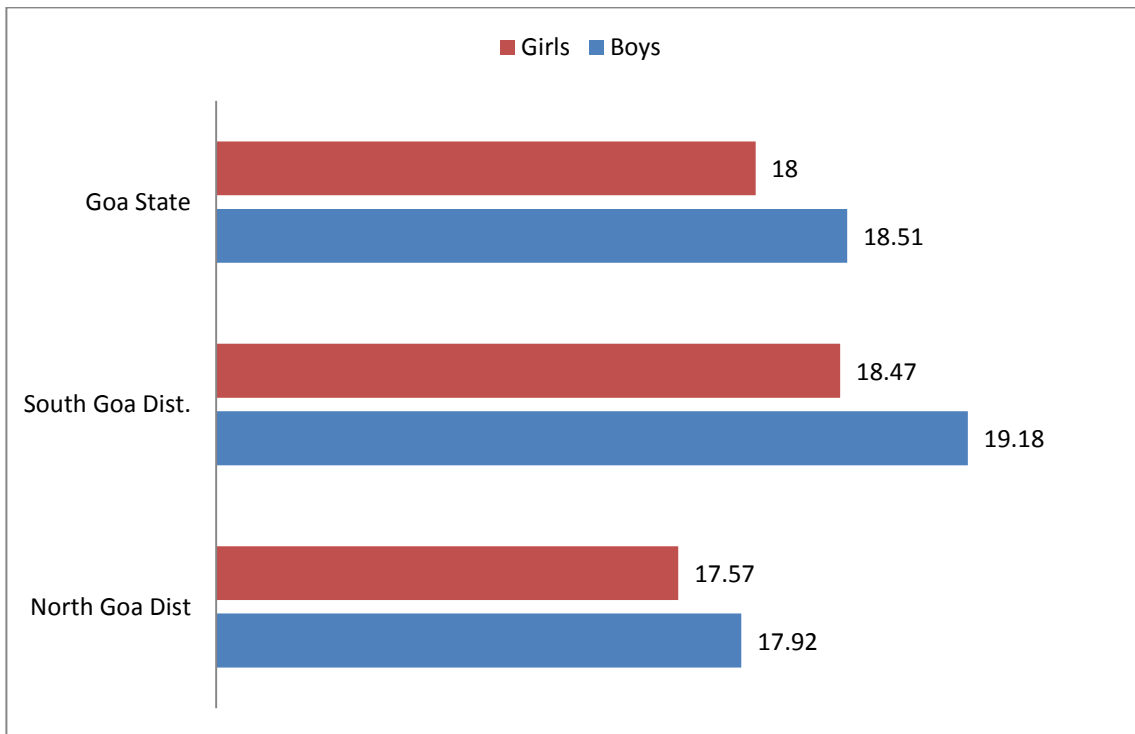


Fig. 3.2.1: Mean Scores of Boys and Girls in Mathematics of the Students of North Goa District, South Goa District and Goa State

Table 3.2.3: Difference in Mean Scores in Mathematics between the Boys and Girls of Goa State

Gender	Mean	SD	t- ratio	Level of Significance
Boys	18.51	6.52	1.92	Not Significant
Girls	18.00	5.98		

The above findings show that boys and girls of the North Goa district, South Goa district and the State of Goa exhibited equal performance in Mathematics. It revealed that gender of a student does not make any difference as far as his/her performance in Mathematics is concerned. Figure 3.2.1 shows the comparative Mean scores of boys and girls of all the three groups.

3.3 Performance in Mathematics in relation to Category/Caste

3.3.1 North Goa District

Table 3.3.1: ANOVA Results: Achievement in Mathematics in relation to Categories/Castes (North Goa District).

Source of Variation	SS	df	MS	F- ratio
Between Groups	202.17	3	67.39	1.98 (N.S.)
Between Groups	40225.3	1174	34.26	

N.S. – Not significant

The ANOVA results in Table 3.3.1 show that there existed no significant difference in Mean scores in Mathematics between the students of North Goa district belonging to different castes/categories. Though the Mean score of the SC students was lower than those of the other categories of students, the same was not significant statistically. It shows that the students of North Goa district belonging to the four categories exhibited equal performance in Mathematics. The mean scores of these groups are graphically represented in Figure 3.3.1.

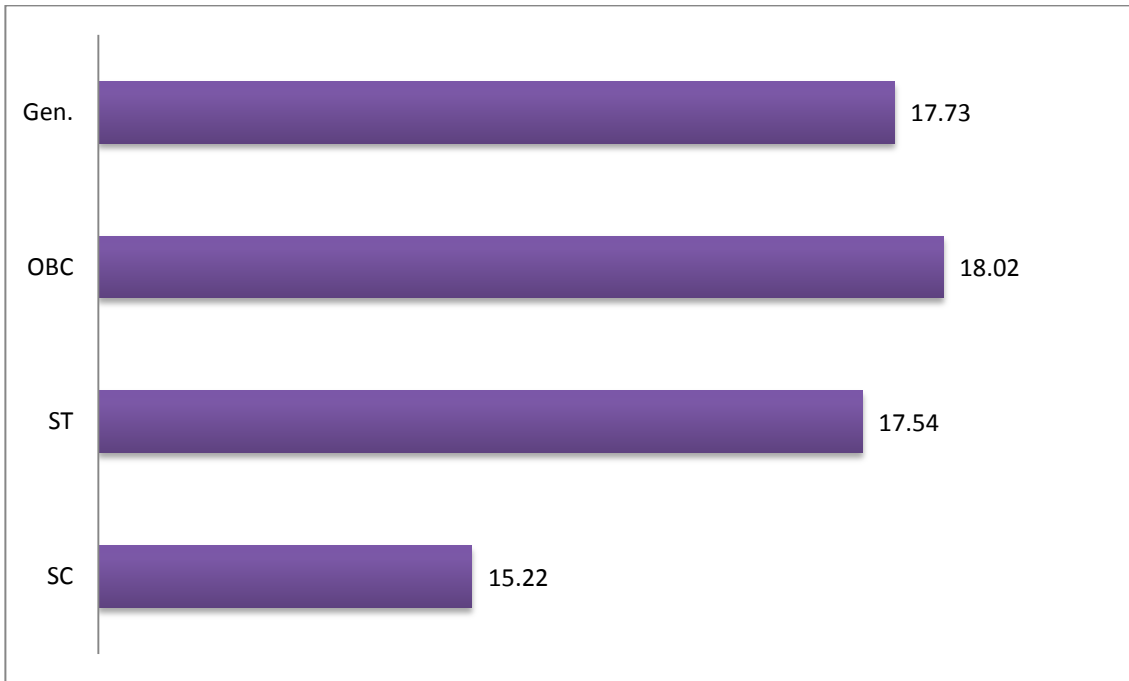


Fig.3.3.1: Mean Scores in Mathematics of Students of Different Categories/Castes (North Goa District)

3.3.2 South Goa District

The students of South Goa district belonging to different castes/categories differed significantly in their performance in Mathematics (Table 3.3.2). Though the mean score of the SC students was lower than all the other three categories of students, none of the difference was found statistically significant (Table 3.3.3). It was observed the mean score of the ST students was significantly higher than the general category students. In fact, the average performance of the ST students was higher than the other two categories of students also though the differences were not significant. No significant difference in mean scores was observed between ST and OBC students, and OBC and General category students. Comparative mean scores in Mathematics of the four categories of students of South Goa district are represented in Figure 3.3.2.

Table 3.3.2: ANOVA Results: Achievement in Mathematics in relation to Categories/
Castes (South Goa District)

Source of Variation	SS	df	MS	F- ratio
Between Groups	363.4	3	121.13	3.08 *
Between Groups	43716.5	1111	39.35	

* Significant at 0.05 level

Table 3.3.3: t-test Results: Difference in Mean Scores in Mathematics between
different Groups (Pairs) (South Goa District)

Pair of Comparison	Difference Between Means	t – ratio
SC – ST	$18.0 - 19.66 = 1.66$	1.82 (N.S)
SC – OBC	$18.0 - 18.91 = 0.91$	0.54 (N.S)
SC – Others/General	$18.0 - 18.37 = 0.37$	0.19 (N.S)
ST – OBC	$19.66 - 18.91 = 0.75$	0.39 (N.S)
ST - Others/General	$19.66 - 18.37 = 1.29$	3.00 **
OBC - Others/General	$18.91 - 18.37 = 0.54$	0.29 (N.S)

**significant at 0.01 level

N.S. – Not significant

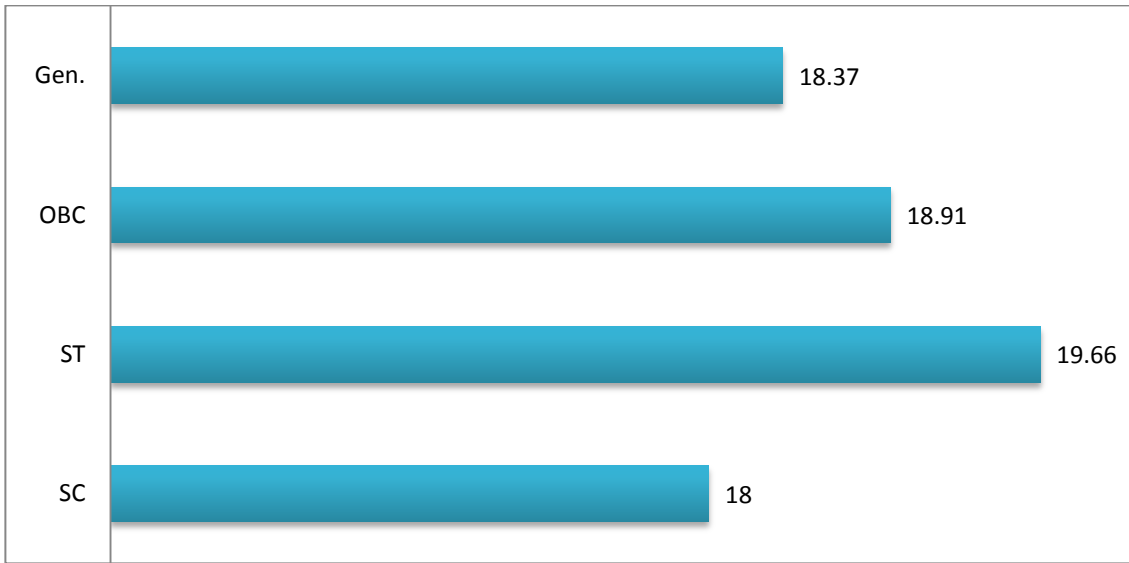


Fig. 3.3.2: Mean Scores in Mathematics of Students of Different Categories/Castes (South Goa District)

3.3.3 Goa State

Table 3.3.4 shows that there existed significant difference in performance in Mathematics among the students of the state of Goa belonging to different categories/castes. Table 3.3.5 shows that the mean score of the SC students was significantly lower than the ST, OBC and general category students. It was found that the Mean score of the ST students was significantly higher than the general category students. No significant difference was found in mean scores between ST and OBC students, and OBC and general category students in mean score in Mathematics. Figure 3.3.3 represents the Mean scores of these four groups.

Table 3.3.4: ANOVA Results: Achievement in Mathematics in relation to Categories/Castes (Goa State)

Source of Variation	SS	Df	MS	F- ratio
Between Groups	439.1	3	146.38	3.97 **
Between Groups	84508.9	2289	36.92	

** Significant at 0.01 level

Table 3.3.5: t-test Results: Difference in Mean Scores between different Groups (Pairs) (Goa State)

Pair of Comparison	Difference Between Means	t - ratio
SC – ST	15.97 – 19.07 = 3.1	2.98 * *
SC – OBC	15.97 – 18.33 = 2.96	2.87 * *
SC – Others/General	15.97 – 18.03 = 2.06	2.04 *
ST – OBC	19.07 – 18.33 = 0.74	1.89(N.S)
ST - Others/General	19.07 – 18.03 = 1.04	3.15 **
OBC - Others/General	18.33 – 18.03 = 0.30	0.94 (N.S)

**significant at 0.01 level

*Significant at 0.05 level

N.S. – Not significant

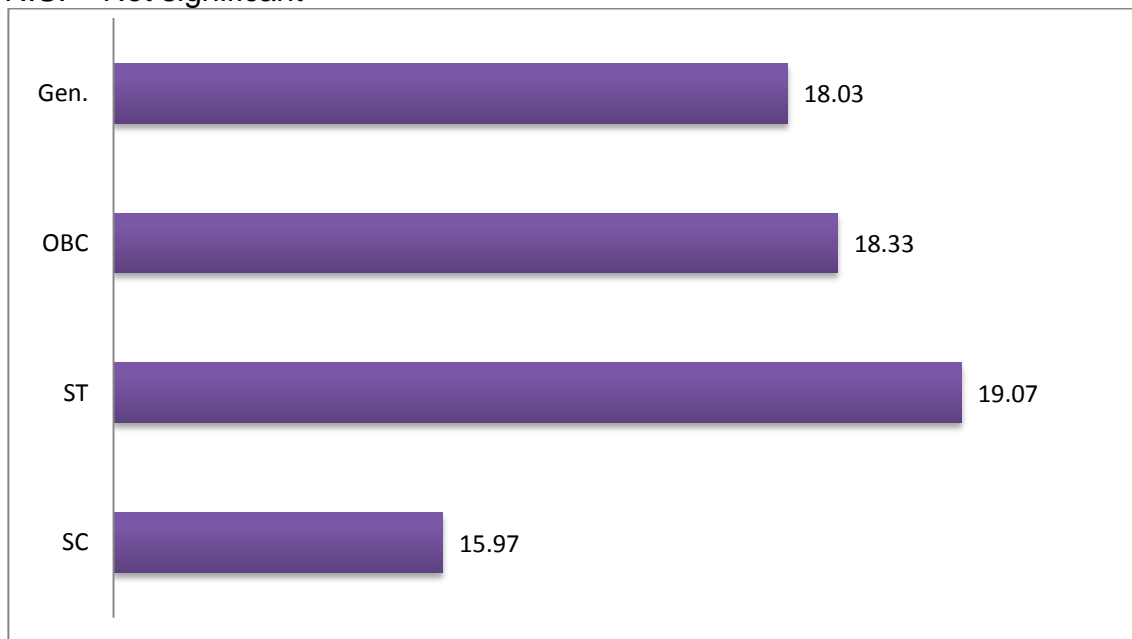


Fig. 3.3.3: Mean Scores in Mathematics of Students of Different Categories/Castes (Goa State)

The findings presented above indicate that caste of a student is a factor associated with the performance in Mathematics. SC students exhibit lower performance in

Mathematics than the students belonging to other castes/ categories. The findings also revealed that the ST students are better the OBC and general category students.

3.4 Performance in Mathematics in relation to Language Background (Language Spoken at Home)

3.4.1 North Goa District

Table 3.4.1 indicates that there existed significant difference in performance in Mathematics between the students of North Goa district schools coming from different language backgrounds. The mean scores of all the groups are represented in Figure 3.4.1. Differences between different pairs in Mean Score are given in Table 3.4.2. It was observed (Table 3.4.2) that the Mean score in Mathematics of the students speaking in Urdu at home was higher than the students speaking other languages at home. But only one of the differences was significant. The mean score of the Urdu speaking students was significantly higher than the Hindi speaking students. It was found that the Mean score in Mathematics of the students speaking in English at home was higher than the students speaking Hindi, Konkani, Marathi and Kannada at home though the differences were not found statistically significant.

Table 3.4.1: ANOVA Results: Achievement in Mathematics in relation to Language background (North Goa District)

Source of Variation	SS	df	MS	F- ratio
Between Groups	525.7	5	87.6	2.57 *
Between Groups	39882.2	1171	34.1	

* Significant at 0.05 level

Table 3.4.2: t-test Results: Difference in Mean Scores between different Groups
(Pairs) (North Goa District)

Pair of Comparison	Difference Between Means	t – ratio
English – Konkani	$20.75 - 17.61 = 3.14$	1.08 (N.S)
English – Marathi	$20.75 - 19.19 = 1.56$	0.62 (N.S)
English – Hindi	$20.75 - 16.60 = 4.15$	1.92 (N.S)
English – Kannada	$20.75 - 17.05 = 3.70$	1.15 (N.S)
English – Urdu	$20.75 - 21.60 = 0.85$	0.25 (N.S)
Urdu– Marathi	$21.60 - 19.19 = 2.41$	0.96 (N.S)
Urdu –Kannada	$21.60 - 17.05 = 4.55$	1.57 (N.S)
Urdu – Hindi	$21.60 - 16.60 = 5.00$	2.02 *
Urdu – Konkani	$21.60 - 17.61 = 3.99$	1.54 (N.S)

*Significant at 0.05 level

N.S.- Not significant at 0.05 level

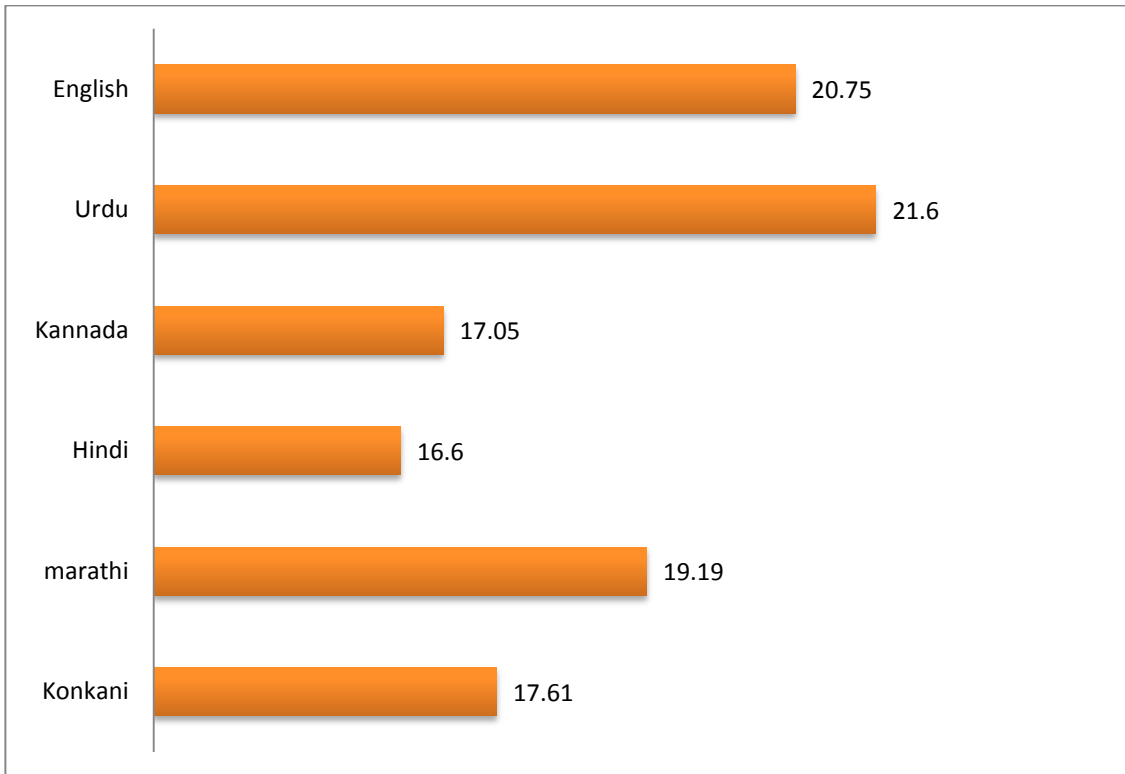


Fig. 3.4.1: Mean Scores in Mathematics of the Students Speaking Different Languages at Home (North Goa District)

3.4.2 South Goa District

ANOVA results in Table 3.4.3 shows significant difference in achievement in Mathematics among the students of South Goa district speaking different languages at home. The t-test results in Table 3.4.4 indicated that the students using English language at home scored significantly higher in Mathematics compared to the students speaking other languages at home such as Hindi, Konkani, Marathi, Kannada and Urdu. Also it was found that the students who used to speak in Konkani language at home scored significantly higher in Mathematics compared to the students speaking in Hindi, Marathi and Kannada at home. The comparative Mean scores in Mathematics of the students of South Goa district belonging to various language backgrounds are presented in Figure 3.4.2.

Table 3.4.3: ANOVA Results: Achievement in Mathematics in relation to Language background (South Goa District)

Source of Variation	SS	df	MS	F-ratio
Between Groups	1912.3	5	318.7	8.36 **
Within Groups	42218.8	1111	38.1	

** Significant at 0.01 level

Table 3.4.4: t-test Results: Difference in Mean Scores between different Groups (Pairs) (South Goa District)

Pair of Comparison	Difference Between Means	t – ratio
English – Konkani	$22.20 - 19.43 = 2.77$	2.40 *
English – Marathi	$22.20 - 17.36 = 4.84$	3.55 **
English – Hindi	$22.20 - 16.57 = 5.63$	4.46 **
English – Kannada	$22.20 - 16.22 = 5.98$	4.33 **
English – Urdu	$22.20 - 17.20 = 5.00$	2.42 *
Konkani –Hindi	$19.43 - 16.57 = 2.86$	4.68 **
Konkani –Kannada	$19.43 - 16.22 = 3.21$	3.86 **
Konkani –Urdu	$19.43 - 17.20 = 2.23$	1.13 (N.S.)
Konkani –Marathi	$19.43 - 17.36 = 2.07$	2.55 *

*significant at 0.05 level

**significant at 0.01 level

N.S. – Not significant

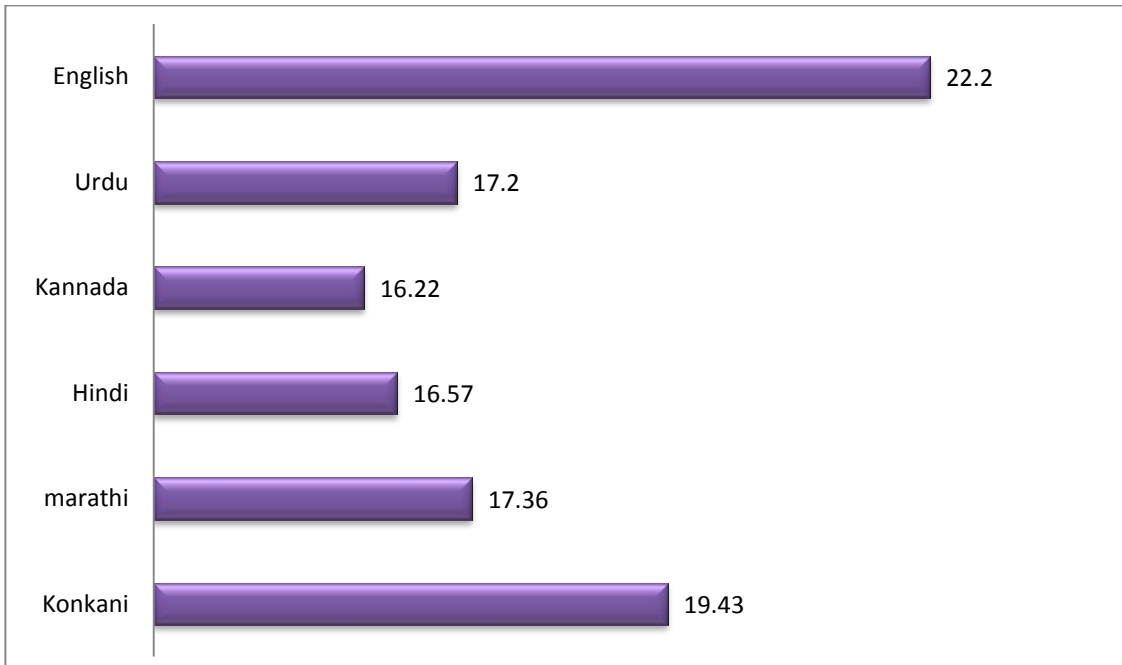


Fig. 3.4.2: Mean Scores in Mathematics of the Students Speaking Different Languages at Home (South Goa District)

3.4.3 Goa State

Table 3.4.5: ANOVA Results: Achievement in Mathematics in relation to Language background (South Goa District)

Source of Variation	SS	df	MS	F-ratio
Between Groups	1411.1	5	235.2	6.43 **
Within Groups	83607.3	2289	36.6	

** Significant at 0.01 level

There existed significant difference in Mean scores between the students of the state of Goa speaking different languages at home (Table 3.4.5). From the t-test results in Table 3.4.6 it is clear that the Mean score of students speaking at home in English was significantly higher than the students speaking in other languages at home. No

significant difference was found between mean score of any other pairs of comparison (Table 3.4.6). Comparative Mean scores in English of the students of Goa State speaking in different languages at home are graphically represented in Fig.3.4.3.

Table 3.4.6: t-test Results: Difference in Mean Scores between different Groups (Pairs) (Goa State)

Pair of Comparison	Difference Between Means	t - ratio
English – Konkani	22.03 – 18.46 = 3.57	3.40 **
English – Marathi	22.03 – 18.53 = 3.50	3.09 **
English – Hindi	22.03 – 16.58 = 5.45	4.86 **
English – Kannada	22.03 – 16.42 = 5.61	4.52 **
English – Urdu	22.03 – 18.67 = 3.36	1.88 (N.S.)
Urdu–Hindi	18.67 – 16.58 = 2.09	1.39 (N.S.)
Urdu –Kannada	18.67 – 16.42 = 2.25	1.42 (N.S.)
Urdu –Konkani	18.67 – 18.46 = 0.21	0.13 (N.S.)
Urdu –Marathi	18.67 – 18.53 = 0.14	0.09 (N.S.)

**significant at 0.01 level

N.S. – Not significant

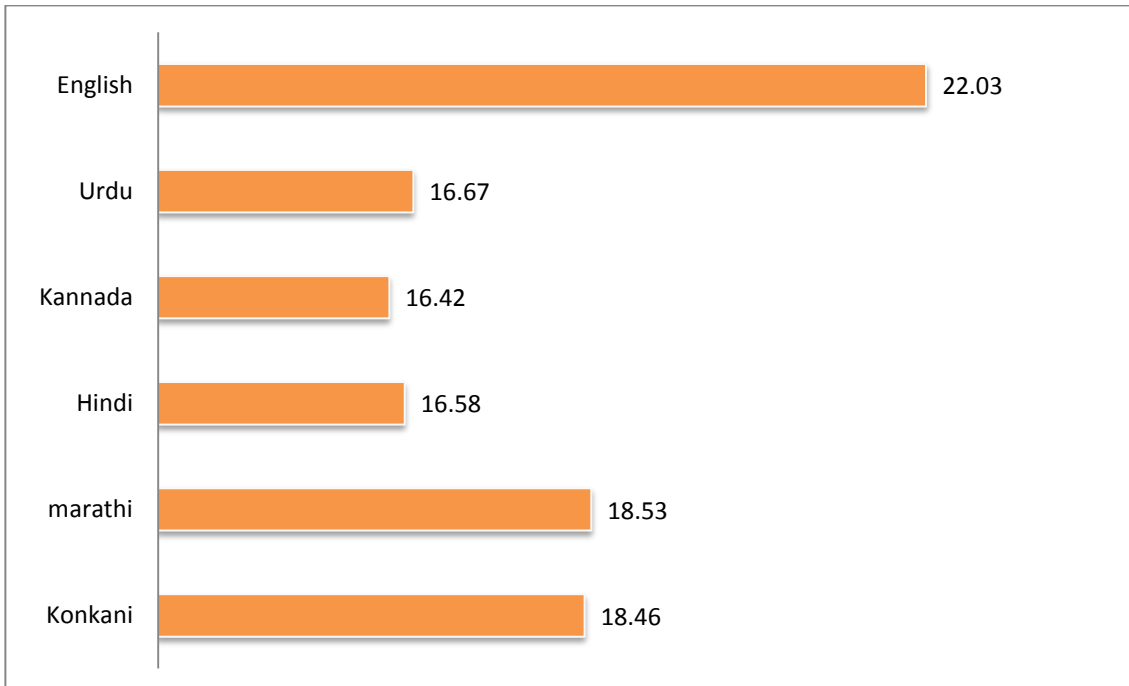


Fig. 3.4.3: Mean Scores in Mathematics of the Students Speaking Different Languages at Home (Goa State)

The findings presented above indicate that language background of the students plays an important role in their academic performance. The school students using English language at home performed better in Mathematics than the students speaking in other languages (Indian languages).

3.5 Achievement in Mathematics in Relation to Location

3.5.1 North Goa District

No significant difference was found in Mean score in Mathematics between the rural and urban school students of North Goa district (Table 3.5.1). It shows that the students of urban and rural schools exhibited equal performance in Mathematics. The comparative Mean score of rural and urban schools students is shown in Figure 3.5.1.

Table 3.5.1: Difference in Mean Scores in Mathematics between the Students of Rural and Urban Schools of North Goa District

Locale	Mean	SD	t - ratio	Level of significance
Rural	17.67	5.88	0.71	Not Significant
Urban	17.96	5.79		

3.5.2 South Goa District

Table 3.5.2: Difference in Mean Scores in Mathematics between the Students of Rural and Urban Schools of South Goa District

Locale	Mean	SD	t - ratio	Level of significance
Rural	18.90	6.40	0.62	Not Significant
Urban	18.65	5.97		

In the case of South Goa district also no significant difference was observed between the Mean scores of the rural and urban students. It showed that both rural and urban school students exhibited equal performance in Mathematics. Mean scores of the two groups are given in Figure 3.5.1.

3.5.3 Goa State

Table 3.5.3 revealed that the average scores in Mathematics of the rural and urban school students of the State of Goa did not differ significantly. It indicated that both the rural and urban had equal level of performance in Mathematics.

Table 3.5.3: Difference in Mean Scores in Mathematics between the Students of Rural and Urban Schools of Goa

Locale	Mean	SD	t - ratio	Level of significance
Rural	18.24	6.16	0.32	Not Significant
Urban	18.35	5.90		

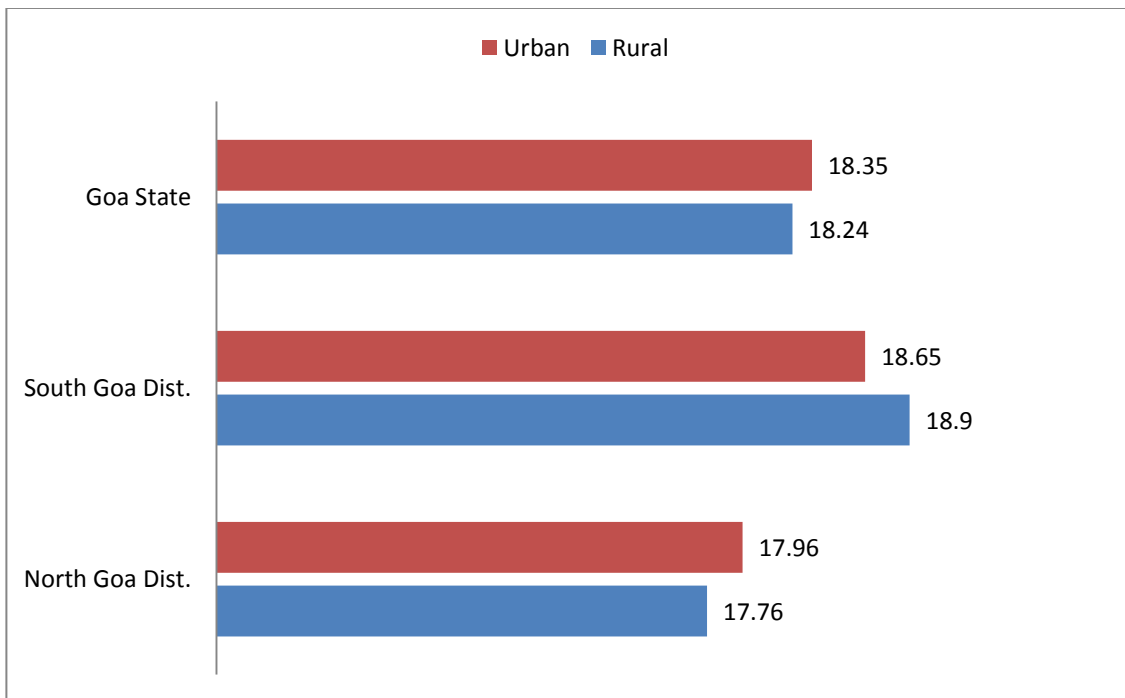


Fig.3.5.1: Comparative Mean Scores in Mathematics of Rural and Urban School Students of North Goa District, South Goa District and Goa State

The findings presented above show that the rural and urban school students of North Goa district, South Goa district and the Goa State exhibited equal performance in Mathematics. It means location of the school is not a factor affecting the performance of the students of Class VII. The students studying in rural and urban schools are equal as far as their performance in Mathematics is concerned.

3.6 Achievement in Mathematics in Relation to Poverty Line Status of the Family

3.6.1 North Goa District

The mean score in Mathematics of the students of North Goa district belonging to BPL families (Mean = 17.47) was found significantly lower than the mean score (18.60) of students from APL families (Table 3.6.1). Comparative mean scores of the two groups are represented in Figure 3.6.1.

Table 3.6.1: Difference in Mean Scores in Mathematics between the Students belonging to BPL families and APL families (North Goa District)

Poverty Line	Mean	SD	t - ratio	Level of significance
BPL	17.47	5.44	2.55	0.05
APL	18.60	6.19		

3.6.2 South Goa District

Though the mean score of the children coming from BPL families was lower than their ABL counterparts, no significant difference was found between the Mean scores of the two groups (Table 3.6.2). It indicated that the children from BPL and APL families of South Goa district did not vary significantly in their performance in Mathematics. Comparative mean scores of the two groups are represented in Figure 3.6.1.

Table 3.6.2: Difference in Mean Scores in Mathematics between the Students belonging to BPL families and APL families (South Goa District)

Poverty Line	Mean	SD	t - ratio	Level of significance
BPL	19.19	6.67	1.28	Not Significant
APL	19.89	7.02		

3.6.3 Goa State

The mean score of the children from BPL families of the State was significantly lower than the children from APL families (Table 3.6.3). It means the students coming from APL families were better than the children from APL families. Mean scores of the two groups are represented graphically in Figure 3.6.1.

Table 3.6.3: Difference in Mean Scores in Mathematics between the Students belonging to BPL families and APL families (Goa State)

Poverty Line	Mean	SD	t - ratio	Level of significance
BPL	18.12	6.00	2.89	0.01
APL	19.22	6.63		

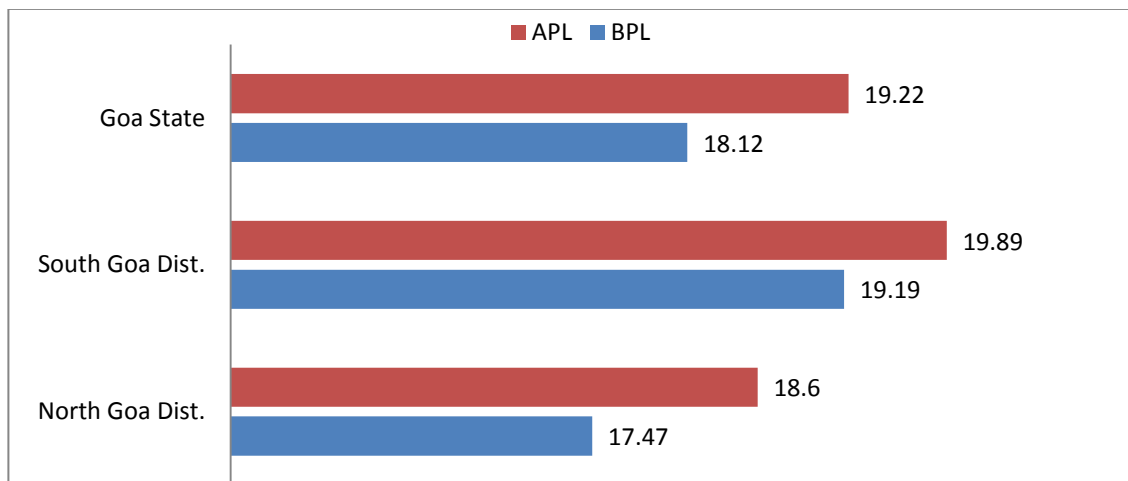


Fig.3.6.1: Comparative Mean Scores in Mathematics of students from BPL and APL families of North Goa District, South Goa District and Goa State

The findings presented above show that the children from BPL families of the North Goa district, south Goa district and the State as a whole exhibited lower performance than the children belonging to APL families. The findings indicated that the children

belonging to financially poor families scored less compared to the children from financially well to do families. In other words, the findings revealed that economic condition of the family influenced the academic performance of students in Mathematics.

3.7 Achievement in Mathematics in Relation to Private Tuition

3.7.1 North Goa District

It was found that the students of North Goa Schools who were taking private tuition scored significantly less in Mathematics than the students who had not joined private tuition classes (Table 3.7.1). It means achievement in Mathematics of the students without private tuition was better than those who used to attend private tuition. The mean scores of the two groups are represented in Figure 3.7.1.

Table 3.7.1: Difference in Mean Scores in Mathematics between the Students joined Private Tuition and those without Private Tuition (North Goa District)

Group	Mean	SD	t - ratio	Level of significance
Private Tuition	16.74	5.32	3.10	0.01
No Private Tuition	17.98	5.96		

3.7.2 South Goa District

Table 3.7.2 shows significant difference between the average scores in Mathematics of the students of South Goa district who used to attend private tuition classes and those who did not. It indicated that students of South Goa district without private

tuition were better than those who attend private tuition. Comparative mean scores of the two groups are represented in Figure 3.7.1.

Table 3.7.2: Difference in Mean Scores in Mathematics between the Students joined Private Tuition and those without Private Tuition (South Goa District)

Group	Mean	SD	t - ratio	Level of significance
Private Tuition	17.67	5.45	4.00	0.01
No Private Tuition	19.23	6.50		

3.7.3 Goa State

Significant difference was found in mean scores in Mathematics of the students who attended private tuition and those who did not (Table 3.7.3). The mean score of the students of the State who did not attend private tuition scored higher than those who attended private tuition classes. The mean scores of both the groups are represented graphically in Figure 3.7.1.

Table 3.7.3: Difference in Mean Scores in Mathematics between the Students joined Private Tuition and those without Private Tuition (Goa State)

Group	Mean	SD	t - ratio	Level of significance
Private Tuition	17.25	5.40	5.00	0.01
No Private Tuition	18.60	6.25		

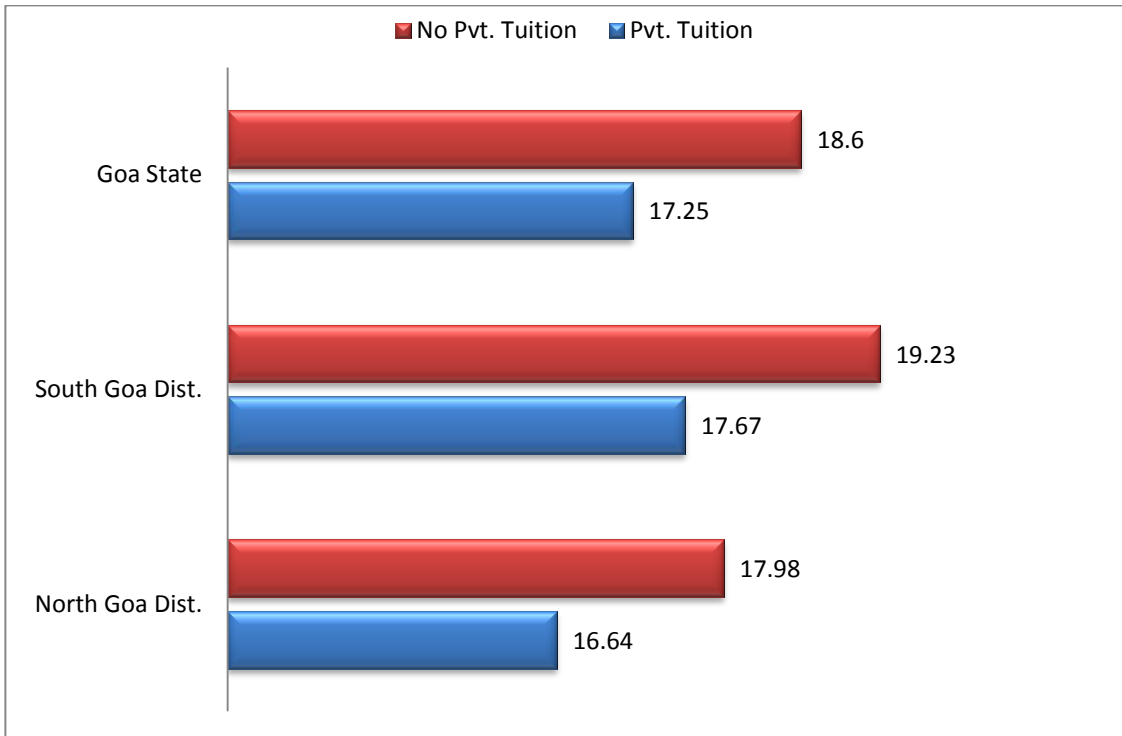


Fig.3.7.1: Comparative Mean Scores in Mathematics of Students attended Private tuition and without Privat. Tuition of North Goa District, South Goa District and Goa State

The above findings indicated that taking of private tuition by students did not help them to do better in Mathematics. It is the students who do not attend private tuition perform better than those who attend the same.

3.8 Achievement in Mathematics in Relation Physical Health Status of Students

3.8.1 North Goa District

Table 3.8.1 shows no significant difference in achievement in Mathematics between the students who were physically challenged and those who were not so. In other

words, the normal students and the physically challenged students of North Goa district exhibited equal performance in Mathematics. The data are represented in Figure 3.8.1.

Table 3.8.1: Difference in Mean Scores in Mathematics between the Physically challenged and Normal Children of North Goa District

Groups	Mean	SD	t - ratio	Level of significance
Physically challenged	16.68	5.20	0.94	Not Significant
Not Physically challenged	17.75	5.87		

3.8.2 South Goa District

It was found that the mean score of the students who were physically challenged (17.23) was significantly lower than mean score of the students who were not so (18.90) (Table 3.8.2). It means the normal students of South Goa schools performed better than the physically challenged students in Mathematics. Mean scores of the groups are graphically shown in Figure 3.8.1.

Table 3.8.2: Difference in Mean Scores in Mathematics between the Physically challenged and Normal Children of South Goa District

Groups	Mean	SD	t - ratio	Level of significance
Physically challenged	17.23	3.77	2.55	0.05
Not Physically challenged	18.90	6.33		

3.8.3 Goa State

The mean score of the physically challenged students was 17.02 and that of the normal students was 18.30. The difference between the two mean scores was found significant at 0.05 level. The finding indicated that the physically challenged students of Class VII the State of Goa exhibited less performance than the normal students. Mean scores of both the groups are graphically shown in Figure 3.8.1.

Table 3.8.3: Difference in Mean Scores in Mathematics between the Physically challenged and Normal Children of Goa State

Groups	Mean	SD	t - ratio	Level of significance
Physically challenged	17.02	4.34	2.17	0.05
Not Physically challenged	18.30	6.13		

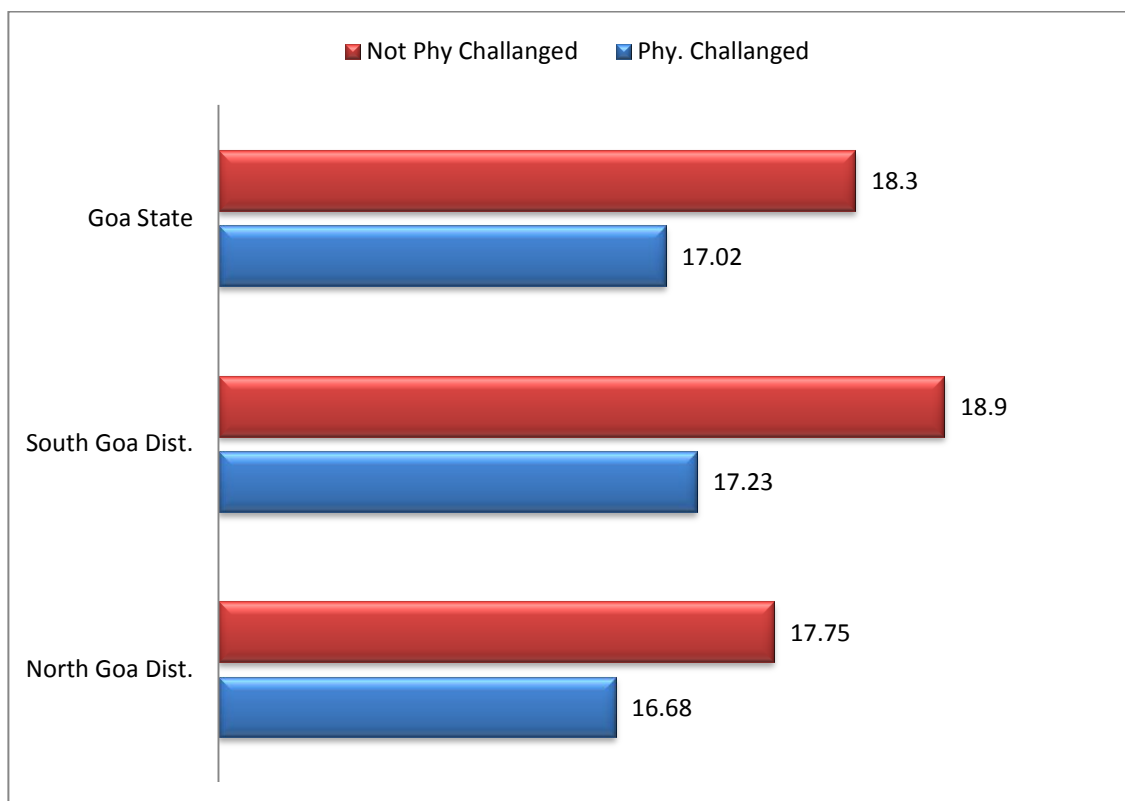


Fig. 3.8.1: Mean Scores of Physically Challenged and Normal students in Mathematics of North Goa Dist., South Goa Dist. and Goa State

The finding presented above indicated that the physical health status of the students affects their performance in Mathematics. The normal students perform better than the physically challenged students. The physically challenged students lag behind the normal students in Mathematic.

3.9 Conclusions

Based on the findings presented above, the following conclusions were drawn.

1. The students of Class-VII of the State scored 36.5 percent in the achievement test in Mathematics used in the present study.
2. In Mathematics, the students studying in schools located in South Goa district perform better compared to their counterparts of North Goa district.
3. Boys and girls do not differ significantly in academic attainment in Mathematics.
4. ST students of Class VII scored significantly higher in Mathematics than the general castes/categories students. But the SC students exhibit lower performance in Mathematics compared to ST, OBC and general castes/categories students.
5. Language background of students affects their performance in Mathematics. Students using English language at home score higher in Mathematics compared to students speaking other languages at home. Students coming from Urdu language background perform better in Mathematics than the students speaking in Hindi language at home. Konkani speaking students' performance is better than the students belonging to Hindi, Kannada and Marathi languages background.
6. Students studying in schools located in urban and rural areas do not differ significantly in their performance in Mathematics.

7. Students coming from BPL families score significantly lower in Mathematics than their counterparts from ABL families.
8. Students who attend private tuition classes exhibit lower performance in Mathematics than those who do not take private tuition.
9. The physically challenged students score significantly lower than the physically normal students in Mathematics.

CHAPTER IV

ACHIEVEMENT OF STUDENTS IN SCIENCE

4.0 Introduction

The achievement test in Science for Class-VII used in the present case consisted of 50 test items. The test items were designed to test a range of relevant cognitive processes such as knowing, understanding and applying. This Chapter presents the findings relating to the overall performance in Science of the students of both the districts of the State, academic attainment of students in Science in relation to gender, locale, language background, financial position of family, physical health status and private tuition. The findings relating to each of the variables are presented for each district separately and for the State of Goa as a whole. At the end, conclusions drawn based on the findings are presented.

4.1 Performance of Students in Science

4.1.1 North Goa District

The Mean score in Science of the students of Class-VII studying in schools located in North Goa district was only 21.09. Since there were 50 test items in the test the maximum possible score was 50. A mean score of 21.09 indicated that in Sciences achievement test the students of Class VII of North Goa district as one unit got about 42 percent of the items correct.

4.1.2 South Goa District

The Mean score of the students of South Goa district in Science was 22.55 only. Since there were 50 items in the test administered to the students each carrying a weight-age of 1 point, the observed average score of the students of South Goa district indicated that on an average they scored about 45 percent.

4.1.3 Goa State

The Mean score of the students of Class-VII of the State of Goa in Science was 21.80. It indicated that in Science test used in the present study, the students of Class-VII of the State answered correctly about 44 percent of the test items.

4.1.4 Difference between North Goa and South Goa Districts, North Goa and Goa State and South Goa and Goa State

It was found that the Mean score of the students of South Goa District was significantly higher than their counterparts of North Goa district (Table 4.1.1). It indicated that the students of South Goa district were better than the Students of north Goa district in Science. Also the average score of the students of North Goa district was significantly lower compared to the students of the State (Table 4.1.2). The average performance in Science of the students of South Goa was not only higher than those of the North Goa district but also higher than the Average score of the students of the State (Table 4.1.3). It revealed that the students of the South Goa district are better than their counterparts of North Goa district as well as the State's average.

The Mean scores in Science of the students of North Goa district, South Goa district and Goa state are represented Figure 4.1.1.

Table 4.1.1: Difference in Mean Scores in Science between the Students of North Goa and South Goa Districts

District	Mean	SD	t - ratio	Level of Significance
North Goa	21.09	6.67	5.05	0.01
South Goa	22.55	7.14		

Table 4.1.2: Difference in Mean Scores in Science between the Students of North Goa District and Goa State

Groups	Mean	SD	t - ratio	Level of Significance
North Goa District	21.09	6.67	2.93	0.01
Goa State	21.80	6.94		

Table 4.1.3: Difference in Mean Scores in Science between the Students of South Goa District and Goa State

Groups	Mean	SD	t - ratio	Level of Significance
South Goa District	22.55	7.14	2.88	0.01
Goa State	21.80	6.94		

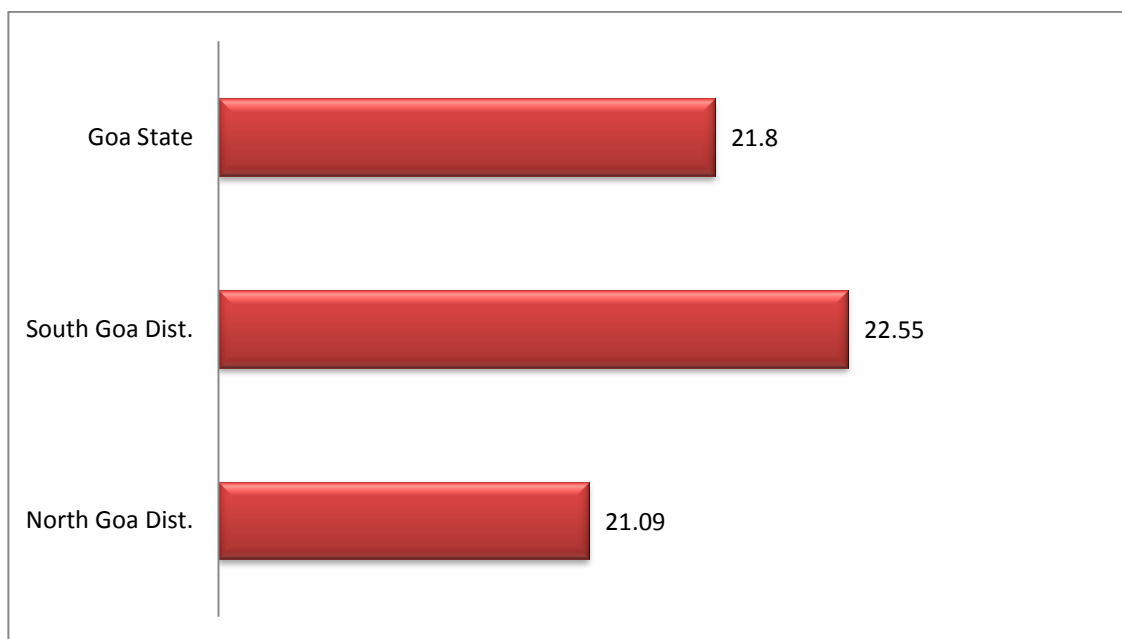


Fig. 4.1.1: Mean Scores in Science of Students of North Goa District, South Goa District and Goa State

4.2 Performance in Science in relation to Gender

4.2.1 North Goa District

The mean scores of boys and girls in Science were 20.84 and 21.30 respectively. Table 4.2.1 shows that there existed no significant difference in Mean scores in Science between boys and girls of North Goa district. In other words, performance of boys and girls in Science was equal.

Table 4.2.1: Difference in Mean Scores in Science between the Boys and Girls of North Goa District

Gender	Mean	SD	t- ratio	Level of Significance
Boys	20.84	6.62	1.18	Not Significant
Girls	21.30	6.70		

4.2.2 South Goa District

Though the mean score of boys (22.32) was higher than Mean score of the girls (22.79), the difference was statically not significant (Table 4.2.2). It indicated that both boys and girls of South Goa district exhibited equal performance in Science.

Table 4.2.2: Difference in Mean Scores in Science between the Boys and Girls of South Goa District

Gender	Mean	SD	t- ratio	Level of Significance
Boys	22.32	7.21	1.09	Not Significant
Girls	22.79	7.07		

4.2.3 Goa State

Mean score in Science of the male students of the State was 21.60 and that of the girls' was 21.99 (Table 4.2.3). The difference between the two Mean values was not found statistically significant; indicating the fact that both boys and girls are equal as far as their performance in Sciences is concerned.

Table 4.2.3: Difference in Mean Scores in Science between the Boys and Girls of Goa State

Gender	Mean	SD	t- ratio	Level of Significance
Boys	21.60	6.94	1.34	Not Significant
Girls	21.99	6.89		

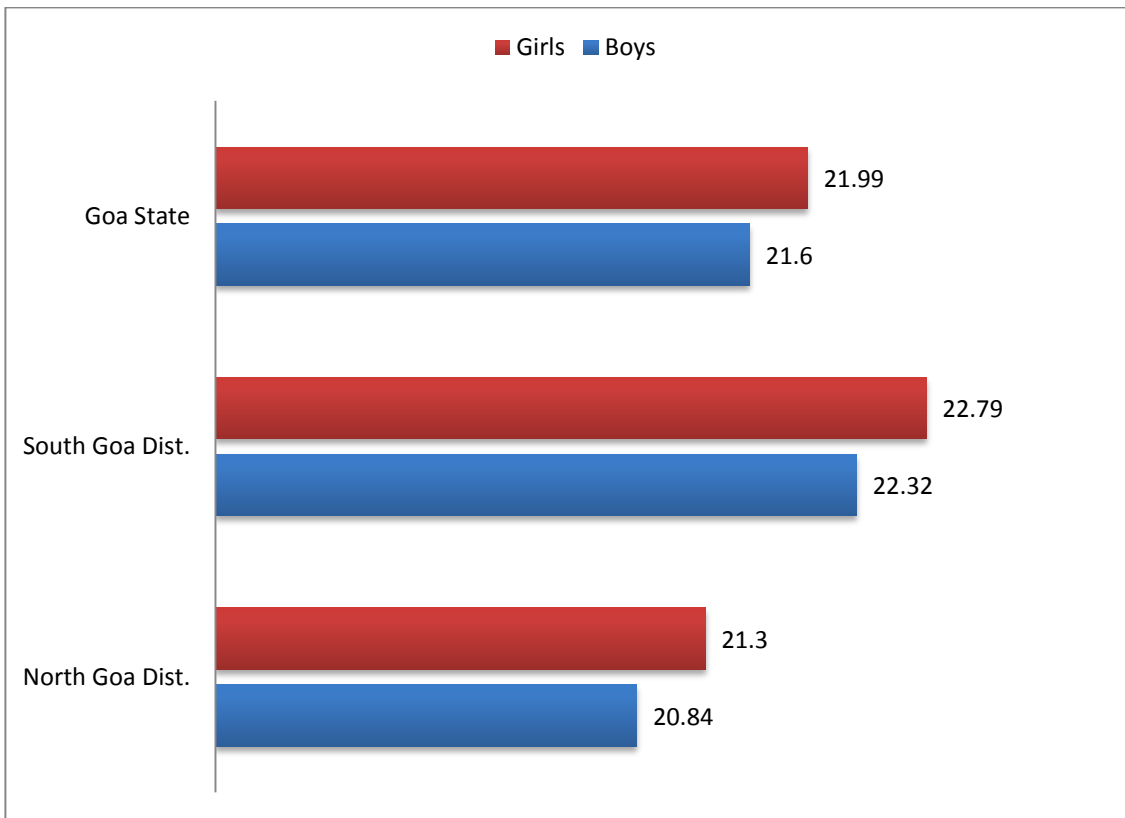


Fig. 4.2.1: Mean Scores of Boys and Girls in Science of the Students of North Goa District, South Goa District and Goa State

The above findings show that boys and girls of the North Goa district, South Goa district and the State of Goa exhibited equal performance in Science. It revealed that gender of a student does not make any difference as far as his/her performance in Science is concerned. Figure 4.2.1 shows the comparative Mean scores of boys and girls of all the three groups.

4.3 Performance in Science in relation to Category/Caste

4.3.1 North Goa District

There existed no significant difference in Mean scores in Science between the students of North Goa district belonging to different castes (Table 4.3.1). It indicated that the students of North Goa district belonging to the four categories/castes exhibited equal performance in Science. The mean scores of these groups are graphically represented in Figure 4.3.1.

Table 4.3.1: ANOVA Results: Achievement in Science in relation to Categories/ Castes (North Goa District)

Source of Variation	SS	df	MS	F-ratio
Between Groups	37.55	3	12.52	0.28 (N.S.)
Within Groups	52358.65	1174	44.60	

N.S.- Not significant

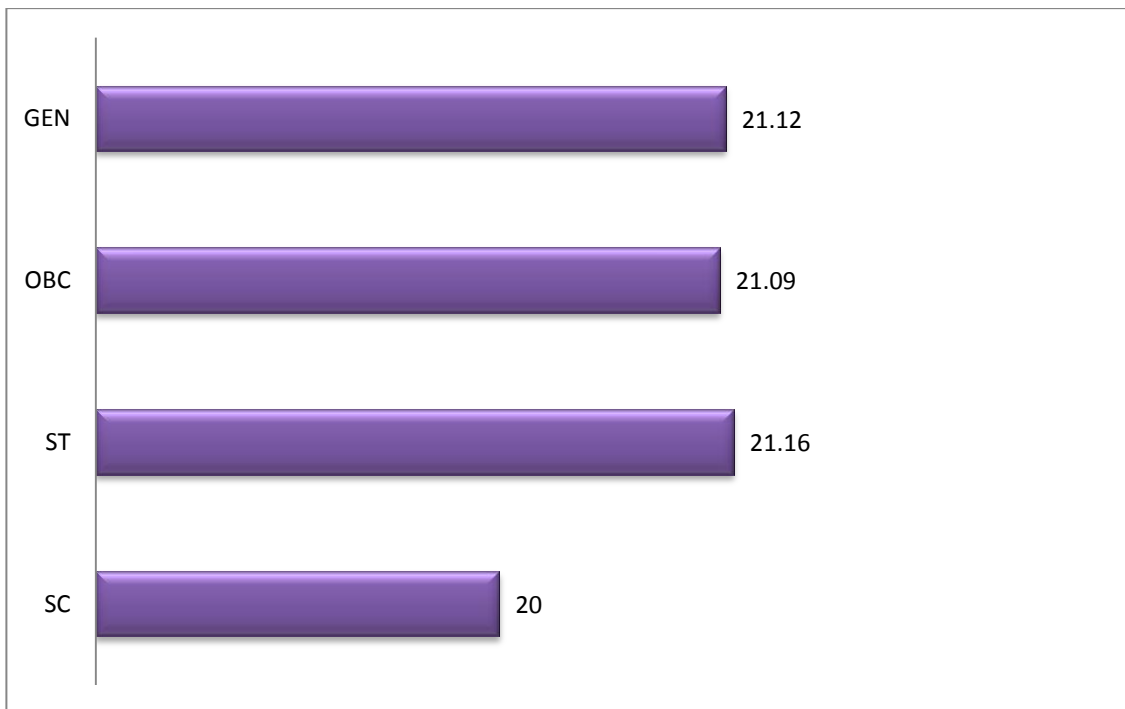


Fig. 4.3.1: Mean Scores in Science of Students of Different Categories/Castes (North Goa District)

4.3.2 South Goa District

The ANOVA results in Table 4.3.2 show that there existed no significant difference in Mean scores in Science between the students of South Goa district belonging to different categories/castes. Though the Mean score of the SC students was lower than those of the other categories of students, the same was not statistically significant. It shows that the students of South Goa district belonging to the four categories exhibited equal performance in Science. The mean scores of these groups are graphically represented in Figure 4.3.2.

Table 4.3.2: ANOVA Results: Achievement in Science in relation to Categories/Castes (South Goa District)

Source of Variation	SS	df	MS	F-ratio
Between Groups	167.9	3	55.96	1.09 (N.S.)
Within Groups	56682.6	1111	51.02	

N.S.- Not significant

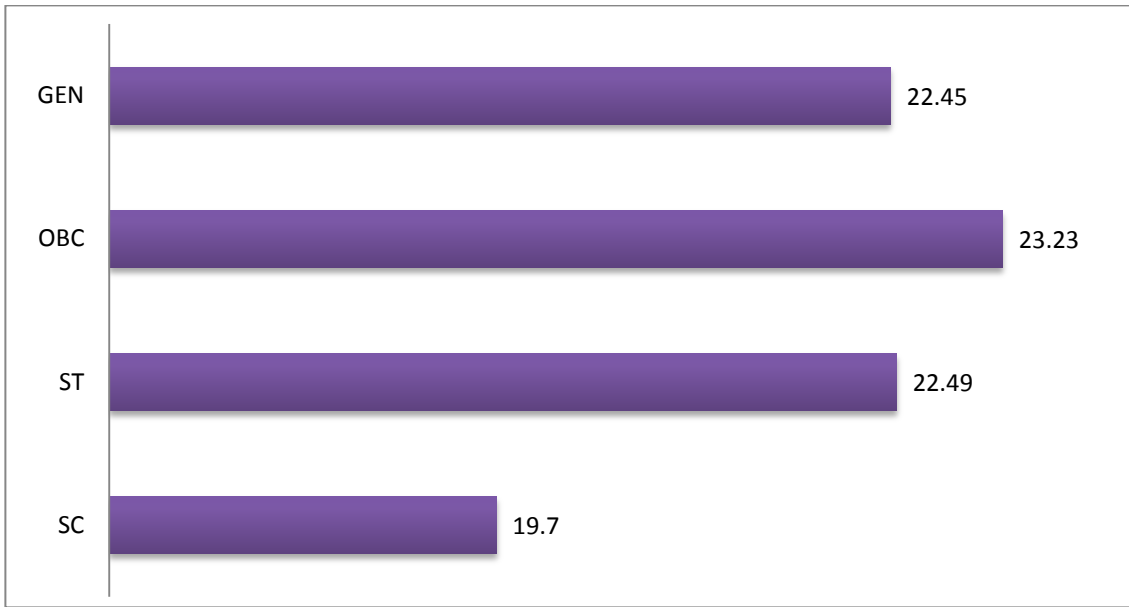


Fig. 4.3.2: Mean Scores in Science of Students of Different Categories/Castes (South Goa District)

4.3.3 Goa State

Table 4.3.3 shows that there existed no significant difference in Mean scores in Science between the students of Goa State belonging to different castes/categories. Though the Mean score of the SC students was lower than those of the other categories of students, the same was not significant. It shows that the students of North Goa district belonging to the four categories exhibited equal performance in Science. The mean scores of these groups are graphically represented in Figure 4.3.3.

Table 4.3.3: ANOVA Results: Achievement in Science in relation to Categories/Castes (Goa State)

Source of Variation	SS	df	MS	F-ratio

Between Groups	184.7	3	61.56	1.28 (N.S.)
Within Groups	110184.1	2289	48.14	

N.S. - Not significant

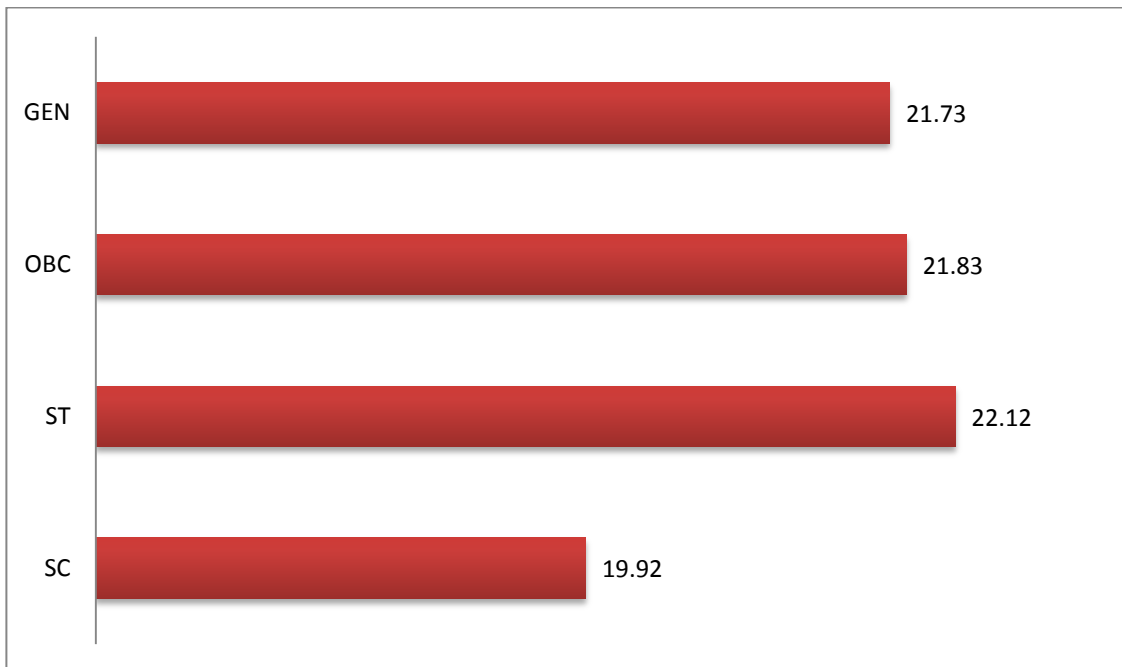


Fig. 4.3.3: Mean Scores in Science of Students of Different Categories/Castes (Goa State)

The findings presented above revealed that performance of students in Science has no relation with the castes or social category to which they belong. The students belonging to different castes or category exhibit equal performance in Science.

4.4 Performance in Science in relation to Language Background (Language Spoken at Home)

4.4.1 North Goa District

Table 4.4.1: ANOVA Results: Achievement in Science in relation to Language background (North Goa District)

Source of Variation	SS	df	MS	F-ratio
Between Groups	1066.2	5	177.69	4.05 **
Within Groups	51378.2	1172	43.84	

** significant at 0.01 level

Table 4.4.2: t-test Results: Difference in Mean Scores between different Groups (Pairs) (North Goa District)

Pair of Comparison	Difference Between Means	t - ratio
English – Konkani	$29.00 - 20.97 = 8.03$	2.96 **
English – Marathi	$29.00 - 22.82 = 6.18$	2.23 *
English – Hindi	$29.00 - 19.14 = 9.86$	3.53 **
English – Kannada	$29.00 - 21.21 = 7.79$	2.52 **
English – Urdu	$29.00 - 25.60 = 3.40$	0.98 (N.S.)
Urdu–Hindi	$25.60 - 19.14 = 6.46$	2.64 **
Urdu –Kannada	$25.60 - 21.21 = 4.39$	1.57 (N.S.)
Urdu –Konkani	$25.60 - 20.97 = 4.63$	1.98 *
Urdu –Marathi	$25.60 - 22.82 = 2.78$	1.13 (N.S.)

*significant at 0.05 level

**significant at 0.01 level

N.S. – Not significant

Significant difference was found in mean scores in Science among the students of North Goa district coming from different language backgrounds (Table 4.4.1). The mean scores of all the groups are represented in Figure 4.4.1. Differences between different pairs in Mean Scores are given in Table 4.4.2. It was observed (Table 4.4.2)

that the Mean score in Science of the students speaking in English at home was higher than the students speaking in Hindi, Konkani, Marathi and Kannada at home. No significant difference in mean score in Science was found between the students speaking in English and Urdu at home. The mean score of the Urdu speaking students was significantly higher than the Hindi and Konkani speaking students.

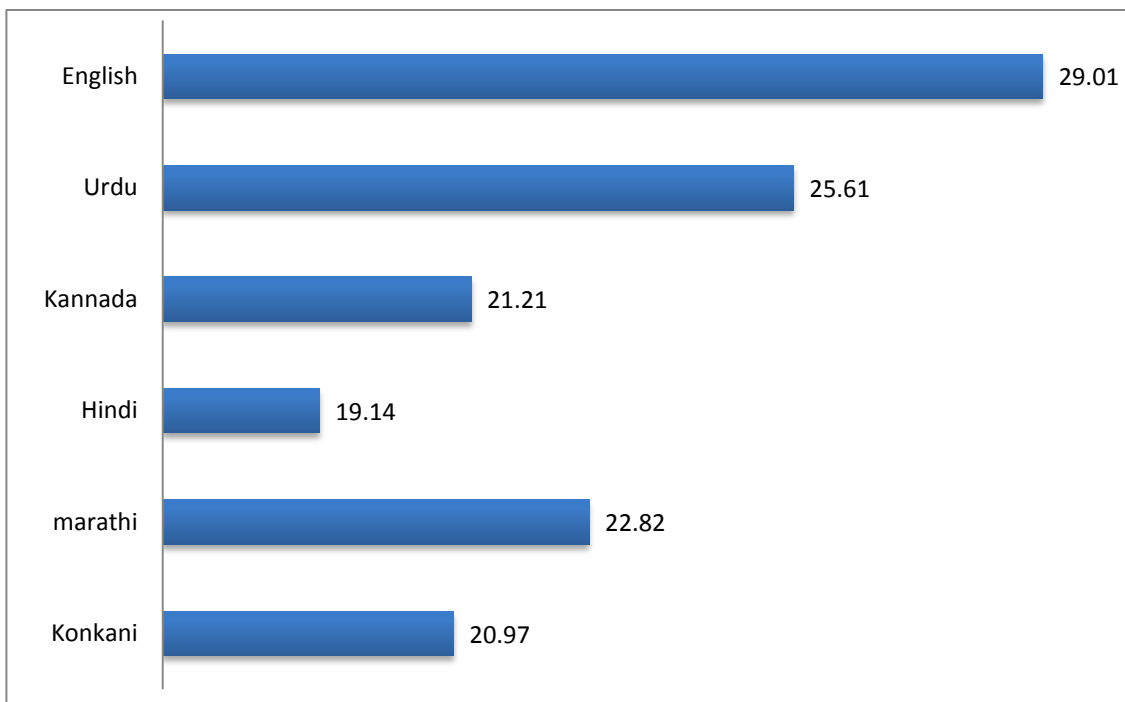


Fig. 4.4.1: Mean Scores in Science of Students Speaking different Languages at Home (North Goa District)

4.4.2 South Goa District

ANOVA results in Table 4.4.3 shows significant difference in achievement in Science among the students of South Goa district speaking different languages at home. The t-test results in Table 4.4.4 revealed that the students using English language at home scored significantly higher in Science compared to the students speaking other languages at home such as Hindi, Konkani, Marathi, Kannada and Urdu. Also it was found that the students who used to speak in Konkani language at home scored

significantly higher in Science compared to the students speaking in Hindi, Marathi and Kannada at home. The comparative Mean scores in Science of the students of South Goa district belonging to various language backgrounds are presented in Fig.4.4.2.

Table 4.4.3: ANOVA Results: Achievement in Science in relation to Language background (South Goa District)

Source of Variation	SS	df	MS	F-ratio
Between Groups	3318.6	5	663.7	17.3 **
Within Groups	53573.7	1109	38.3	

** Significant at 0.01 level

Table 4.4.4: t-test Results: Difference in Mean Scores between different Groups (Pairs) (South Goa District)

Pair of Comparison	Difference Between Means	t - ratio
English – Konkani	29.17 – 23.14 = 6.03	5.24 **
English – Marathi	29.17 – 20.33 = 8.84	6.45 **
English – Hindi	29.17 – 19.94 = 9.23	7.27 **
English – Kannada	29.17 – 19.88 = 9.29	6.68 **
English – Urdu	29.17 – 21.20 = 7.97	3.52 **
Konkani –Hindi	23.14 – 19.94 = 3.20	5.24 **
Konkani –Kannada	23.14 – 19.88 = 3.26	3.88 **
Konkani –Urdu	23.14 – 21.20 = 1.94	0.99 (N.S.)
Konkani –Marathi	23.14 – 20.33 = 2.81	3.46 **

**significant at 0.01 level

N.S. – Not significant

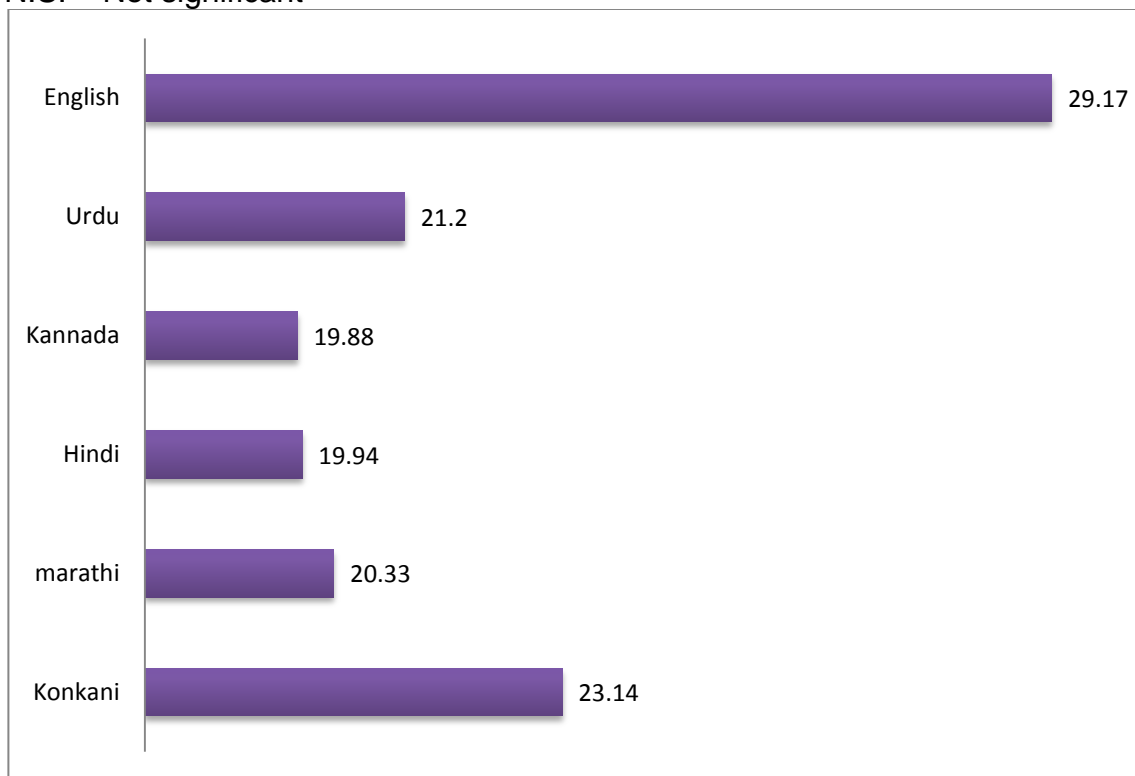


Fig. 4.4.2: Mean Scores in Science of Students Speaking different Languages at Home (South Goa District)

4.4.3 Goa State

Table 4.4.5 shows that there existed significant difference in Mean scores in Science between the students of the state of Goa speaking different languages at home. From the t-test results in Table 4.4.6 it is clear that the Mean score of students speaking at home in English was significantly higher than the students speaking in other languages at home. It was observed that the Mean scores of the Urdu speaking students was higher than the students speaking other Indian languages at home though the differences were statistically not significant. No significant difference was found between mean scores of any other pairs of comparison (Table 4.4.6).

Comparative Mean scores in Science of the students of Goa State speaking in different languages at home are graphically represented in Fig.4.4.3.

Table 4.4.5: ANOVA Results: Achievement in Science in relation to Language background (Goa State)

Source of Variation	SS	df	MS	F-ratio
Between Groups	3137.4	5	627.48	13.38 **
Within Groups	107294.8	2289	46.87	

** Significant at 0.01 level

Table 4.4.6: t-test Results: Difference in Mean Scores between different Groups (Pairs) (Goa State)

Pair of Comparison	Difference Between Means	t - ratio
English – Konkani	$29.15 - 21.99 = 7.16$	6.01 **
English – Marathi	$29.15 - 21.91 = 7.24$	5.66 **
English – Hindi	$29.15 - 19.59 = 9.56$	7.52 **
English – Kannada	$29.15 - 20.20 = 8.95$	6.34 **
English – Urdu	$29.15 - 22.67 = 6.48$	3.07 **
Urdu–Hindi	$22.67 - 19.59 = 3.08$	1.71 (N.S.)
Urdu –Kannada	$22.67 - 20.20 = 2.47$	1.27 (N.S.)
Urdu –Konkani	$22.67 - 21.99 = 0.68$	0.34 (N.S.)
Urdu –Marathi	$22.67 - 21.91 = 0.76$	0.29 (N.S.)

**significant at 0.01 level

N.S. – Not significant

The findings presented above indicate that language background of the students plays an important role in their academic performance in Science. The students using English language at home performed better in Science than the students speaking other languages (Indian languages).

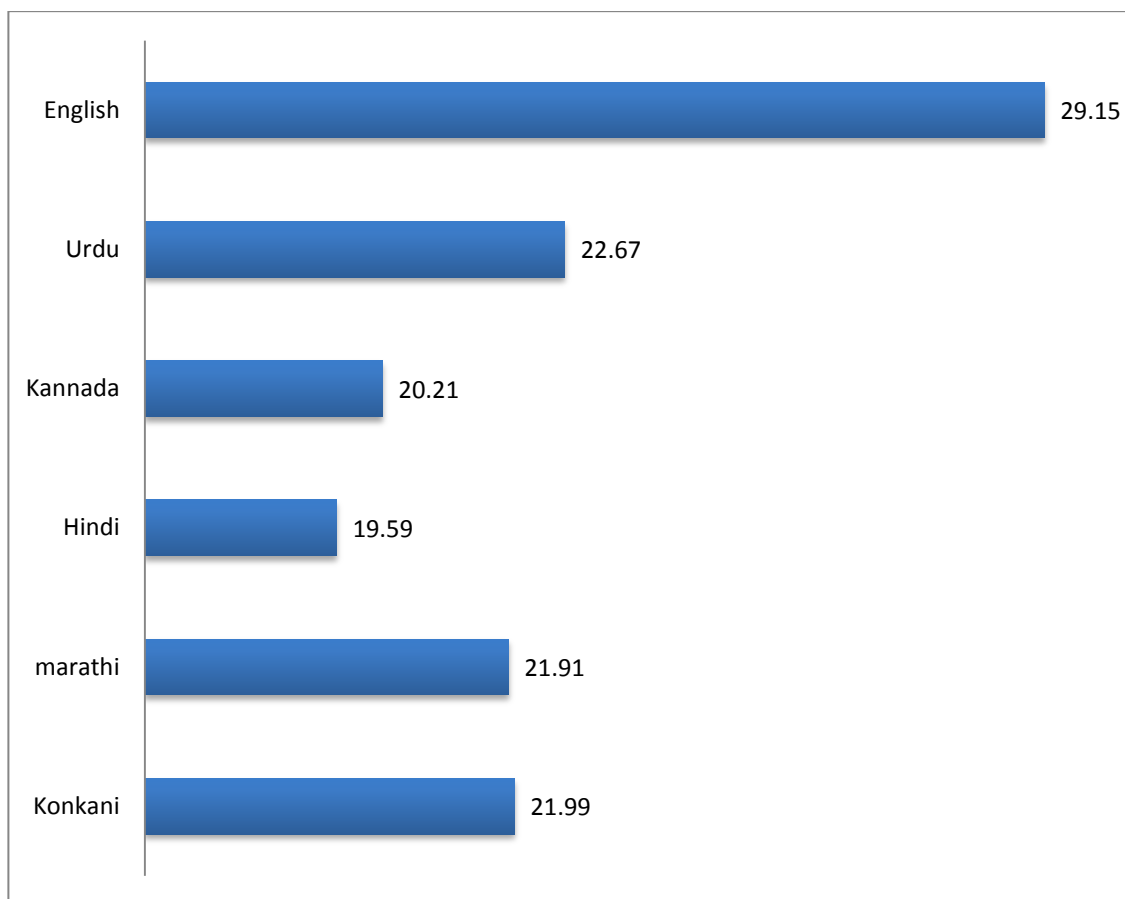


Fig. 4.4.3: Mean Scores in Science of the Students Speaking Different Languages at Home (Goa State)

4.5 Achievement in Science in Relation to Location

4.5.1 North Goa District

Significant difference was found in Mean score in Science between the rural and urban school students of North Goa district (Table 4.5.1). The mean score of the

urban school students was significantly higher than the rural school students. It showed that the students of urban schools exhibited higher performance in Science than the rural school students. The comparative Mean score of rural and urban schools students is shown in Figure 4.5.1.

Table 4.5.1: Difference in Mean Scores in Science between the Students of Rural and Urban Schools of North Goa District

Locale	Mean	SD	t - ratio	Level of Significance
Rural	20.84	6.58	2.44	0.05
Urban	22.01	6.94		

4.5.2 South Goa District

In the case of South Goa district no significant difference was observed between the Mean scores of the rural and urban schools students (Table 4.5.2). It showed that both rural and urban school students exhibited equal performance in Science. Mean scores of the two groups are given in Figure 4.5.1.

Table 4.5.2: Difference in Mean Scores in Science between the Students of Rural and Urban Schools of South Goa District

Locale	Mean	SD	t - ratio	Level of Significance
Rural	22.41	6.95	1.00	Not Significant
Urban	22.90	6.71		

4.5.3 Goa State

The average score in Science of the urban school students of the State of Goa was significantly higher than the rural school students (Table 4.5.3). It indicated that the urban school students were better than their rural counterparts in Science.

Table 4.5.3: Difference in Mean Scores in Science between the Students of Rural and Urban Schools of Goa

Locale	Mean	SD	t - ratio	Level of Significance
Rural	21.57	6.79	2.61	0.01
Urban	22.51	7.33		

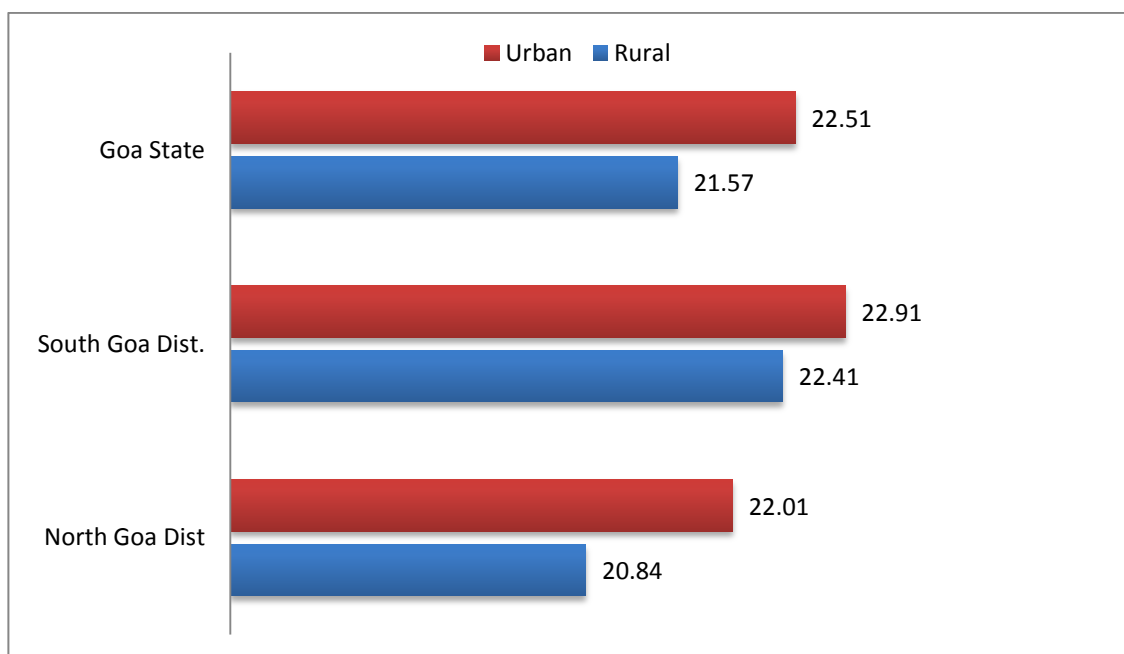


Fig.4.5.1: Comparative Mean Scores in Science of Rural and Urban School Students of North Goa District, South Goa District and Goa State

The findings presented above indicated that location is a factor influencing academic performance in Science. The urban schools students perform better than the rural school students in Science subject.

4.6 Achievement in Science in Relation to Poverty Line Status of the Family

4.6.1 North Goa District

The mean score in Science of the students of North Goa district belonging to BPL families (Mean = 19.58) was found significantly lower than the mean score (M = 22.52) of students from APL families (Table 4.6.1). Comparative mean scores of the two groups are represented in Figure 4.6.1.

Table 4.6.1: Difference in Mean Scores in Science between the Students belonging to BPL families and APL families (North Goa District)

Poverty Line	Mean	SD	t - ratio	Level of Significance
BPL	19.58	5.63	6.12	0.01
APL	22.52	7.14		

4.6.2 South Goa District

It was found that the children from BPL and APL families studying in Schools located South Goa district differed significantly in their performance in Science (Table 4.6.2). The mean score of the children coming from BPL families was significantly lower than the children from ABL families. Comparative mean scores of the two groups are represented in Figure 4.6.1.

Table 4.6.2: Difference in Mean Scores in Science between the Students belonging to BPL families and APL families (South Goa District)

Poverty Line	Mean	SD	t - ratio	Level of Significance
BPL	20.82	7.19	5.29	0.01
APL	24.31	7.60		

4.6.3 Goa State

The mean score of the children from BPL families of the State was significantly lower than those from the APL families (Table 4.6.3). It means the students coming from APL families were better than the children from BPL families. Mean scores in Science of the two groups are represented graphically in Figure 4.6.1.

Table 4.6.3: Difference in Mean Scores in Science between the Students belonging to BPL families and APL families (Goa State)

Poverty Line	Mean	SD	t - ratio	Level of Significance
BPL	20.07	6.32	8.49	0.01
APL	23.38	7.41		

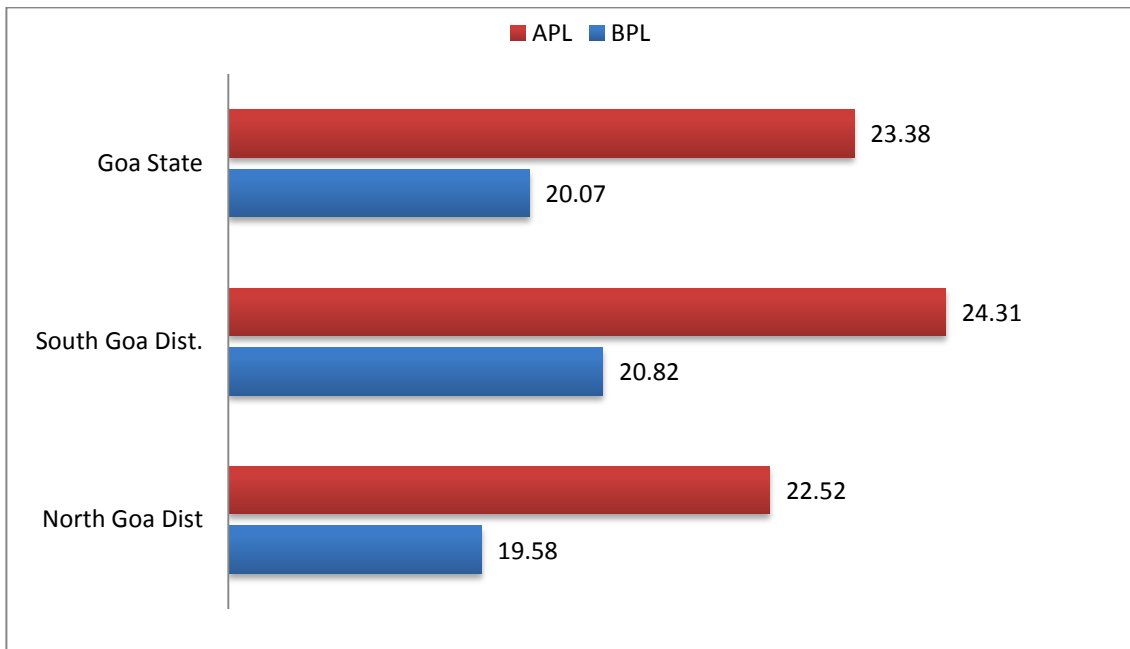


Fig.4.6.1: Comparative Mean Scores in Science of children from BPL and APL families of North Goa District, South Goa District and Goa State

The above findings showed that the children from APL families of the North Goa district, South Goa district and the State of Goa scored higher in Science compared to those from BPL families. It means economic condition of the family is a factor that influences the performance of students in Science. The economically poor student score less than the students from economically advanced families.

4.7 Achievement in Science in Relation to Private Tuition

4.7.1 North Goa District

The students of North Goa Schools who were taking private tuition scored significantly less in Science than the students who had not joined private tuition classes (Table 4.7.1). The mean score in Science of the students without private

tuition was higher than those who used to attend private tuition. The mean scores of the two groups are represented in Figure 4.7.1.

Table 4.7.1: Difference in Mean Scores in Science between the Students joined Private Tuition and those without Private Tuition (North Goa District)

Group	Mean	SD	t - ratio	Level of Significance
Private Tuition	19.73	5.79	3.86	0.01
No Private Tuition	21.43	6.83		

4.7.2 South Goa District

Table 4.7.2: Difference in Mean Scores in Science between the Students joined Private Tuition and those without Private Tuition (South Goa District)

Group	Mean	SD	t - ratio	Level of Significance
Private Tuition	22.02	6.65	1.53	Not significant
No Private Tuition	22.74	7.30		

Table 4.7.2 shows no significant difference between the Average scores in Science of the students of South Goa district who used to attend private tuition classes and those who did not. It indicated that students of South Goa district who attended and those who did not attend private tuition were equal in their performance in Science. Comparative mean scores of the two groups are represented in Figure 4.7.1.

4.7.3 Goa State

Table 4.7.3: Difference in Mean Scores in Science between the Students taking Private Tuition and those without Private Tuition (Goa State)

Group	Mean	SD	t - ratio	Level of Significance
Private Tuition	20.98	6.37	3.34	0.01
No Private Tuition	22.05	7.08		

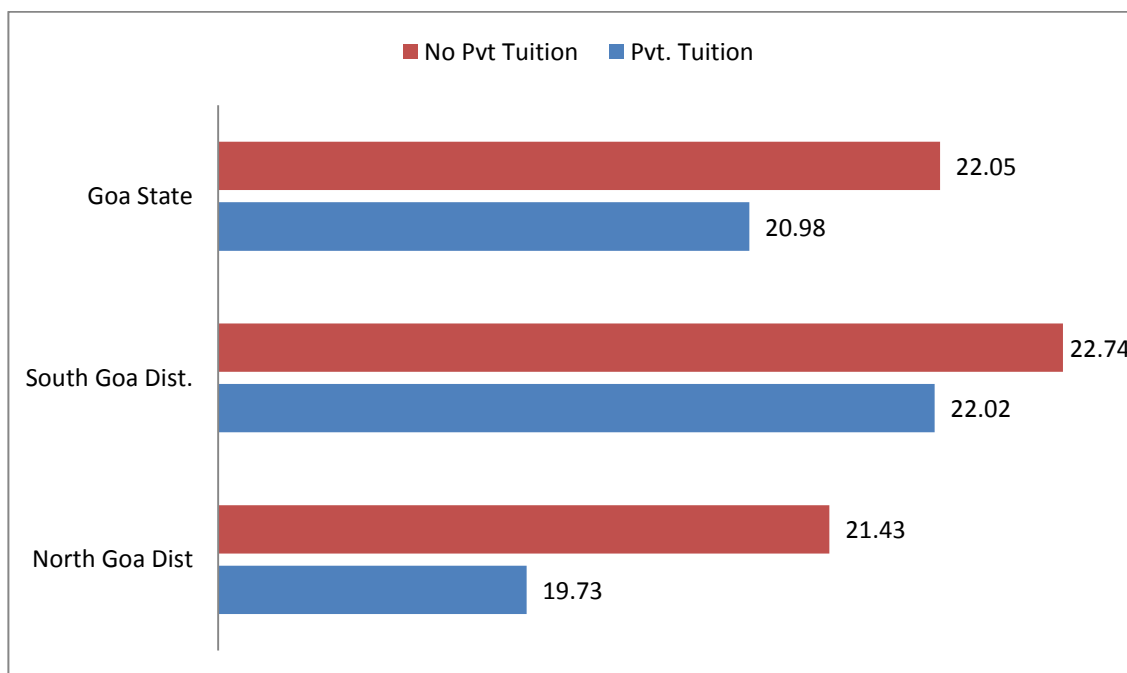


Fig.4.7.1: Comparative Mean Scores in Science of Students attended Private tuition and without Private Tuition of North Goa District, South Goa District and Goa State

Significant difference was found in mean scores in Science of the students who attended private tuition and those who did not (Table 4.7.3). The mean score of the students of the State who did not attend private tuition scored higher than those who attended private tuition classes. The Mean scores of both the groups are represented graphically in Figure 4.7.1.

The above findings indicated that attending private tuition did not help students to score more than the students who did not attend private tuition classes. The students who do not attend private tuition Classes perform better in Science than those who used to go for private tuition.

4.8 Achievement in Science in Relation Physical Health Status of Students

4.8.1 North Goa District

No significant difference was found in achievement in Science between the students who were physically challenged and those who were not so, though the Mean score of the normal students was higher than the physically challenged ones (Table 4.8.1). In other words, the normal students and the physically challenged students of North Goa district exhibited equal performance in Science. The data are represented in Figure 4.8.1.

Table 4.8.1: Difference in Mean Scores in Science between the Physically challenged and Normal Children of North Goa District

Groups	Mean	SD	t - ratio	Level of Significance
Physically challenged	19.14	5.64	1.28	Not significant
Not Physically challenged	21.13	6.68		

4.8.2 South Goa District

The mean score of the students who were physically challenged (Mean = 19.38) was significantly lower than mean score of the normal students (Mean = 22.65) (Table 4.8.2). It means the normal students of South Goa schools performed better than the physically challenged students in Science. Mean scores of the two groups are graphically shown in Figure 4.8.1.

Table 4.8.2: Difference in Mean Scores in Science between the Physically challenged and Normal Children of South Goa District

Groups	Mean	SD	t - ratio	Level of Significance
Physically challenged	19.38	6.17	3.03	0.01
Not Physically challenged	22.65	7.15		

4.8.3 Goa State

The mean score of the physically challenged students was 19.30 and that of the normal students was 21.86. The difference between the two mean scores was found significant at 0.01 level. The finding indicated that the physically challenged students of Class VII of the State of Goa exhibited less performance than the normal students. Mean scores of both the groups are graphically shown in Figure 4.8.1.

Table 4.8.3: Difference in Mean Scores in Science between the Physically challenged and Normal Children of Goa State

Groups	Mean	SD	t - ratio	Level of Significance
Physically challenged	19.30	5.92	3.20	0.01
Not Physically challenged	21.86	6.95		

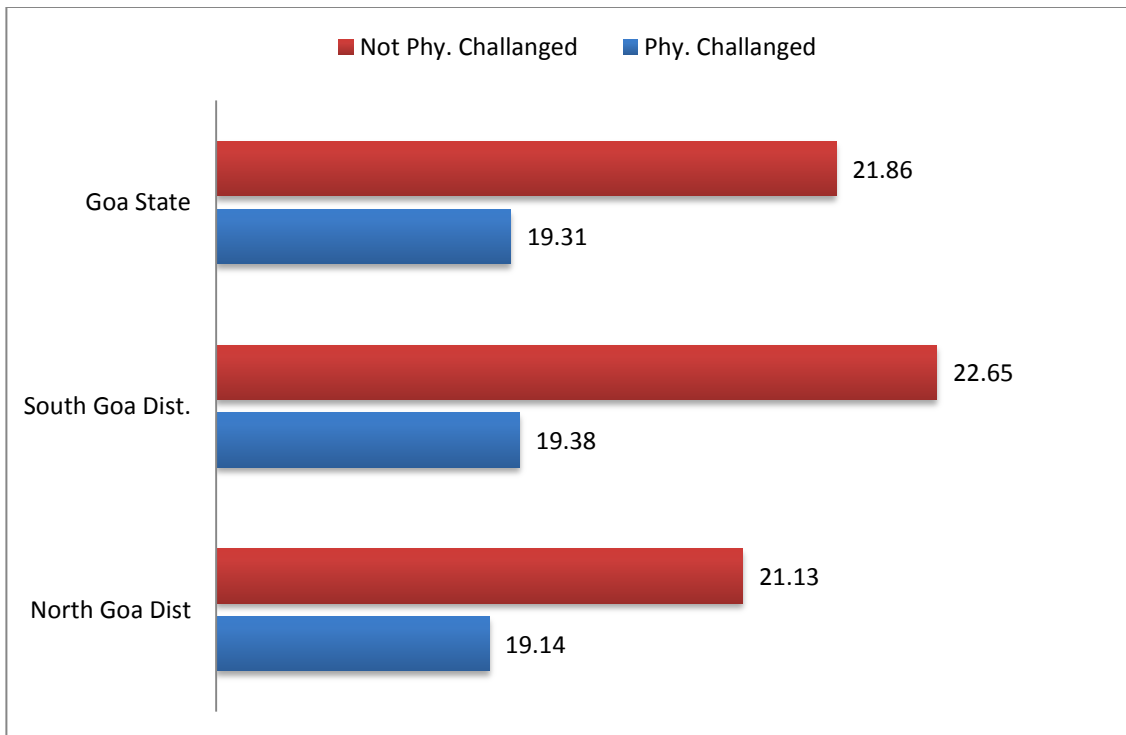


Fig. 4.8.1: Mean Scores of Physically Challenged and Normal students in Science of North Goa District, South Goa District and Goa State

The finding presented above indicated that the physical health status of the students affects their performance in Science. The normal students perform better than the physically challenged students. The physically challenged students lag behind the normal students in Science.

4.9 Conclusions

1. In the achievement test in Science used in the present study, the students of Class-VII of the State scored about 43.6 percent.
2. The students studying in schools located in South Goa district perform better in Science compared to their counterparts of North Goa district.

3. Boys and girls do not differ significantly in academic attainment in Science.
4. SC, ST, OBC and general castes/categories students of Class VII do not differ significantly in their performance in Science.
5. Language background of students affects their performance in Science. Students using English language at home score higher in Science compared to students speaking other languages at home. Students speaking in Konkani language at home exhibit better performance in Science than the students using Marathi, Hindi and Kannada languages. And students coming from Urdu language background score higher in Science than the students speaking at home in Hindi and Konkani languages.
6. Students studying in schools located in urban areas score significantly higher in Science than the students of rural Schools.
7. Students coming from BPL families perform significantly lower in Science than their counterparts from ABL families.
8. Students who attend private tuition classes score significantly lower in Science than the students who do not go for private tuition.
9. The physically challenged students score significantly lower in Science than the physically normal students.

CHAPTER V

ACHIEVEMENT OF STUDENTS IN SOCIAL SCIENCE

5.0 Introduction

The achievement test in Social Science used in this project consisted of 50 multiple choice test items measuring knowledge and understanding outcomes in History and Social and Political Life, and knowledge, understanding and application outcomes in Geography. This Chapter presents the findings relating to the overall performance in Social Science of the students of both the districts of the State, academic attainment of students in Science in relation to gender, locale, language background, financial position of family, physical health status and private tuition. The mean scores of different groups were calculated and compared using t-test. The findings relating to each of the variables are presented for each district separately and for the State of Goa as a whole. Based on the findings conclusions are drawn and presented at the end of the chapter

5.1 Performance of Students in Social Science

5.1.1 North Goa District

The Average score in Social Science of the students of North Goa district was only 20.03. Since there were 50 test items in the test the maximum possible score was 50. An average score of 20.03 indicated that in Social Science the students of North Goa district of Class VII scored only 40.1 percent.

5.1.2 South Goa District

The Mean score of the students of South Goa district in Social Science was 21.11 only. Since there were 50 items in the test administered to the students each carrying a weight-age of 1 point, the observed Mean score of the students of South Goa district indicate that they scored just 42.2 percent in Social Science.

5.1.3 Goa State

The Mean score in Social Science of the students of Goa was 20.55. Since the maximum possible score is 50, the findings indicated that the students of the State answered 41 percent of the items in the Social Science test correctly.

5.1.4 Difference between North Goa and South Goa Districts, North Goa and Goa State and South Goa and Goa State

The Mean score of the students of South Goa District was found significantly higher than their counterparts of North Goa district (Table 5.1.1). It indicated that the students of South Goa district were better in their performance in Social Science than the Students of North Goa district. Also the average score of the students of North Goa district was significantly lower compared to the average score of the students of the State (Table 5.1.2). The average performance of the students of South Goa was not only higher than those of the North Goa district but also higher than the mean score of the students of the State (Table 5.1.3). It revealed that the students of the South Goa district are better than their counterparts of North Goa district as well as that of the State.

The Mean scores of the students of North Goa district, South Goa district and Goa state are represented Figure 5.1.1.

Table 5.1.1: Difference in Mean Scores in Social Science between the Students of North Goa and South Goa Districts

District	Mean	SD	t - ratio	Level of Significance
North Goa	20.03	6.67	4.00	0.01
South Goa	21.11	6.14		

Table 5.1.2: Difference in Mean Scores in Social Science between the Students of North Goa District and Goa State

Groups	Mean	SD	t - ratio	Level of
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				Significance
North Goa Dist.	20.03	6.67	2.26	0.05
Goa State	20.55	6.17		

Table 5.1.3: Difference in Mean Scores in Social Science between the Students of South Goa District and Goa State

Groups	Mean	SD	t - ratio	Level of Significance
South Goa Dist.	21.11	6.14	2.54	0.05
Goa State	20.55	6.17		

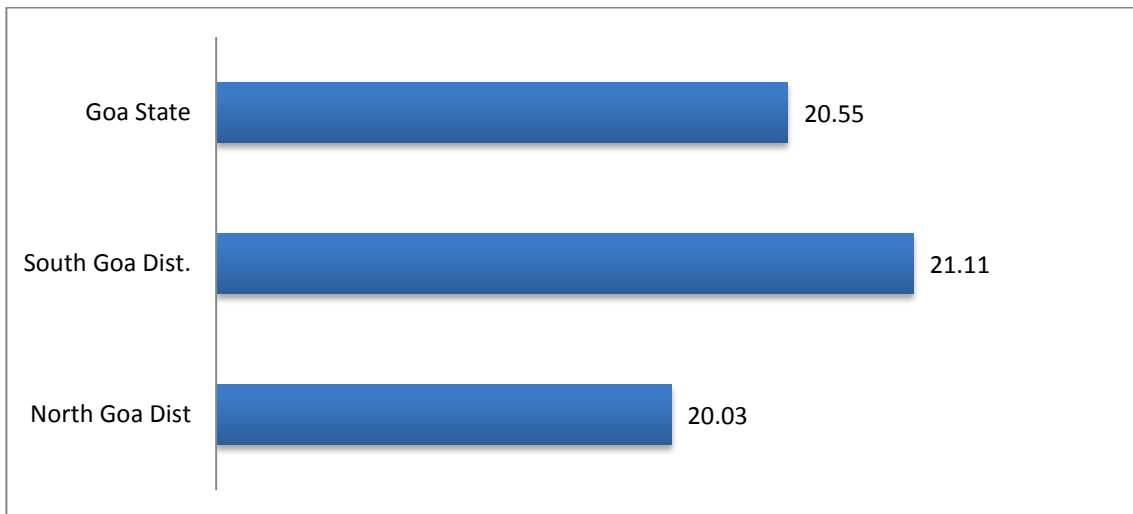


Fig. 5.1.1: Mean Scores in Social Science of Students of North Goa District, South Goa District and Goa State

5.2 Performance in Social Science in relation to Gender

5.2.1 North Goa District

The mean scores of boys and girls in Social Science were 19.92 and 20.13 respectively. Table 5.2.1 shows that the difference between the Mean values was not significant. It means that there existed no significant difference in Mean scores in Social Science between boys and girls of North Goa district. In other words, performance of boys and girls in Social Science was equal.

Table 5.2.1: Difference in Mean Scores in Social Science between the Boys and Girls of North Goa District

Gender	Mean	SD	t- ratio	Level of Significance
Boys	19.92	6.29	0.50	Not significant
Girls	20.13	6.05		

5.2.2 South Goa District

Though the mean score of boys (20.96) was lower than Mean score of the girls (21.27), the difference was statically not significant (Table 5.2.2). It indicated that both boys and girls of South Goa district exhibited equal performance in Social Science.

Table 5.2.2: Difference in Mean Scores in Social Science between the Boys and Girls of South Goa District

Gender	Mean	SD	t- ratio	Level of Significance
Boys	20.96	6.16	0.84	Not significant
Girls	21.27	6.12		

5.2.3 Goa State

The Mean score in Social Science of the male students of the State was 20.45 and those of the girls' was 20.66 (Table 5.2.3). The difference between the two Mean values was not found statistically significant; indicating the fact that both boys and girls are equal as far as their performance in Social Sciences concerned.

Table 5.2.3: Difference in Mean Scores in Social Science between the Boys and Girls of Goa State

Gender	Mean	SD	t- ratio	Level of Significance
Boys	20.45	6.23	0.81	Not significant
Girls	20.66	6.09		

The above findings show that boys and girls of the North Goa district, South Goa district and the State of Goa exhibited equal performance in Social Science. It revealed that gender of a student does not make any difference as far as his/her performance in Social Science is concerned. Figure 5.2.1 shows the Mean scores of all the three groups.

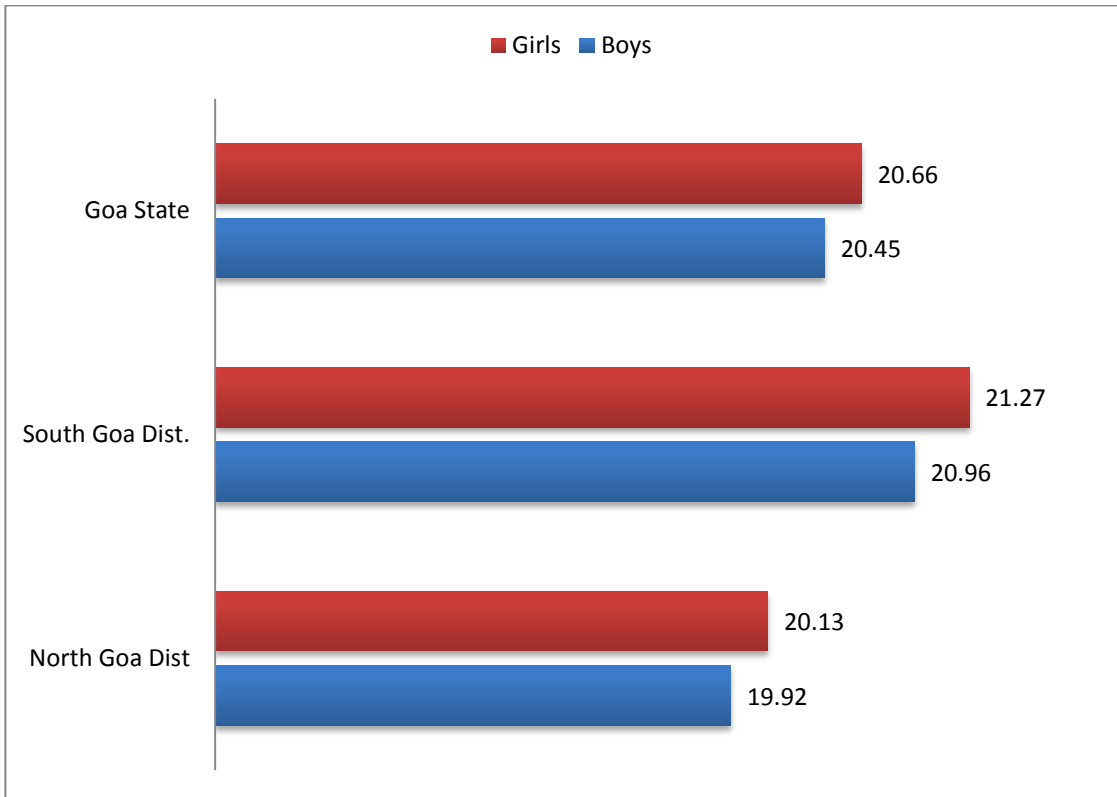


Fig. 5.2.1: Mean Scores of Boys and Girls in Social Science of the Students of North Goa District, South Goa District and Goa State

5.3 Performance in Social Science in relation to Category/Caste

5.3.1 North Goa District

No significant difference was found in Mean scores in Social Science between the students belonging to different castes of North Goa district (Table 5.3.1). Though the Mean score of the SC students was lower than the students belonging to other castes, the difference was not significant. It shows that the students of North Goa district belonging to the four categories of castes exhibited equal performance in Social Science. The mean scores of these groups are graphically represented in Figure 5.3.1.

Table 5.3.1: ANOVA Results: Achievement in Social Science in relation to Categories/ Castes (North Goa District)

Source of Variation	SS	df	MS	F-ratio
Between Groups	269.5	3	89.83	2.38 (N.S.)
Within Groups	44384.3	1174	37.81	

N.S.- Not significant

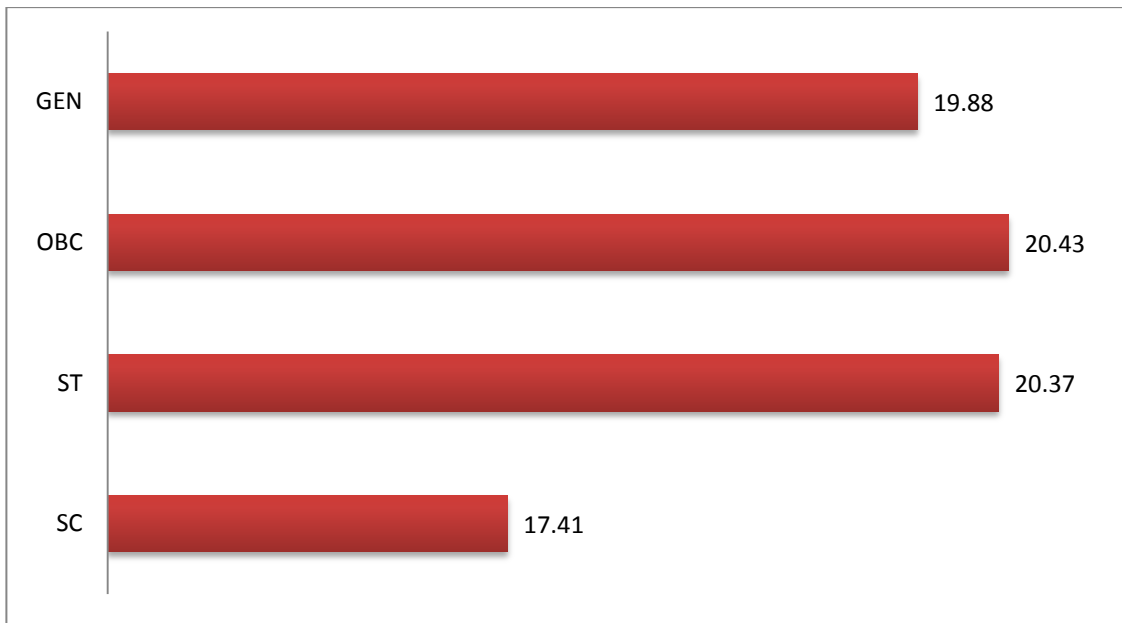


Fig. 5.3.1: Mean Scores in Social Science of Students of Different Categories/Castes (North Goa District)

5.3.2 South Goa District

Table 5.3.2 shows that there existed no significant difference in Mean scores in Social Science between the students belonging to different castes of the South Goa district. It shows that the students of South Goa district belonging to the four

categories exhibited equal performance in Social Science. The mean scores of these groups are graphically represented in Figure 5.3.2.

Table 5.3.2: ANOVA Results: Achievement in Social Science in relation to Categories/ Castes (South Goa District)

Source of Variation	SS	df	MS	F-ratio
Between Groups	94.4	3	31.48	0.83 (N.S.)
Within Groups	41917.2	1111	37.73	

N.S.- Not significant

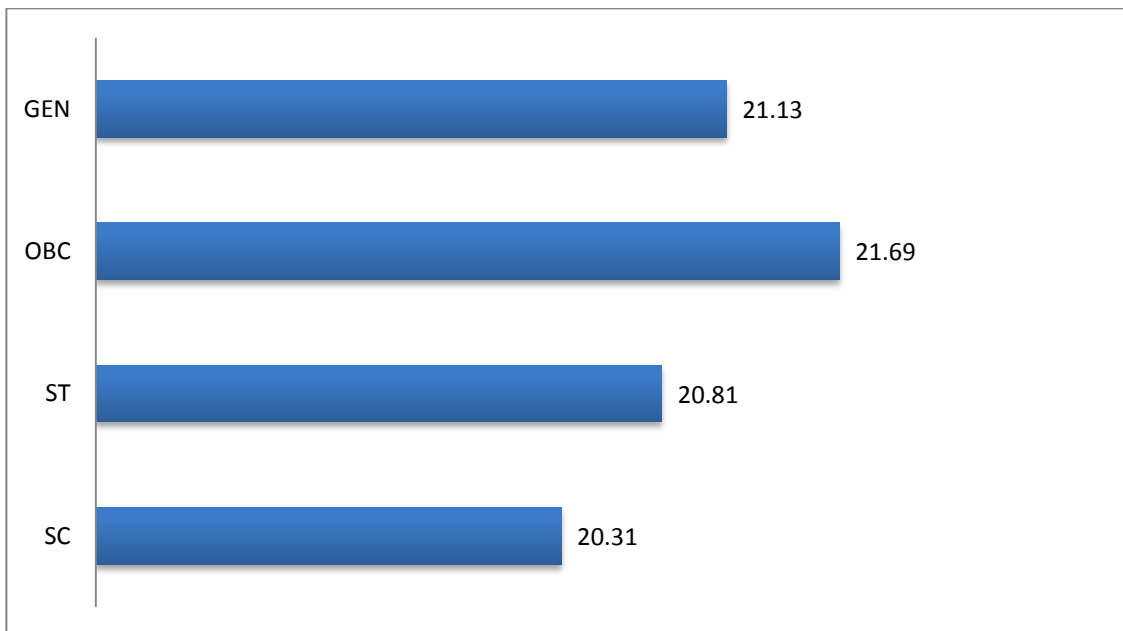


Fig 5.3.2: Mean Scores in Social Science of Students of Different Categories/Castes (South Goa District)

5.3.3 Goa State

The ANOVA results in Table 5.3.3 show that there existed no significant difference in Mean scores in Social Science between the students of Goa State belonging to different castes categories. Though the Mean score of the SC students was lower than those of the other categories of students, the difference was not significant. It shows that the students of the State belonging to the four categories exhibited equal performance in Social Science. The mean scores of these groups are graphically represented in Figure 5.3.3.

Table 5.3.3: ANOVA Results: Achievement in Social Science in relation to Categories/ Castes (Goa State)

Source of Variation	SS	df	MS	F-ratio
Between Groups	275.3	3	91.75	1.41 (N.S.)
Within Groups	87110.9	2289	38.05	

N.S. - Not significant

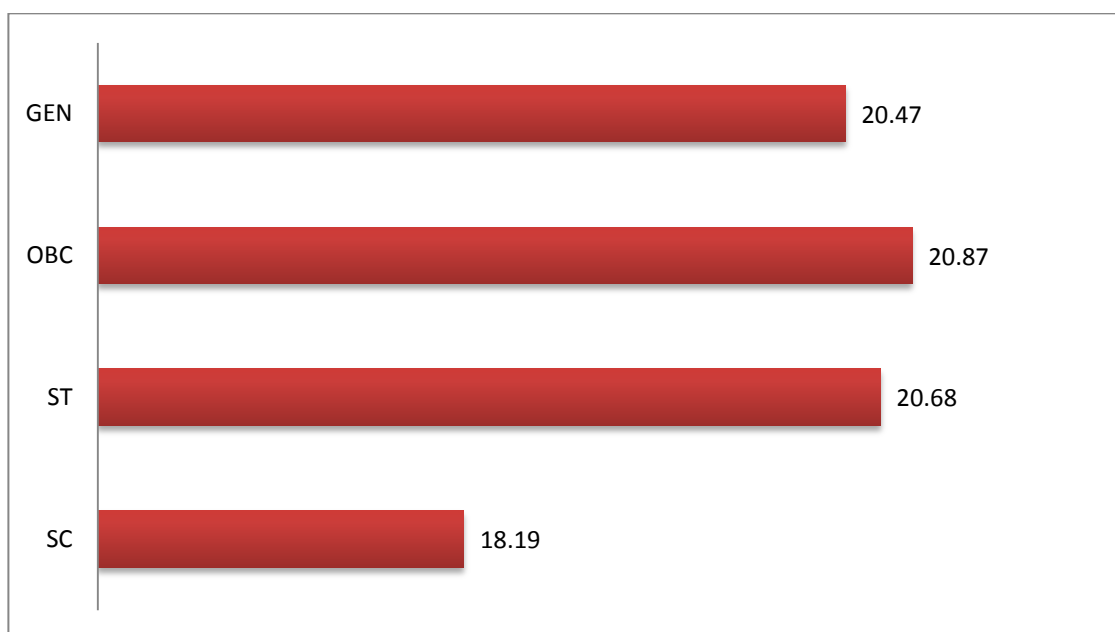


Fig. 5.3.3: Mean Scores in Social Science of Students of Different Categories/Castes (Goa State)

The above findings showed that the students belonging to different castes/categories did not differ in their academic attainment in Social Science. In other words, it revealed that caste of a student does not make any difference as far as his/her performance in Social science is concerned.

5.4 Performance in Social Science in relation to Language Background (Language Spoken at Home)

5.4.1 North Goa District

Table 5.4.1: ANOVA Results: Achievement in Social Science in relation to Language background (North Goa District)

Source of Variation	SS	df	MS	F-ratio
Between Groups	613.6	5	122.72	3.27 **
Within Groups	44012.0	1172	37.55	

** Significant at 0.01 level

Table 5.4.2: t-test Results: Difference in Mean Scores between different Groups (Pairs) (North Goa District)

Pair of Comparison	Difference Between Means	t - ratio
English – Konkani	21.00 – 20.00 = 1.00	0.40 (N.S.)
English – Marathi	21.00 – 21.49 = 0.49	0.19 (N.S.)
English – Hindi	21.00 – 18.26 = 2.74	1.06 (N.S.)

English – Kannada	21.00 – 19.47 = 1.53	0.53 (N.S.)
English – Urdu	21.00 – 18.0 = 3.00	0.91 (N.S.)
Marathi –Hindi	21.49 – 18.26 = 3.23	3.71 **
Marathi –Kannada	21.49 – 19.47 = 2.02	1.32 (N.S.)
Marathi –Konkani	21.49 – 20.00 = 1.49	2.44 *
Marathi –Urdu	21.49 – 18.00 = 3.49	1.56 (N.S.)

*significant at 0.05 level

**significant at 0.01 level

N.S. – Not significant

Significant difference was found in performance in Social Science between the students coming from different language background of North Goa district (Table 5.4.1). The mean scores of all the groups are represented in Figure 5.4.1. Differences between different pairs in Mean Score are given in Table 5.4.2. No significant difference in Mean scores in Social Science between the students speaking in English and other languages (Hindi, Konkani, Marathi, Kannada and Urdu) at home was found. Difference between any other two groups was not found significant. The mean score of the Marathi speaking students was significantly higher than the Hindi and Konkani speaking students. Figure 5.4.1 represents the mean performance of students speaking different languages at home.

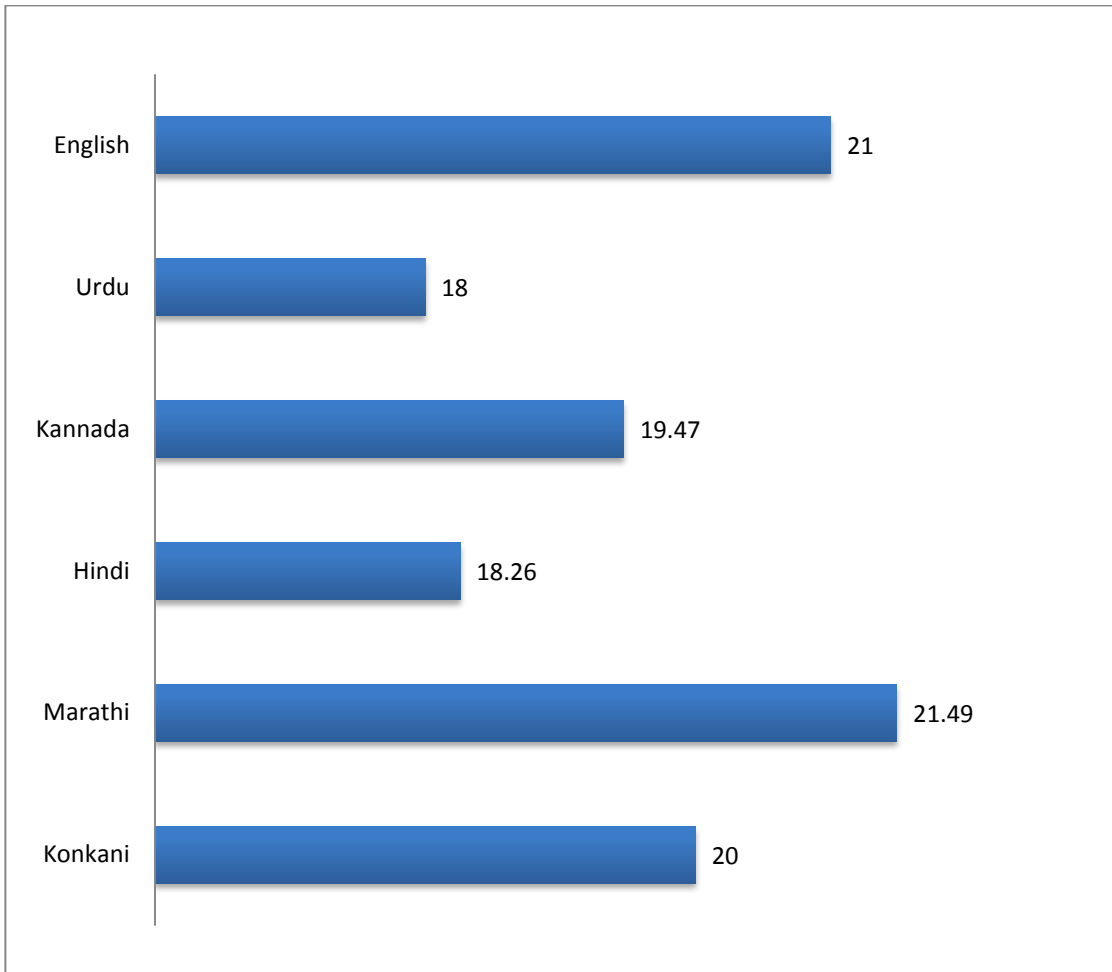


Fig. 5.4.1: Mean Scores in Social Science of Students Speaking different Languages at Home (North Goa District)

5.4.2 South Goa District

Table 5.4.3: ANOVA Results: Achievement in Social Science in relation to Language background (South Goa District)

Source of Variation	SS	df	MS	F-ratio
Between Groups	1945.8	5	389.2	10.8 **
Within Groups	40053.5	1109	36.1	

** Significant at 0.01 level

Table 5.4.4: t-test Results: Difference in Mean Scores between different Groups (Pairs) (South Goa District)

Pair of Comparison	Difference Between Means	t - ratio
English – Konkani	25.57 – 21.63 = 3.94	3.51 **
English – Marathi	25.57 – 19.20 = 6.37	4.80 **
English – Hindi	25.57 – 19.35 = 6.22	5.05 **
English – Kannada	25.57 – 18.72 = 6.85	5.11 **
English – Urdu	25.57 – 19.40 = 6.17	2.81 **
Konkani –Hindi	21.63 – 19.35 = 2.28	3.86 **
Konkani –Kannada	21.63 – 18.72 = 2.91	3.59 **
Konkani –Urdu	21.63 – 19.40 = 2.23	1.17 (N.S.)
Konkani –Marathi	21.63 – 19.20 = 2.43	3.11 **

**significant at 0.01 level

N.S. – Not significant

ANOVA results in Table 5.4.3 shows significant difference in achievement in Social Science among the students of South Goa district speaking different languages at home. The t-test results in Table 5.4.4 indicated that the students using English language at home scored significantly higher in Social Science compared to the students speaking other languages at home such as Hindi, Konkani, Marathi, Kannada and Urdu. Also it was found that the students who used to speak in Konkani language at home scored significantly higher in Social Science compared to the students speaking in Hindi, Marathi and Kannada at home. No significant differences were found in mean scores in Social science among the students speaking at home in Hindi, Kannada, Urdu and Marathi. The comparative Mean scores in Social

Science of the students of South Goa district belonging to various language backgrounds are presented in Fig.5.4.2.

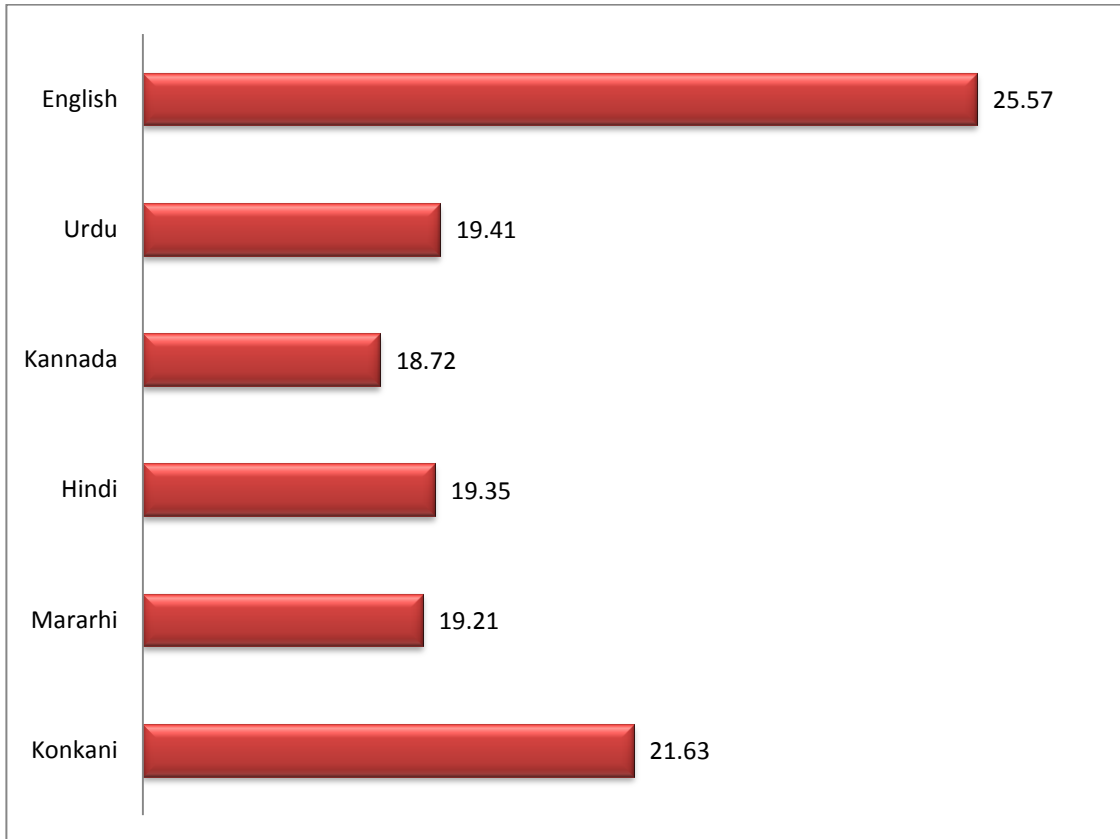


Fig. 5.4.2: Mean Scores in Social Science of Students Speaking different Languages at Home (South Goa District)

5.4.3 Goa State

Table 5.4.5 shows that there existed significant difference in Mean scores in Social Science between the students of the state of Goa speaking different languages at home. Table 5.4.6 reveals that the Mean score in Social Science of the students speaking in English at home was significantly higher than the students speaking in other languages at home. Also, the students speaking in Konkani at home scored significantly higher in Social Science compared to students speaking Hindi and Kannada. No significant difference was found between mean score of any other pairs of comparison (Table 5.4.6). Comparative Mean scores in English of the students of

Goa State speaking in different languages at home are graphically represented in Fig.5.4.3.

Table 5.4.5: ANOVA Results: Achievement in Social Science in relation to Language background (Goa State)

Source of Variation	SS	Df	MS	F-ratio
Between Groups	1584.2	5	316.84	8.47 **
Within Groups	85584.8	2289	37.39	

** Significant at 0.01 level

Table 5.4.6: t-test Results: Difference in Mean Scores between different Groups (Pairs) (Goa State)

Pair of Comparison	Difference Between Means	t - ratio
English – Konkani	25.03 – 20.76 = 4.27	4.14 **
English – Marathi	25.03 – 20.66 = 4.37	3.90 **
English – Hindi	25.03 – 18.88 = 6.15	5.59 **
English – Kannada	25.03 – 18.91 = 6.12	4.97 **
English – Urdu	25.03 – 19.93 = 5.10	2.90 **
Konkani - Hindi	20.76 – 18.88 = 1.88	4.17 **
Konkani – Kannada	20.76 – 18.91 = 1.85	2.61**
Konkani – Urdu	20.76 – 19.93 = 0.83	0.57 (N.S.)
Konkani – Marathi	20.76 – 20.66 = 0.10	0.21 (N.S.)

**significant at 0.01 level

N.S. – Not significant

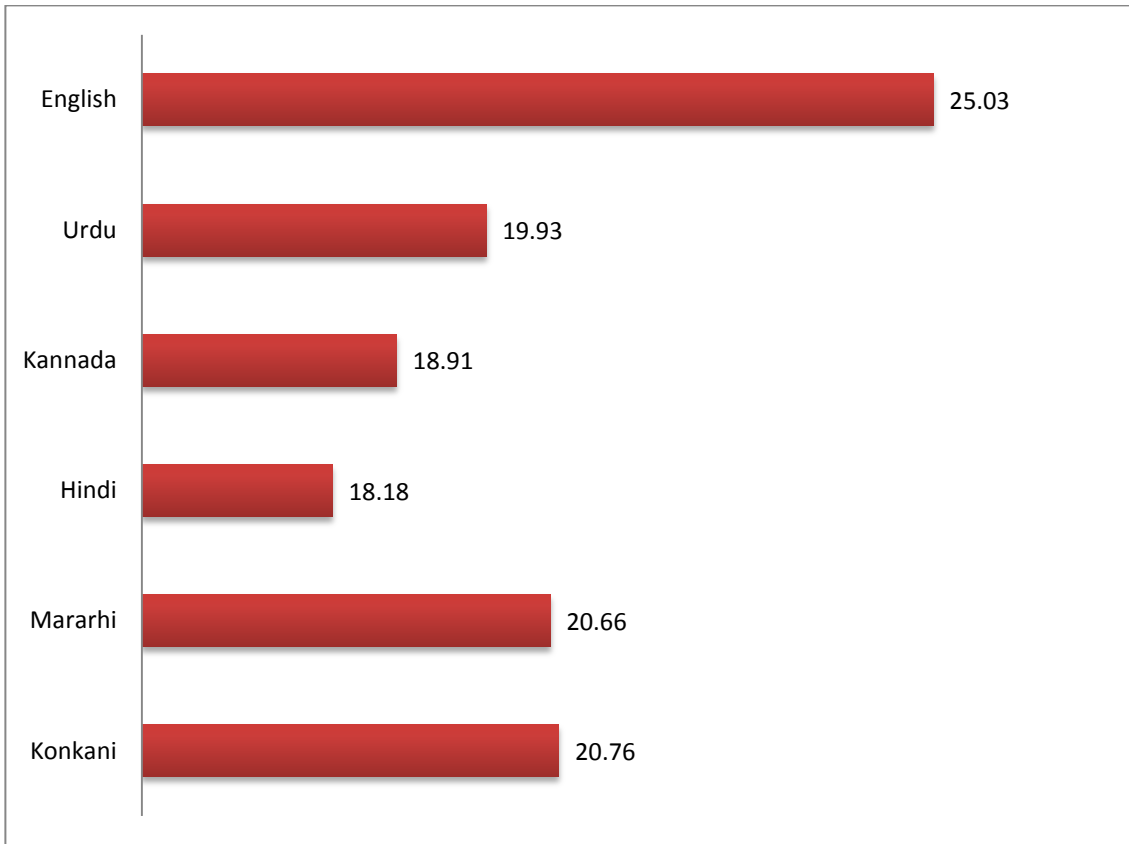


Fig. 5.4.3: Mean Scores in Social Science of the Students Speaking Different Languages at Home (Goa State)

The findings presented above indicate that language background of the students plays an important role in their academic performance in Social Science. The students using English language at home exhibited higher performance in Social Science in school than the students speaking in other languages at home.

5.5 Achievement in Social Science in Relation to Location

5.5.1 North Goa District

Table 5.5.1 shows significant difference in Mean score in Social Science between the rural and urban school students of North Goa district. The mean score of the urban school students (Mean = 21.45) was significantly higher than the rural school

students (Mean = 19.65). It shows that the students of urban schools exhibited higher performance in Social Science than the rural school students. The comparative Mean score of rural and urban schools students is shown in Figure 5.5.1.

Table 5.5.1: Difference in Mean Scores in Social Science between the Students of Rural and Urban Schools of North Goa District

Locale	Mean	SD	t - ratio	Level of Significance
Rural	19.65	5.91	3.83	0.01
Urban	21.45	6.85		

5.5.2 South Goa District

In the case of South Goa district also significant difference was observed between the Mean scores of the rural and urban students. The urban school students scored higher than the rural school students in Social Science. Mean scores of the two groups are given in Figure 5.5.1.

Table 5.5.2: Difference in Mean Scores in Social Science between the Students of Rural and Urban Schools of South Goa District

Locale	Mean	SD	t - ratio	Level of Significance
Rural	20.85	5.90	2.16	0.05
Urban	21.78	6.60		

5.5.3 Goa State

The average score in Social Science of the urban school students (Mean = 21.64) of the State of Goa was significantly higher than the rural school students (Mean = 20.20) (Table 4.5.3). It indicated that the urban school students were better than their rural counterparts in Social Science.

Table 5.5.3: Difference in Mean Scores in Social Science between the Students of Rural and Urban Schools of Goa State

Locale	Mean	SD	t - ratio	Level of Significance
Rural	20.20	5.93	4.50	0.01
Urban	21.64	6.74		

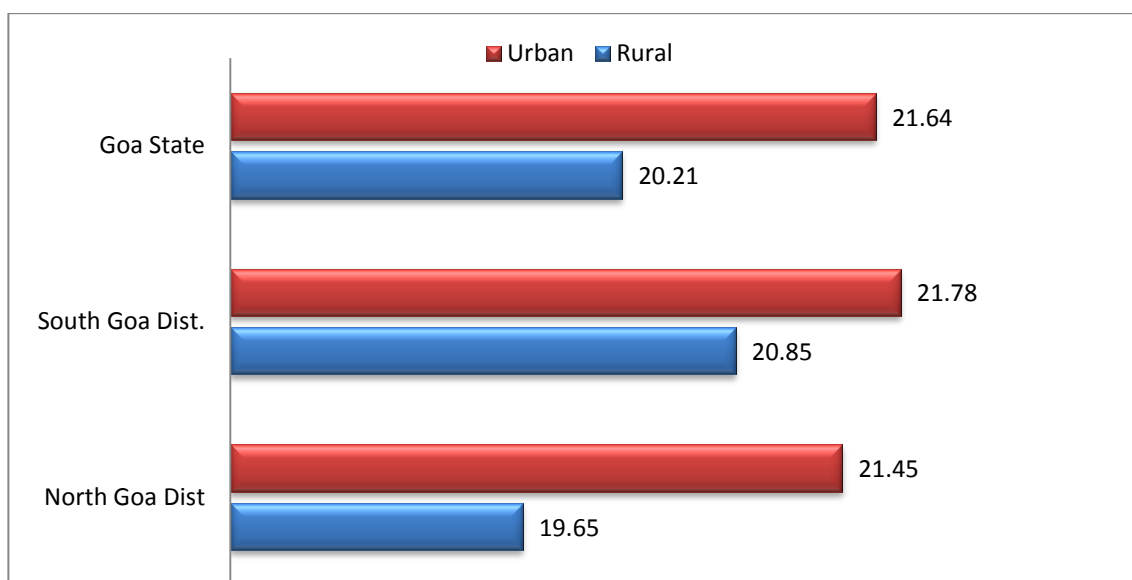


Fig.5.5.1: Comparative Mean Scores in Social Science of Rural and Urban School Students of North Goa District, South Goa District and Goa State

The findings presented above indicated that location is a factor influencing academic performance in Social Science. The urban schools students are better than the rural school students as far as their performance in Social Science is concerned.

5.6 Achievement in Social Science in Relation to Poverty Line Status of the Family

5.6.1 North Goa District

The mean score in Social Science of the students of North Goa district belonging to BPL families (Mean = 18.10) was found significantly lower than the mean score (M = 21.43) of students from APL families (Table 5.6.1). Comparative mean scores of the two groups are represented in Figure 5.6.1.

Table 5.6.1: Difference in Mean Scores in Social Science between the Students belonging to BPL families and APL families (North Goa District)

Poverty Line	Mean	SD	t - ratio	Level of Significance
BPL	18.10	5.14	3.25	0.01
APL	21.43	5.56		

5.6.2 South Goa District

It was found that the children from BPL and APL families of South Goa district differed significantly in their performance in Social Science (Table 5.6.2). The mean score of the children coming from BPL families (i.e.19.76) was significantly lower than the mean score of children from ABL families (i.e.22.29). Comparative mean scores of the two groups are represented in Figure 5.6.1.

Table 5.6.2: Difference in Mean Scores in Social Science between the Students belonging to BPL families and APL families (South Goa District)

Poverty Line	Mean	SD	t - ratio	Level of Significance
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BPL	19.76	5.68	4.68	0.01
APL	22.29	6.63		

5.6.3 Goa State

The mean score in Social Science of the children from BPL families of the State (Mean = 18.74) was significantly lower than the Mean score of those from the APL families (Mean = 21.84) (Table 5.6.3). It means the students coming from APL families were better than the children from BPL families. Mean scores of the two groups are represented graphically in Figure 5.6.1.

Table 5.6.3: Difference in Mean Scores in Social Science between the Students belonging to BPL families and APL families (Goa State)

Poverty Line	Mean	SD	t - ratio	Level of Significance
BPL	18.74	5.42	9.12	0.01
APL	21.84	6.60		

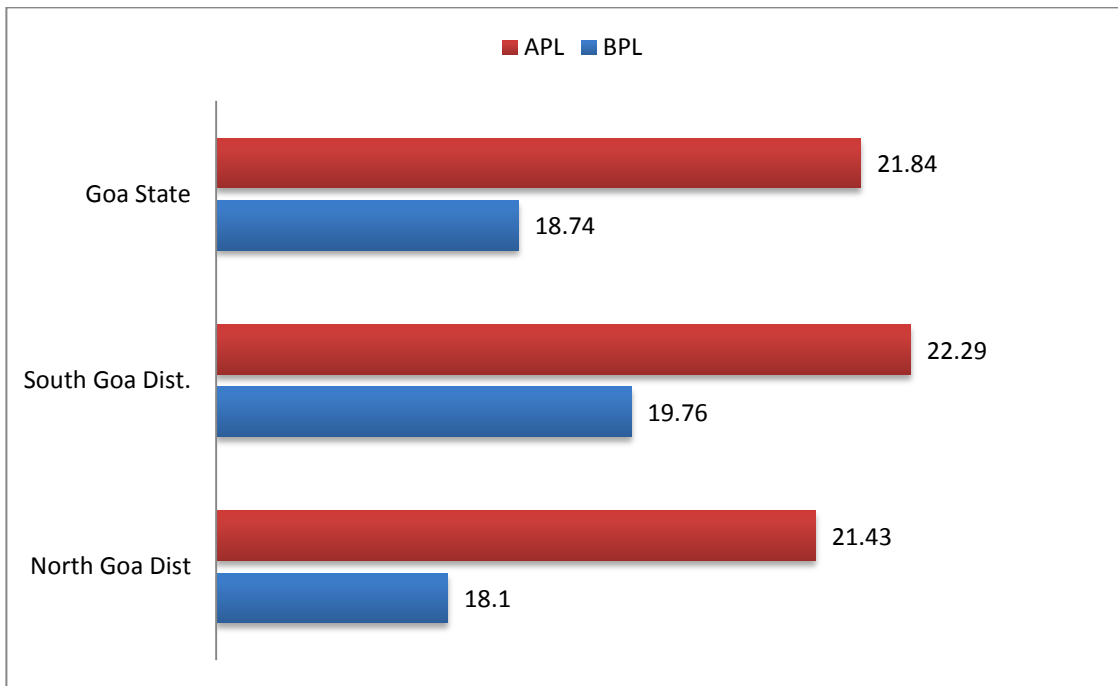


Fig.5.6.1: Comparative Mean Scores in Social Science of the Students belonging to BPL and APL families of North Goa District, South Goa District and Goa State

The above findings showed that the children from APL families of the North Goa district, South Goa district and the State of Goa as a whole scored higher in Social Science compared to those from BPL families. It means economic condition of the family is a factor that influences the performance of students. The economically poor student score less than the economically advanced students.

5.7 Achievement in Social Science in Relation to Private Tuition

5.7.1 North Goa District

The Mean score in Social Science of the students of North Goa Schools who were taking private tuition(i.e.18.90) was significantly lower than the students who had not joined private tuition classes (Mean = 20.32) (Table 5.7.1). It means achievement in

Social Science of the students without private tuition was better than those who used to attend private tuition. The mean scores of both the groups are represented in Figure 5.7.1.

Table 5.7.1: Difference in Mean Scores in Social Science between the Students joined Private Tuition and those without Private Tuition (North Goa District)

Group	Mean	SD	t - ratio	Level of Significance
Private Tuition	18.90	5.35	3.55	0.01
No Private Tuition	20.32	6.32		

5.7.2 South Goa District

Table 5.7.2: Difference in Mean Scores in Social Science between the Students joined Private Tuition and those without Private Tuition (South Goa District)

Group	Mean	SD	t - ratio	Level of Significance
Private Tuition	20.65	6.11	1.50	Not significant
No Private Tuition	21.28	6.15		

Table 5.7.2 shows no significant difference between the mean scores in Social Science of the students of South Goa district who used to attend private tuition classes and those who did not. It indicated that the students of South Goa district who were attending private tuition classes and those who were not had equal

performance in Social Science. Comparative mean scores of the two groups are represented in Figure 5.7.1.

5.7.3 Goa State

Significant difference was found in mean scores in Social Science of the students who attended private tuition and those who did not (Table 5.7.3). The mean score of the students of the State who did not attend private tuition (Mean = 20.77) was higher than those who attended private tuition classes (Mean = 19.85). The Mean scores of both the groups are represented graphically in Figure 5.7.1.

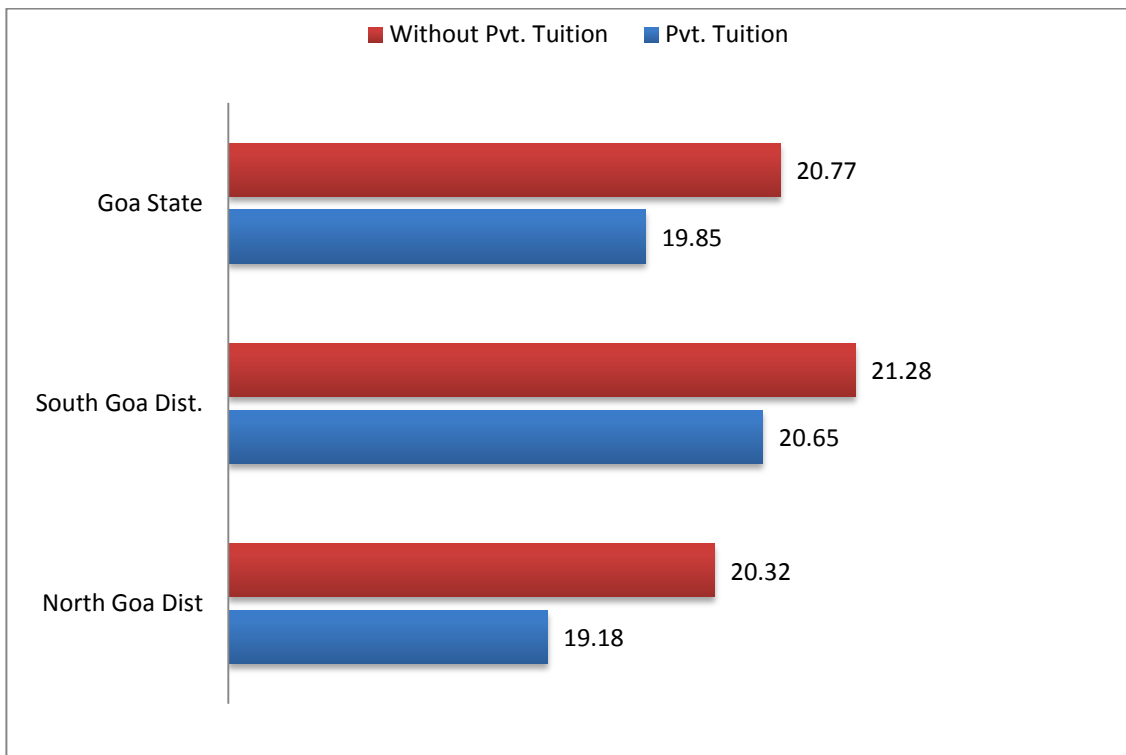


Fig.5.7.1: Comparative Mean Scores in Social Science of Students attended Private tuition and without Private. Tuition of North Goa District, South Goa District and Goa State

Table 5.7.3: Difference in Mean Scores in Social Science between the Students joined Private Tuition and those without Private Tuition (Goa State)

Group	Mean	SD	t - ratio	Level of Significance
Private Tuition	19.85	5.84	3.17	0.01
No Private Tuition	20.77	6.25		

The findings presented above indicate that attending private tuition did not help students to score more. The students who do not attend private tuition classes perform better in Social Science than those who take private tuition.

5.8 Achievement in Social Science in Relation Physical Health Status of Students

5.8.1 North Goa District

In North Goa district no significant difference was found in achievement in Social Science between the students who were physically challenged and those who were not so, though the Mean score of the normal students was slightly higher than the physically challenged ones (Table 5.8.1). In other words, the normal students and the physically challenged students of North Goa district exhibited equal performance in Social Science. The data are represented in Figure 5.8.1.

Table 5.8.1: Difference in Mean Scores in Social Science between the Physically challenged and Normal Children of North Goa District

Groups	Mean	SD	t - ratio	Level of Significance
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Physically challenged	20.00	7.14	0.02	Not significant
Not Physically challenged	20.03	6.14		

5.8.2 South Goa District

The mean score of the students who were physically challenged (Mean = 17.91) was significantly lower than mean score of the normal students (Mean = 21.22) (Table 5.8.2). It means the normal students of South Goa schools performed better than the physically challenged students in Social Science. Mean scores of the two groups are graphically shown in Figure 5.8.1.

Table 5.8.2: Difference in Mean Scores in Social Science between the Physically challenged and Normal Children of South Goa District

Groups	Mean	SD	t - ratio	Level of Significance
Physically challenged	17.91	3.74	4.94	0.01
Not Physically challenged	21.22	6.17		

5.8.3 Goa State

The mean score of the physically challenged students was 18.73 and that of the normal students was 20.60. The difference between the two mean scores was found significant at 0.05 level. The finding indicated that the physically challenged students of Class VII of the State of Goa exhibited less performance in Social Science than the normal students. Graphical representation of the Mean scores of both the groups is done in Figure 5.8.1.

Table 5.8.3: Difference in Mean Scores in Social Science between the Physically challenged and Normal Children of Goa State

Groups	Mean	SD	t - ratio	Level of Significance
Physically challenged	18.73	5.38	2.56	0.05
Not Physically challenged	20.60	6.20		

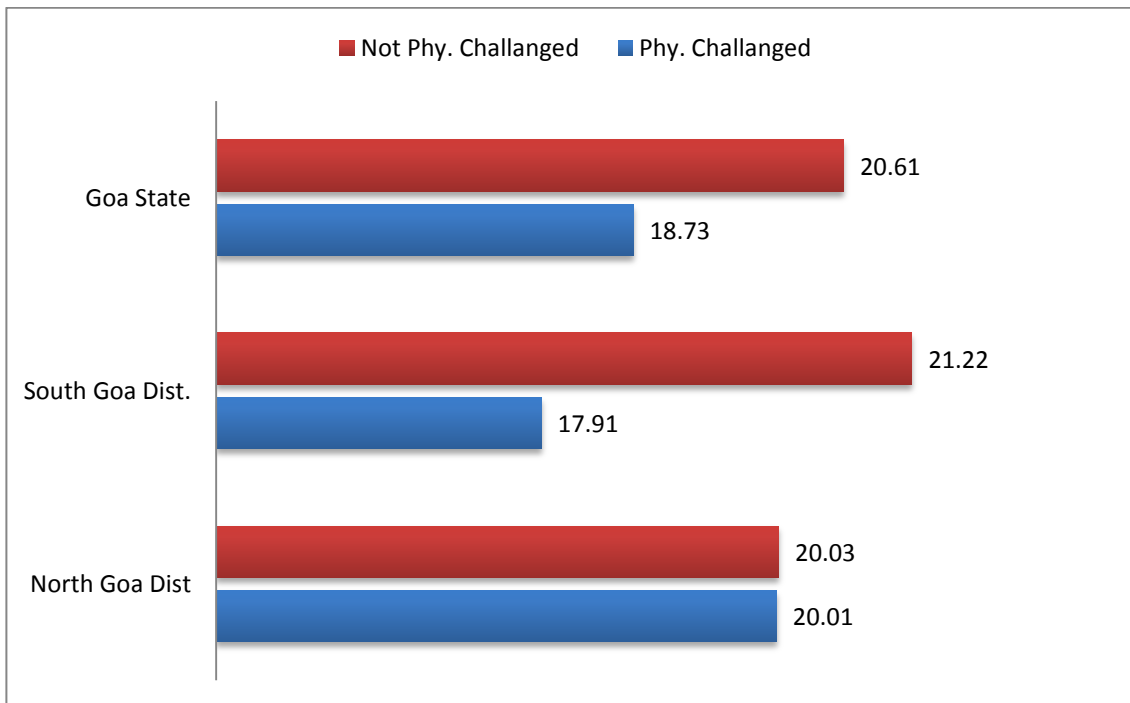


Fig. 5.8.1: Mean Scores of Physically Challenged and Normal students in Social Science of North Goa District, South Goa District and Goa State

The finding presented above indicated that the physical health status of the students affects their performance in Social Science. The normal students perform better than the physically challenged students. The physically challenged students lag behind the normal students in Social Science.

5.9 Conclusions

1. On an average the students of Class-VII of the State of Goa scored roughly 41 percent in the achievement test in Social Science.
2. The students studying in schools located in South Goa district perform better in Social Science compared to their counterparts of North Goa district.
3. Boys and girls exhibit equal performance in Social Science.
4. SC, ST, OBC and general castes/categories students do not differ significantly in their performance in Social Science.
5. Language background of students affects their performance in Social Science. Students using English language at home exhibit higher performance in Social Science compared to students speaking other languages at home. Further, students coming from Konkani speaking background score higher in Social Science than the students speaking at home in Hindi, Kannada and Marathi languages.
6. Students studying in schools located in urban areas exhibit significantly higher performance in Social Science than the students studying rural Schools.
7. Students coming from BPL families score significantly lower in Social Science than their counterparts from ABL families.
8. Students who attend private tuition classes exhibit significantly lower performance in Social Science than those who do not go for private tuition classes.
9. The physically challenged students score significantly lower in Social Science than the physically normal students.

CHAPTER VI

WHAT THE STUDENTS KNOW AND CAN DO IN DIFFERENT SUBJECTS

6.0 Introduction

This chapter presents what the students know and can do in each of the four subjects, viz: English, Mathematics, Science and Social Science in order. Subject-wise there are two parts in this chapter. The first part shows what the students know in the subject concerned. This part has two sections. In the first section, performance (average scores) of students in different cognitive processes in each of the subjects for North Goa district, South Goa district and Goa State are presented, followed by the significance of difference in performance between the students of North Goa and South Goa districts in each of the cognitive processes in each subject. The second section represents how the students responded to different items representing various cognitive processes. Only a sample of very few items was considered for this purpose. For ease of interpretation and clarity in understanding data are graphically represented as per requirement.

The second part presents what the students can do in various cognitive processes in each of the four subjects. Data are presented subject-wise in Tabular form for different items for North Goa district, South Goa district and Goa State followed by interpretation of the same.

6.1 English Language

6.1.1 What the Students Know in English Language

a) What the Students know in Different Areas

Table 6.1.1: Students' Performance in Textual Knowledge, Expression and Reading Comprehension

Component	Maximum possible Avg. Score	Sample	Obtained Mean	SD	t-value
Textual Knowledge (10 items)	10	North Goa Dist.	4.89	1.99	5.59 **
		South Goa Dist.	5.39	2.04	
		Goa State	5.14	2.01	
Expression (20 items)	20	North Goa Dist.	9.34	3.34	5.10 **
		South Goa Dist.	10.09	3.68	
		Goa State	9.70	3.53	
Reading Comprehension (20 items)	20	North Goa Dist.	7.14	2.80	5.08 **
		South Goa Dist.	7.78	3.22	
		Goa State	7.46	3.02	

** Significant at 0.01 level

The performance of students in textual knowledge, expression and reading comprehension in Table 6.1.1 revealed the following:

- In all the three cognitive processes, the students of South Goa district are better than the students of North Goa district.
- In textual knowledge and expression, the students of Class-VII are just average. In reading comprehension their performance is very low.

b) Sample Items

The details about how the students responded to different items (few selected items) are given below.

Sample Item: Remember (text based)

Item No. 1: The king sent messengers to _____ .

1. find three wise men
2. presents gifts to the people
3. look for the hermit
4. find answers to three questions

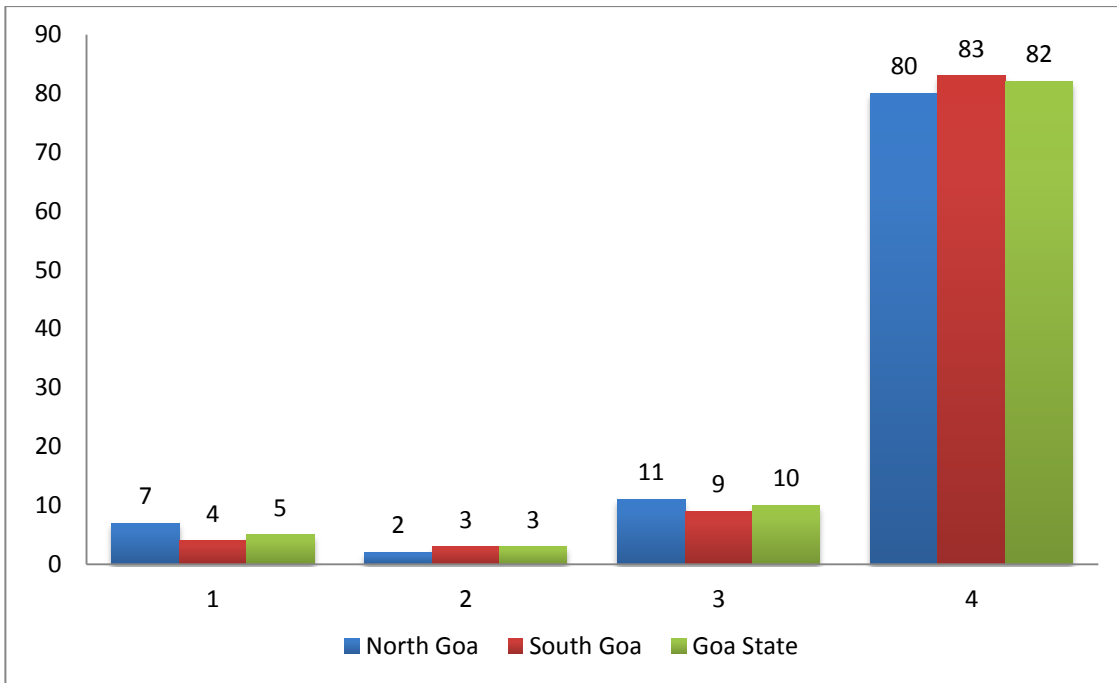


Fig. 6.1.1: Percentage of Students Selected each Response (Item No.1)

The item requires students to memorise and reproduce the answer. It is an easy item. Around 80 percent students of North Goa district, 84 percent of South Goa district and 82 percent students of the State selected the correct option. Figure 6.1.1 shows how the other students responded.

Sample Item: Grasp idea (text based)

Item No. 9: Mr. Purcell was puzzled when he realised that the _____.

1. stranger had spend 10 years in prison
2. man did not have ten dollars

3. noise of the pets disturbed the stranger
4. stranger brought the birds to release them

This item requires students grasp the idea given in the text. This is a difficult item. Only 35 percent students of North Goa district, 40 percent students of South Goa district and 37 percent students of the State selected the correct option. Figure 6.1.2 shows how the remaining students responded.

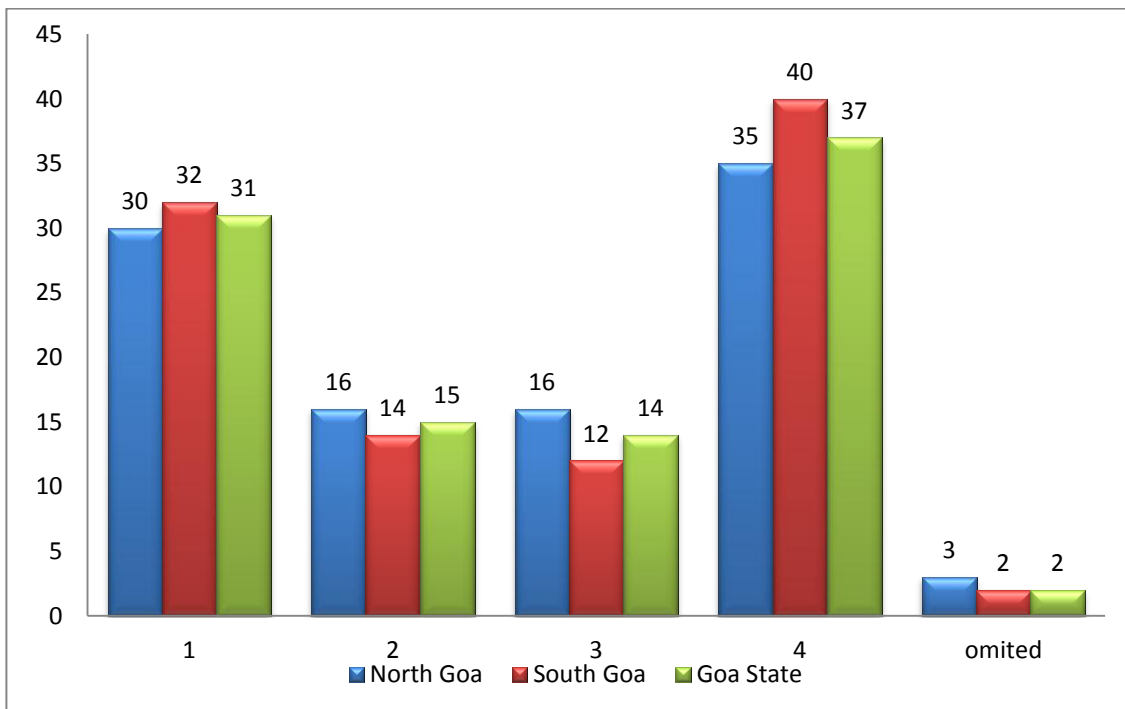


Fig. 6.1.2: Percentage of Students Selected each Response (Item No.9)

Sample Item (Expression): Grasp Idea/Express

Item No.14: The sentence given below has four parts marked a, b, c and d but not in correct order. Read carefully and decide the correct order of the parts of the sentence and encircle the number of the correct order.

South India / most people in / the cool floor / like to sit on.

a b c d

1. a, c, d, b

2. c, d, a, b
3. b, a, d, c
4. d, c, a, b

This item requires the students to understand the relationship between different parts to form a meaningful sentence. Figure 5.1.3 shows that 70 percent students of North Goa district, 77 percent students of South Goa district and 73 percent students of the State selected option No.3 which is the answer. How the remaining students responded to the other options are given in the Figure.

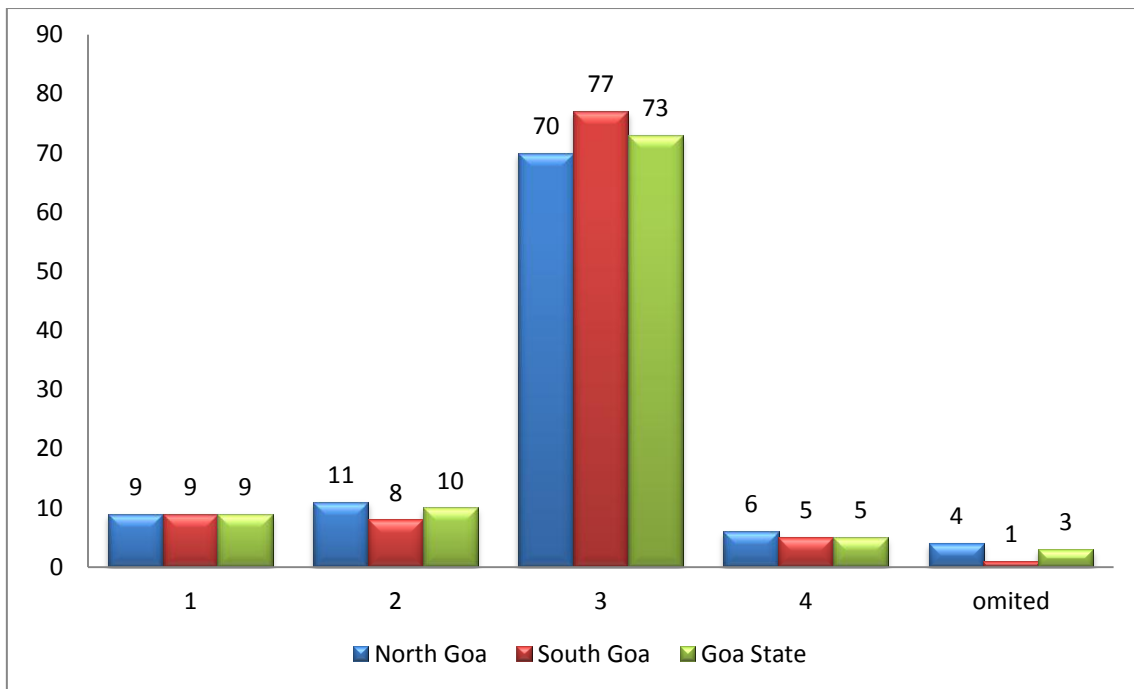


Fig. 6.1.3: Percentage of Students Selected each Response (Item No.14)

Sample Item (Expression): Infer/Converts

Item No.30: Which is the correct passive voice for the given active voice sentence.

The movie fascinates me.

1. I am fascinated by the movie.
2. I was fascinated by the movie.
3. I am being fascinated by the movie.

4. I had been fascinated by the movie.

The item requires the students to grasp the meaning of the active voice sentence and convert it into passive voice. Only 30 percent students of North Goa district, 28 percent students of South Goa district and 29 percent students of the State could select the correct option (i.e. Option No.1). Figure 6.1.4 shows how the rest of the students responded.

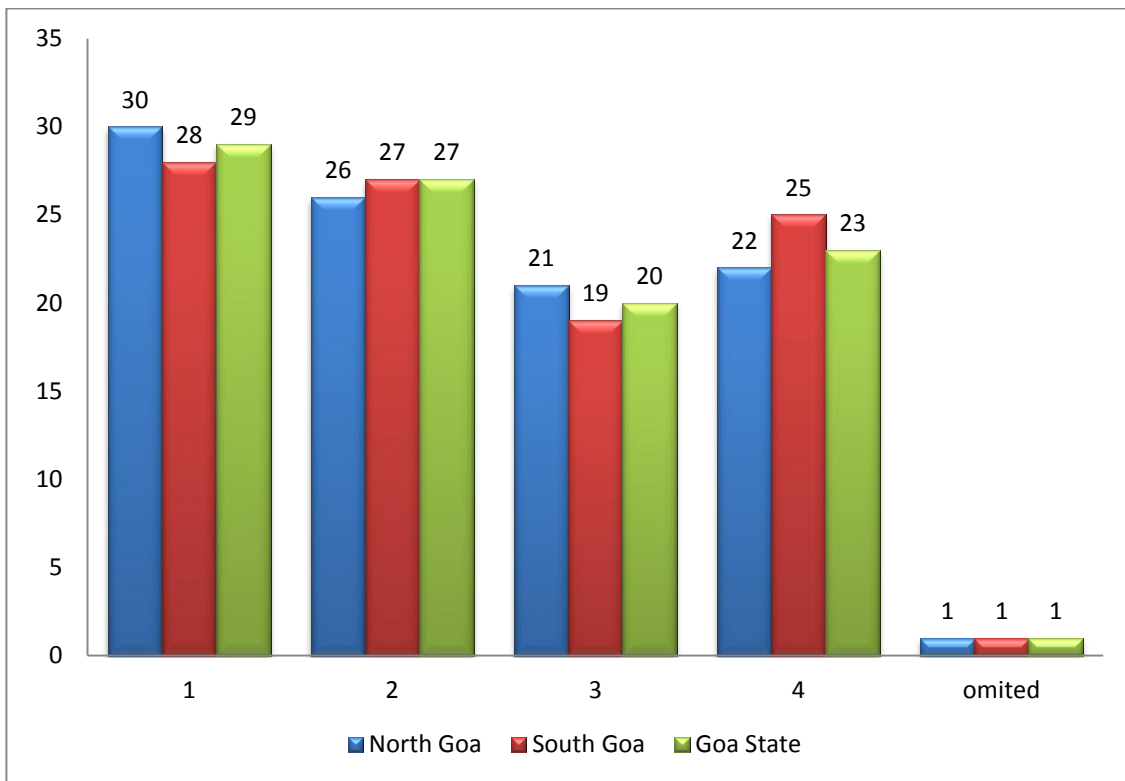


Fig.6.1.4: Percentage of Students Selected each Response (Item No.30)

Sample Item (Reading Comprehension): Grasp/Interpret

Direction: Read the following passage carefully. Below it, there are incomplete statements/questions along with four options. Encircle the serial number of the correct option.

In this life, there are no gains without pains. Life indeed would be doll if there were no difficulties. Games lose their zest if there is no real struggle and if the result is a foregone conclusion.

Both the winner and the loser enjoy a game most if it is closely contested till the end. No victory is a real triumph unless you have a worthy rival. Whether we like it or not, life is one continuous competitive examination.

Item No.46: “No gain without pain” means _____ .

1. hard work usually ends in suffering
2. suffering is needed to achieve success
3. suffering cannot result in anything
4. the more one suffer, the more he/she gains

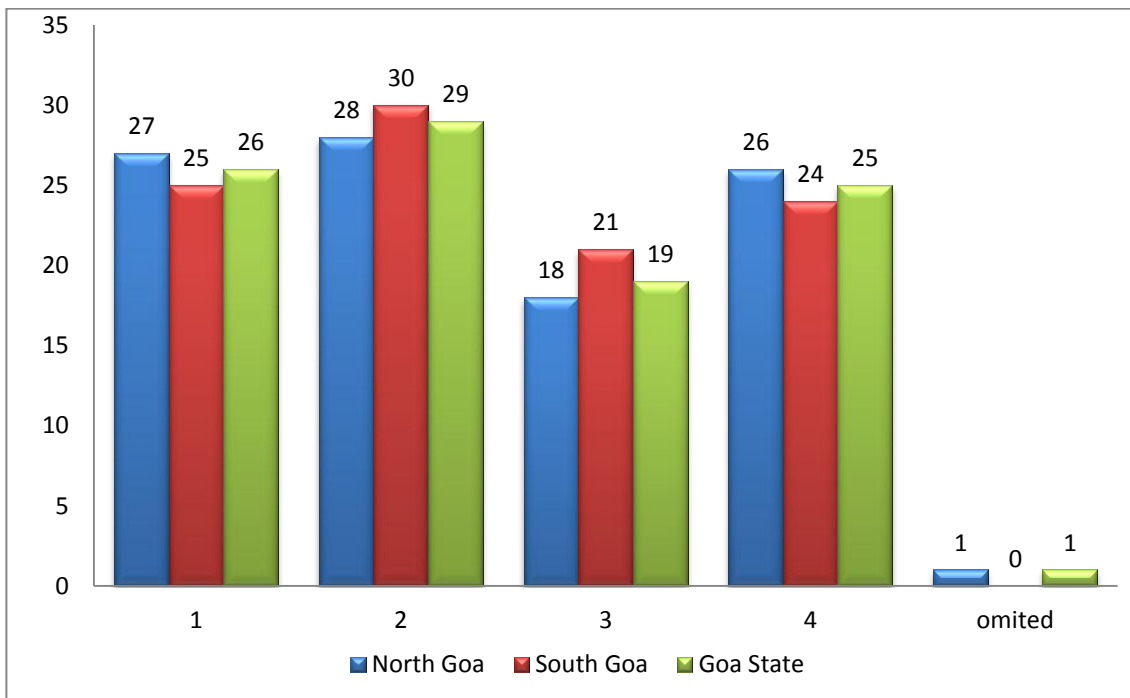


Fig. 6.1.5: Percentage of Students Selected each Response (Item No.46)

The item requires students to grasp the meaning of the relevant idea given in the text and interpret it. This is a difficult item. Only 28 percent students of North Goa district,

30percent students of South Goa district and 29 percent students of the State could select the correct option. Figure 6.1.5 shows how the rest of the students responded.

Sample Item (Reading Comprehension): Grasp idea /Interpret/Infer

Item No. 50: Which of the following represents the central idea of the passage?

1. Life is an unending struggle.
2. Life is full of enjoyable games.
3. Suffering is not necessary for success.
4. Life is full of pain and suffering.

This item requires students to clutch the main idea of the given passage and infer the same. Only 25 percent students of North Goa district, 26 percent students of South Goa district and 25 percent students of the State could select the correct option (i.e. Option No.1).

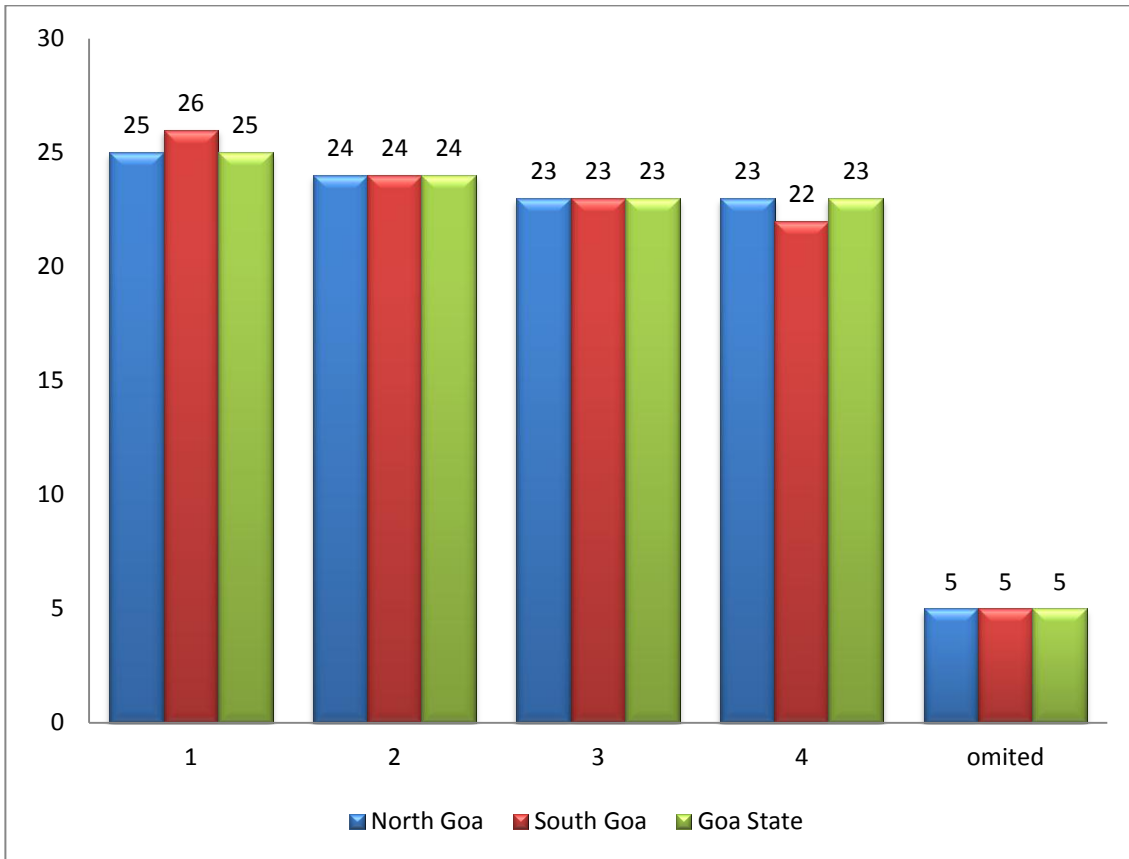


Fig. 6.1.6: Percentage of Students Selected each Response (Item No.50)

6.1.2 What the Students can do in English Language

a) Remembering from the text

Table 6.1.2: Performance of Students of Class-VII on the cognitive process of remembering (textual knowledge)

Item No.	Remembering/recall from the text	% of Students correctly answered		
		North Goa	South Goa	Goa
1	Factual information	80	83	82
4	Effect of an action	55	57	56

6	Cause –effect relation	41	45	43
7	Cause of an action	48	58	53
8	Action of a character	40	49	45

- Four-fifths of the students of Class-VII are able to remember/recall factual information from the text.
- Only around two-third of the students are able to find cause-effect relation in the given text.
- Around half of the students could identify the reason behind an action.

b) Expression

Table 6.1.3 shows the performance of students of Class-VII in the cognitive process of expression.

Table 6.1.3: Performance of Students on the cognitive process of Expression (on the Sample Items)

Item No.	Expression	% of Students correctly answered		
		North Goa	South Goa	Goa State
11	Correct use of verb in past tense	61	64	62
13	Framing of a sentence correctly	63	65	64
16	Correct use of auxiliary verb	67	69	68
19	Meaning of word (miser)	44	48	46
21	Change of direct speech to indirect speech	50	53	51
23	Correct use of conjunction	39	44	42

26	Correct use of articles	48	51	49
29	Correct use of preposition	26	29	27
30	Change from active to passive voice	30	28	29

- Sixty-two percent of students of Class-VII can correctly use a verb in past tense.
- Only 46 percent students know the meaning of the word 'miser'.
- Only half of the students are able to change direct speech to indirect speech.
- Only 27 percent students of Class-VII know the correct use of a preposition.
- Only 29 percent students of Class-VII are able to change active voice to passive voice.

c) Reading Comprehension

Table 6.1.4 shows the performance of students of Class-VII in the cognitive process of grasp idea/interpret/infer/evaluate.

Table 6.1.4: Performance of Students on the cognitive process of grasp idea/interpret/infer/evaluate (on the Sample Items)

Item No.	Grasp idea/interpret/infer/evaluate	% of Students correctly answered		
		North Goa	South Goa	Goa State
34	Grasp the meaning of words	39	43	41
33	Grasp the meaning of phrases	43	53	48
41		54	56	55
39	Grasp opposite	41	45	43

	meaning			
35	Determine the cause of an action/event	21	26	23
44		20	20	20
45	Make inference	21	22	21
43	Evaluate the title	47	45	46
50	Identify the main theme/central idea	22	25	23

- Only two-third of the students could grasp the meaning / opposite meaning of words.
- Half of the students could grasp the meaning of phrases.
- Only one out of every five students could draw inference.
- Less than half of the students could evaluate a title of given passage.
- Only 23 percent students of Class-VII are able to identify the main theme/central idea.

6.2 Mathematics

6.2.1 What the Students Know in Mathematics

a) What the Students know in Different Areas

Table 6.2.1: Students Performance in Comprehension and Application.

Component	Maximum possible Avg. Score	Sample	Obtained Mean	SD	t-value
Comprehension (23 items)	23	North Goa Dist.	8.67	3.5	3.87 **
		South Goa Dist.	9.25	3.72	
		Goa State	8.96	3.52	

Application (22 items)	22	North Goa Dist.	6.44	2.74	3.42 **
		South Goa Dist.	6.85	2.85	
		Goa State	6.64	2.81	

** Significant at 0.01 level

The performance of students in Comprehension and application in Mathematics given in Table 6.2.1 revealed the following:

- In both understanding and application in Mathematics, the students of South Goa district are better than the students of North Goa district.
- In comprehension the performance of students in of Class-VII is low. The average score of the students is less than 10 against a maximum possible score of 23.
- As far as application ability in Mathematics is concerned, performance of students is very low. The obtained mean score of the students is less than 7 against the maximum possible score of 22.

b) Sample Items

The details about how the students responded to different items (few selected items) are given below.

Sample Item: Remember

Item No. 1: The additive inverse of 7 is _____.

1. -7
2. 0
3. 1/7
4. 7

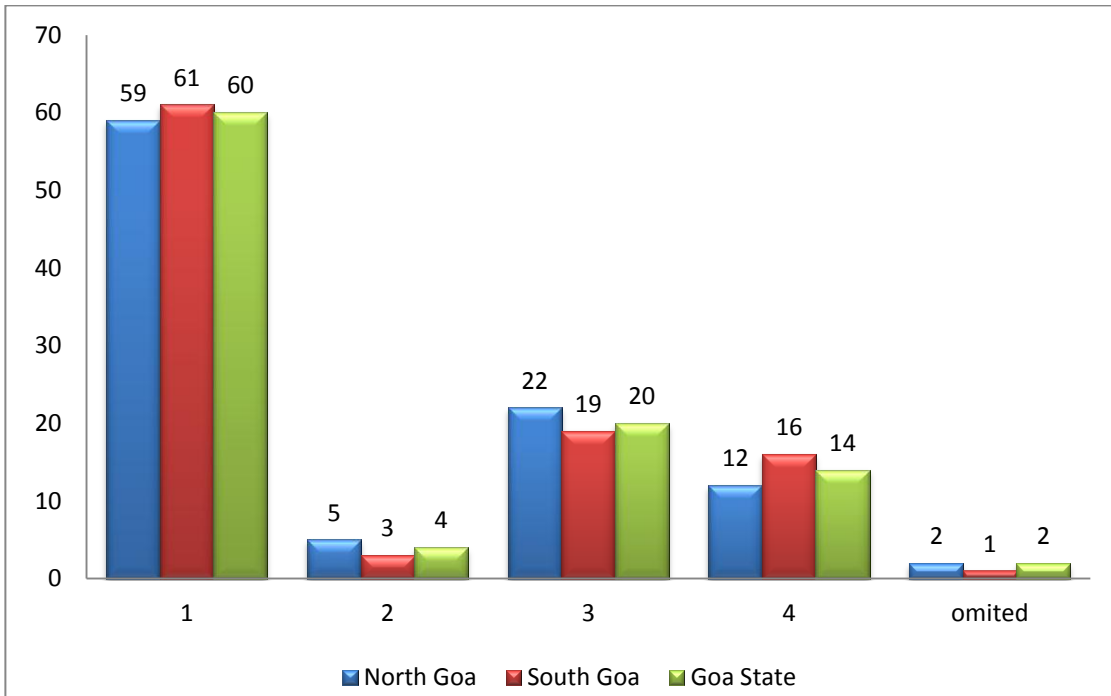


Fig. 6.2.1: Percentage of Students Selected each Response in Maths (Item No.1)

The item requires students to recall and reproduce the answer. Though it is a too easy item, only 59 percent students of North Goa district, 61 percent of South Goa district and 60 percent students of the State selected the correct option. Two students out of every 5 students do not know the additive inverse of 7. Figure 6.2.1 shows how the other students responded.

Sample Item: Remember

Item No. 3: A percentage is a fraction having a denominator of _____ .

1. 1
2. 10
3. 100
4. 1000

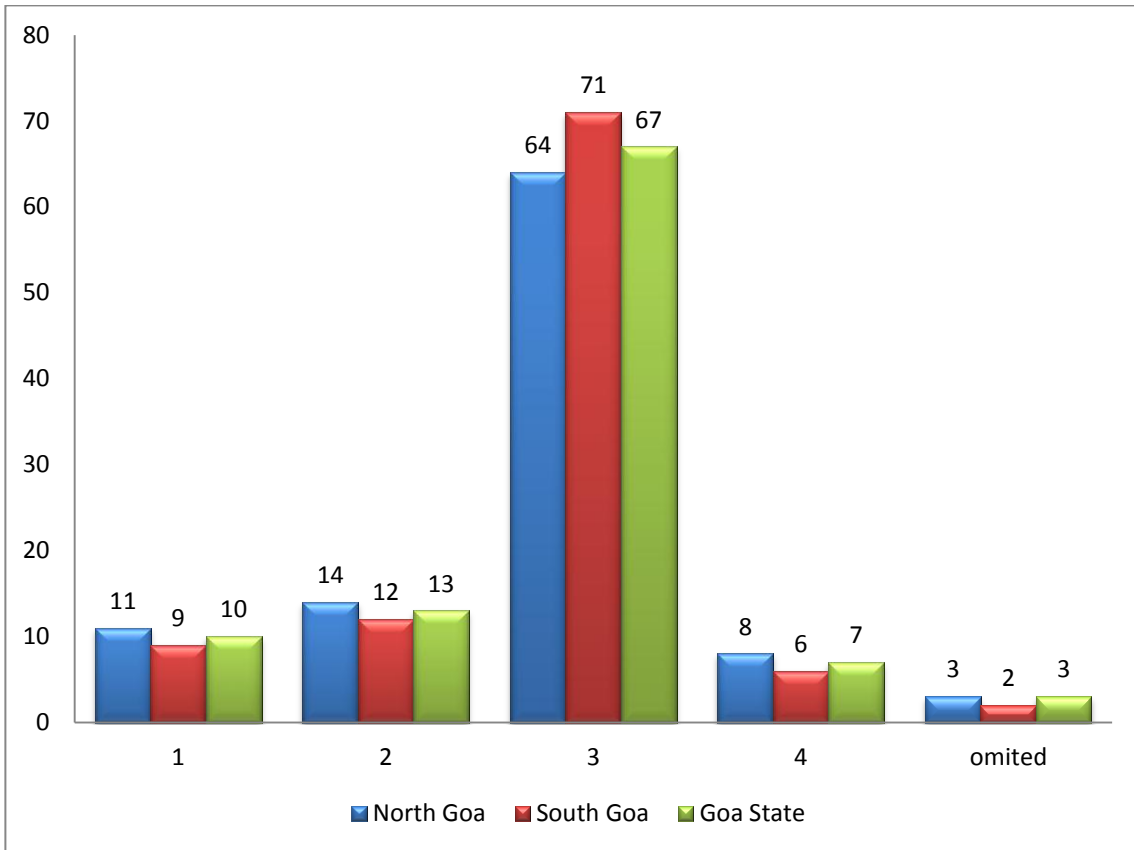


Fig. 6.2.2: Percentage of Students Selected each Response (Item No.3)

The item requires students to recall and reproduce the answer. Though it is an easy item, only 64 percent students of North Goa district, 71 percent of South Goa district and 67 percent students of the State selected the correct option (No.3). It means one student out of every three students does not know the meaning of percentage. Figure 6.2.2 shows how the other students of the samples responded.

Sample Item: Comprehension

Item No. 11: 20 % of which of the following number is 50?

1. 150
2. 275
3. 300
4. 250

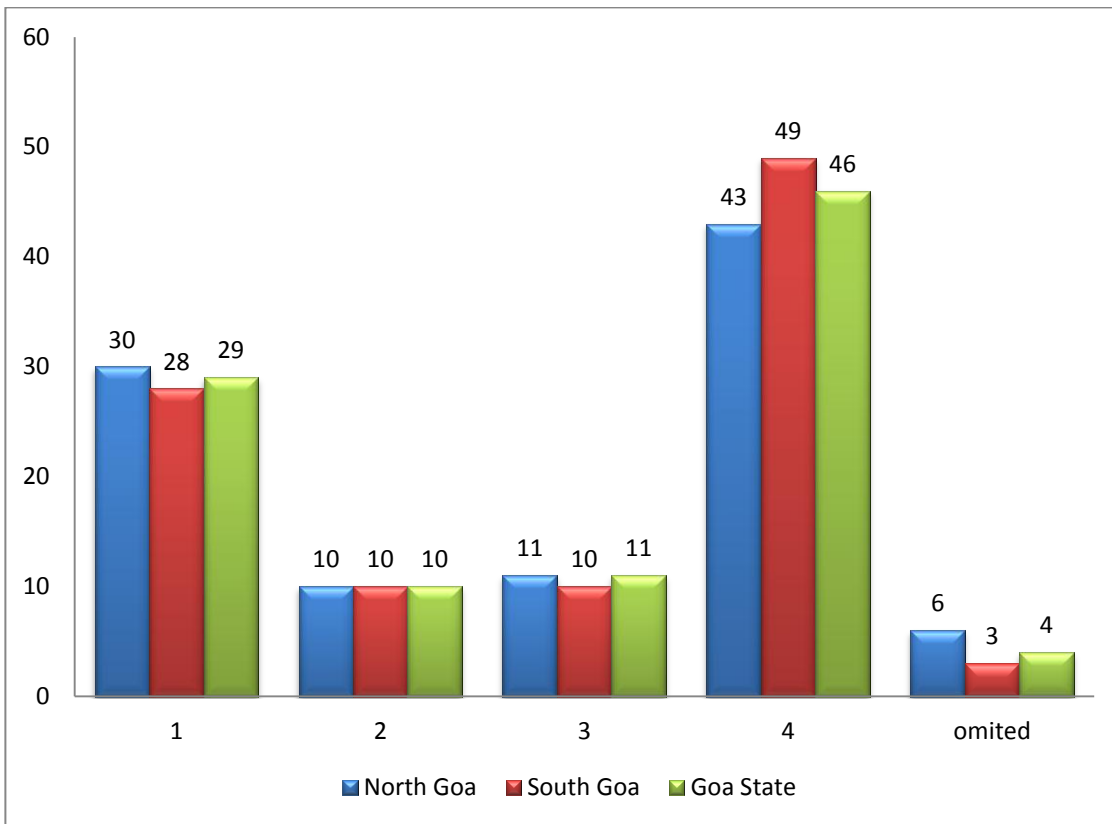
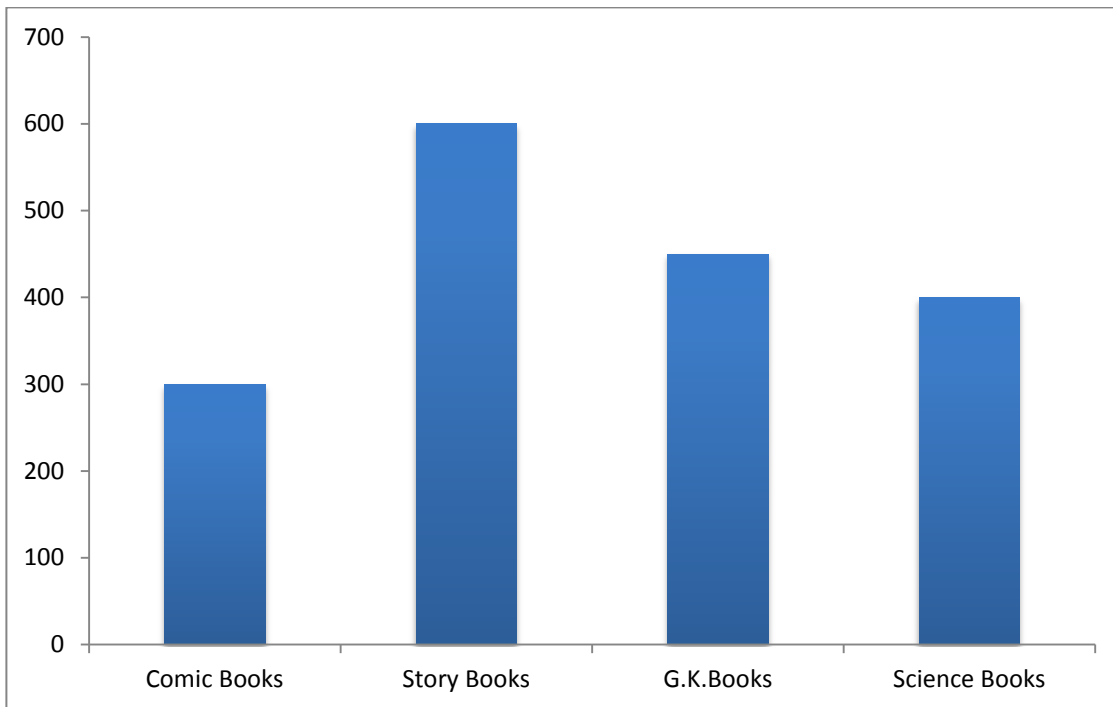


Fig. 6.2.3: Percentage of Students Selected each Response (Item No.11)

The item requires students to understand the meaning of percentage and the relevant formula. Only 43 percent students of North Goa district, 49 percent of South Goa district and 46 percent students of the State selected the correct option (No.4). It means more than half of the students have not understood the concept 'percentage'. Figure 6.2.3 shows how the other students of the samples responded.

Sample Item: Interpreting

Item No. 24: The graph shows the data about different types of books in a school library. Study the graph and answer the given question.



What is the ratio of comic books to that of story books?

1. 1:2
2. 2:1
3. 3:5
4. 5:3

The item requires students to study the graph, comprehend it and interpret it to derive the answer. Only 27 percent students of North Goa district, 26 percent of South Goa district and 27 percent students of the State selected the correct option (No. 1). It indicates that roughly one student out of every five student could interpret such graphs. Figure 6.2.4 shows how the other students of the samples responded.

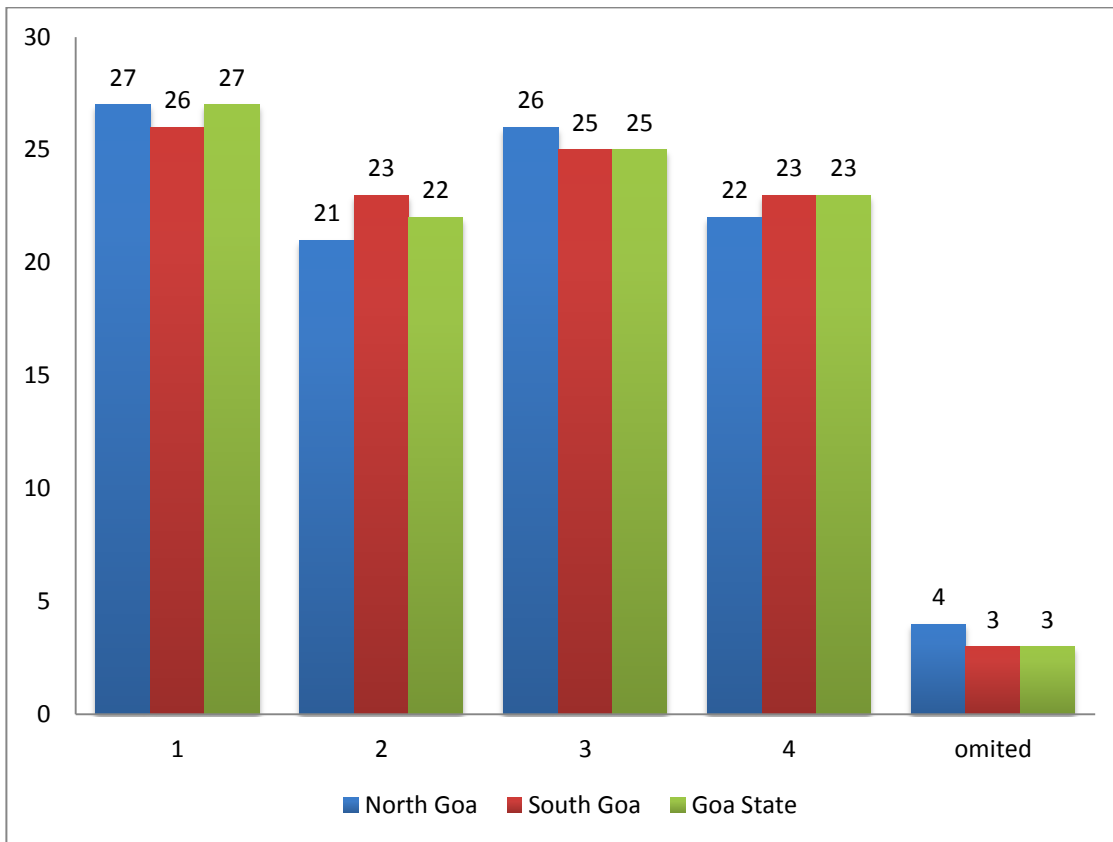


Fig. 6.2.4: Percentage of Students Selected each Response (Item No.24)

Sample Item: Applying

Item No. 42: A wooden door of dimension 3m X 2m is mounted on a square wall of side 9 m. How many litres of paint will be required to paint the wall if one litre of paint covers an area of 5m²?

1. 15
2. 25
3. 75
4. 85

The item requires students to know the application of formulas to find out the areas of rectangle and square and then find out the requirement of paint using appropriate

mathematical operation. Only 29 percent students of North Goa district, 36 percent of South Goa district and 33 percent students of the State selected the correct answer (option 1). It shows that only one student out of every three can solve such problem in real life situation. Figure 6.2.5 shows how the other students of the samples responded.

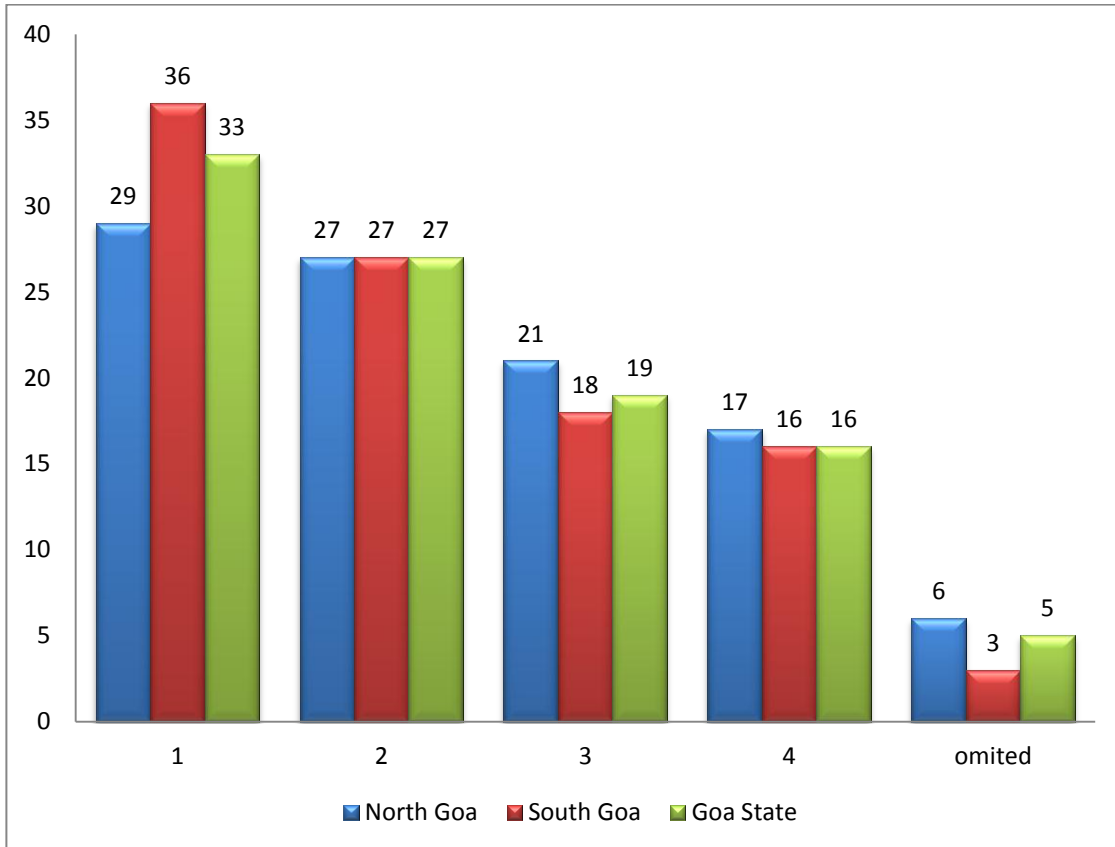


Fig. 6.2.5: Percentage of Students Selected each Response (Item No.42)

Item No. 49: Sam walked straight 4 meters to the North, took a right turn and walked straight another 3 meters. How meters away Sam is from the starting point?

1. 3
2. 5
3. 7

The item tests the ability of the students to use the knowledge of right angled triangle to solve problem in a given situation. It requires students to know the application of formulas to find out the third side of a triangle knowing two sides. Mere 14 percent students of North Goa district, 11 percent of South Goa district and 12 percent students of the State selected the correct answer, i.e. option No.2. It shows that roughly just one student out of every eight students can solve such a problem in real life situation. Higher percentage of students selected the incorrect options, i.e. 1, 3 and 4. Figure 6.2.6 shows how the other students of the samples responded.

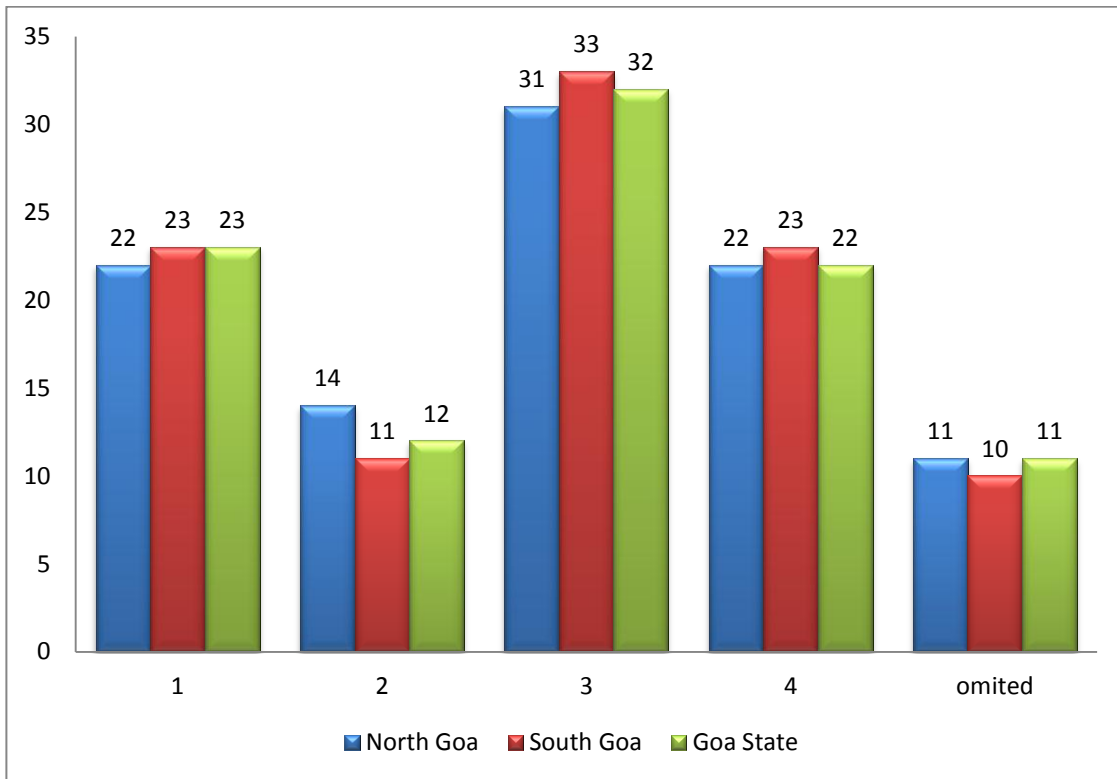


Fig. 6.2.6: Percentage of Students Selected each Response (Item No.49).

6.2.2 What the Students can do in Mathematics

a) Arithmetic

Table 6.2.2 shows the performance of students of Class-VII of North Goa district, South Goa district and Goa State on various cognitive processes in Arithmetic.

Table 6.2.2: Performance of Students in Arithmetic.

Cognitive Process	Item No.	Specification	% of Students correctly answered		
			North Goa	South Goa	Goa
Knowing	1	Identifying additive inverse	59	61	60
	3	Meaning of percentage	64	71	67
Under-standing	6	Multiplication of number with decimals	69	75	72
	11	Percentage of a number	43	49	46
	19	Decrease in percentage	34	34	34
	20	Finding of HCF	27	30	29
	21	Finding equivalent fraction	17	20	19
Applying	29	Profit & loss	45	49	47
	30	Ratio & Proportion	31	35	33
	32	Profit & loss	40	44	42
	36	Fraction	33	33	33

	40	Simple interest	40	51	46
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- Three-fifths of the students of Class-VII know the additive inverse of 7.
- Less than half of the students can find out the number, 20 percent of which is 50.
- Only 29 percent of students can find out the HCF of 18 and 24.
- Only one out of every five students can find equivalent fraction of $\frac{2}{3}$.
- Nearly half of the students can solve a problem involving profit and loss.
- Only one-third of the students can use the principles of ratio and proportion to solve a problem in practical situation.
- Only one-third of the students can apply fraction in practical situation.
- Only 46 percent students can find out the amount one needs to deposit in a bank for two years to earn Rs. 400/- as interest at a simple interest of 5 % p.a.

b) Geometry

Table 6.2.3 shows the performance of students of Class-VII of North Goa district, South Goa district and Goa State on various cognitive processes in Geometry.

Table 6. 2. 3: Performance of Students in Geometry

Cognitive Process	Item No.	Specification	% of Students correctly answered		
			North Goa	South Goa	Goa
Knowing	2	Geometrical instrument	56	52	54
	4	Formula of parallelogram	56	63	60
	7	Sum of two angles	58	65	61

Under- standing		forming linear pair			
	15	Pythagoras theorem	28	30	29
	18	Properties of hexagon	35	40	38
	22	Properties of isosceles angles	16	16	16
	26	Identification of obtuse triangle	15	18	16
Applying	31	Pythagoras theorem	12	8	10
	46	ASA congruence rule	25	26	25
	47	Area & perimeter of rectangle	11	11	11

- Only 54 percent students of Class-VII of the State know that a pair of compasses is used to bisect an angle of 85° .
- Sixty percent students know/remember the formula of parallelogram.
- Only 29 percent students have understood the Pythagoras theorem and barely 10 percent students can apply the same.
- Only 16 percent students have understood the properties of isosceles angles.
- Only one-fourth of the students are able to correctly apply ASA congruence rule.
- Only one student out of every 10 students of Class-VII of Goa is able to apply the formula of area and perimeter of a rectangle to solve problems in a practical situation.

c) Algebra

Table 6.2.4 shows the performance of students of Class-VII of North Goa district, South Goa district and Goa State on various cognitive processes in Algebra.

Table 6. 2. 4: Performance of Students in Algebra.

Cognitive Process	Item No.	Specification	% of Students correctly answered		
			North Goa	South Goa	Goa
Knowing	5	Coefficient	27	27	27
Under-standing	10	Expanding of exponents	46	57	51
	13	Conversion of statement to equation	48	58	53
	16	Value of coefficient in equation	37	38	37
Applying	29	Simple equation	48	49	49
	43	Algebraic expression	29	31	30

- Only 27 percent students of Class-VII of the State can identify the coefficient in an expression.
- Fifty-three percent students can convert a statement into an equation.
- Only 37 percent students can find out the value of a coefficient in a equation.
- Only half of the students of Class-VII of Goa can apply simple equation in a new situation.
- Barely 30 percent students can use algebraic expression to solve a problem in a practical situation.

6.3 Science

6.3.1 What the Students Know in Science

a) What the Students know in Different Areas

Table 6.3.1: Students Performance in Knowledge, Understanding and Application

Component	Maximum possible Avg. Score	Sample	Obtained Mean	SD	t-value

Knowing (20 Items)	20	North Goa Dist.	10.26	3.34	6.71**
		South Goa Dist.	11.20	3.39	
		Goa State	10.73	3.35	
Understanding (23 Items)	23	North Goa Dist.	8.21	3.58	1.07 (N.S)
		South Goa Dist.	8.37	3.66	
		Goa State	8.43	3.63	
Applying (7 Items)	7	North Goa Dist.	2.61	1.44	0.83 (N.S.)
		South Goa Dist.	2.66	1.45	
		Goa State	2.65	1.46	

** Significant at 0.01 level

N.S. Not significant at 0.05 level

The performance of students in knowledge, understanding and application in Table 6.3.1 revealed the following:

- In knowledge component, the students of South Goa district are better than the students of North Goa district.
- In understanding and application areas, students of both the districts are equal.
- In knowledge component the students of Class-VII are just average. But in understanding and application they are much below the average value.

b) Sample Items

The details about how the students responded to different items (few selected items) are given below.

Sample Item: Knowing (Recall)

Item No. 3: Which part of the tree help in reducing soil erosion?

1. Flowers

2. Leaves
3. Stems
4. Roots

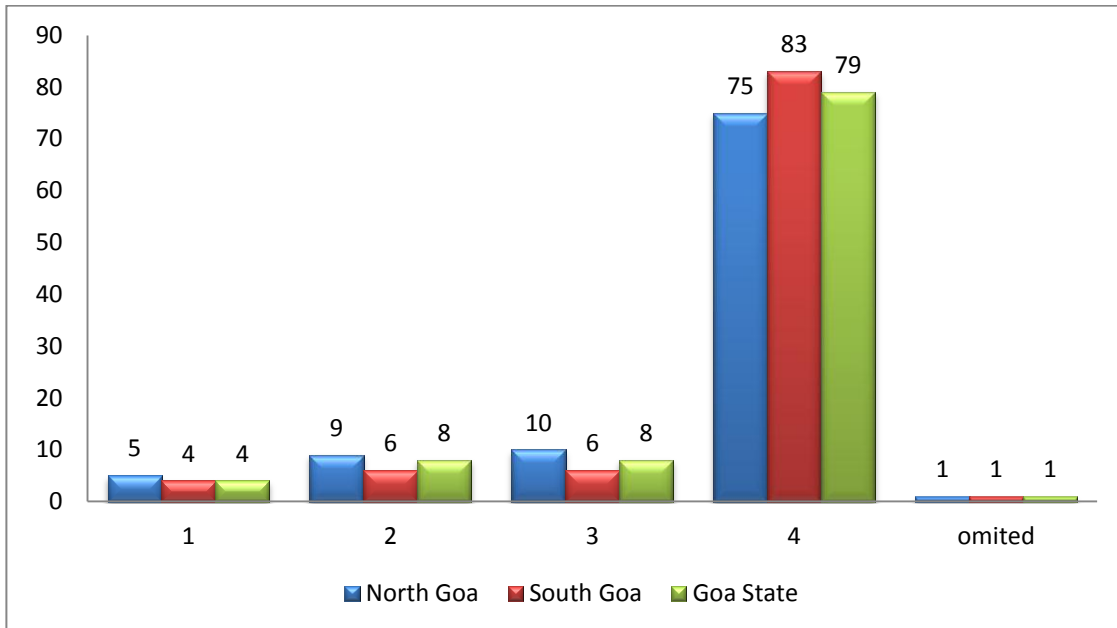


Fig. 6.3.1: Percentage of Students Selected each Response (Item No.3)

The item requires students to memorise and reproduce the answer. It is an easy item. Around 75 percent students of North Goa district, 83 percent of South Goa district and 79 percent students of the State selected the correct option (Option - 4). Figure 6.3.1 shows how the other students responded.

Sample Item: Knowing (Recall)

Item No. 18: Which of the following produces unisexual flower?

1. Papaya
2. Mustard
3. Rose
4. Petunia

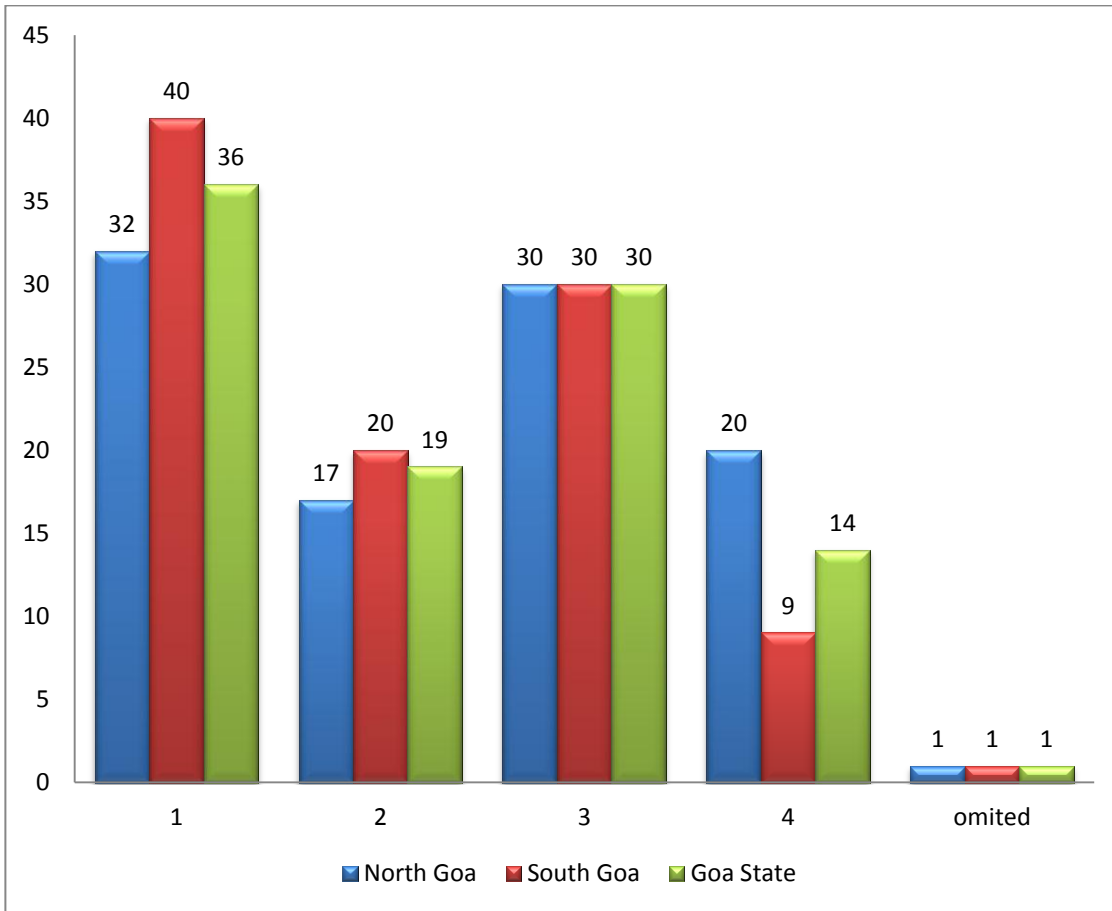


Fig. 6.3.2: Percentage of Students Selected each Response (Item No.18)

The item requires students to memorise and reproduce the answer. Though it is an only 32 percent student of North Goa district, 40 percent of South Goa district and 36 percent students of the State selected the correct option (Option – 1). It indicates that roughly only one student out of every three students knows the answer to this question. Figure 6.3.2 shows how the other students responded.

Sample Item: Reasoning

Item No. 30: Why should we use CFLs?

1. To get more light.
2. CFLs are safer than bulb.
3. CFLs are eco-friendly.

4. To save electricity.

The item requires students to understand the usefulness of CFLs and the reasons for their use. Only 46 percent student of North Goa district, 48 percent of South Goa district and 45 percent students of the State selected the correct option Option-4). It indicates that less than half of the students of Class-VII know the reasons behind use of CFLs. Figure 6.3.3 shows how the other students responded.

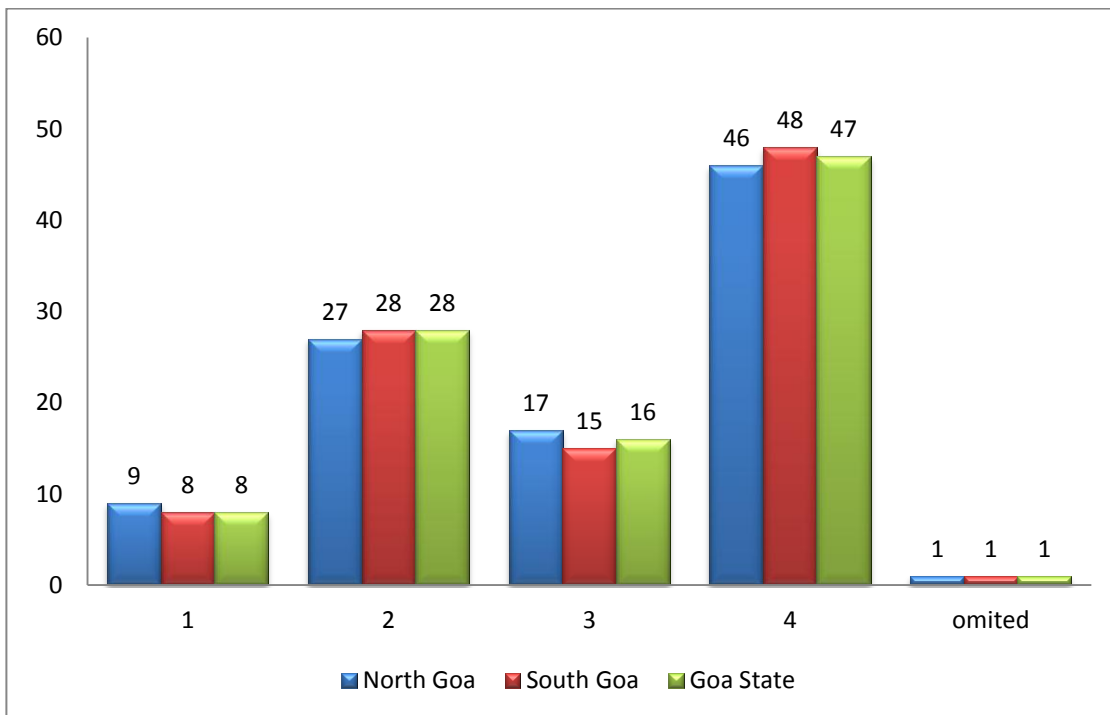


Fig. 6.3.3: Percentage of Students Selected each Response (Item No.30)

Sample Item: Reasoning

Item No. 43: Woollen clothes make us feel warm in cold season because they are_____.

1. good conductor of heat
2. poor conductor of heat
3. good insulator of heat
4. poor insulator of heat

The item requires students to understand usefulness of woollen clothes and the scientific reason behind using the same in winter. Only 19 percent student of North Goa district, 18 percent of South Goa district and 19 percent students of the State selected the correct option (option-2). It indicates that only one student out every five students know the reason behind using Woollen clothes in cold regions/ winter season. Figure 6.3.4 shows how the other students responded.

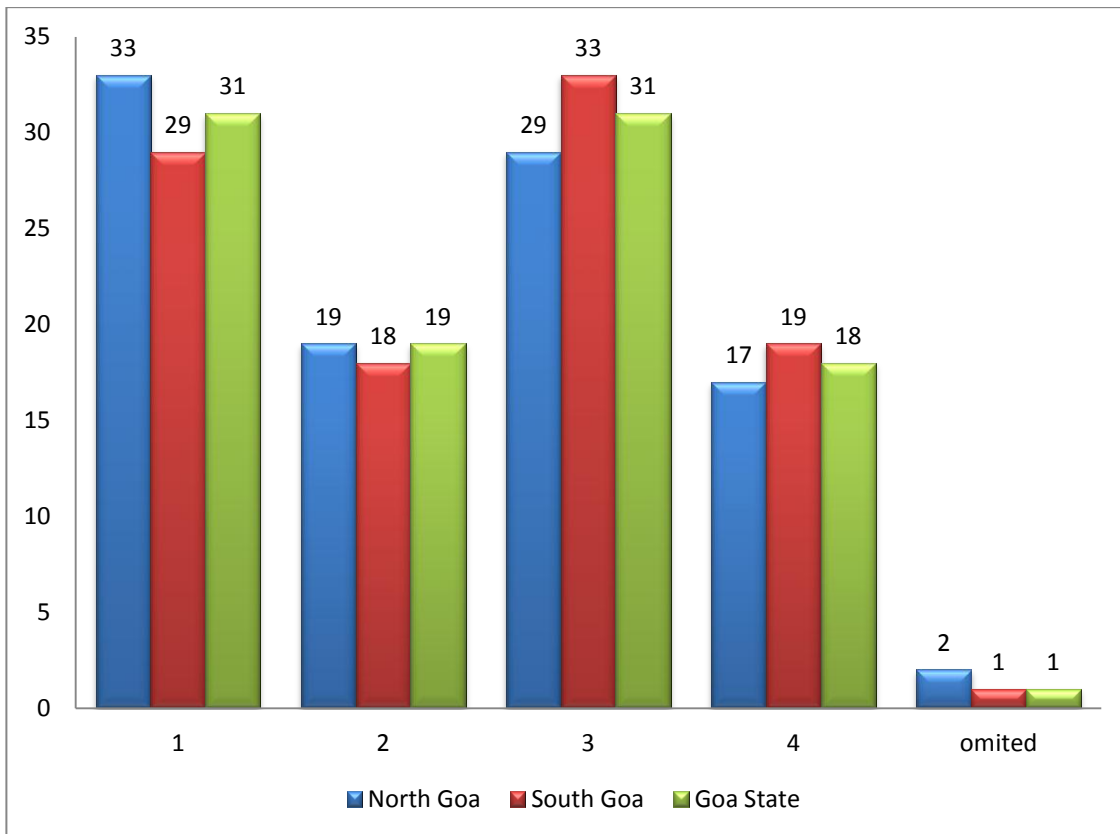


Fig. 6.3.4: Percentage of Students Selected each Response (Item No.43).

Sample Item: Applying

Item No. 46: You have a garden to maintain. But availability of water in your locality is limited. In which of the following ways will you water the plants so that you will be able to maintain the garden with limited water?

1. By spreading water over the field using a narrow pipe.
2. By supplying water directly to the base of the plants using a narrow pipe.
3. By spreading water directly over the leaves of the plants using a narrow pipe.
4. By filling field trenches with water using a narrow pipe.

This item requires students to apply their theoretical knowledge in a practical situation. Only 45 percent student of North Goa district, 47 percent of South Goa district and 46 percent students of the State selected the correct option (Option-2). Figure 6.3.5 shows how the other students responded.

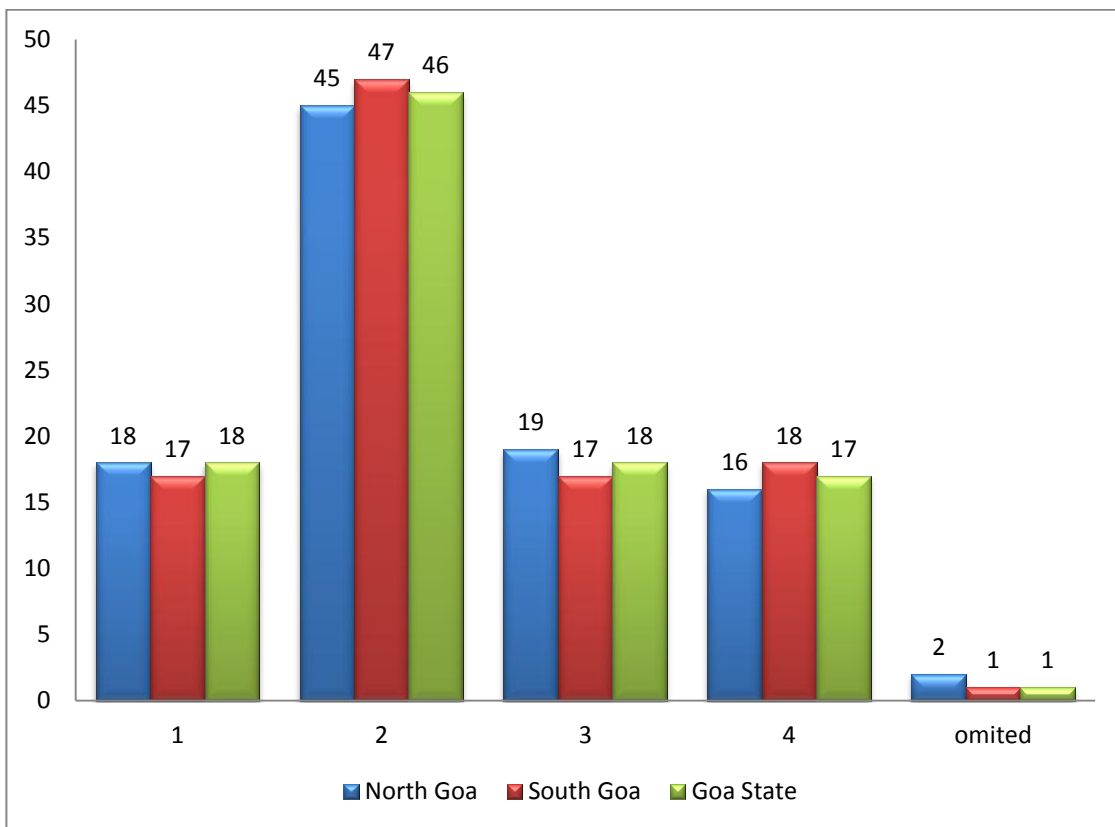


Fig. 6.3.5: Percentage of Students Selected each Response (Item No.46)

Sample Item: Applying

Item No. 49: Which one of the following should you do to save yourself if a storm accompanied by lightening comes while playing on the ground?

1. Take shelter under a tree.
2. Take shelter in a nearby building.
3. Take shelter in a nearby open garage.
4. Lie down quietly on the ground.

This item requires students to apply their theoretical knowledge in a practical situation. A child is required to take the course of action available before him/her in a real life situation based on scientific knowledge. Only 23 percent students each of North Goa district, South Goa district and the State of Goa selected the correct option (Option-2). It shows that roughly one student out of every five students of Class-VII can take the right decision in such a situation. Figure 6.3.6 shows that other options (incorrect options) were selected by higher percentages of students of all the three samples.

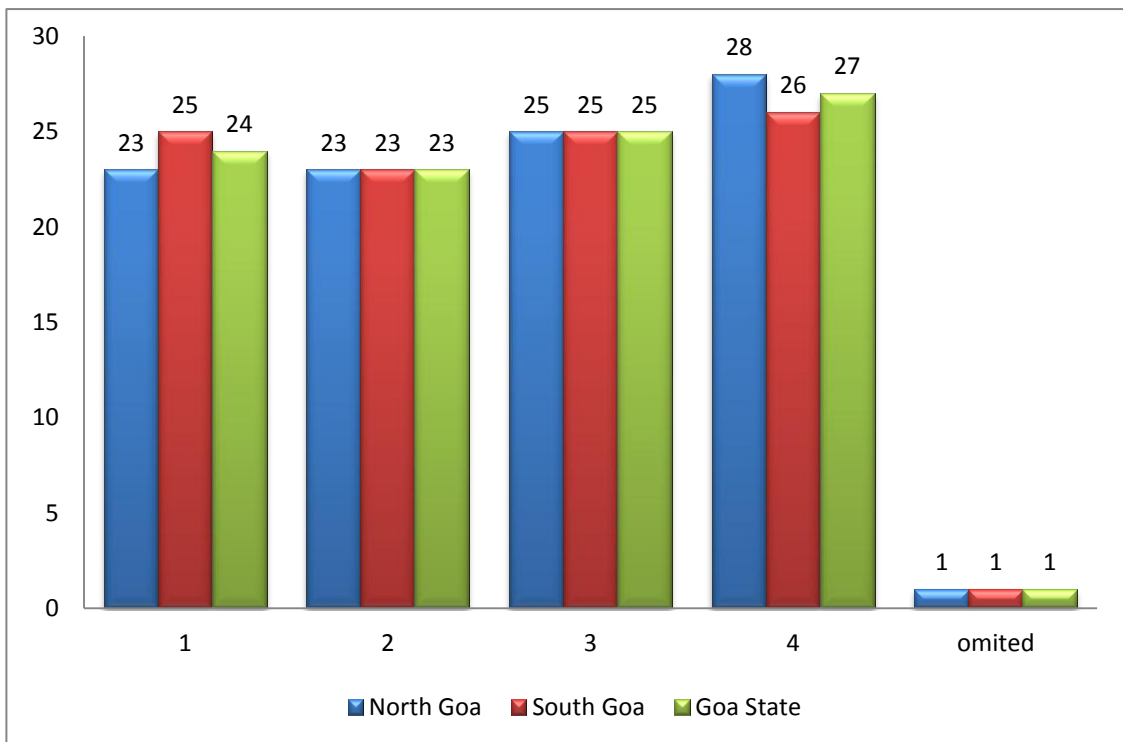


Fig. 6.3.6: Percentage of Students Selected each Response (Item No.49)

6.3.2 What the Students can do in Science

Table 6.3.2 shows the performance of students of Class-VII of North Goa district, South Goa district and Goa State on various cognitive processes in Science.

Table 6. 3. 2: Performance of Students in Science (Selected Items)

Cognitive Process	Item No.	Specification	% of Students correctly answered		
			North Goa	South Goa	Goa
Knowing	1	World water day	85	93	89
	4	Devise used for protecting electrical circuits against damage.	58	70	64
	7	Basic unit of time	65	66	66
	8	Normal pulse rate	44	46	45
	10	Respiratory organ of earthworm.	59	67	63
	11	Normal temperature of human body	59	64	62
	14	Motion of a swing	47	61	54
	16	Composition of sandy soil	34	35	34
	19	Water borne disease	31	33	32
Under-standing	22	Leaves as food factory	65	66	66
	25	Distance- time graph	24	24	24
	29	Quality of loamy soil	41	45	43
	33	Effect of message	31	32	31
	35	Nature of detergent solution	35	35	35
	37	Protective valves	16	16	16
	38	Depletion of water table	21	28	24
	40	Use of white fur to the polar bear	45	55	50
	42	Transfer of heat	29	31	30
	47	Simple pendulum	42	45	43

Applying	48	Combination of temperature	42	44	43
	50	Distance between object and image in a plain mirror	18	14	16

- Almost all the students of Class-VII of the State remember that 'World Water Day' is celebrated on 22nd March.
- Sixty-four percent students can remember and say that 'Fuse' is used to prevent damage to electrical circuits and possible fire.
- One-third of the students of Class-VII cannot say that the basic unit of time is 'Second'.
- Nearly two-fifths of the students of Class-VII do not remember and can say the normal temperature of human body.
- Only half of the students of Class-VII can identify that the type of motion a swing shows.
- Only one student out of every three students can state that 'dysentery' is water borne disease.
- Two-third of the students can give the reason for calling leaves as food factories of plant.
- Only one-fourth of the students can interpret a distance-time graph.
- Only 43 percent students can give the reason why loamy soil is good for growing plants.
- Two-third of the students cannot state why detergent solution changes the colour of red litmus but not that of blue litmus.
- Only one student out of every four students can state the reason for depletion of water table.
- Only 30 percent students can explain the principle involved in transfer of heat.
- Only 43 percent students can correctly calculate the time period of a simple pendulum completing 20 oscillations in 40 seconds.
- About three-fifths of the students cannot apply the principle involved in transfer of heat in a new situation.

- Barely 16 percent students of Goa can determine the distance between an object and its image when the object is moved away from the original position.

6.4 Social Science

6.4.1 What the Students Know in Social Science

i) History

a) What the Students know in History

The performance of students in knowledge and understanding in Table 6.4.1 revealed the following:

- In both knowledge and understanding, the students of both the districts are equal.
- In both knowledge and understanding in History, the students of both the districts are far below average.

Table 6.4.1: Students Performance in Knowledge and Understanding in History.

Component	Maximum possible Avg. Score	Sample	Obtained Mean	SD	t-value
Knowing (11 Items)	11	North Goa Dist.	3.58	1.79	1.14
		South Goa Dist.	3.66	1.69	(N.S)
		Goa State	3.62	1.75	
Understanding (7 Items)	7	North Goa Dist.	2.24	1.37	1.43
		South Goa Dist.	2.16	1.33	(N.S)
		Goa State	2.20	1.34	

N.S:- Not significant at 0.05 level

b) Sample Items

The details about how the students responded to different items (few selected items) are given below.

Sample Item: Knowing (Recall)

Item No. 9: Pritiviraja III defeated Mohmmad Ghori in the year _____.

1. 1168
2. 1192
3. 1191
4. 1190

The item requires students to recall from memory and reproduce the answer, i.e. the year. Only 26 percent students of North Goa district, 32 percent of South Goa district and 29 percent students of the State selected the correct option (Option- 3). Figure 6.4.1 shows how the other students responded.

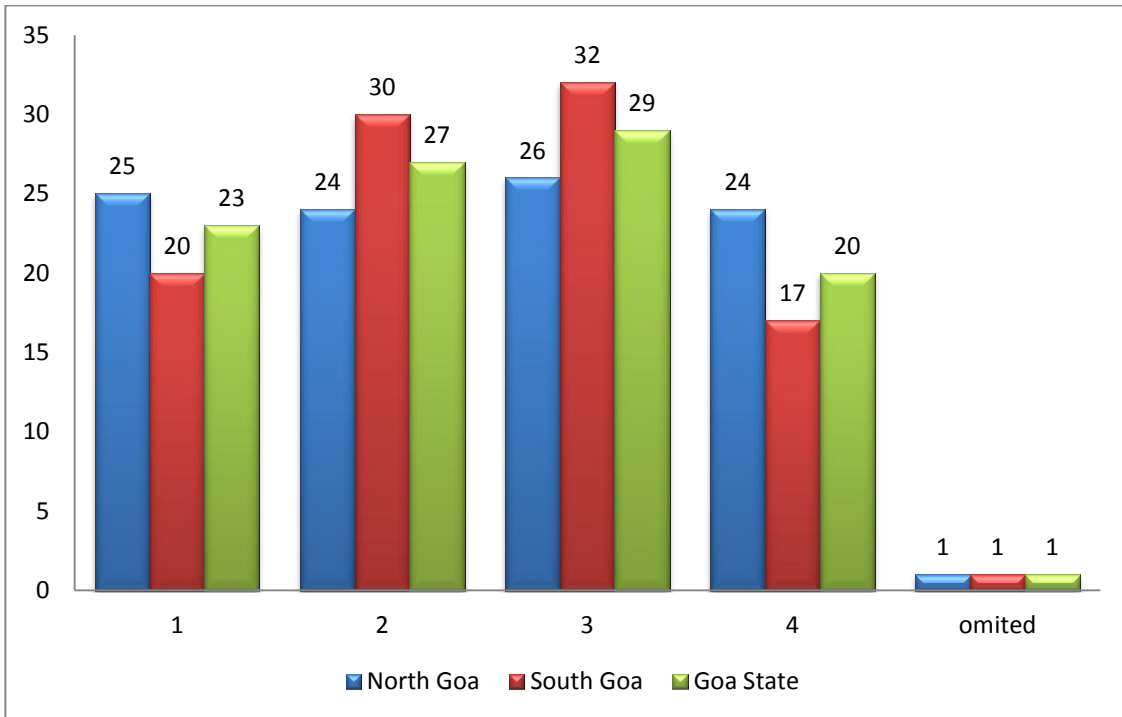


Fig. 6.4.1: Percentage of Students Selected each Response (Item No.9).

Sample Item: Reasoning

Item No. 17: Many painters began to move out of Mughal Empire because they _____.

1. were paid less by the Mughal Empire
2. the Mughal Empire had become weak
3. they were not safe in the Mughal Empire
4. they were invited by the other king

The item requires students to understand the situation and provide the reason behind the said action. Only 25 percent students each of North Goa district, South Goa district and the State of Goa selected the correct option (Option- 2). Figure 6.4.2 shows how the other students responded.

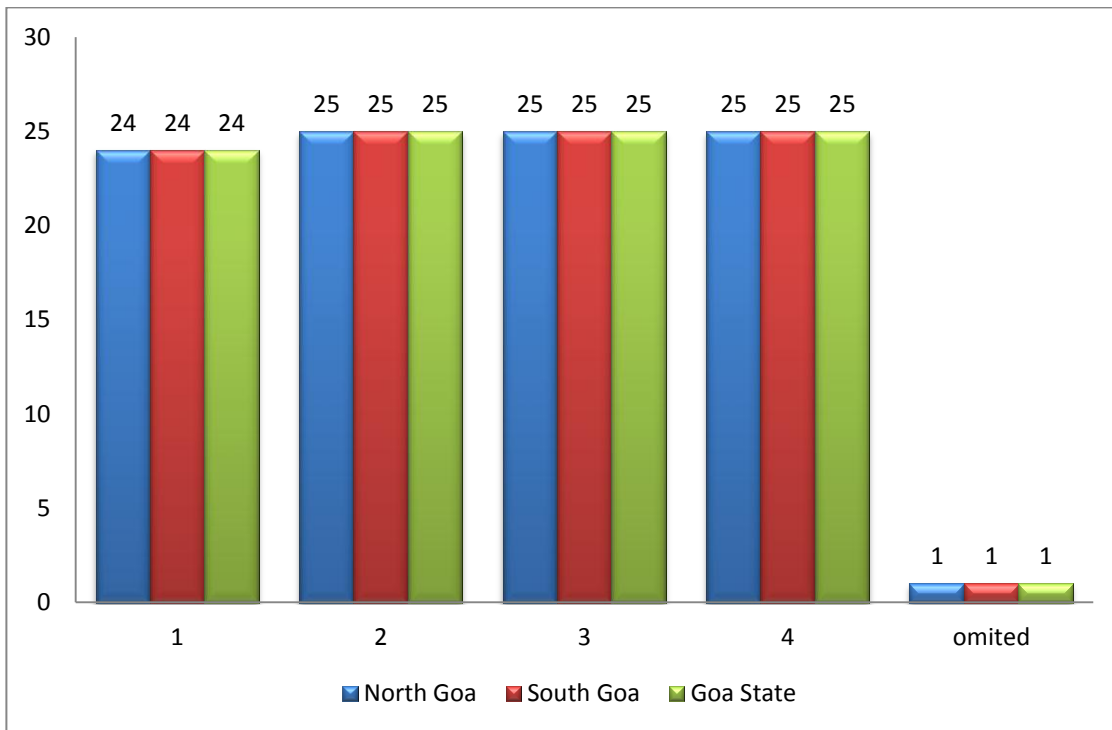


Fig. 6.4.2: Percentage of Students Selected each Response (Item No.17).

ii) Social and Political Life

a) Sample Items

The details about how the students responded to different items (few selected items) are given below.

Sample Item: Knowing (Recall)

Item No. 20: A political party is said to be in majority in a State assembly if it wins _____.

1. half of the seats
2. one-third of the seats
3. one-fourth of the seat
4. more than half of the seat

The item requires students to recall from memory and reproduce the answer. Only 46 percent students of North Goa district, 42 percent of South Goa district and 44

percent students of the State of Goa selected the correct option (Option- 4). It means less than half of the students know the meaning of 'majority' in state assembly. Figure 6.4.3 shows how the other students responded.

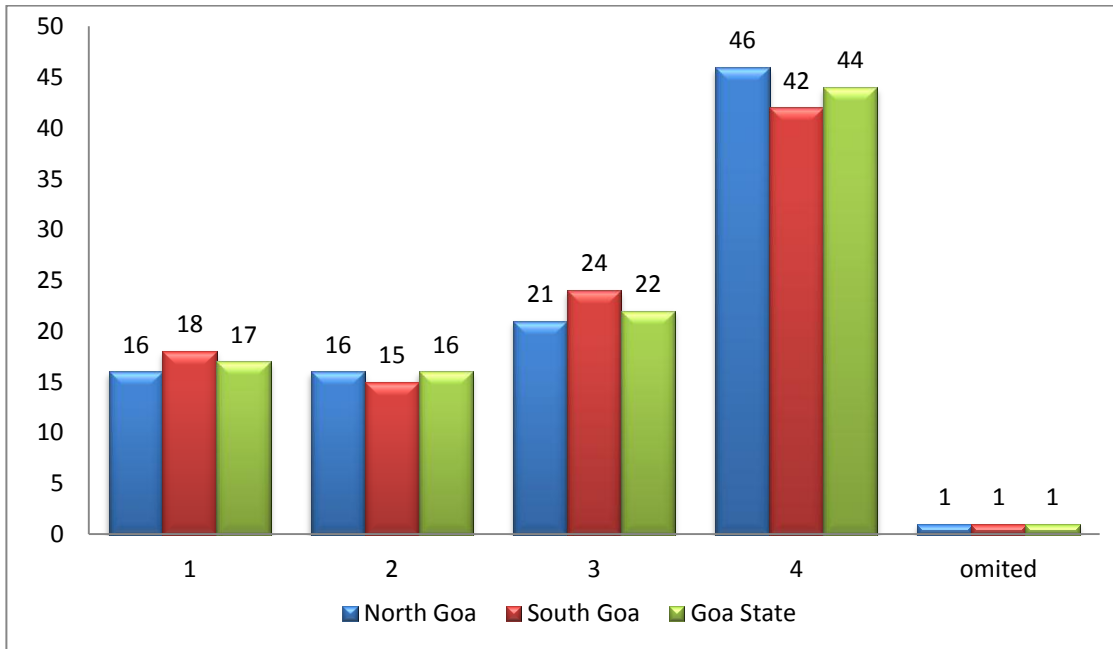


Fig. 6.4.3: Percentage of Students Selected each Response (Item No.20)

Sample Item: Reasoning

Item No. 23: Goods in weekly markets are cheaper than the regular shops because the _____.

1. number of buyers is more in weekly markets
2. quality of products is low in weekly market
3. shop owners do not much pay rent and taxes
4. competition among sellers is more

This item requires students to comprehend the situation and provide the reason. Only 34 percent students of each of North Goa district, South Goa district and the State of Goa selected the correct option (Option- 3). It means only one out of every three

students of Class-VII can provide one of the reasons behind availability of goods at a cheaper rate in weekly market. Figure 6.4.4 shows how the other students responded.

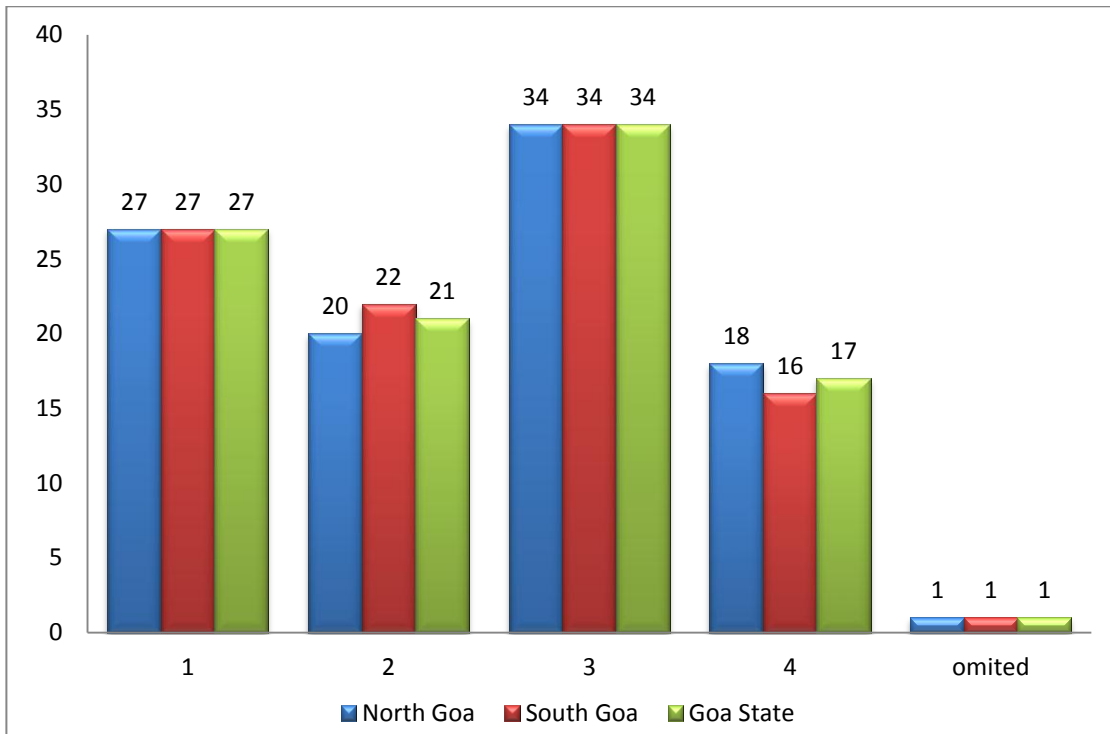


Fig. 6.4.4: Percentage of Students Selected each Response (Item No.23)

iii) Geography

a) What the Students know in Different Areas in Geography

Table 6.4.2: Students Performance in Knowledge and Understanding in Geography

Cognitive processes	Maximum possible Avg. Score	Sample	Obtained Mean	SD	t-value
Knowing (10 Items)	10	North Goa Dist.	5.20	2.04	5.35 **
		South Goa Dist.	5.66	2.08	
		Goa State	5.44	2.09	

Understanding (12Items)	12	North Goa Dist.	4.98	2.24	4.54 **
		South Goa Dist.	5.42	2.39	
		Goa State	5.21	2.33	

** Significant at 0.01 level

b) Sample Items

The details about how the students responded to different items (few selected items) are given below.

Sample Item: Knowing (Recall)

Item No. 35: Which layer of the atmosphere contains ozone gas?

1. Stratosphere
2. Troposphere
3. Mesosphere
4. Thermosphere

The item requires students to recall from memory and reproduce the answer, i.e. the year. Only 28 percent students of North Goa district, 29 percent of South Goa district and 29 percent students of the State selected the correct option (Option- 1). The results show that less than one-third of the students know/remember that stratosphere contains ozone gas. Figure 6.4.1 shows how the other students responded.

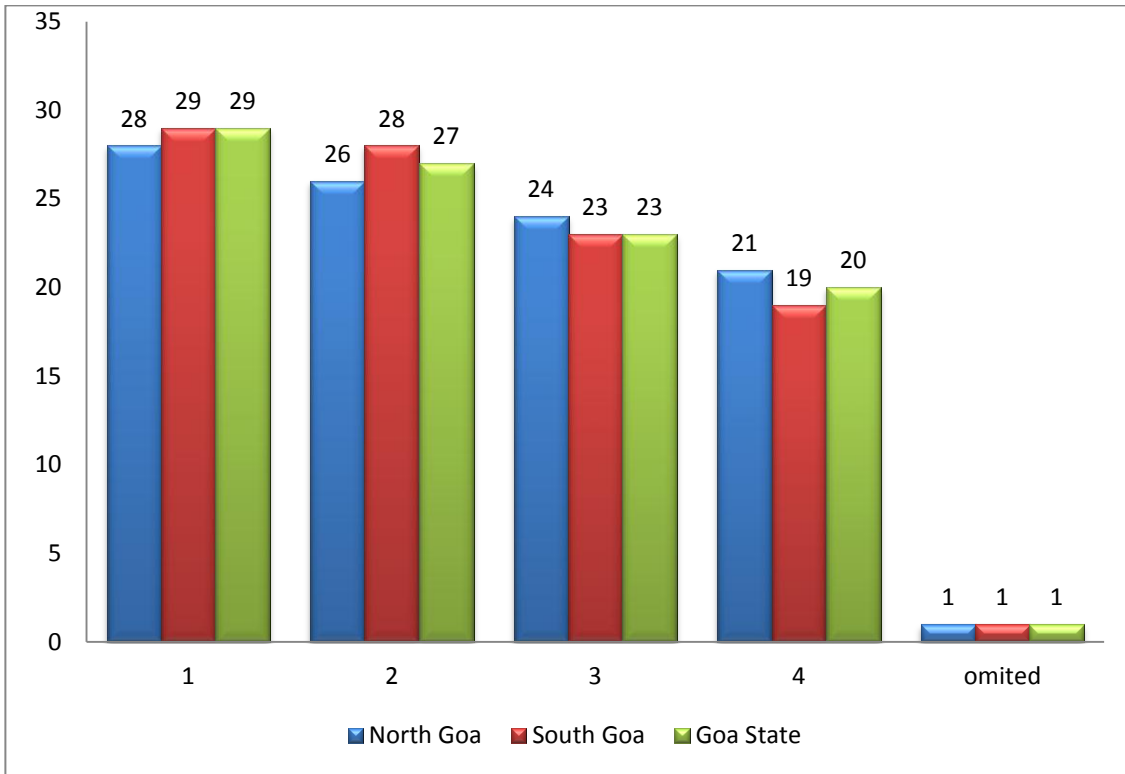


Fig. 6.4.5: Percentage of Students Selected each Response (Item No.35)

Sample Item: Reasoning/Comprehension

Item No. 45: The climate in Ladakh is extremely cold and dry because of_____.

1. heavy snowfall
2. heavy rainfall
3. strong wind
4. high altitude

The item requires students to comprehend and give appropriate. Only 27 percent students each from North Goa district, South Goa district and the State of Goa selected the correct option (Option- 4). It shows that roughly one student out of every four students know the reason behind extremely cold and dry climate in Ladakh. Figure 6.4.6 shows how the other students responded.

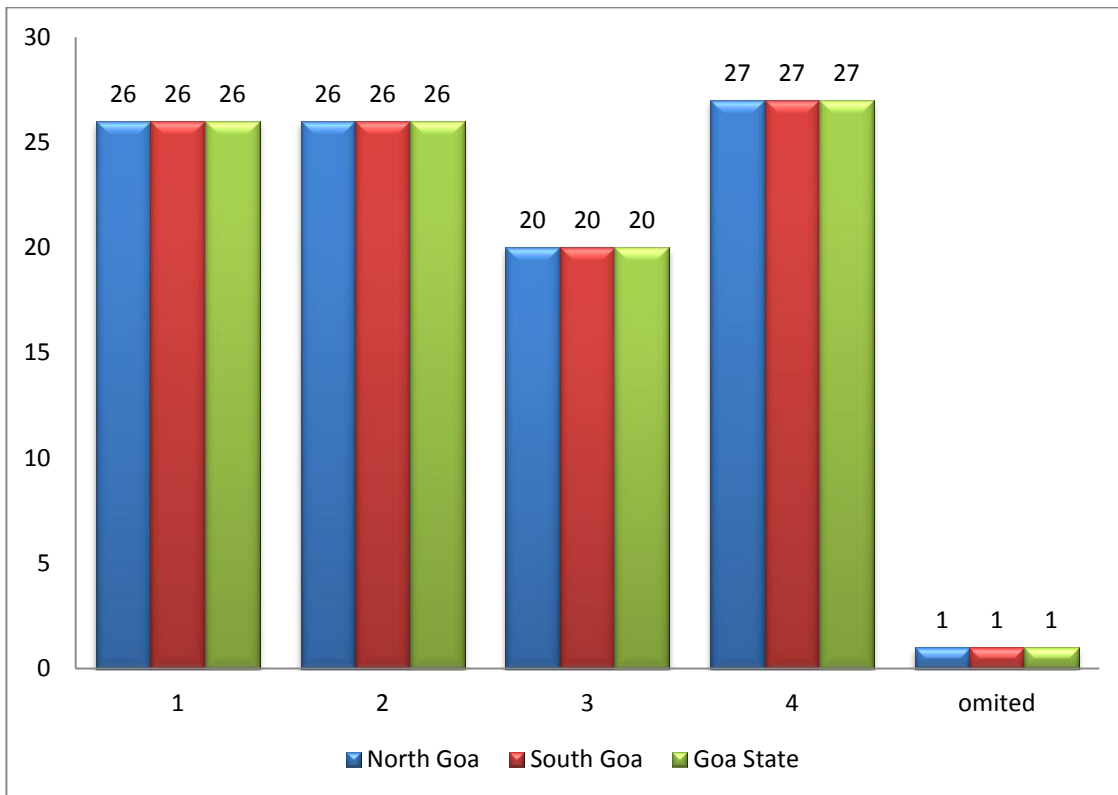


Fig. 6.4.6: Percentage of Students Selected each Response (Item No.45)

6.4.2 What the Students can do in Social Science

i) What the Students can do in History

Table 6.4.3 shows the performance of students of Class-VII of North Goa district, South Goa district and Goa State on various cognitive processes in History.

Table 6. 4. 3: Performance of Students in History (Selected Items).

Cognitive Process	Item No.	Specification	% of Students correctly answered		
			North Goa	South	Goa

				Goa	
Knowing	1	The ruler defeated by Babur	33	27	30
	2	Gate-way to Mecca	56	57	57
	5	Identifying the tribes of Central India	38	36	37
	6	Identifying the person initiated Virashaiva Movement	24	28	26
	9	The year in which Pritiviraja III defeated Momhammad Ghori	26	32	29
	11	The first ruler made Delhi as Capital	8	9	9
Under-standing	13	Sambhaji giving up the conquest of Tiswadi	45	47	46
	15	Rebellions faced Aurangzeb	33	26	29
	18	Sultans criticized by authors of Tawarikh	17	19	18

- Only 30 percent students can say (remember) that Babur captured Delhi by defeating Ibahim Lodhi.
- About three-fifths of the students are able to state that Surat was called the gate-way to Mecca.
- Less than two-fifths of the students can name the tribes spread across the Central India.
- Only 26 percent students are able to say that Basavanna initiated Virashaiva Movement.
- Only 29 percent students can identify the year in which Pritiviraja III defeated Momhammad Ghori.
- Forty-six percent students can give the reason behind Sambhaji giving up the conquest of Tiswadi.
- Only 29 percent students can clarify why Aurangzeb faced a lot of rebellions.

- Only 18 percent students can cite the reason behind the authors of Tawarikh criticized the Sultans.

ii) What the Students can do in Social and Political Life

Table 6.4.4 shows the performance of students of Class-VII of North Goa district, South Goa district and Goa State on various cognitive processes in Social and Political Life.

Table 6. 4. 4: Performance of Students in Social and Political Life.

Cognitive Process	Item No.	Specification	% of Students correctly answered		
			North Goa	South Goa	Goa
Knowing	19	Adult franchise	72	75	74
	20	Meaning of majority of a party in state assembly	46	42	44
	21	Law to protect women	26	30	28
Under-standing	22	Provision of crèches by an organisation having 30 or more women employee	46	40	43
	24	Impartiality of Media	31	36	34
	25	Constitution of India as leaving document	20	22	21

- Three-fourths of the students of Class-VII can state that adult franchise is based on equality.
- Only 44 percent students of the State are able to say the meaning of majority of a political party in a State legislative assembly.
- Only 28 percent students can identify the year in which a law was passed to provide legal protection to women facing physical and mental violence.
- Only 43 percent students can provide the reason behind making provision of crèches by an organisation having 30 or more women employee.

- Only one-third of the students of Goa can explicate why Indian media fails to give balanced views.
- Only one out of every five students know the reason behind calling constitution of India as a living document.

iii) What the Students can do in Geography

Table 6. 4. 5: Performance of Students in Geography (Selected Items)

Cognitive Process	Item No.	Specification	% of Students correctly answered		
			North Goa	South Goa	Goa
Knowing	26	Non-polluting vehicle	79	85	82
	27	Expensive transport	60	65	62
	30	Earth's thinner most layer	57	59	58
	32	Animals found in deciduous forest	32	31	32
	34	Origin of earthquake	37	29	33
Under- standing	36	Reasons for setting food processing industries in the Prairies	59	69	64
	38	Effect of increased volume of carbon dioxide	50	55	53
	40	Effect of heat and press on limestone	52	51	51
	41	Effect of high tide	37	44	40
	43	Reasons behind breaking up of rivers in to distributaries	27	25	26
	47	Trees shedding leaves in dry season	25	27	26
Applying	48	Taking decision for carrying things in climbing high mountain	66	68	67
	49	Deciding on appropriate means of transport	44	49	47
	50	Taking appropriate decision knowing the	50	46	48

		movement of sea			
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Table 6.4.5 shows the performance of students of Class-VII of North Goa district, South Goa district and Goa State on various cognitive processes in Geography.

- Eighty-two percent students can identify that cycle is a non-polluting vehicle.
- Around two-fifths of the students cannot identify the most expensive means of transport.
- Around three-fifths of the students cannot name the thinner most layer of the earth.
- Only one-third of the students can name the animals found in deciduous forest.
- Only one-third of the students can name the place where the movement of earthquake starts.
- Sixty-four percent students can cite the reasons for setting up of food processing industries in the Prairies.
- Only about half of the students of Class-VII are able to explain the effect of increased volume of carbon dioxide in air.
- Only about half of the students of Class-VII are able to explain how marble is formed.
- Two-third of the students cannot reveal the reason behind breaking up of rivers in to distributaries.
- Only one-fourth of the students can divulge the reason behind trees shedding leaves in dry seasons.
- Two-third of the students can use the knowledge relating to high altitude in a real life situation.
- Forty-seven percent students can use the knowledge of relative advantages of different means of transport in choosing the appropriate one in a given situation.

- Nearly half of the students can take the right decision while on a seashore by observing the movement of sea water.

CHAPTER VII

STUDENT RELATED VARIABLES

7.0 Introduction

The data in this chapter are derived from the questionnaires completed by the students studying in 102 schools located in both the districts of the State. The first section of this chapter contains the detail information relating to student-related factors and the second section includes the regression results. Findings are presented separately for each district, followed by comparison between the two districts and finally the State of Goa as a whole. At the end, conclusions drawn based on the findings are presented.

Section - I: *Student Related Factors*

7.1 Students' Background

The variables covered in this category are as follows.

- (a) Gender
- (b) Language used at Home
- (c) Social Group
- (d) Number of Sibling
- (e) Physical Health Status

7.1.1 Gender of Students

a) North Goa District

Distribution of students on the basis of gender is given in Table 7.1.1. It shows that in North Goa district the percentage of girls was 53.7 which is higher than the percentage of boys (46.3 percent). The data are graphically represented in Figure 7.1.1

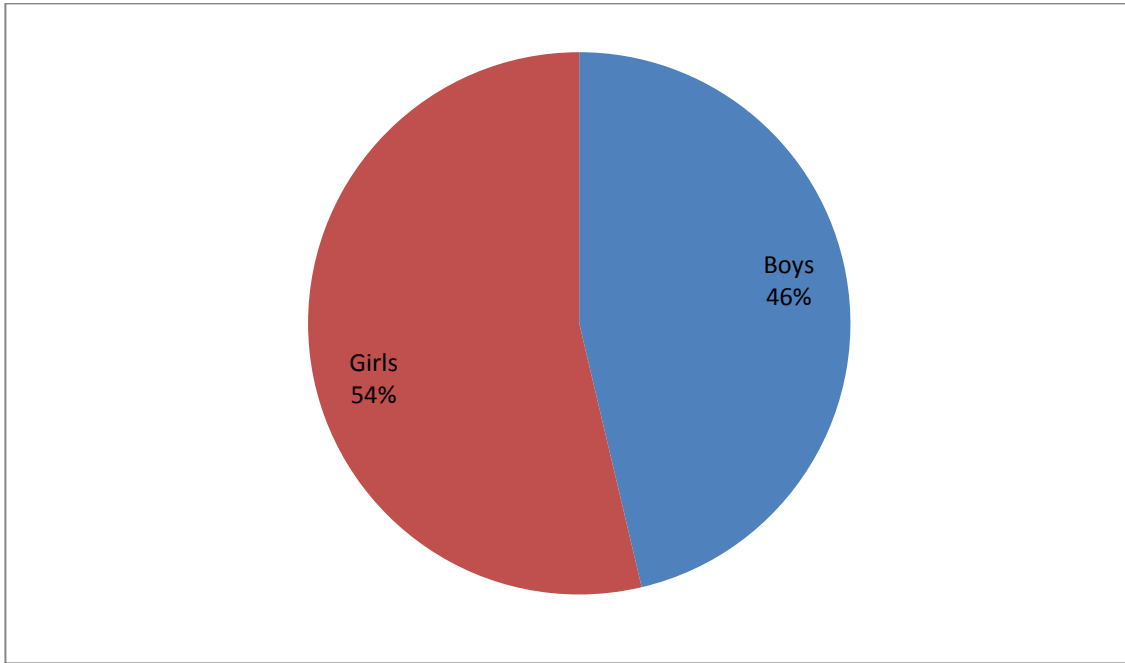


Fig. 7.1.1: Gender of Students (North Goa District)

Table: 7.1.1: Distribution of Students by Gender

	Boys		Girls		Total
	No.	%	No.	%	
North Goa District	545	46.3	633	53.7	1178
South Goa District	564	50.2	551	49.8	1115
Total (Goa State)	1109	48.4	1184	51.6	2293

b) South Goa District

In the schools located in South Goa district the percentage of boys was 50.2 and girls 49.8. It shows that the percentage of boys and girls was almost equal. The data are graphically represented in Figure 7.1.2.

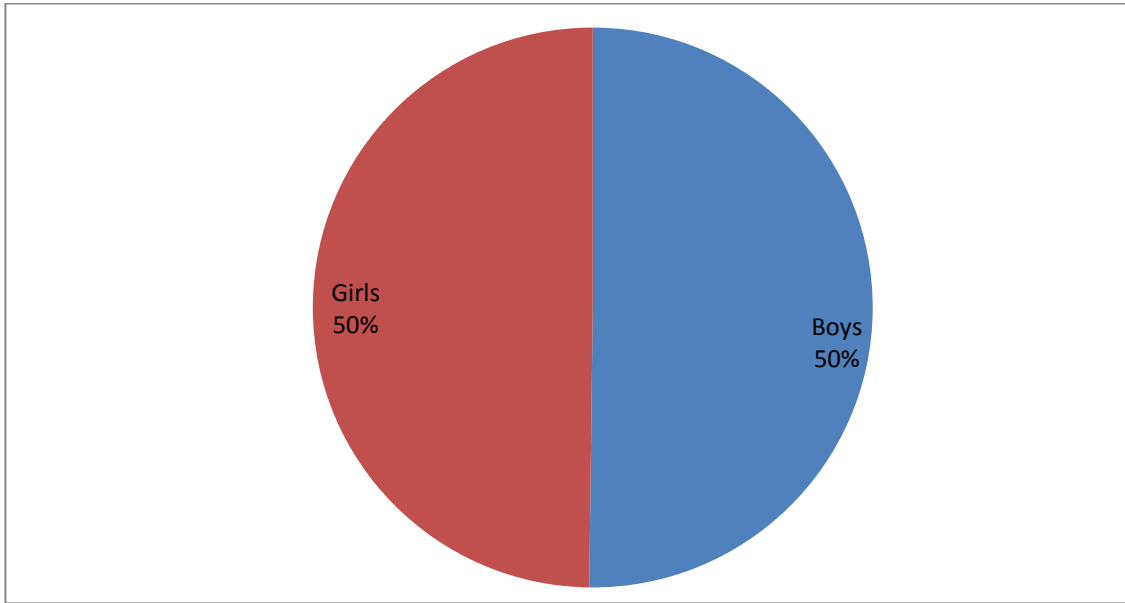


Fig. 7.1.2: Gender of Students (South Goa District).

c) Comparison between North and South Goa Districts

Figure 7.1.3 shows that the percentage of boys was higher in South Goa district compared to North Goa district. But the percentage of girls was higher in North Goa district than in South Goa district.

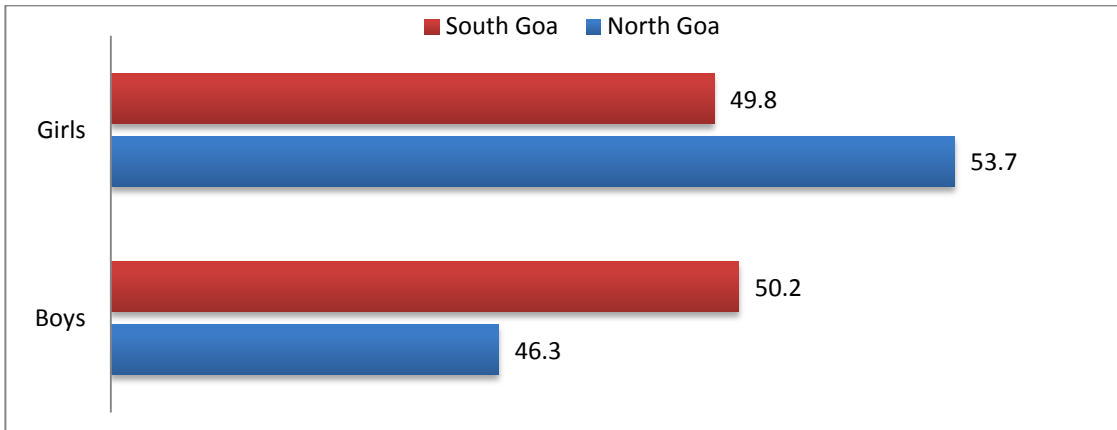


Fig.7.1.3: Comparative Percentage of Male and female Students of North Goa and South Goa Districts

d) Goa State

Over all, the entire sample comprises of 48.4 percent boys and 51.6 percent girls. It shows that the percentage of girls is slightly higher than boys in the State of Goa. The data are graphically represented in Figure 7.1.4.

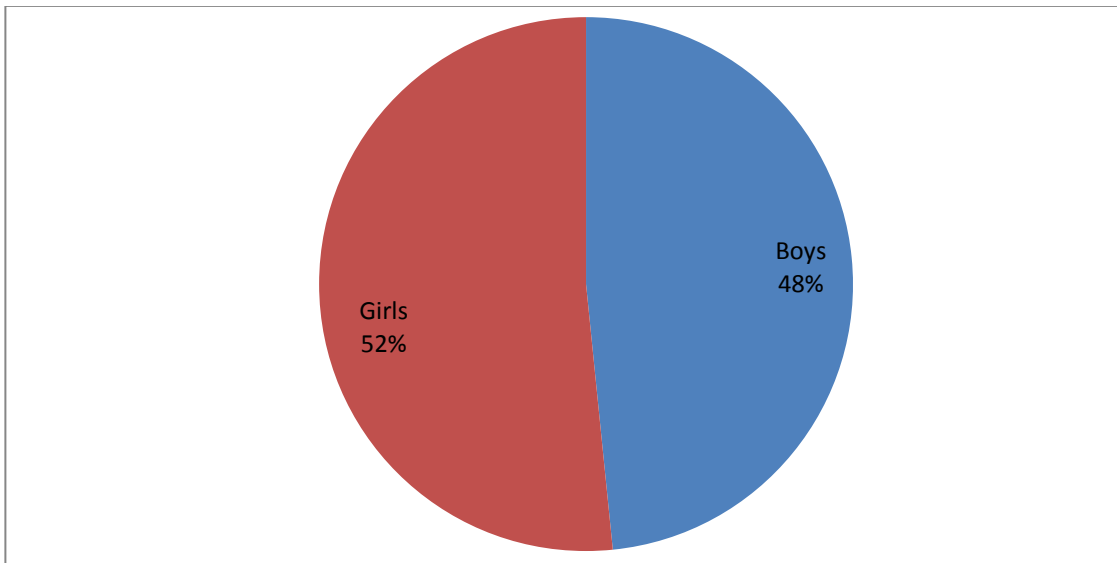


Fig. 7.1.4: Gender of Students (Goa State)

7.1.2 Distribution of Students by Categories/ Castes

a) North Goa District

Table 7.1.2 shows that in schools located in North Goa district only 2 percent of students were SC, 11.7 percent ST, 27.8 percent OBC and the remaining 58.6 percent belonged to general category. The data are represented in Fig.7.1.5.

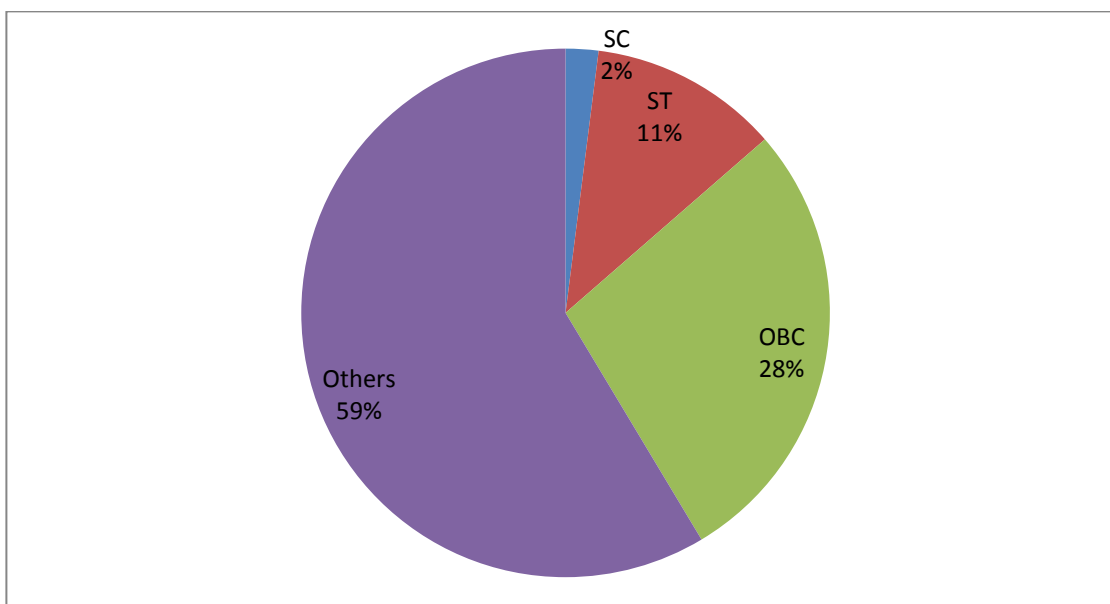


Fig. 7.1.5: Caste/ Category of Students of North Goa District

Table: 7.1.2: Distribution of Students by Categories

	SC	ST	OBC	Others
North Goa District	2.0	11.6	27.8	58.6
South Goa District	1.0	30.2	14.7	54.1
Total (Goa State)	1.5	20.9	21.3	56.3

Note: Figures indicate percentage of students.

b) South Goa District

In North Goa district schools only 2 percent of the students of Class VII were SCs, 30.2 percent STs, 14.7 percent OBCs and 54.1 percent other/general category. Figure 7.1.6 represents the data graphically.

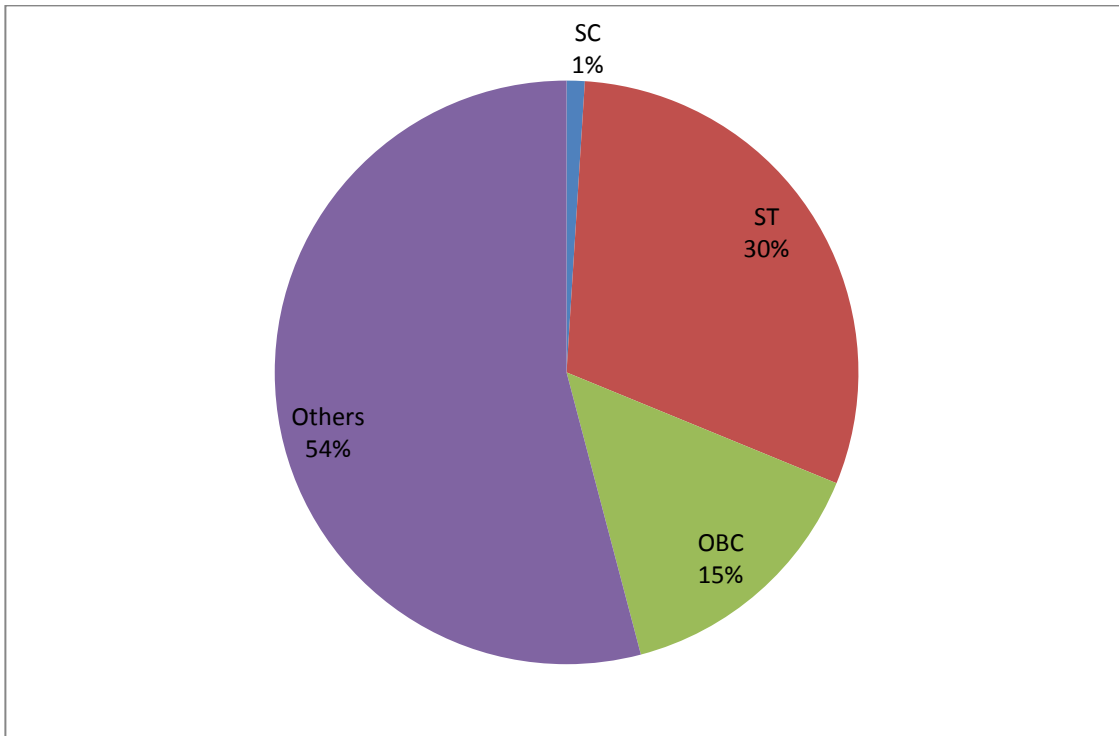


Fig. 7.1.6: Caste/ Category of Students of South Goa District

c) Comparison between North and South Goa Districts

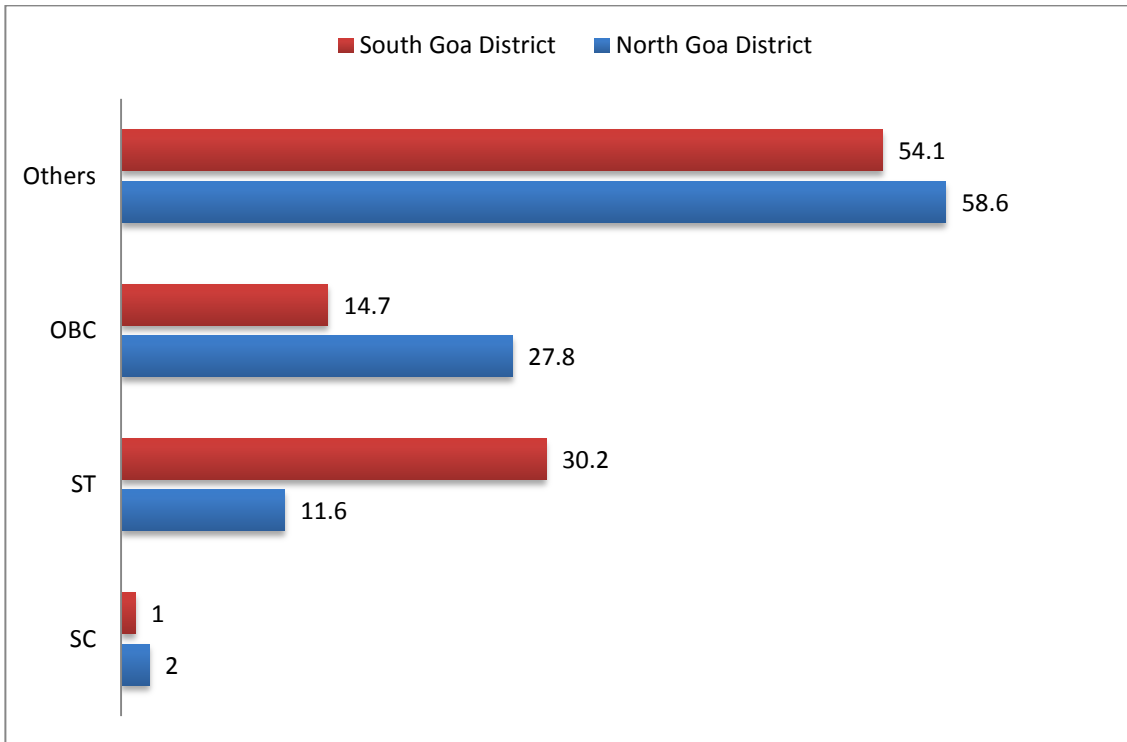


Fig.7.1.7: Comparative Percentage of Different Categories of Students in North Goa and South Goa Districts

Concentration of ST students was very high in South Goa district compared to North Goa district where as the percentage of OBC students was more in North Goa than in South Goa districts. Not much difference was observed between the two districts as far as concentration of SC and General Castes students is concerned. The comparative data are shown in Fig.7.1.7.

d) Goa State

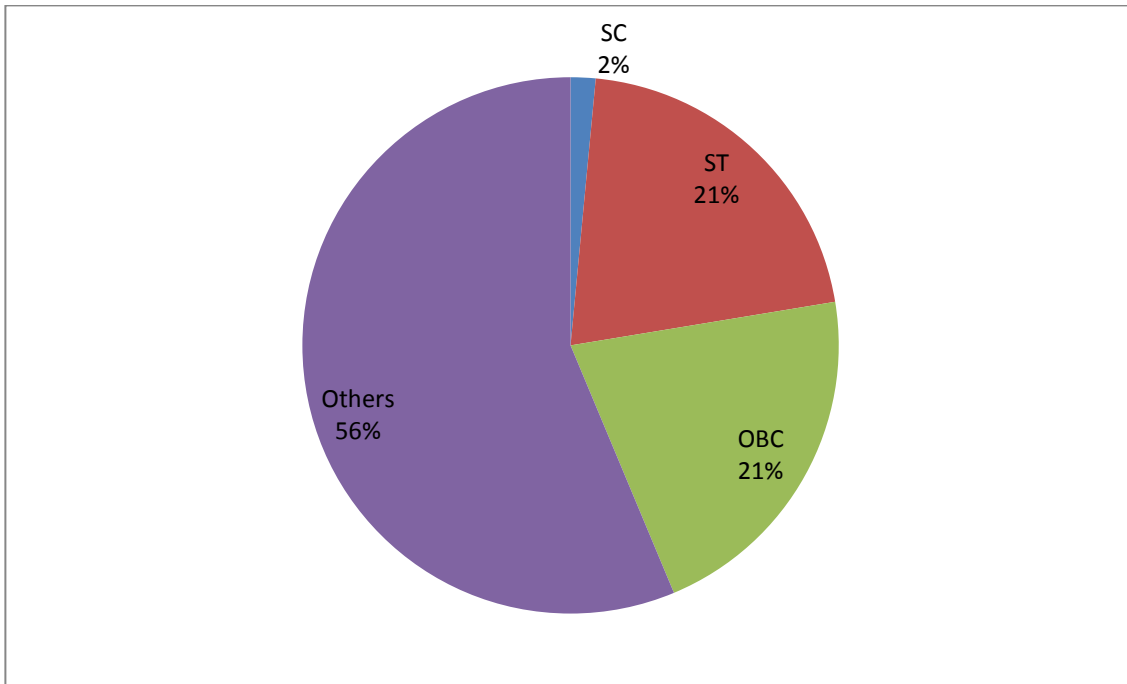


Fig. 7.1.8: Caste/ Category of Students of Goa State

Figure 7.1.8 shows that in Goa only 1.5 percent of the students of Class- VII were SC, 20.9 percent ST, 21.3 percent OBC and 56.3 percent general category.

7.1.3 Spoken Languages at Home

a) North Goa District

More than three-fourths of the students studying in schools located in North Goa district were from Konkani language speaking families (Table 7.1.3). About 9 percent and 7.4 percentages of the students used to use Marathi and Hindi languages respectively at home. Negligible percentages of students were from English, Kannada and Urdu speaking background. Figure 7.1.9 represents the data relating to language background of the students of North Goa district.

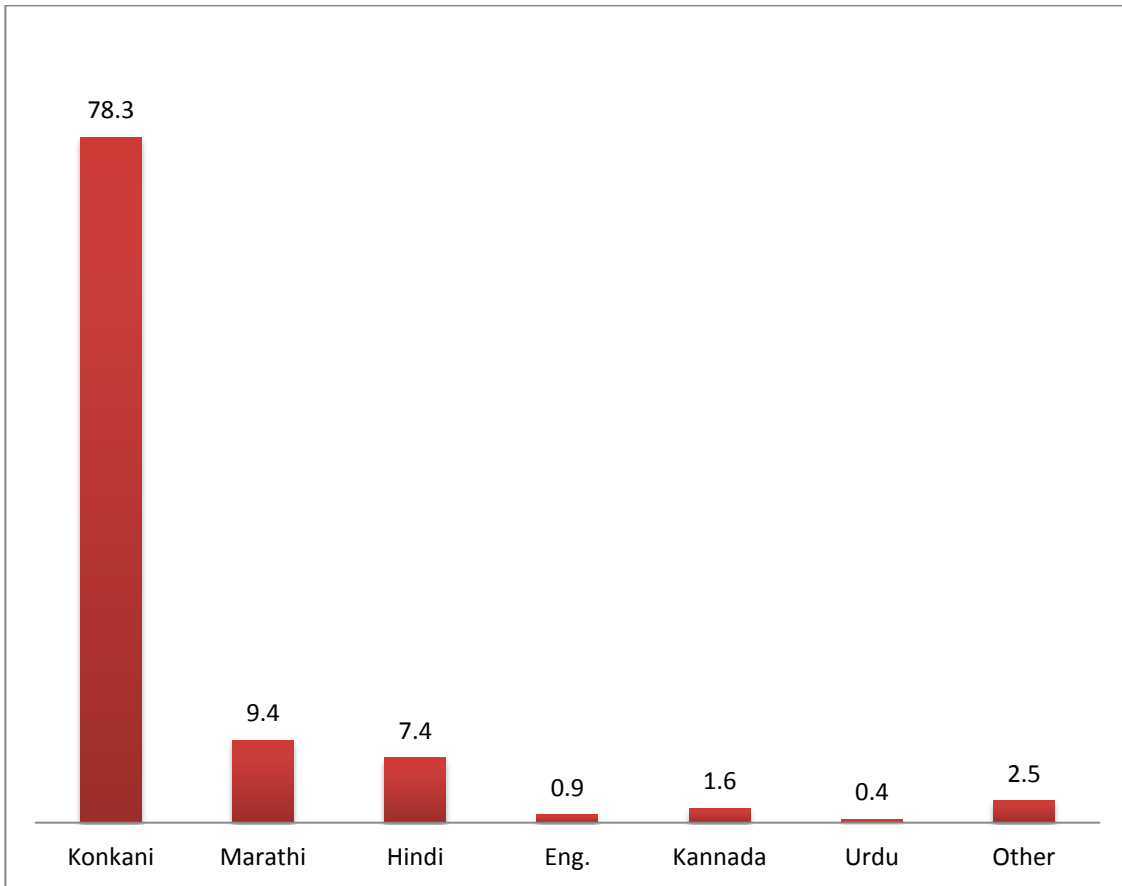


Fig. 7.1.9: Language Background of Students of North Goa District

Table: 7.1.3: Language Background of Students

	Konkani	Marathi	Hindi	Eng.	Kannada	Urdu	Other
North Goa Dist.	78.3	9.4	7.4	0.9	1.6	0.4	2.5
South Goa Dist.	72.3	5.6	8.8	2.7	5.2	3.1	0.9
Total (Goa State)	75.4	7.6	8.8	1.5	3.4	1.6	1.7

Note: Figures indicate percentage of students

b) South Goa District

Table 7.1.3 and Figure 7.1.10 shows that 72.4 percent, 8.8 percent, 5.6 percent, 5.2 percent, 3.2 percent and 2.7 percent of students of South Goa district respectively used to speak in Konkani, Hindi, Marathi, Kannada, Urdu and English at home. The data are graphically represented in Figure 7.1.10.

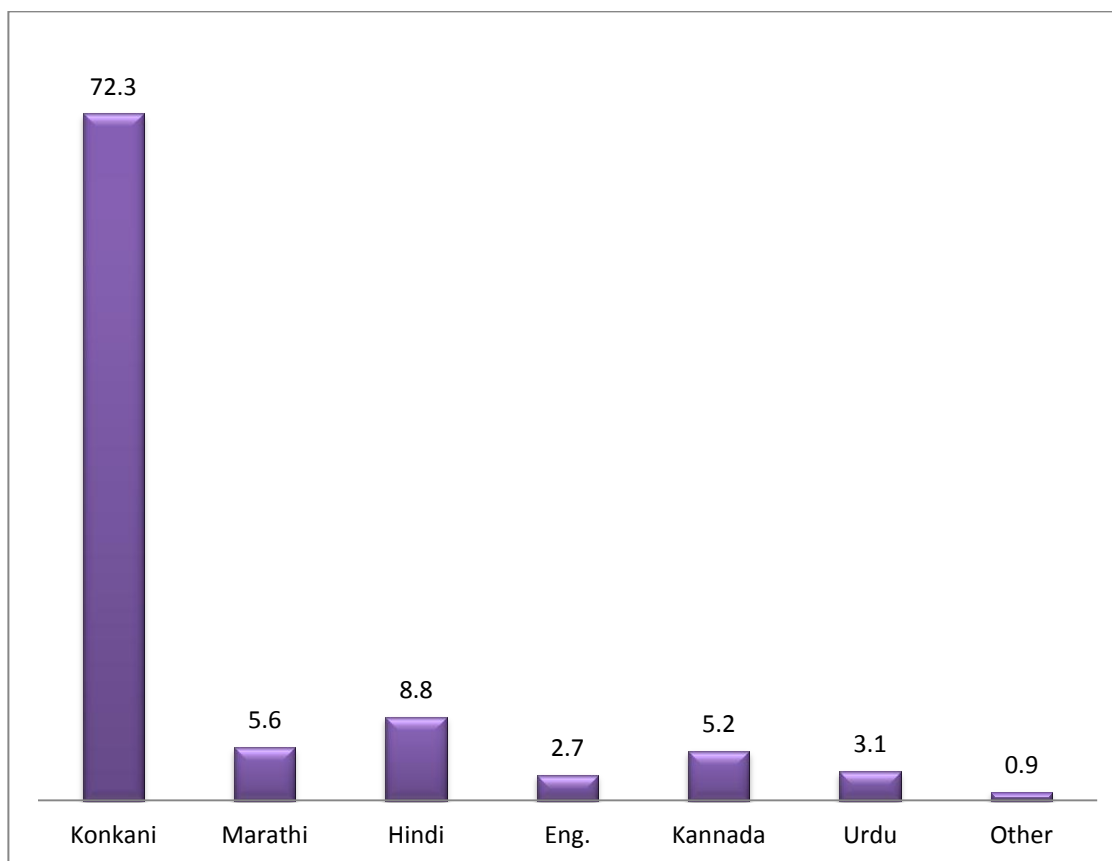


Fig. 7.1.10: Language Background of Students of South Goa District

c) Comparison between North and South Goa Districts

In North Goa district the percentages students speaking Konkani and Marathi at home were higher than the South Goa district. But higher percentages of students in south Goa district compared to North Goa district were from families where English, Kannada and Urdu languages are spoken at home. The comparative data are shown in Figure 7.1.10.

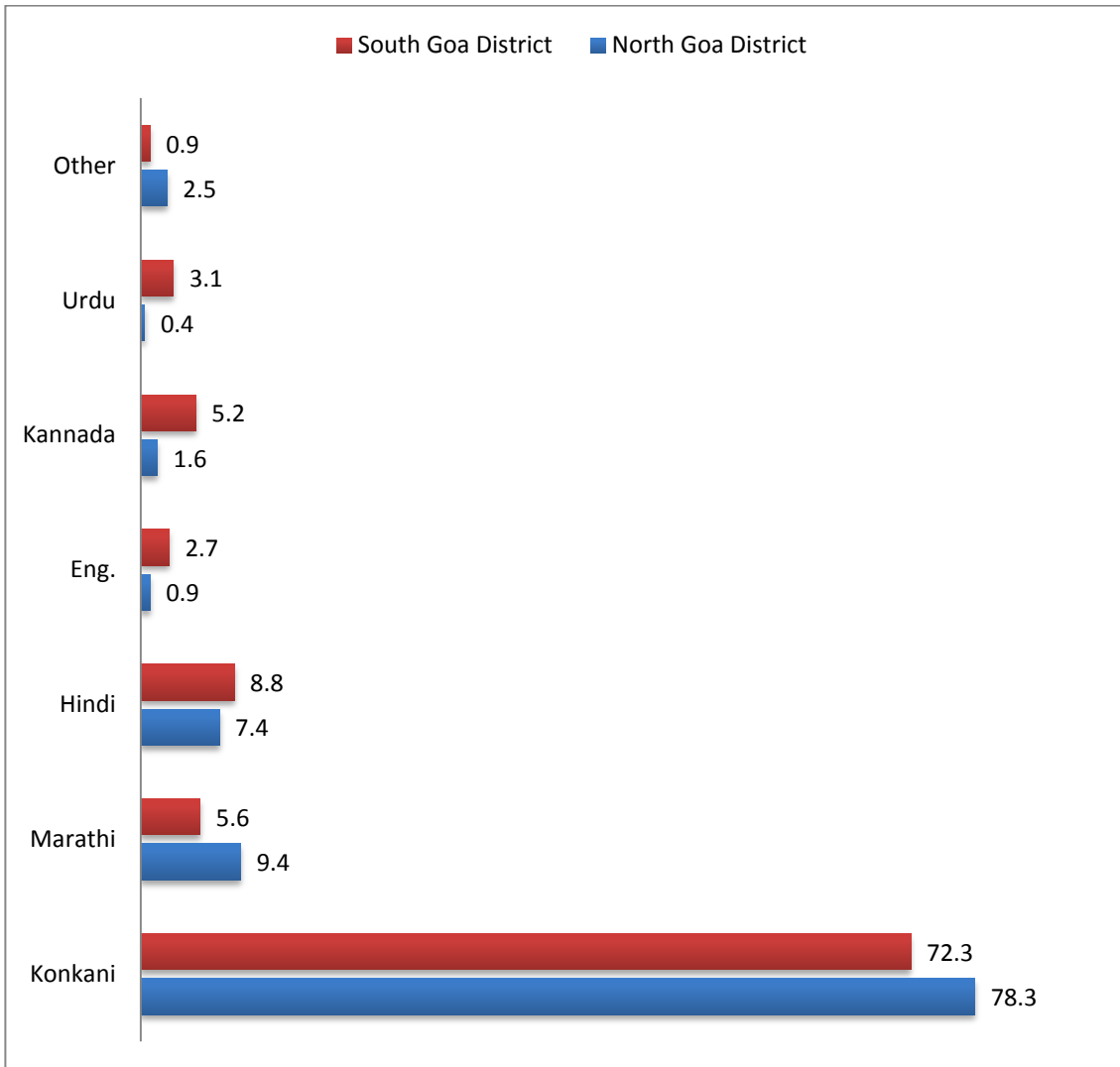


Fig.7.1.11: Comparative Percentage of Students from different Language Background of North Goa and South Goa Districts

d) Goa State

In Goa, two-third of the students of Class VII were from Konkani speaking background. Around 9 percent, 7.6percent, 3.4 percent and 1.6 percent of the students of the State had Hindi, Marathi, Kannada and Urdu respectively as their mother gangu. Only 1.5 percent of the students used to converse in English. Figure

7.1.12 represents the data regarding language background of the students of the State. In Goa the medium of instruction from Class V onwards in almost all the Schools is English. But nearly 98 percent of the students are from families speaking in a language other than English. It means the students of Class VII are taught in English though their mother tongue is other than English.

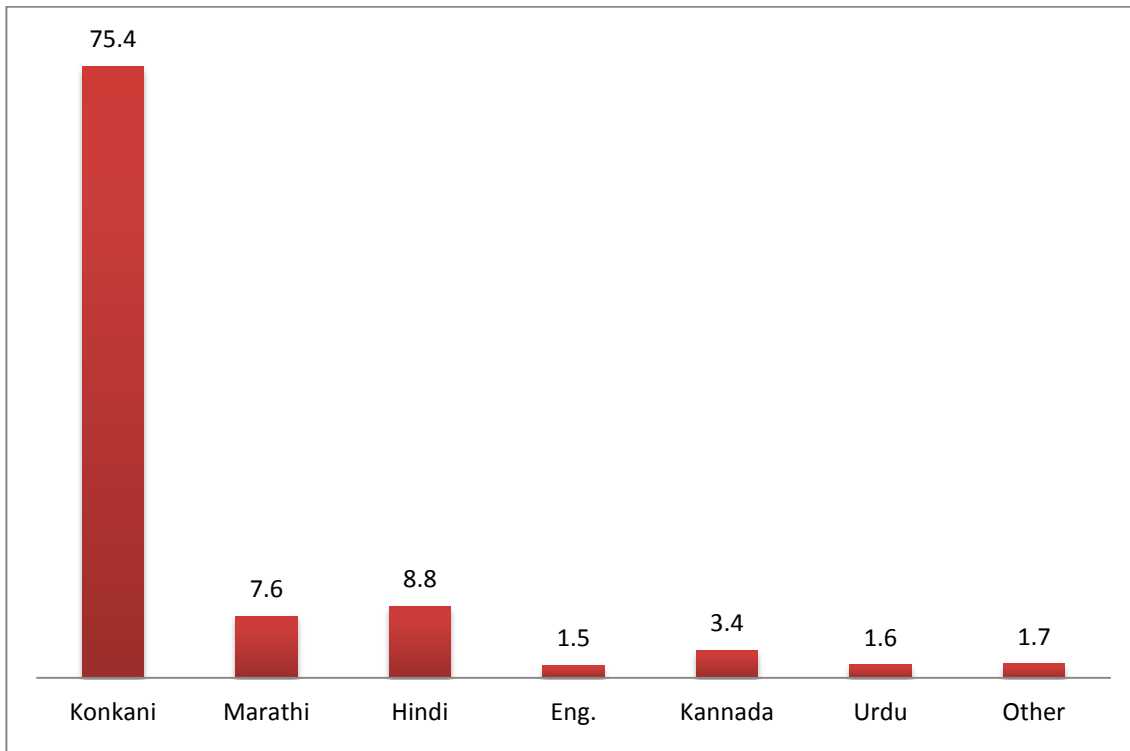


Fig. 7.1.12: Language Background of Students of Goa State

7.1.4 Number of Siblings

a) North Goa District

Table 7.1.4 and Figure 7.1.13 show the data relating to number of sibling the students of Class VII studying in schools located in North Goa district

Table: 7.1.4: Number of Siblings of Students

	None	One	Two	Three & more
North Goa District	10.8	41.5	31.8	15.9
South Goa District	8.1	38.6	30.3	22.9
Total (Goa State)	9.4	40.2	31.1	19.3

Note: - Figures indicate percentage of Students

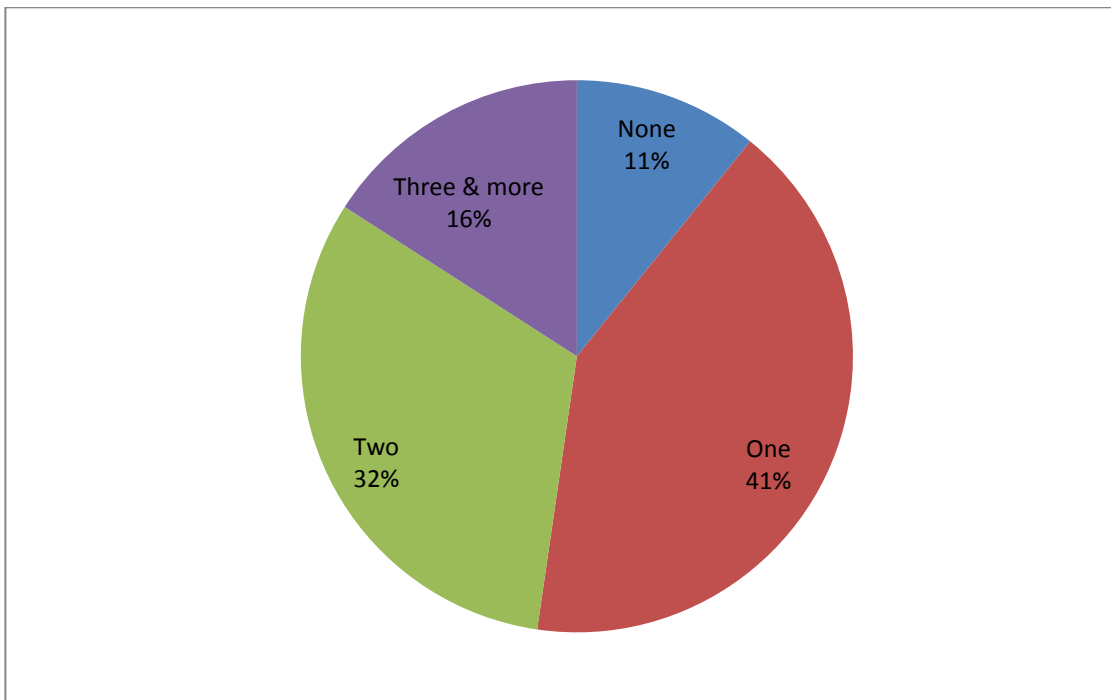


Fig.7.1.13: No. of Siblings of Students (North Goa District)

b) South Goa District

Table 7.1.4 and Figure 7.1.14 indicated that about 8 percent, 39 percent, 30 percent and 30 percent students of class VII of South Goa district had none, one, two and more than two siblings respectively.

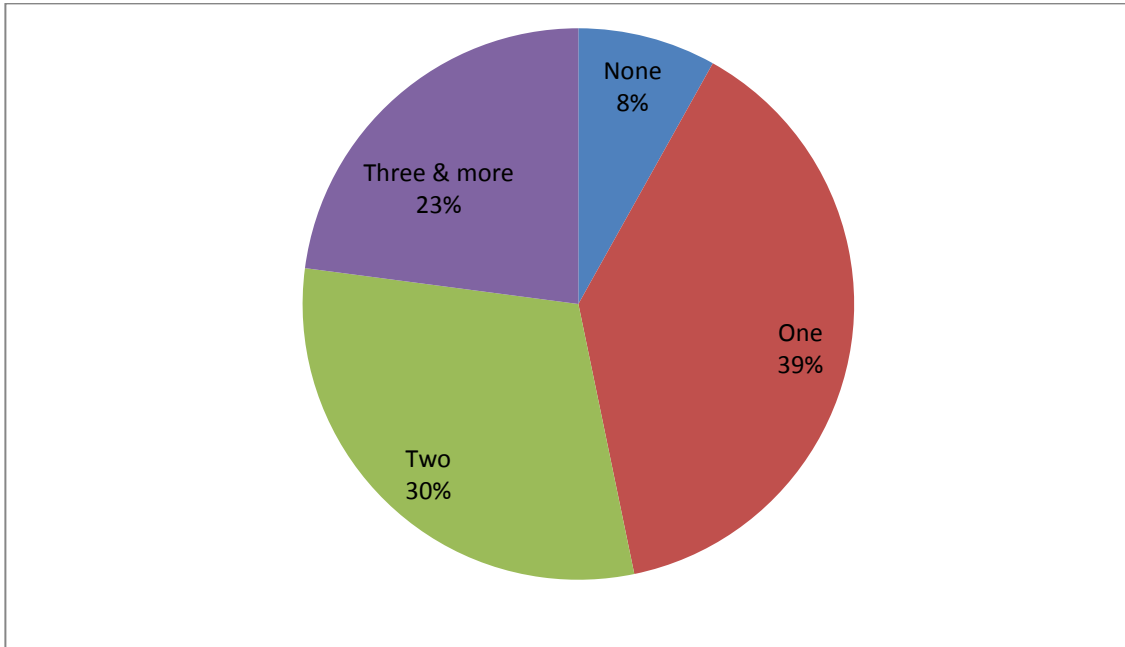


Fig.7.1.14: No of Siblings of Students (South Goa District)

c) Comparison between North Goa and South Goa Districts

Figure 7.1.15 indicated that slightly higher percentages of students of North Goa than South Goa district had none, one and two siblings. But, higher percentage of students of South Goa than North Goa district had three and more siblings.

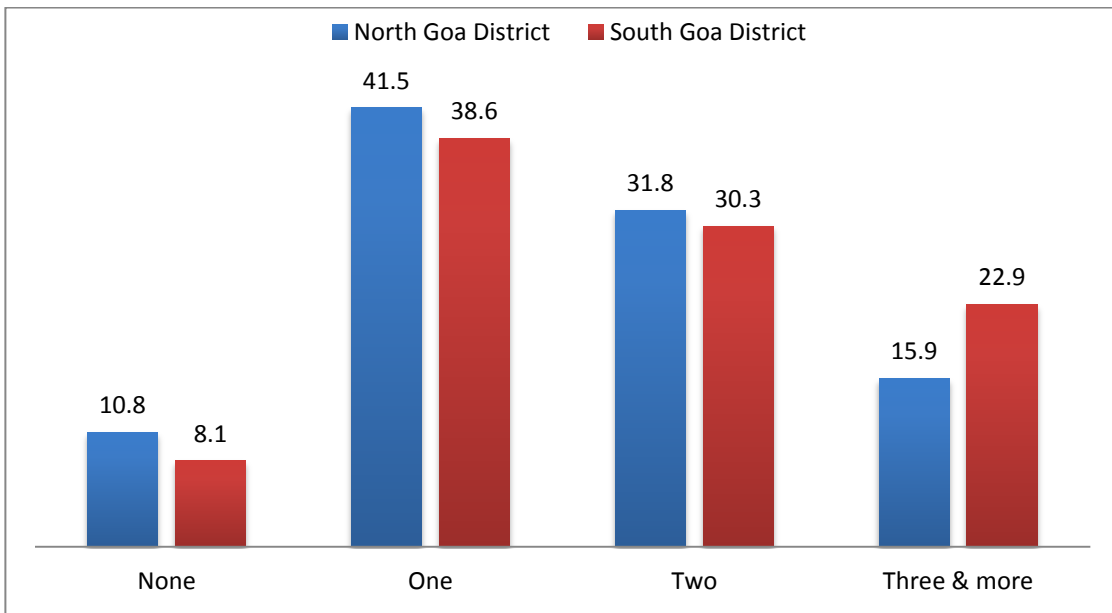


Fig.7.1.15: No. of Siblings of Students (Comparison between North Goa and South Goa Districts)

d) Goa State

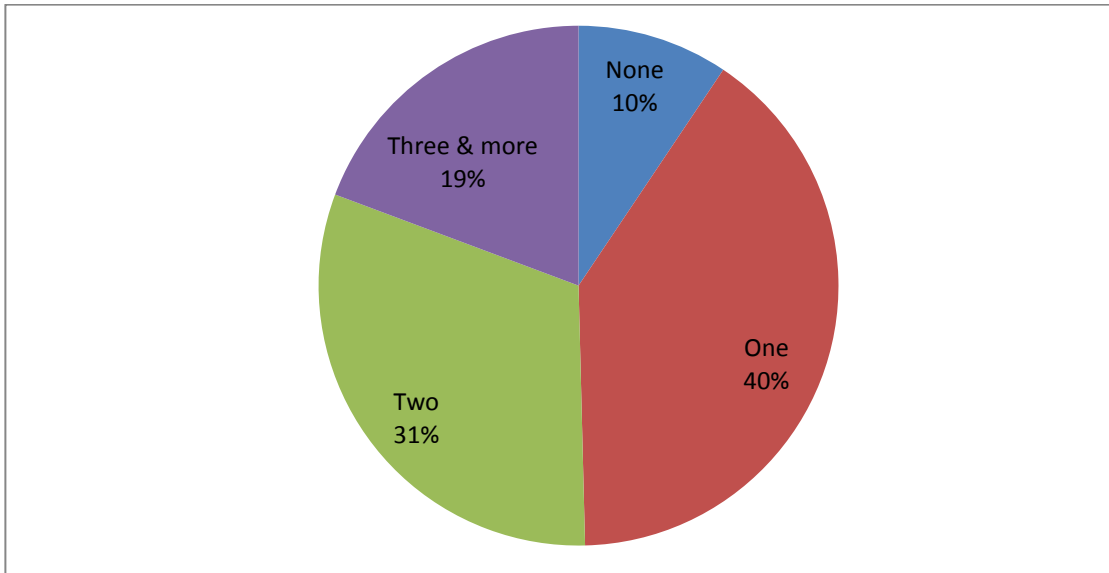


Fig.7.1.16: No. of Siblings of Students (Goa State)

Figure 7.1.16 showed that about one-tenth and two-fifths of the students of Class VII of the State had none and one sibling respectively. Thirty-one percent had two and about one-fifth had more than two siblings.

7.1.5 Physical Health Status

a) North Goa District

Table 7.1.5 and Figure 7.1.17 indicate the percentage of physically challenged students in North Goa district.

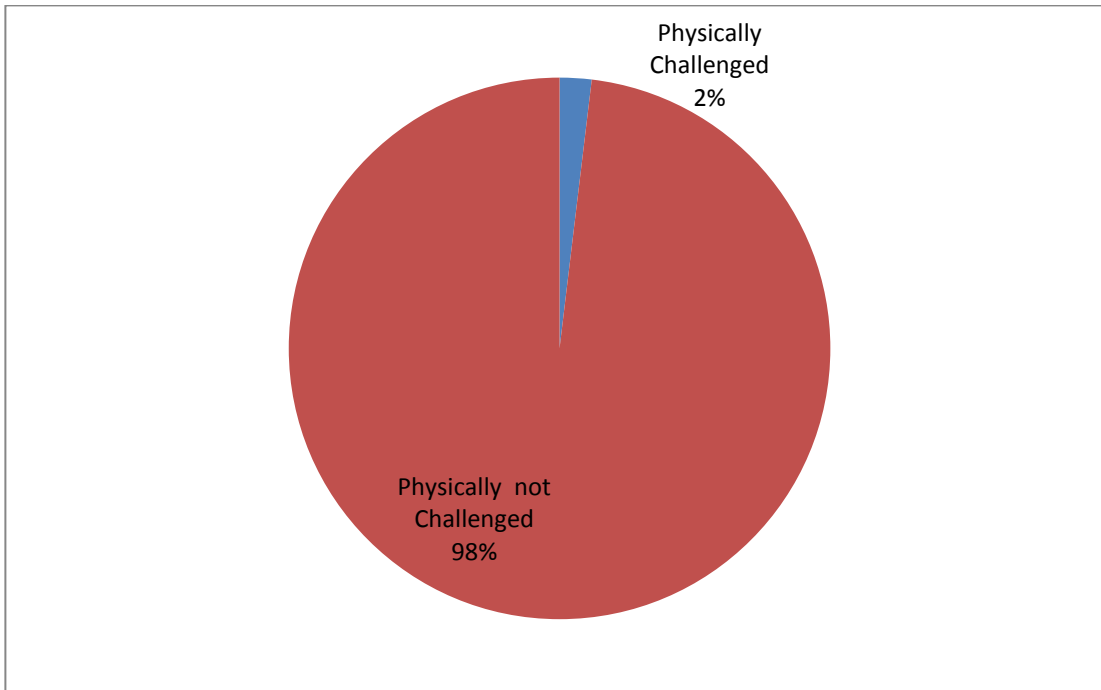


Fig.7.1.17: Physical Health Status of Students of North Goa District

Table 7.1.5: Physical Health Status of Students

	Physically Challenged	Physically not Challenged
North Goa District	1.9	98.1
South Goa District	2.9	97.1
Total (Goa State)	2.4	96.7

Note: - Figures indicate percentage of Students

b) South Goa District

Figure 7.1.18 shows that 3 percent of students were physically challenged.

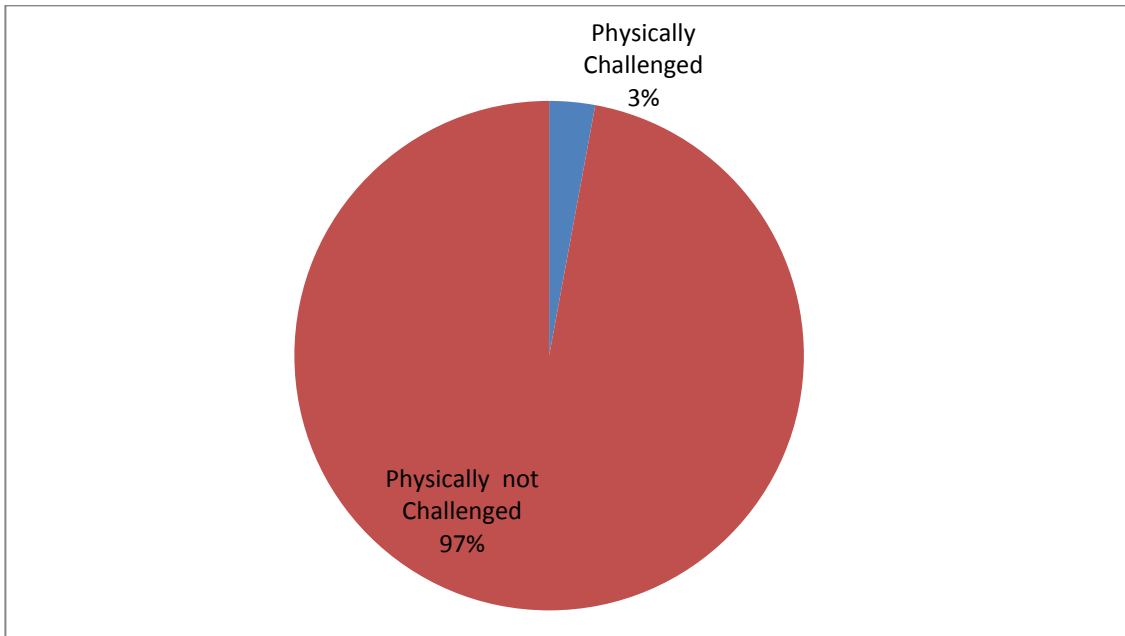


Fig. 7.1.18: Physical Health Status of Students of South Goa District

c) Comparison between North and South Goa Districts

Figure 7.1.19 shows comparison between the two districts of the State.

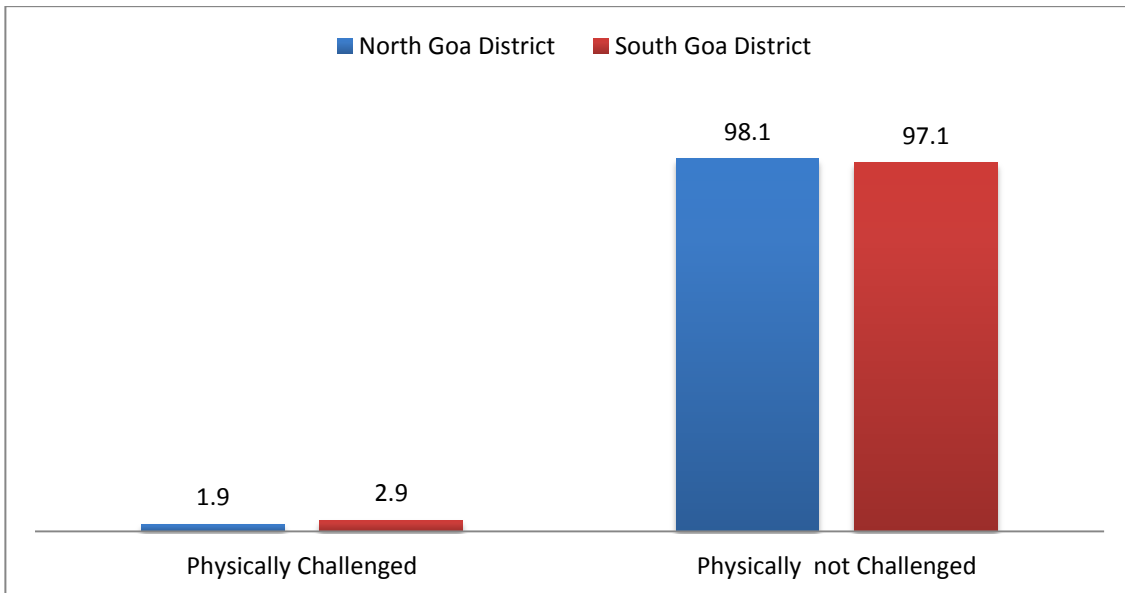


Fig. 7.1.19: Physical Health Status of Students of North Goa and South Goa Districts

d) Goa State

Figure 7.1.20 shows the data relating to percentages of students who were physically challenged and not physically challenged.

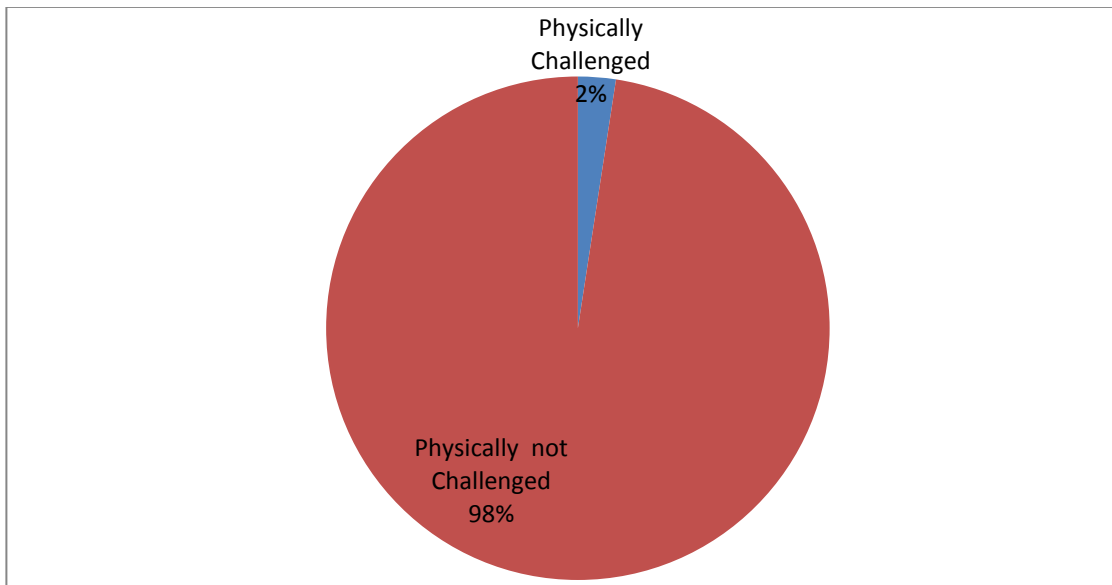


Fig. 7.1.20: Physical Health Status of Students of Goa State

The above data revealed that about 2 percent of students of Class-VII of the State are physically challenged.

7.2 Availability of Resources at Home

It is generally assumed that children with better facilities at home tend to strive for higher academic performance in school compared to the students who do not get such facilities. Therefore, it is pertinent to find out the availability of various resources at home. The different types of resources about which information were collected in his project are presented in the following pages.

7.2.1 Status of Parents' Education

i) Father's Education

Parents play a vital role in educating their children. Their influence on the academic achievement of children, directly or indirectly cannot be under estimated. Studies reveal that educational status of parents is one of the important factors that influence the academic attainment of children.

a) North Goa District

Table 7.2.1 and Figure 7.2.1 show percentages of fathers' of the students of North Goa district possessing different levels of educational qualifications.

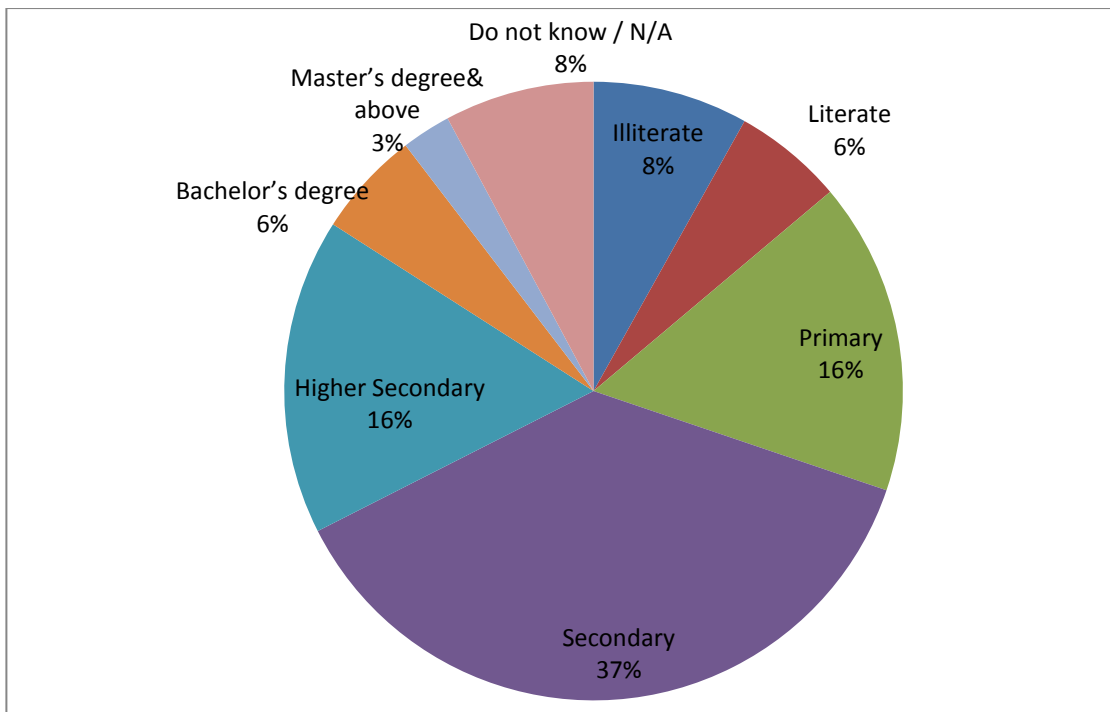


Fig. 7.2.1: Educational Qualification of Parents (Fathers) (North Goa District)

Table 7.2.1: Educational Status of Parents (Fathers)

Educational Qualification	North Goa District	South Goa District	Goa State
Illiterate	8.2	10.3	9.2
Literate	5.8	6.8	6.3
Primary	16.5	16.6	16.6

Secondary	37.7	34.0	35.4
Higher Secondary	16.7	13.8	15.3
Bachelor's degree	5.6	6.6	6.1
Master's degree & above	2.6	0.8	1.7
Do not know / N/A	7.9	11.0	9.4
Total	100	100	100

Note: - Figures indicate percentage of Students

b) South Goa District

Table 7.2.1 and Figure 7.2.2 show percentages of fathers' of the students of South Goa district possessing different levels of educational qualifications.

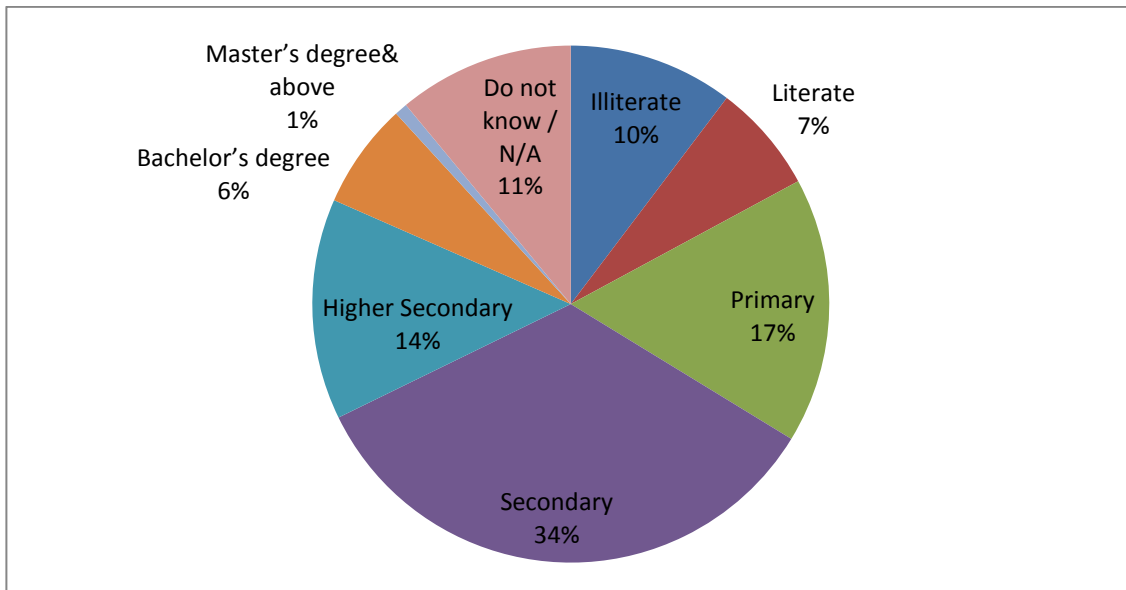


Fig. 7.2.2: Educational Qualification of Parents (Fathers) (South Goa District)

c) Comparison between North Goa and South Goa Districts

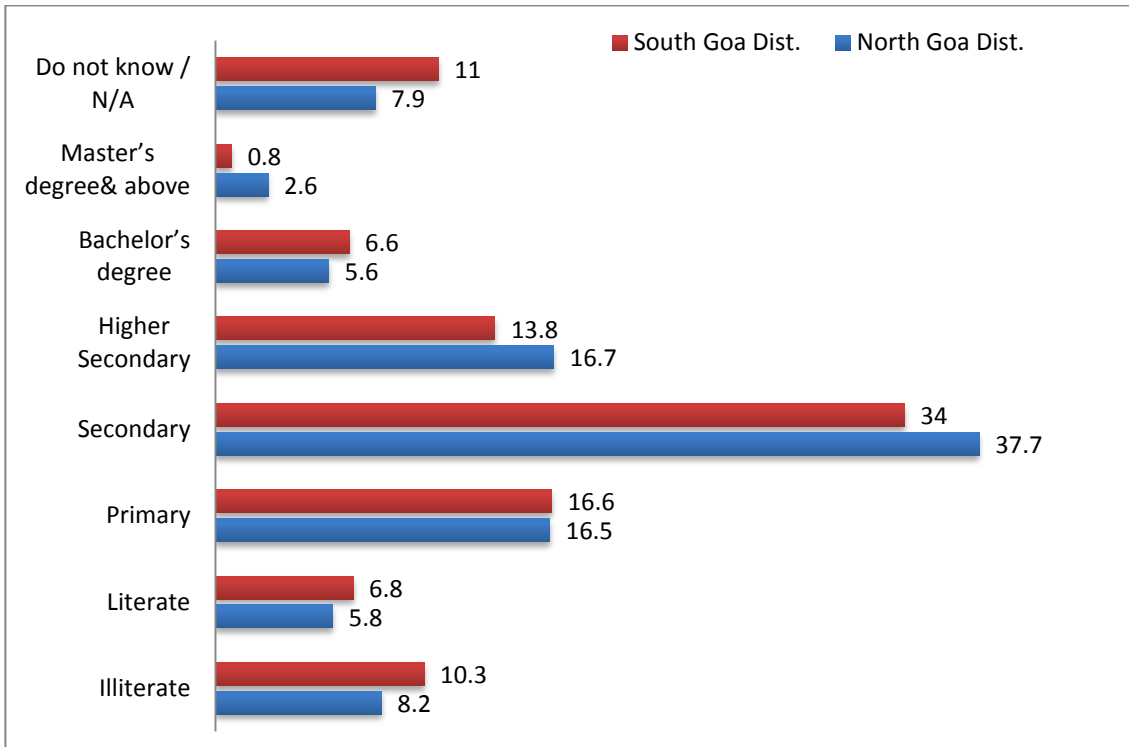


Fig. 7.2.3: Comparative Educational Qualification of Parents (Fathers) of North Goa and South Goa Districts

Figure 7.2.3 indicated that the fathers of the students of North Goa district than South district were slightly better qualified educationally.

d) Goa State

Table 7.2.1 and Figure 7.2.4 show percentages of fathers' of the students of Goa State possessing different levels of educational qualifications.

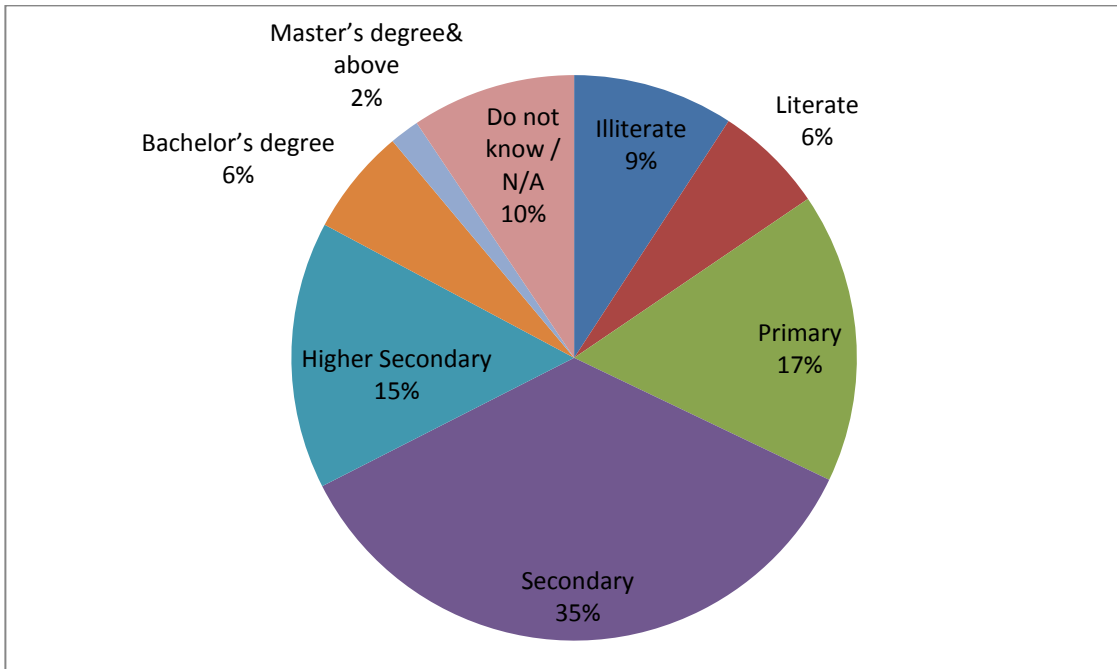


Fig. 7.2.4: Educational Qualification of Parents (Fathers) (Goa State)

The above findings showed that the fathers of about 9 percent students were illiterate, more than half had studied up to secondary, 15 percent had studied up to higher secondary, only 6 percent were Bachelor's degree holder and merely 2 percent were Master's degree holders.

ii) Mother's Education

a) North Goa District

Data relating to educational qualification of mothers of the students of North Goa district are given in Table 7.2.2 and Figure 7.2.5.

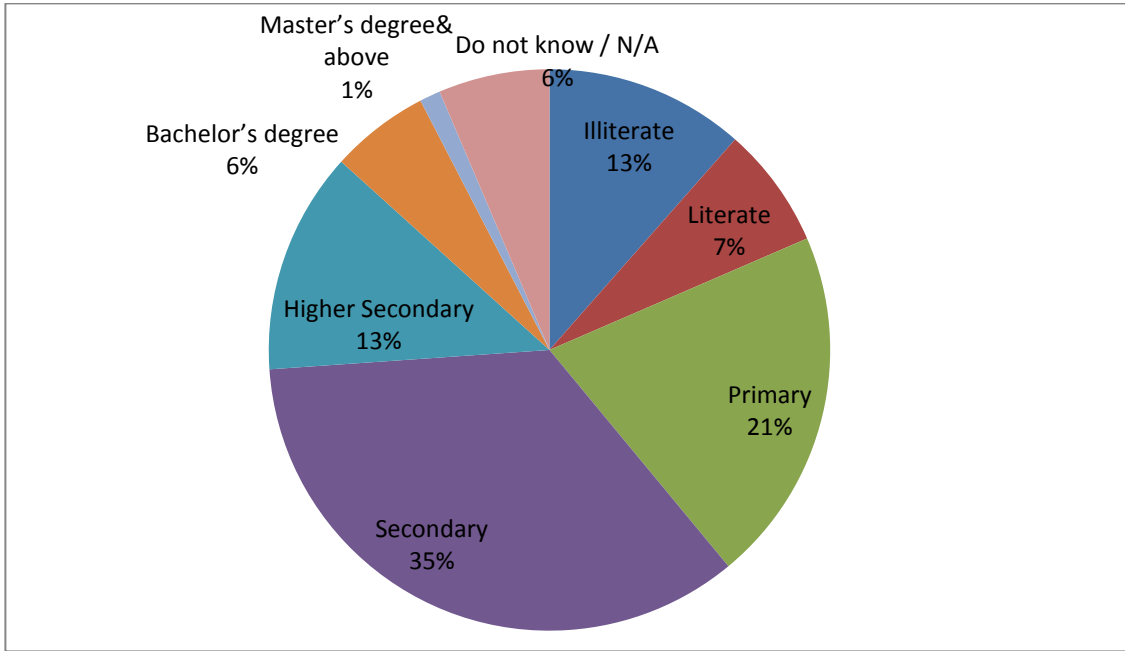


Fig. 7.2.5: Educational Qualification of Parents (Mothers) (North Goa District)

Table 7.2.2: Educational Status of Parents (Mothers)

Educational Qualification	North Goa District	South Goa District	Goa State
Illiterate	11.5	18.5	14.8
Literate	7.0	7.1	7.1
Primary	20.5	17.4	19.0
Secondary	34.9	30.6	32.8
Higher Secondary	12.8	9.9	11.4
Bachelor's degree	5.7	5.6	5.7
Master's degree & above	1.2	0.8	1.0
Do not know / N/A	6.4	10.1	8.2
Total	100	100	100

Note: - Figures indicate percentage of Students

b) South Goa District

Table 7.2.2 and Figure 7.2.6 show the data relating to educational qualifications of mothers of the students of South Goa district.

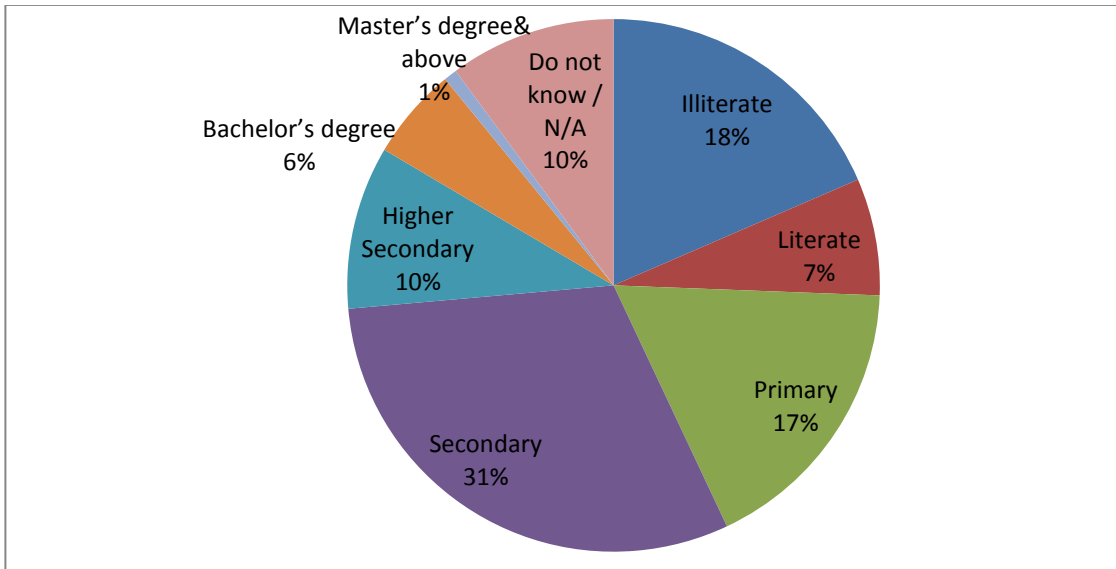


Fig. 7.2.6: Educational Qualification of Parents (Mothers) (South Goa District)

c) Comparison between North Goa and South Goa Districts

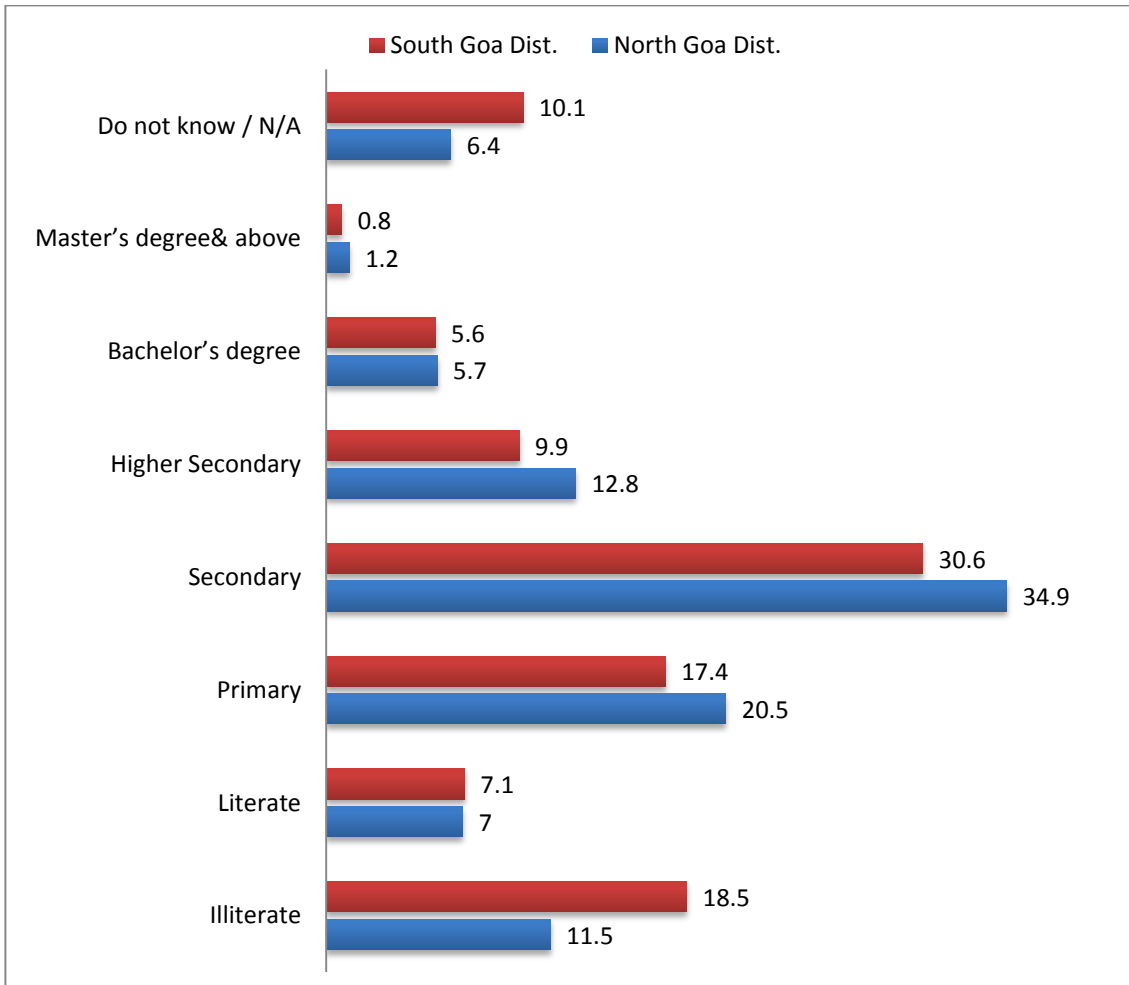


Fig. 7.2.7: Educational Qualification of Parents (Mothers) (Comparison between North Goa and South Goa Districts)

d) Goa State

Figure 7.2.8 shows educational qualifications of mothers of the students of Class- VII of the State. About 15 percent of students informed that their mothers were illiterate. Little more than half of the students' mothers were educated up to High school, 11 percent up to higher secondary and 6 percent possessed Bachelor's degree and just 1 percent had Master's degree.

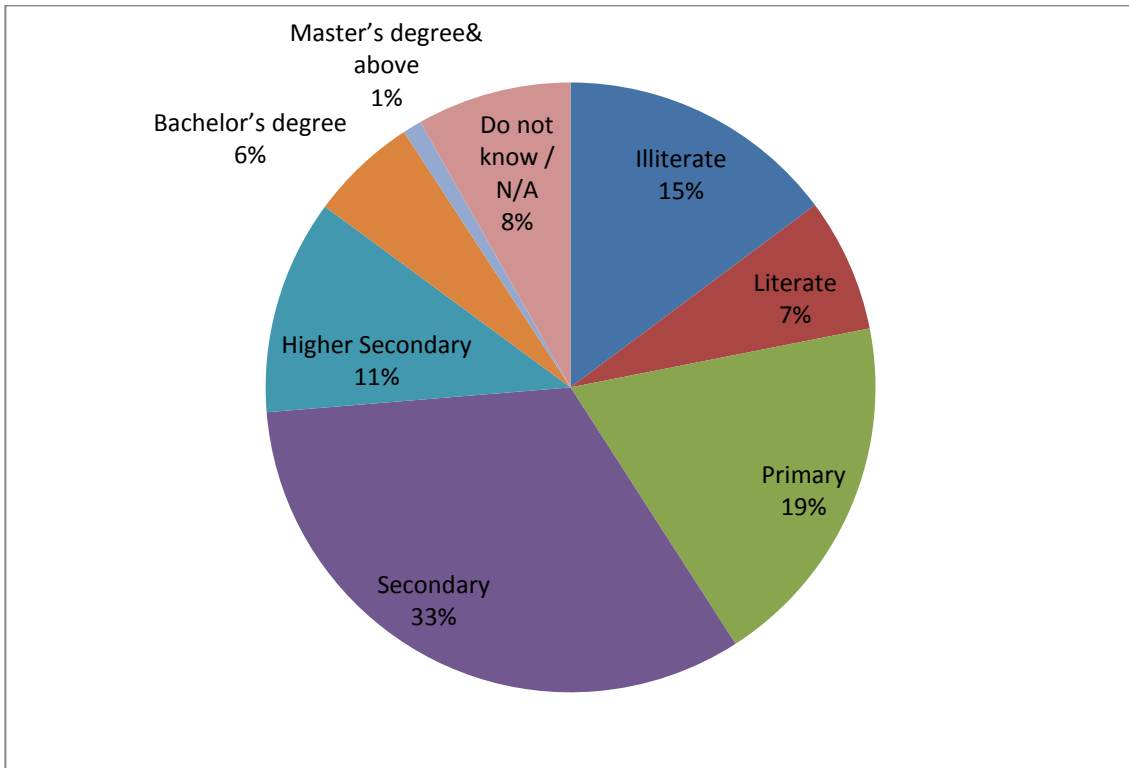


Fig. 7.2.8: Educational Qualification of Parents (Mothers) (Goa State)

7.2.2 Occupations of Parents

i) Occupation of Fathers

a) North Goa District

Table 7.2.3 and Figure 7.2.9 provide information about percentages of students' fathers of North Goa district engaged in different occupations.

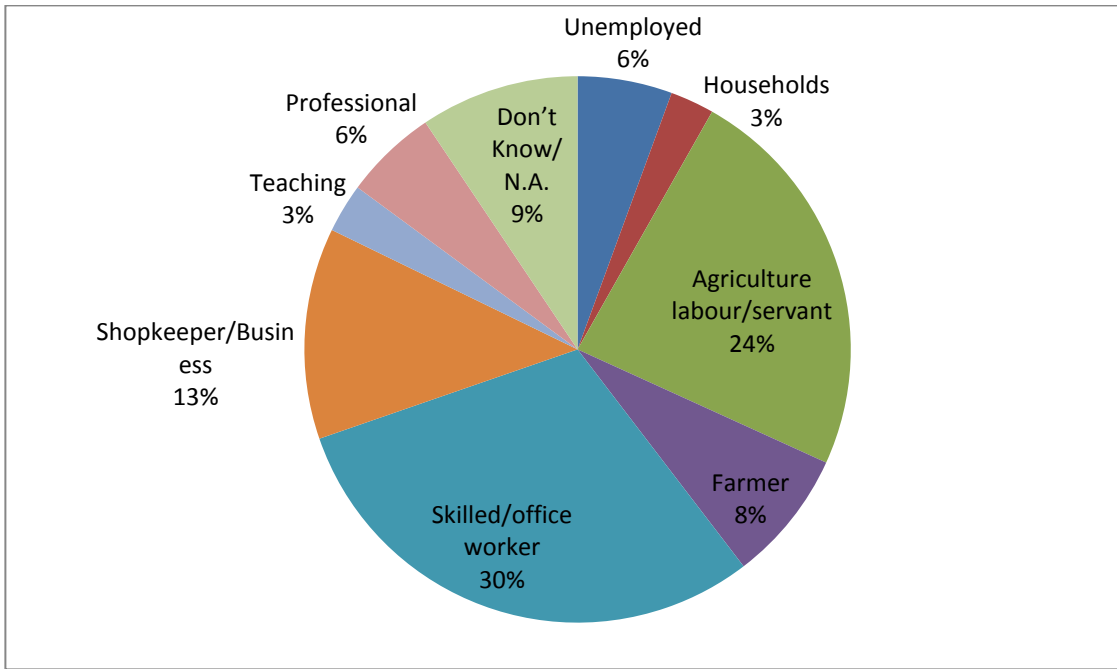


Fig.7.2.9: Occupation of Fathers (North Goa District)

Table 7.2.3: Fathers' Occupations

Occupation	North Goa District	South Goa District	Goa State
Unemployed	5.6	5.0	5.3
Households	2.6	2.4	2.5
Agriculture labour/servant	23.6	24.0	23.8
Farmer	7.8	13.1	10.4
Skilled/office worker	30.1	32.6	31.4
Shopkeeper/Business	12.5	11.1	11.8
Teaching	2.9	1.2	2.1
Professional	5.5	2.8	4.1
Don't Know/ N.A.	9.4	7.8	8.6
Total	100	100	100

Note: - Figures indicate percentage of Students

b) South Goa District

Table 7.2.3 and Figure 7.2.10 provide information about percentages of students' fathers of South Goa district engaged in different occupations.

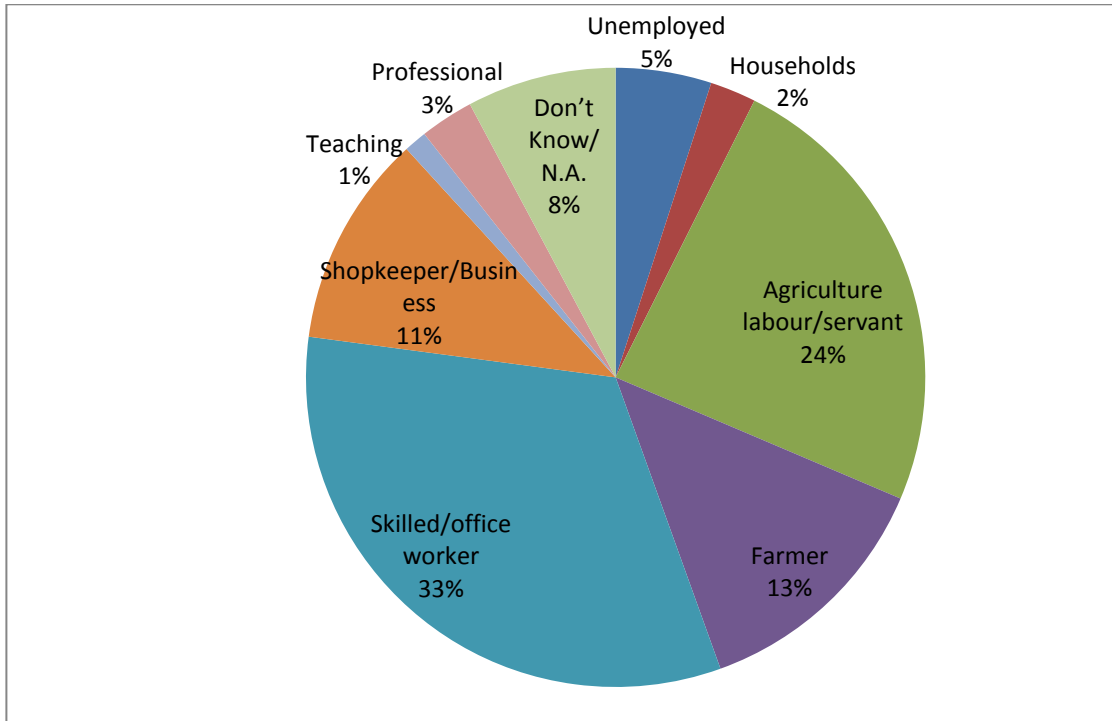


Fig.7.2.10: Occupation of Fathers (South Goa District)

c) Comparison between North Goa and South Goa Districts

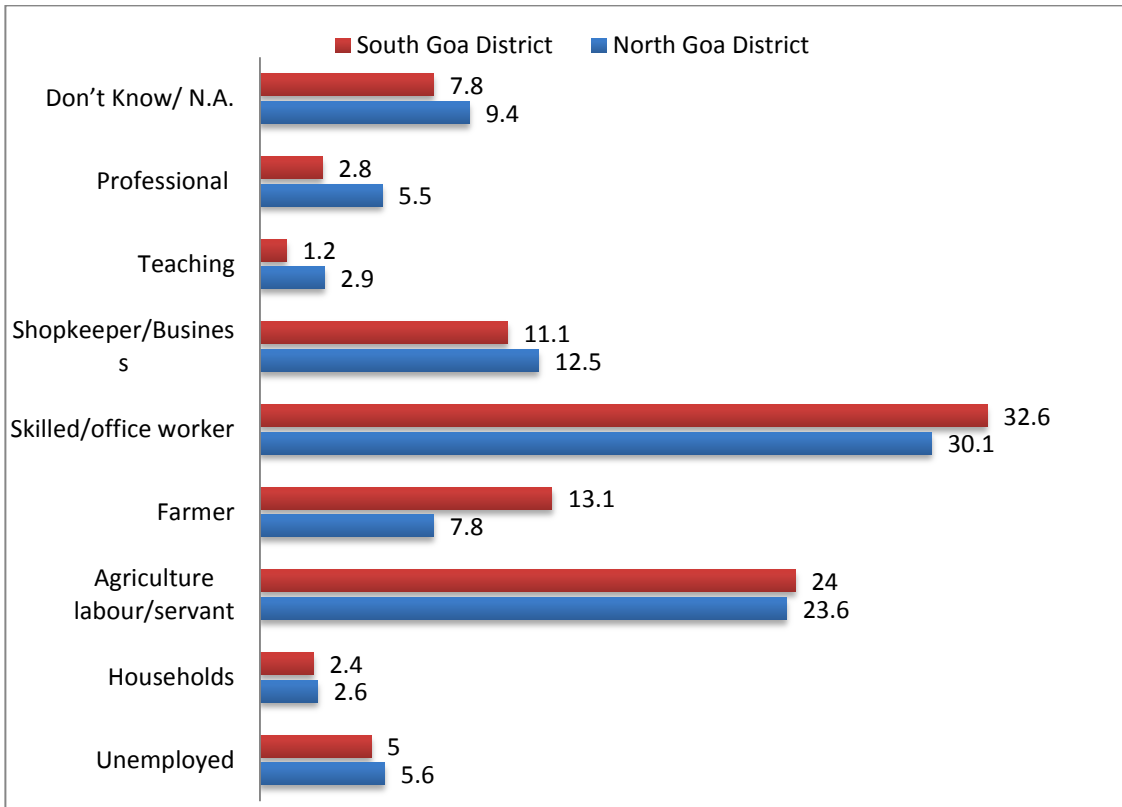


Fig. 7.2.11: Comparative Occupation of Parents (Fathers) of the students of North Goa District, South Goa District and the State of Goa

Figure 7.2.11 provides comparative data about occupations of fathers of the students of North Goa and South Goa districts.

d) Goa State

Figure 7.2.12 represents data of the entire State regarding percentage of fathers (of students) engaged in various occupations.

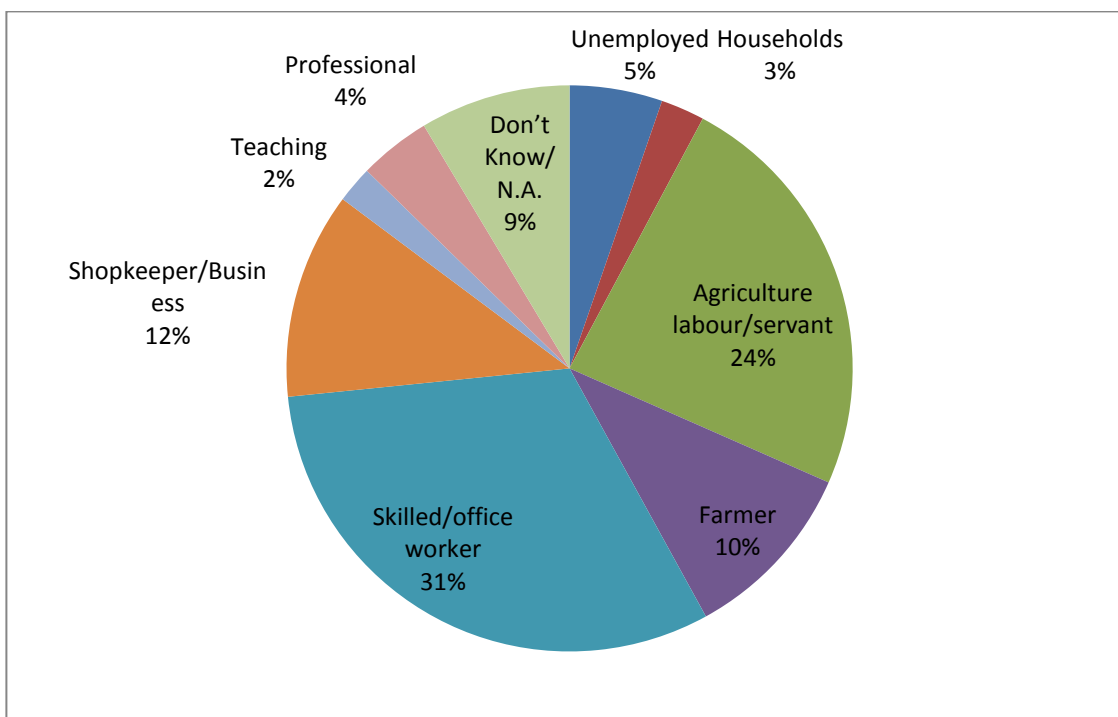


Fig.7.2.12: Occupation of Parents (Fathers) of the Students (Goa State)

ii) Occupation of Mothers

Table 7.2.4 revealed that about two-third of the mothers of students of both the districts and also the State of Goa was engaged in household work (house-wives) and more than one-tenth of Mothers were agriculture labour/servant. Negligible percentages of Mothers were skilled workers, professional, in business and in teaching profession. No difference was observed between North Goa and South Goa districts as far occupations of mothers were concerned.

Table 7.2.4: Mothers' Occupations

Occupation	North Goa District	South Goa District	Goa State
	%	%	%
Unemployed	2.8	3.2	3.0
Households	69.7	67.2	68.6

Agriculture labour/servant	11.7	14.6	13.1
Farmer	1.6	2.6	2.1
Skilled/office worker	6.6	4.7	5.8
Shopkeeper/Business	2.2	2.0	2.1
Teaching	2.4	1.8	2.1
Professional	0.8	0.6	0.7
Don't Know/ N.A.	1.8	3.3	2.5
Total	100	100	100

7.2.3 Poverty Line

a) North Goa District

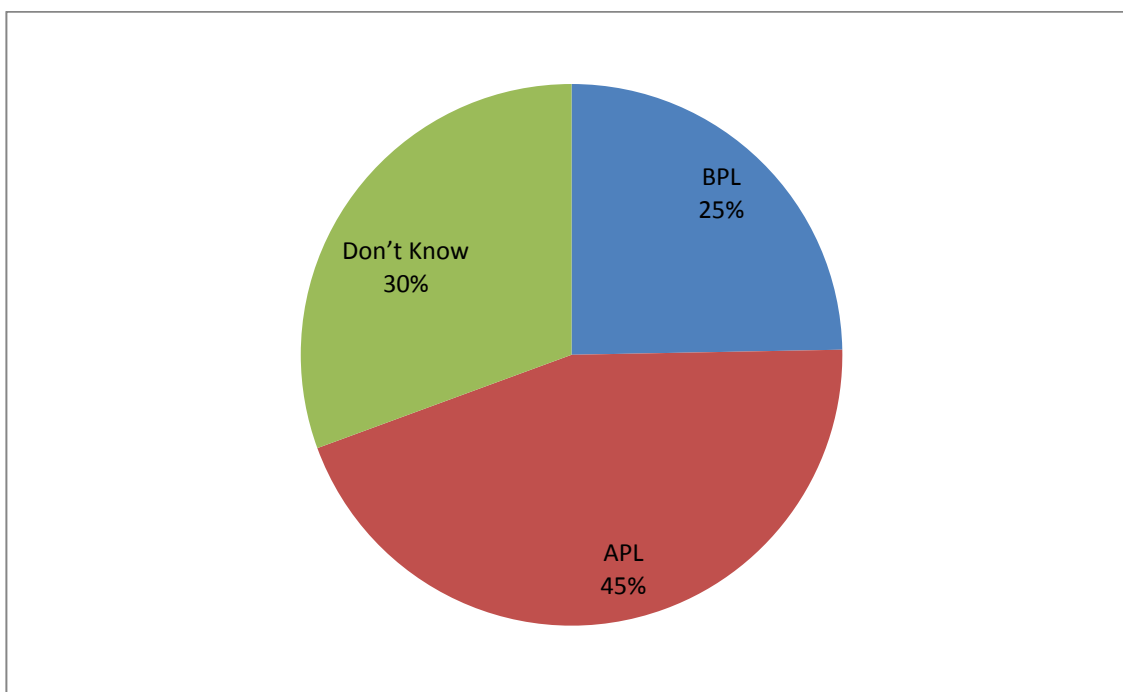


Fig. 7.2.13: Poverty Line Status of the Families (North Goa District)

Twenty-five percent of students of the North Goa district schools were from families having Below Poverty Line (BPL) card and 45 percent were from APL families (Table

7.2.5 and Figure 7.2.13). About 30 percent of students had no knowledge about their poverty line status.

Table 7.2.5: Poverty Line Status of the Families of the Students of Class-VII

Poverty Line	North Goa Dist.		South Goa Dist.		Goa State	
	No.	%	No.	%	No.	%
BPL	291	24.7	174	15.6	465	20.3
APL	527	44.7	455	40.8	982	42.8
Don't Know	360	30.6	485	43.5	845	36.9
Total	1178	100	1114	100	2292	100

b) South Goa District

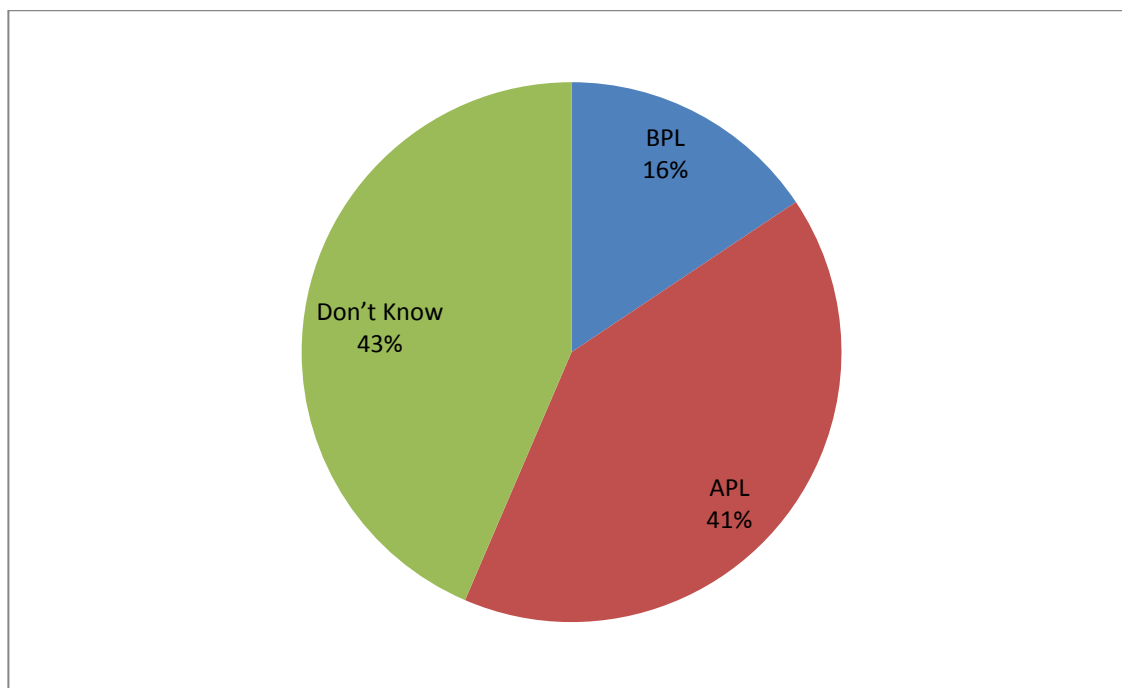


Fig. 7.2.14: Poverty Line Status of the Families (South Goa District)

Figure 7.1.14 represents data concerning poverty line status of the families of students of South Goa district. A very high percentage (43 percent) student had no knowledge about poverty line status of their family.

c) Comparison between North Goa and South Goa Districts

Figure 7.2.15 indicates that higher percentage students of North Goa than South Goa district were from BPL families.

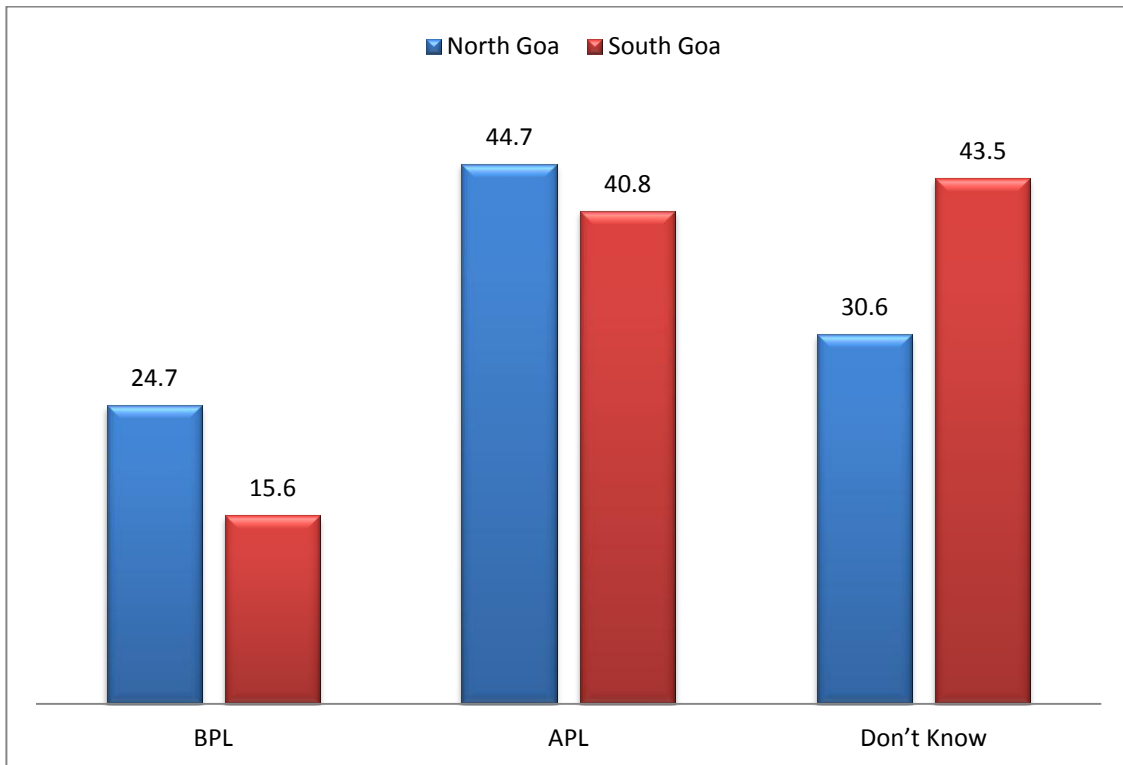


Fig. 7.2.15: Poverty Line Status of the Families (Comparison between North Goa and South Goa Districts)

d) Goa State

In Goa 20 percent students of Class-VII were from BPL families and 43 percent were from APL families. Thirty-seven percent of students did not know about the poverty line status of their families.

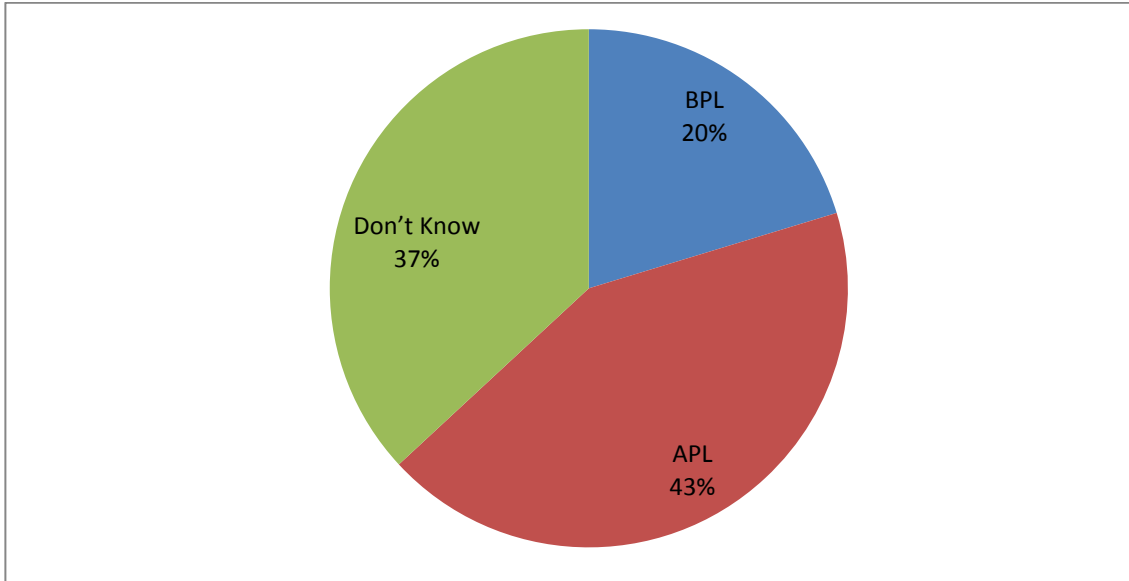


Fig. 7.2.16 Poverty Line Status of the Families (Goa State)

7.2.4 Educational Resources at Home

a) North Goa District

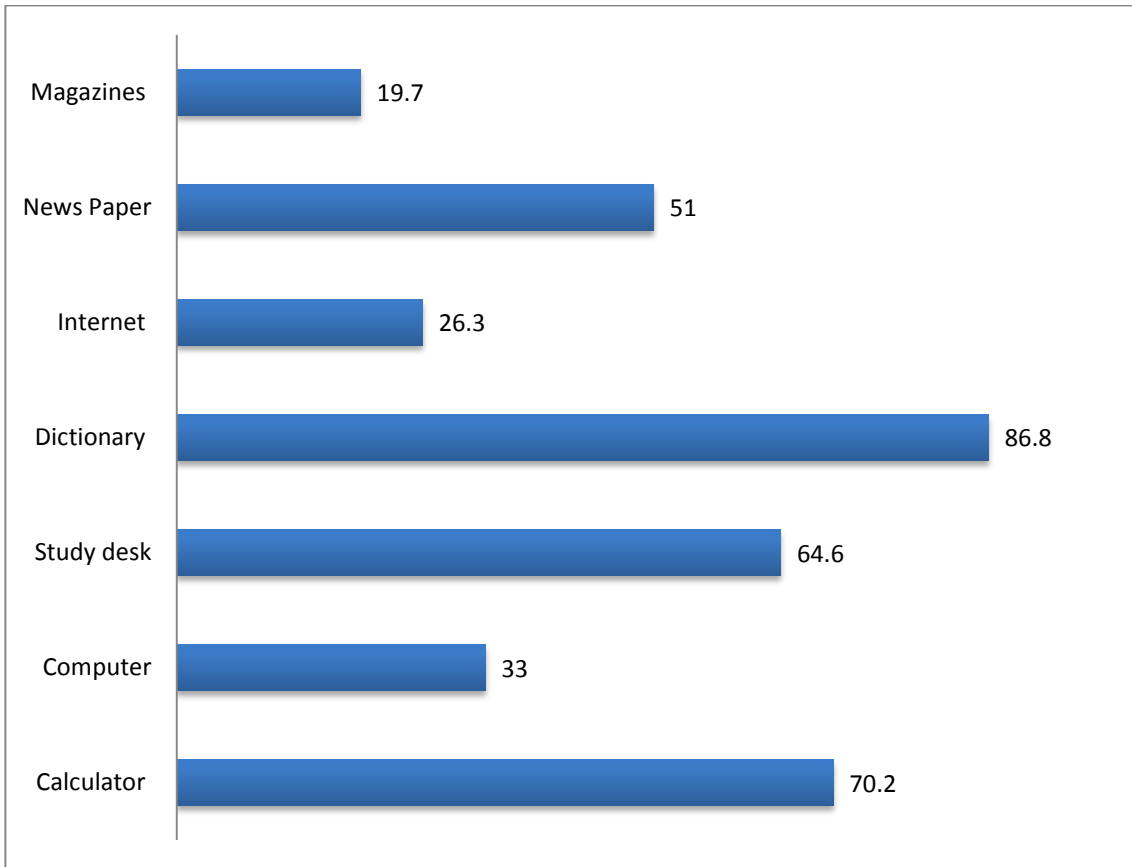


Fig. 7.2.17: Educational resources at Home (North Goa District)

Table 7.2.6 and Figure 7.2.17 indicate that majority of students of North Goa district had calculator, study desks, dictionary and news papers at home. But most of the school students did not have magazines, computer and internet facility at home.

Table 7.2.6: Educational Resources at Home

Resources	North Goa Dist.	South Goa Dist.	Goa State
Calculator	70.2	66.1	68.2
Computer	33.0	52.6	42.6
Study desk	64.6	70.6	67.5
Dictionary	86.8	85.3	86.1
Internet	26.3	21.3	23.9
News Paper	51.0	45.2	48.2

Magazines	19.7	20.8	20.3
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Note – Figures indicate percentage of students

b) South Goa District

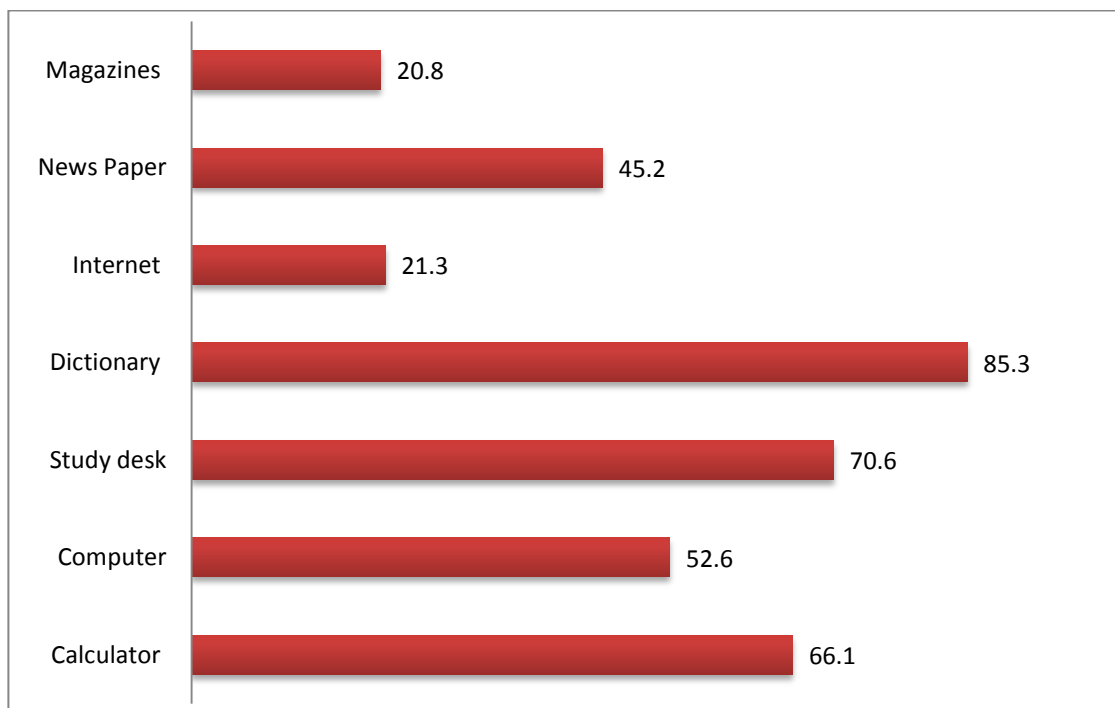


Fig. 7.2.18: Educational Resources at Home (South Goa District)

Majority of students of South Goa district had calculator, study desks, computer and dictionary at home (Table 7.2.6 and Figure 7.2.18). But it was found that most of the students were not having internet facility, news paper and magazines at home.

c) Comparison between North Goa and South Goa Districts

Figure 7.2.19 shows that higher percentage of students of North Goa than South Goa district had calculator, dictionary, and news paper and internet facility at home. But higher percentage of students of South than North Goa district had computer and study desks at home.

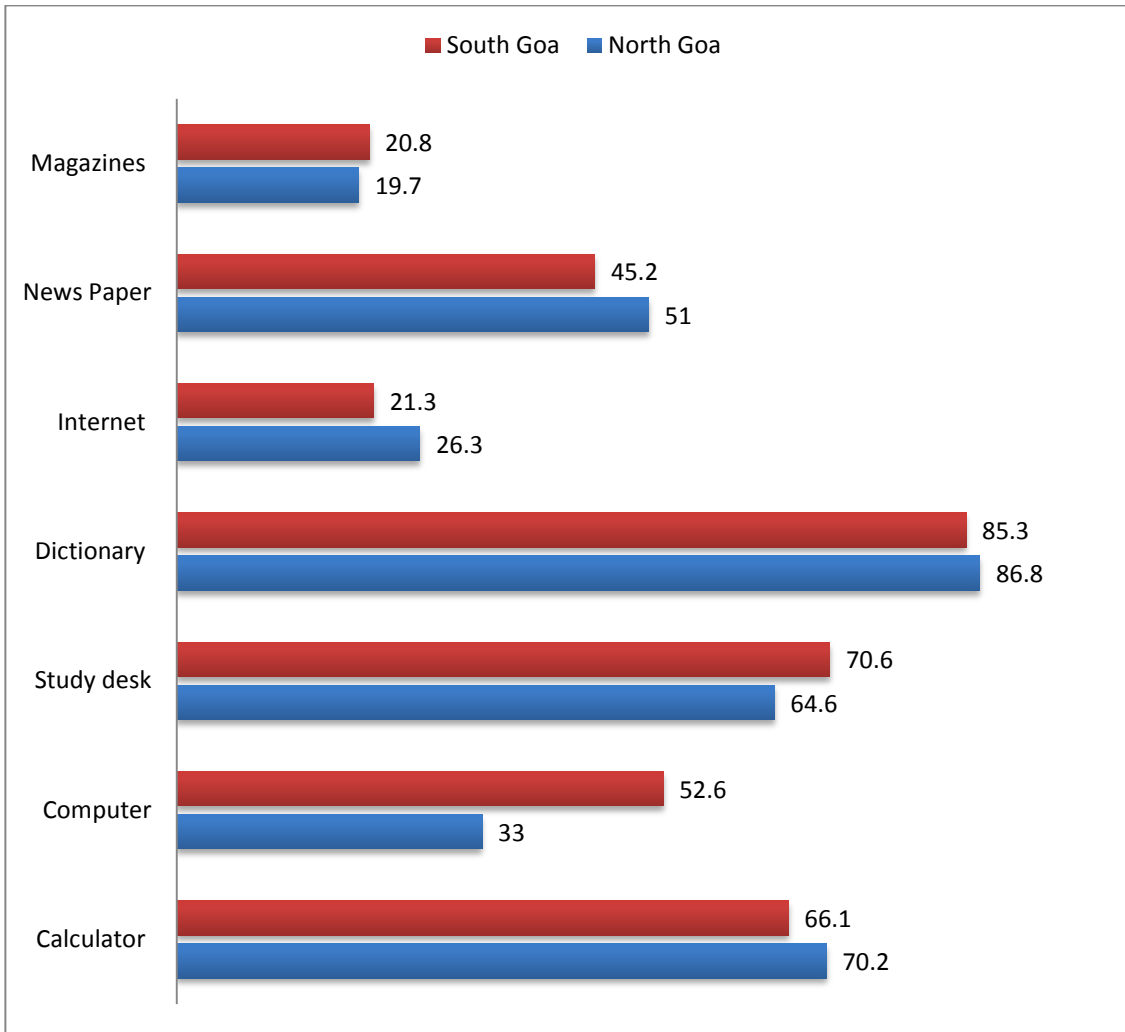


Fig. 7.2.19: Comparative Educational Resources at Home: North Goa and South Goa Districts

d) Goa State

Only calculator, study desks and dictionary were available to majority of the students at home (Figure 7.2.20). The other educational resources were not available at home to majority of the students of the State.

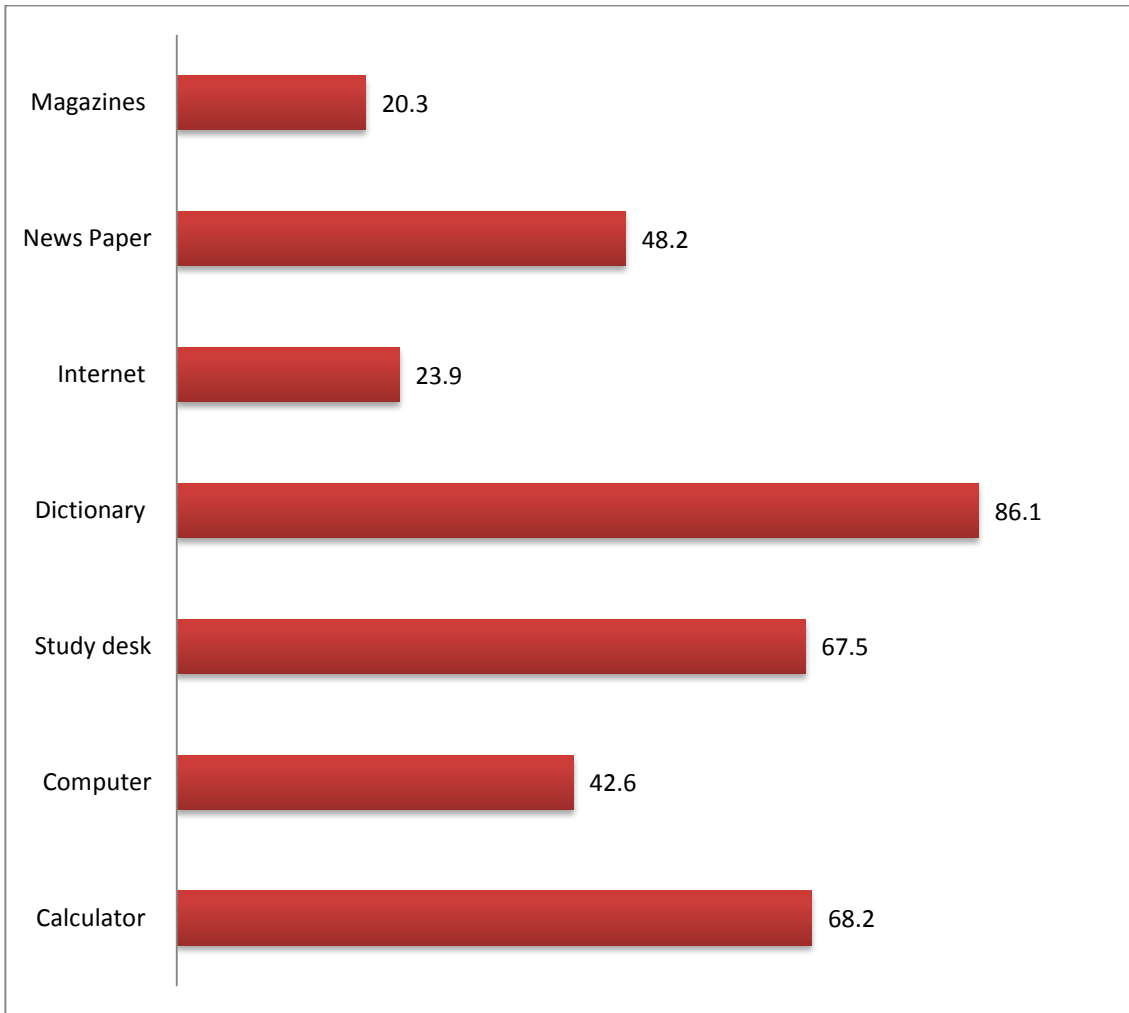


Fig. 7.2.20: Educational Resources at Home (Goa State).

7.2.5 Availability of Books at Home

a) North Goa District

Table 7.2.7 and Figure 7.2.21 show that about 16 percent of students of North Goa district had no books at home. More than half of the students had 1-10 books and about one-fifth had more than 25 books at home.

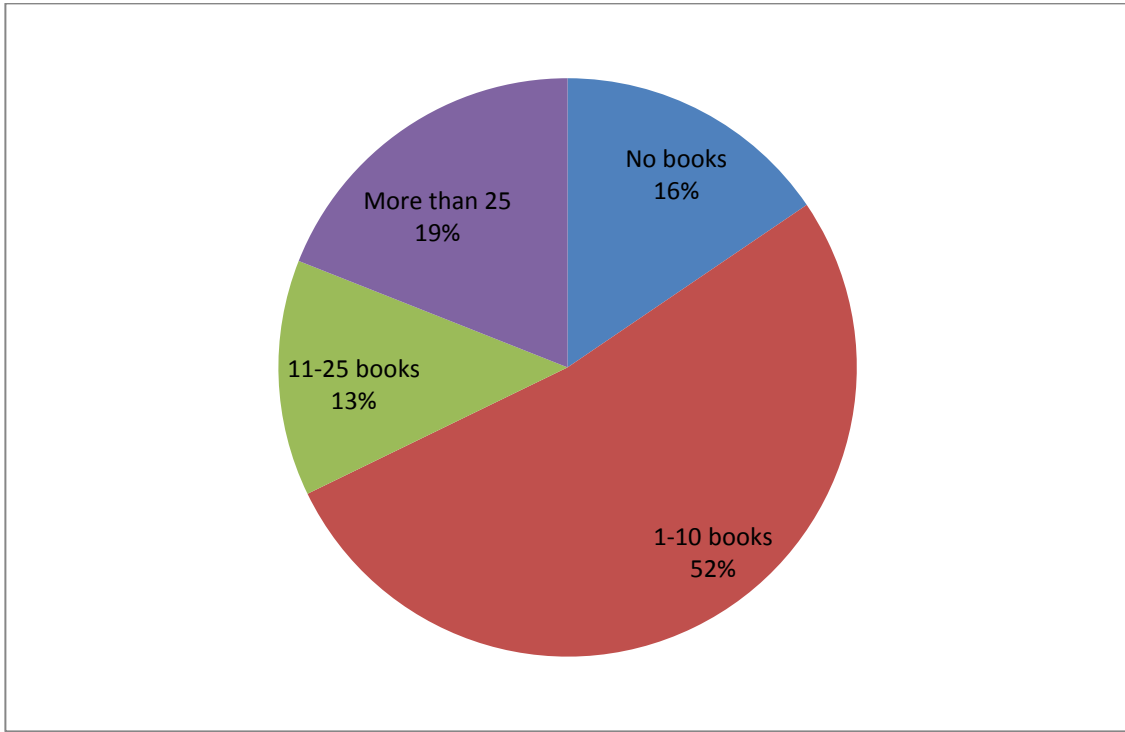


Fig. 7.2.21: Availability of Books at Home (North Goa District).

Table 7.2.7: Availability of Books at Homes of the students

Books	North Goa Dist.	South Goa Dist.	Goa State
No books	15.5	19.4	17.3
1-10 books	52.3	50.1	51.3
11-25 books	13.2	11.3	12.3
More than 25	19.0	19.2	19.1
Total	100	100	100

Note – Figures indicate percentage of students

b) South Goa District

About 19 percent of students of South Goa district had no books at home. One-half of the students had 1-10 books, 11.3 percent had 11-25 books and about one-fifth had more than 25 books at home(Table 7.2.7 and Figure 7.2.22).

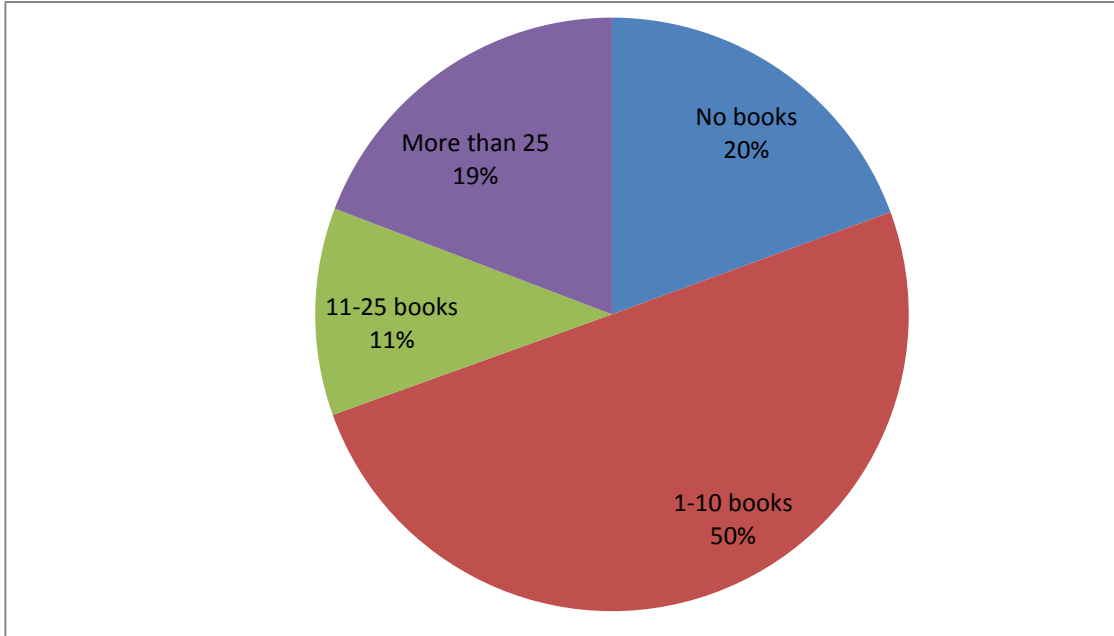


Fig. 7.2.22: Availability of Books at Home (South Goa District)

c) Comparison between North Goa and South Goa Districts

Not much difference was found between the students of North and South Goa districts as far as availability of book at their home is concerned.

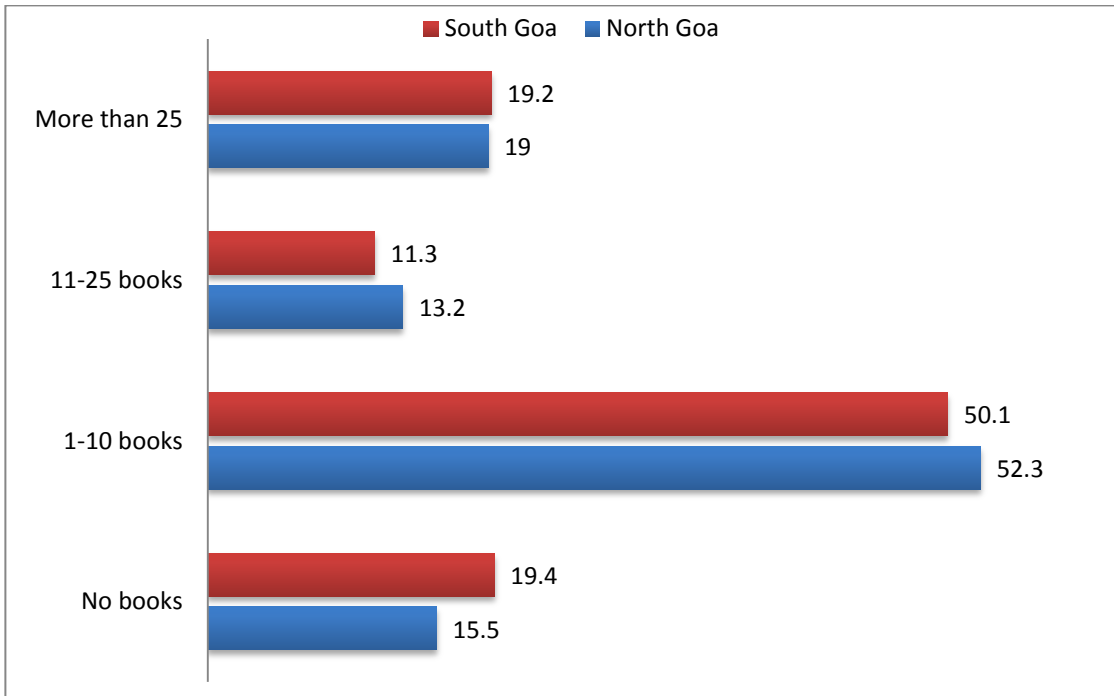


Fig. 7.2.23: Availability of Books at Home (North Goa and South Goa Districts)
d) Goa State

Figure 7.2.24 indicates that majority of students of Class VII of the State had 1-10 books, 12 percent had 11-25 books and 19 percent of the students had more than 25 books at home. But around one-fifth of the students of the State had no books at home.

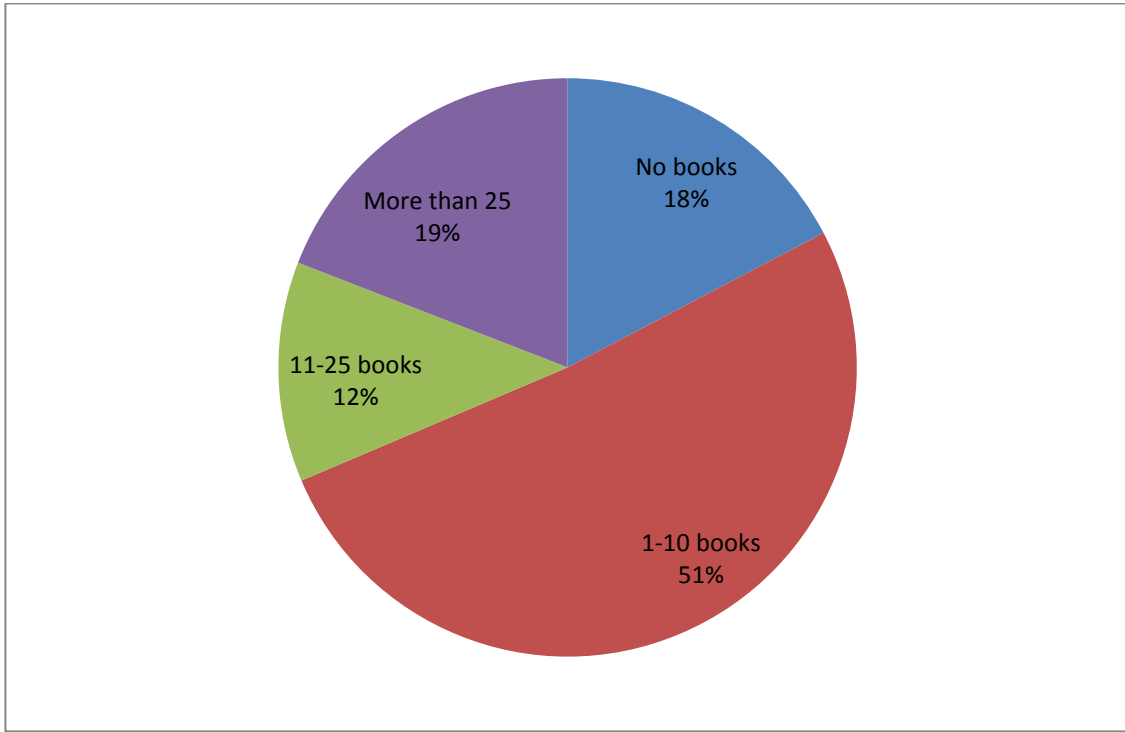


Fig. 7.2.24: Availability of Books at Home (Goa State)

7.2.6 Means of Transport to go to School

a) North Goa District

Figure 7.2.25 shows that highest percentage (47 percent) of students of North Goa district used to go to school by school bus. Thirty-five percent students used to go to school by walking. Nine percent and Eight percent students respectively mentioned that they used to go to school by public bus and own vehicle.

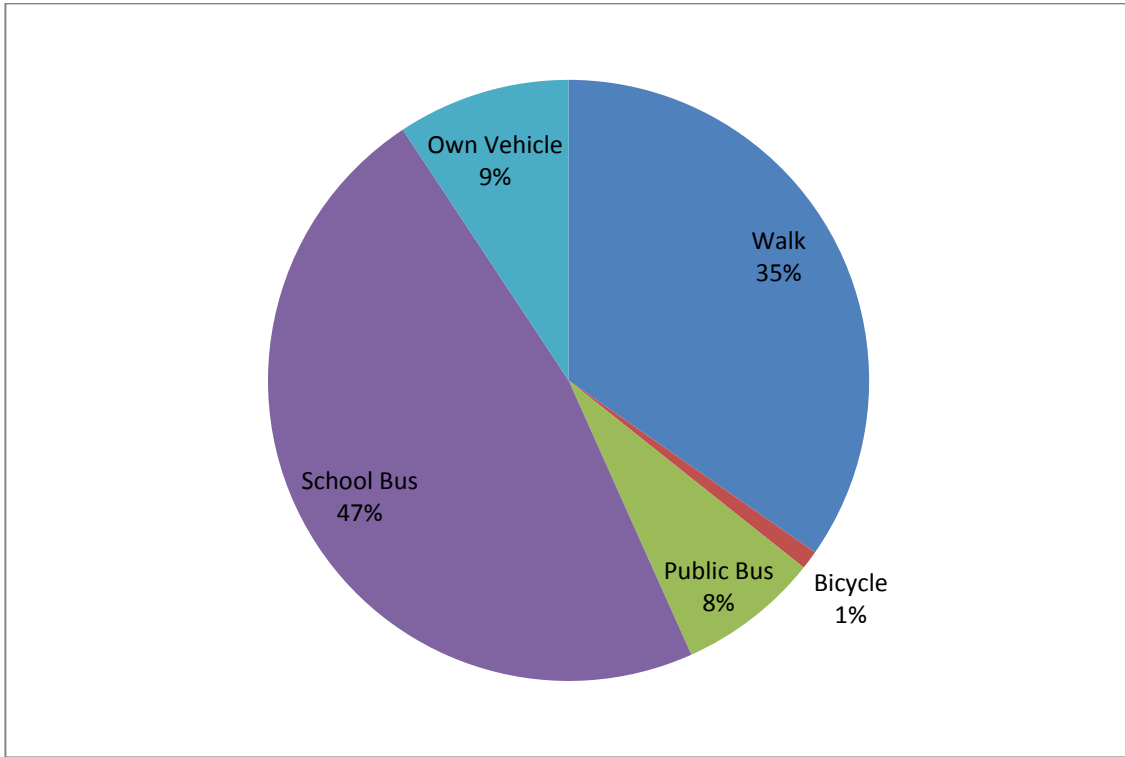


Fig.7.2.25: Availability of Transport Facilities (North Goa District)

Table 7.2.8: Availability of Transport Facilities.

Mode	North Goa Dist.	South Goa Dist.	Goa State
Walk	34.7	29.4	34.6
Bicycle	1.0	2.3	1.6
Public Bus	7.6	5.6	6.6
School Bus	47.4	47.4	47.4
Own Vehicle	9.3	10.3	9.8

Note – Figures indicate percentage of students.

b) South Goa District

Figure 7.2.26 shows percentages of students of South Goa district using different modes of transport to go to school.

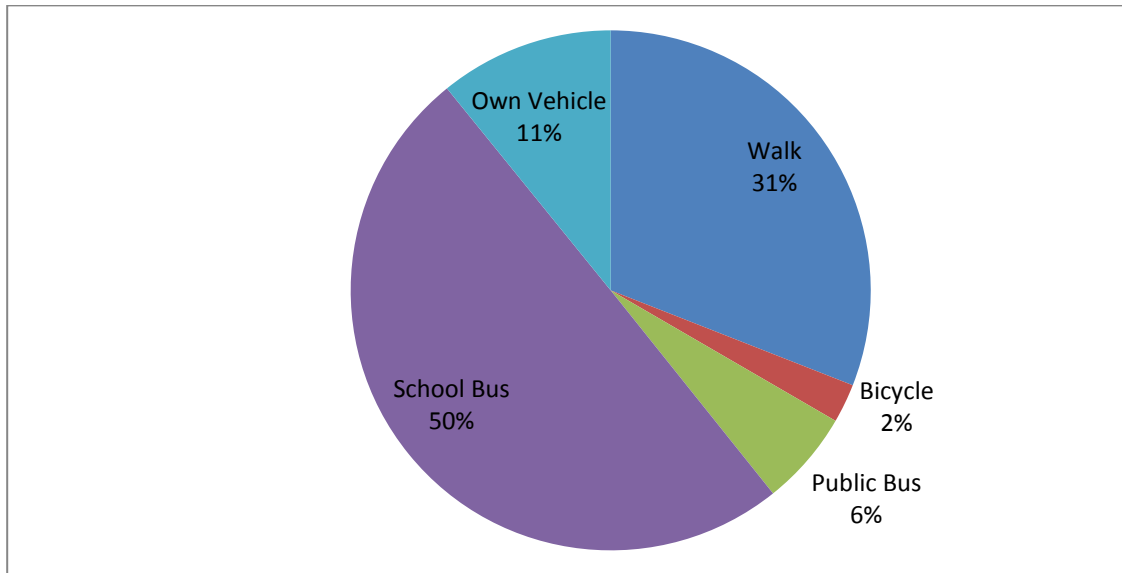


Fig.7.2.26: Availability of Transport Facilities (South Goa District)

c) Comparison between North Goa and South Goa Districts

Figure 7.2.27 shows that nearly equal percentages of the students of both the districts of the State used to use different mode of conveyance to attend school.

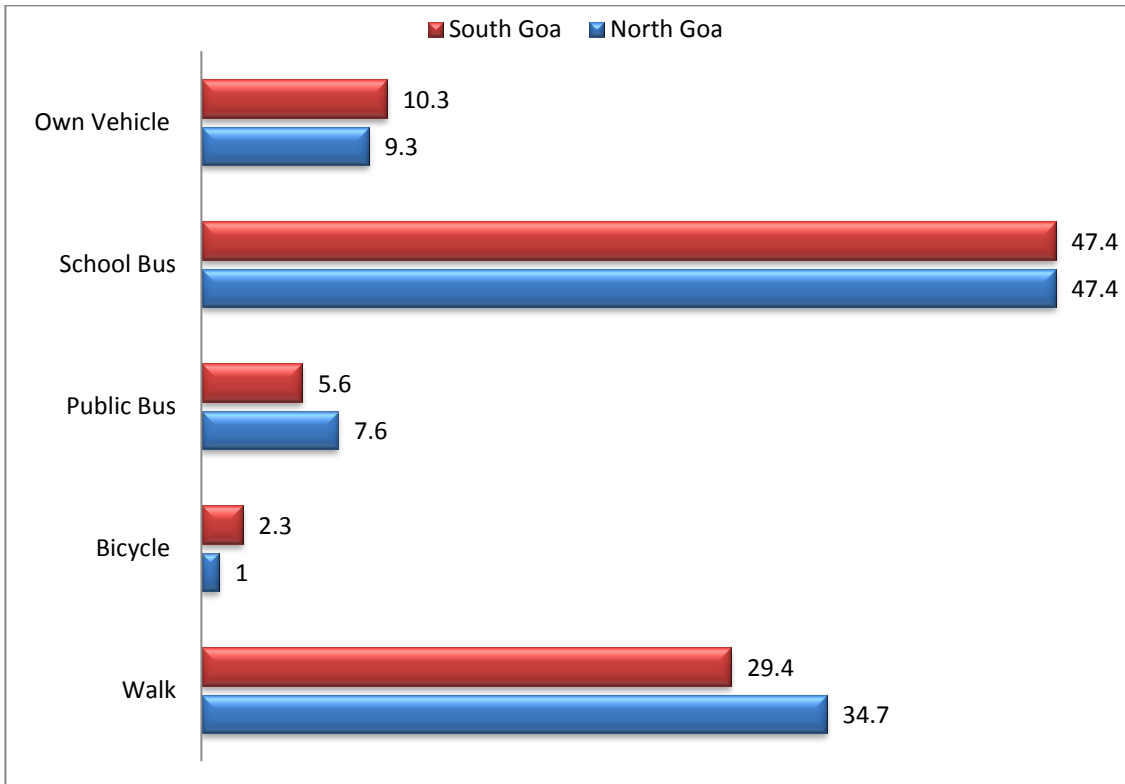


Fig.7.2.27: Availability of Transport Facilities (North Goa and South Goa Districts)

d) Goa State

Nearly half of the students of the State used to go to school by school bus, 35 percent by walking, 10 percent by own vehicle and 6 percent by public bus. (Figure 7.2.28)

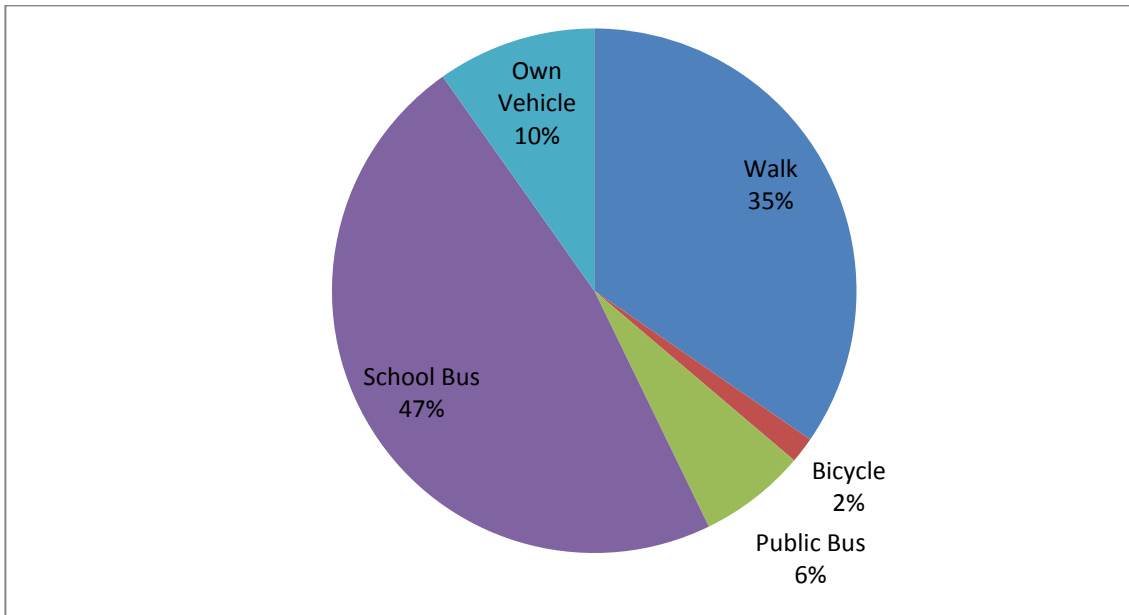


Fig.7.2.28: Availability of Transport Facilities (Goa State)

7.2.7 Persons helping in Study at Home

a) North Goa District

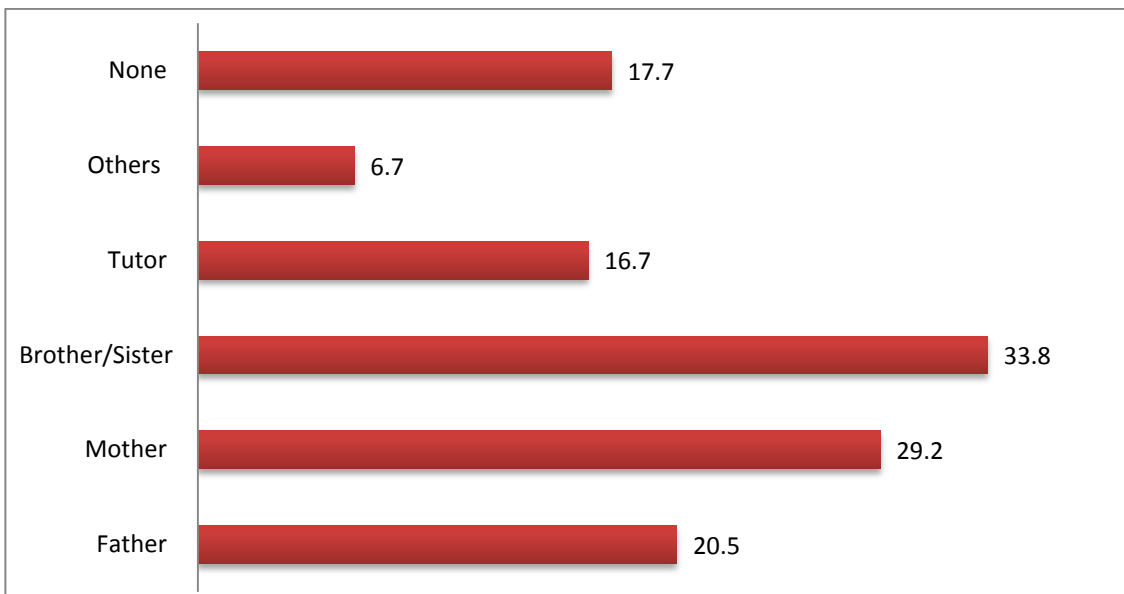


Fig. 7.2.29: Persons helping Students in Study at Home (North Goa District)

Highest percentage of students (34 percent) of North Goa district mentioned that their brothers/sisters used to help them in study at home (Table 7.2.9 and Figure 7.2.29).

Around 29 percent were helped by their mothers and 20.5 percent by their father. Only 16.7 were helped by tutors. No one used to provide any academic help to about 18 percent students at home.

Table 7.2.9: Persons helping in Study at Home

Person	North Goa Dist.	South Goa Dist.	Goa State
Father	20.5	16.2	18.4
Mother	29.2	22.0	25.7
Brother/Sister	33.8	30.1	32.0
Tutor	16.7	21.7	19.1
Others	6.7	5.3	6.0
None	17.7	19.2	18.4

Note – Figures indicate percentage of students

b) South Goa District

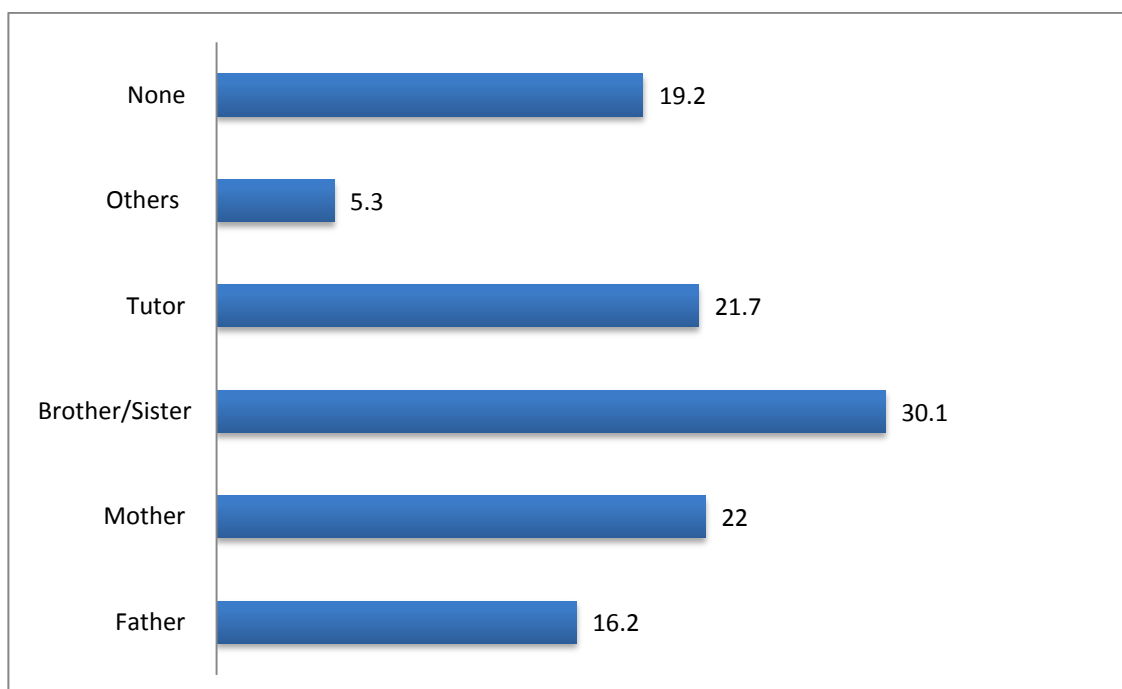


Fig. 7.2.30: Persons helping Students in Study at Home (South Goa District)

Table 7.2.9 and Figure 7.2.30 provide the data regarding help in study at home received by students of South Goa district from different persons.

c) Comparison between North Goa and South Goa Districts

Figure 7.2.31 indicates that higher percentage of students of North Goa compared to south Goa district used to get help from their father, mother and brother/sisters. But higher percentages of students of South Goa than North Goa district were helped by tutors.

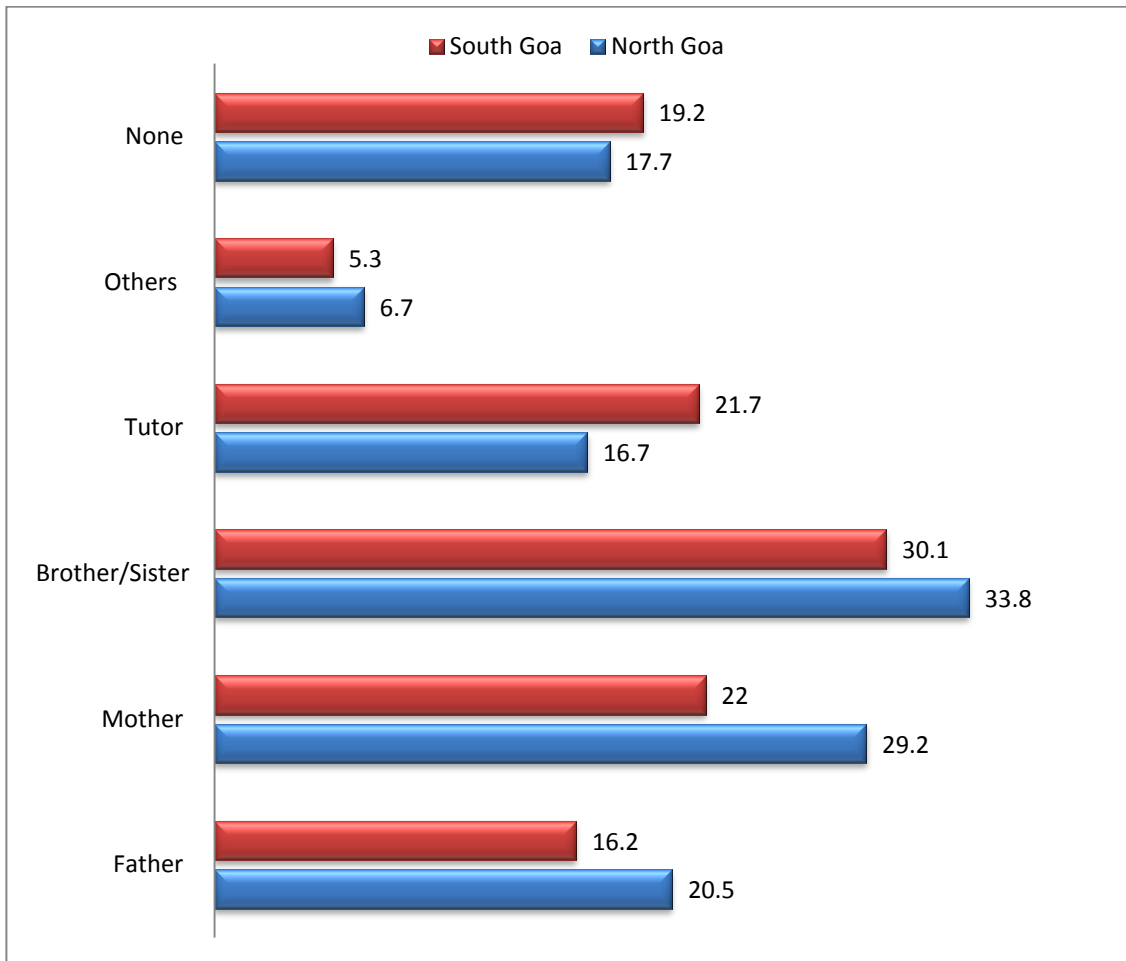


Fig. 7.2.31: Persons helping Students in Study at Home: North Goa District and South Goa District

d) Goa State

About one-third of students of Class VII of the State mentioned that they were getting help from their brothers/sisters. Around one-third of students used to get help in study at home from their mothers. Eighteen percent and 19 percent of students used to get help from their father and tutors respectively. About 18 percent of students of the State used to get help in study at home from no one.

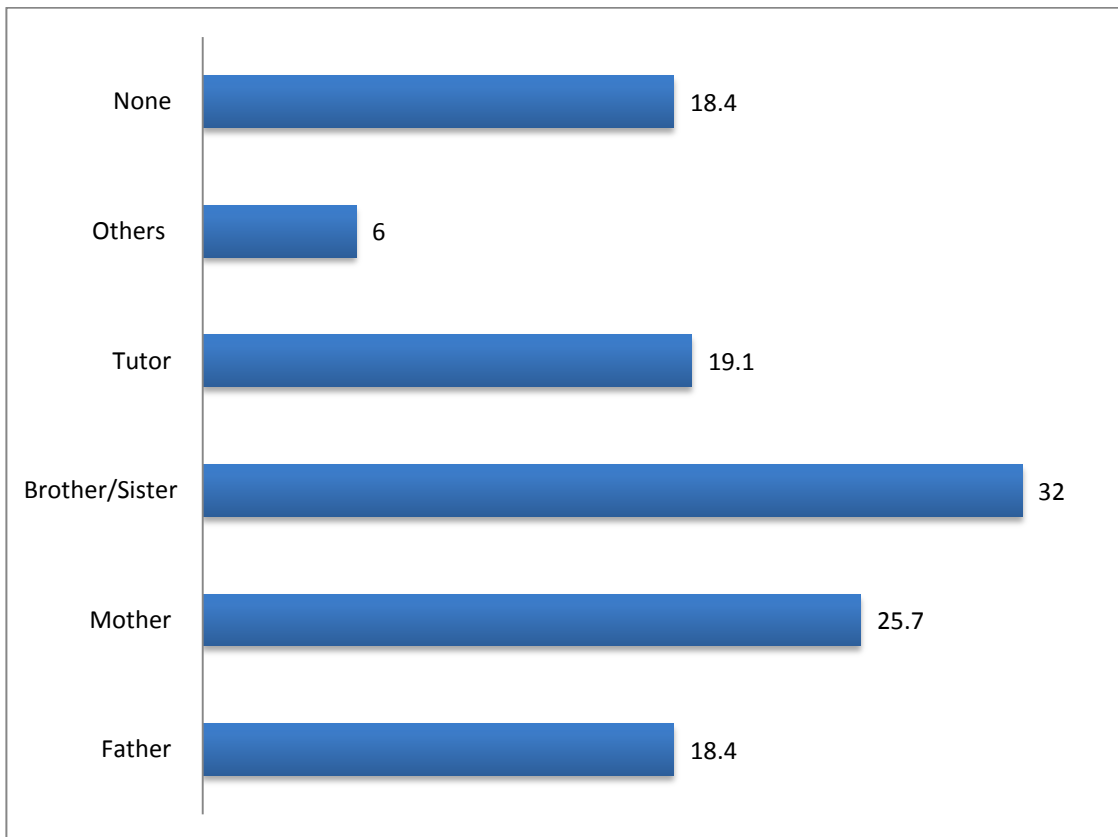


Fig. 7.2.32: Persons helping Students in Study at Home (Goa State)

7.2.8 Persons checking Homework at Home

a) North Goa District

Around 62 percent, 9.6 percent and 3.2 percent of students of North Goa district respectively stated that family members, tutors and friends used to check their homework at home (Table 7.2.10). No one used to check the homework of about 25 percent (one-fourth) of the students.

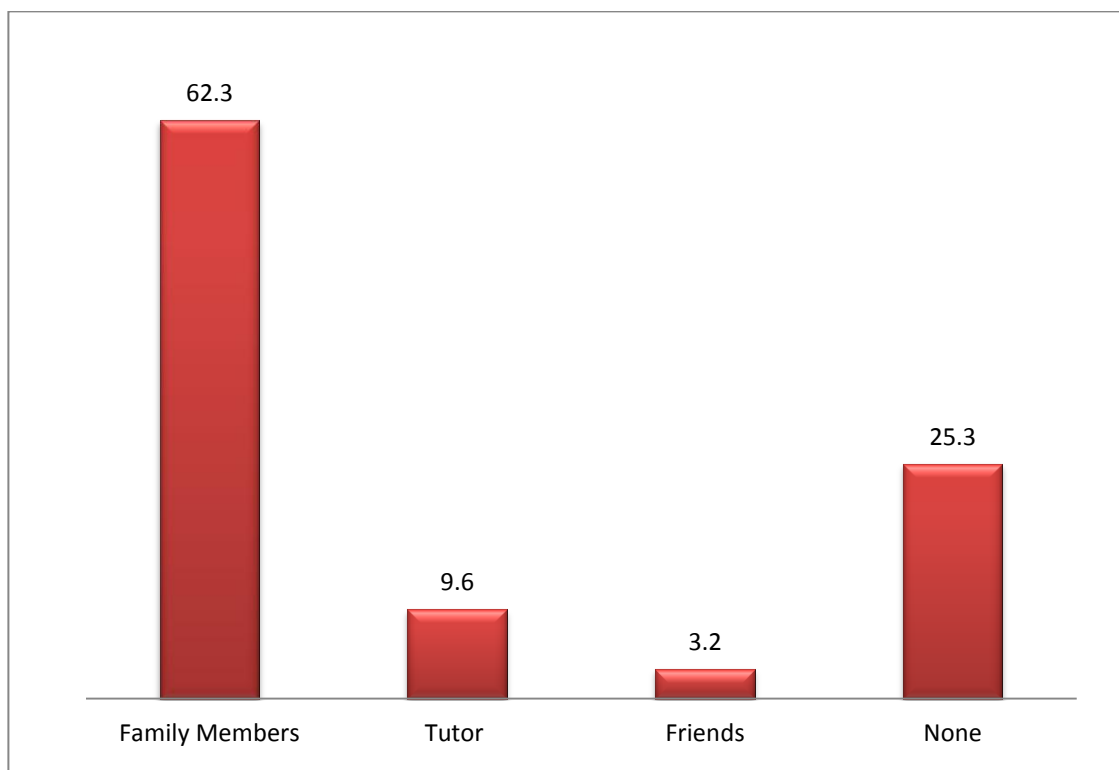


Fig. 7.2.33: Persons checking Homework at Home (North Goa District)

Table 7.2.10: Persons checking Homework at Home

Person	North Goa Dist.	South Goa Dist.	Goa State
Family Members	62.3	60.2	61.3
Tutor	9.6	14.8	12.2
Friends	3.2	3.5	3.3
None	25.3	24.5	24.9

Note – Figures indicate percentage of students.

b) South Goa District

Three-fifths of the students of South Goa district mentioned that their family members used to check their homework (Table 7.2.10). About 15 percent stated that their tutors used to check their homework. One-fourth of the students indicated that they no one did check their homework.

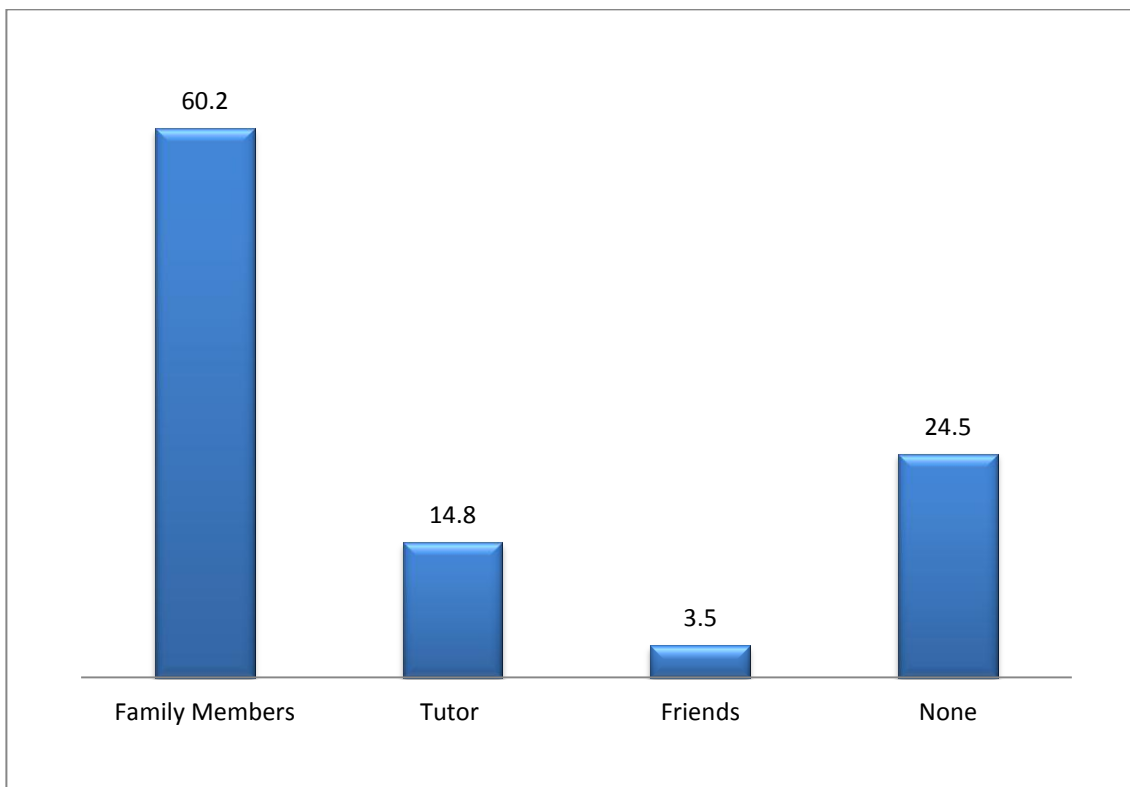


Fig. 7.2.34 Persons checking Homework at Home (South Goa District)

c) Comparison between North Goa and South Goa Districts

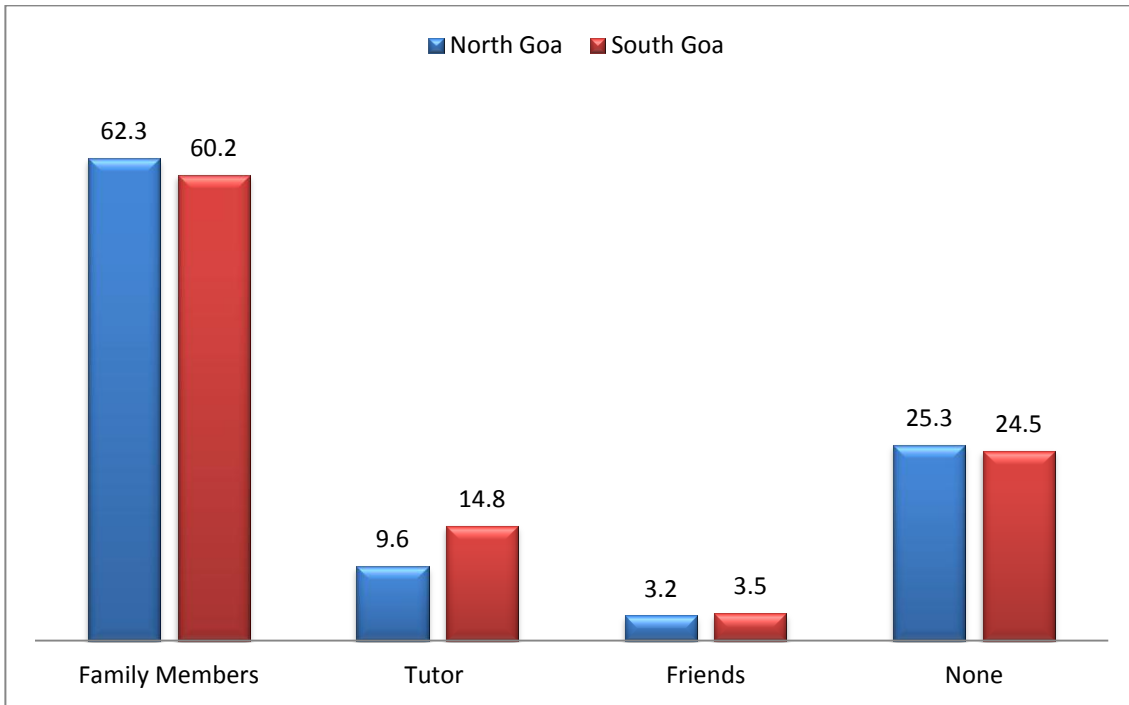


Fig. 7.2.35: Persons checking Homework at Home: North Goa District and South Goa District

Figure 7.2.35 shows no substantial difference between percentages of students of North and South Goa districts getting their homework checked by different persons.

d) Goa State

Table 7.2.8 and Figure 7.2.36 revealed that in most of the cases it is the family members who used to check the homework of students. Only about 12 percent and 3 percent students of the State respectively indicated that their tutors and friends used to check their homework. Nobody used to check homework of about one-fourth of the students of Class VII of Goa.

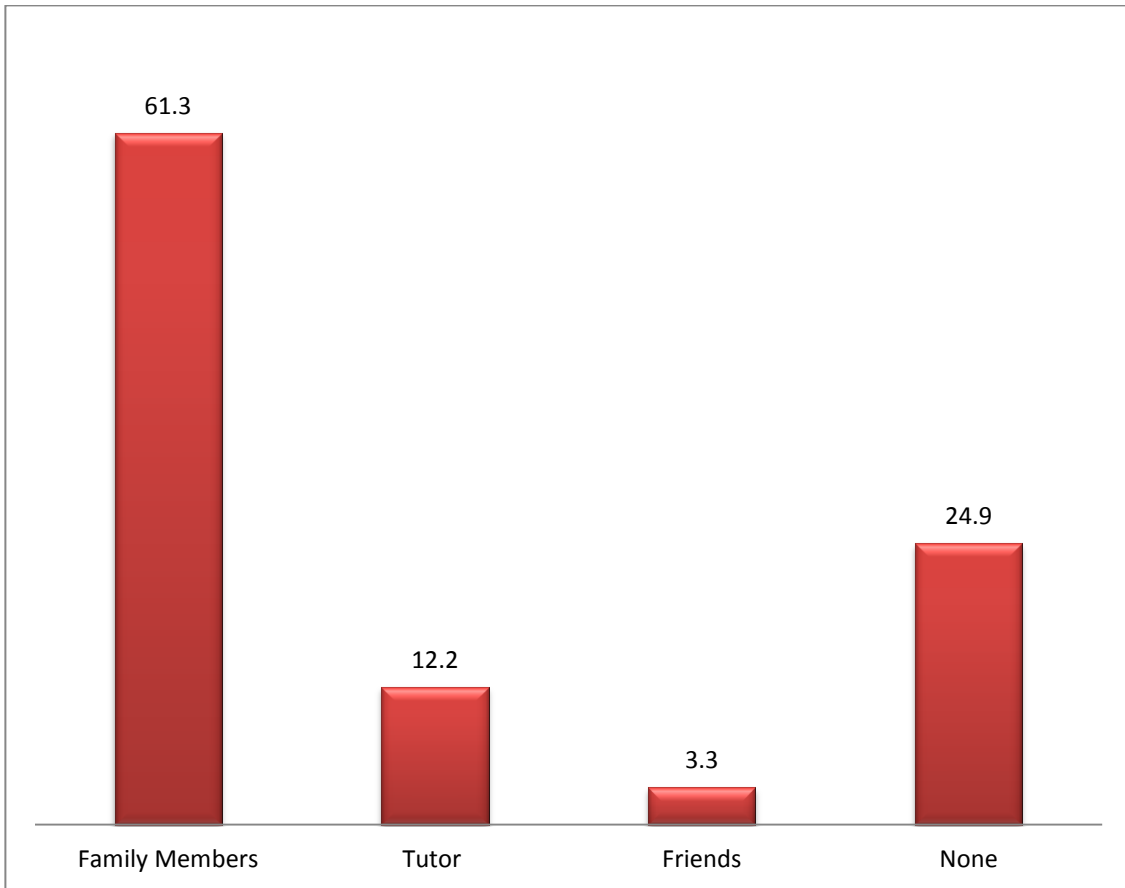


Fig. 7.2.36: Persons checking Homework at Home (Goa State)

7.2.9 Private Tuition

a) North Goa District

Only 21 percent students of North Goa district mentioned that they used to attend private tuition classes and 79 percent did not used to do so (Figure 7.2.37).

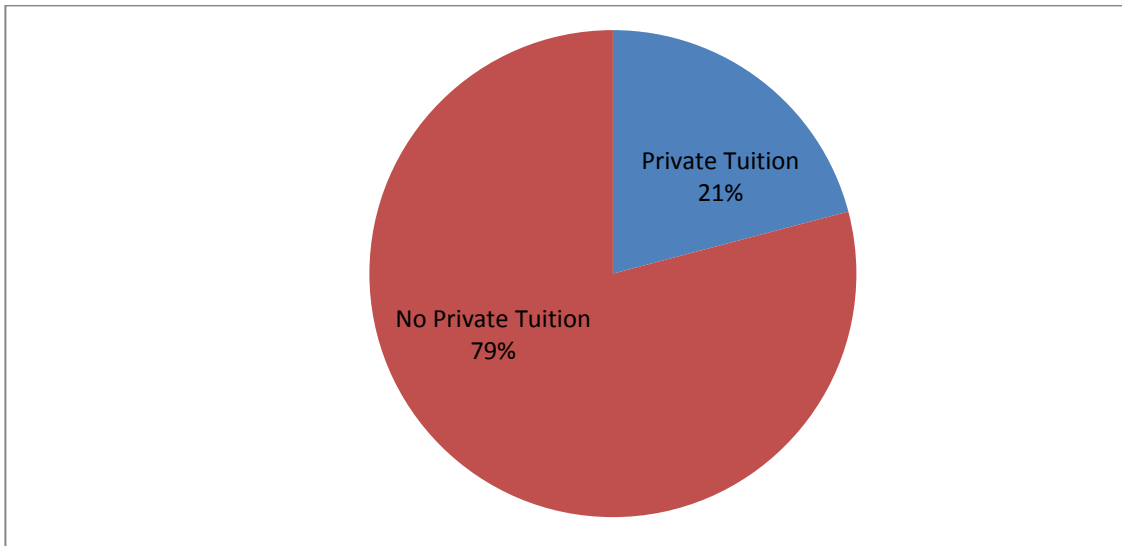


Fig. 7.2.37: Percentage of Students attending and not attending Private Tuition (North Goa District)

b) South Goa District

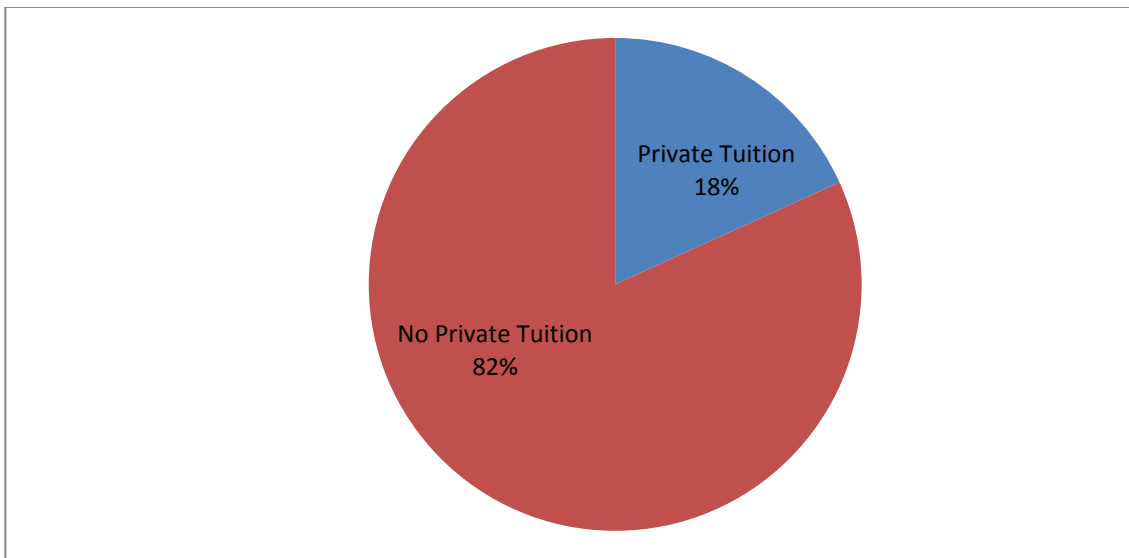


Fig. 7.2.38 Percentage of Students attending and not attending Private Tuition (South Goa District)

Only 18 percent of students of South Goa district were taking private tuition (Figure 7.2.38) and the rest 82 percent students were not attending tuition classes.

c) Comparison between North Goa and South Goa Districts

No difference was observed between percentages of students of North Goa and South Goa districts who used to take private tuition and those who did not (Figure 7.2.39).

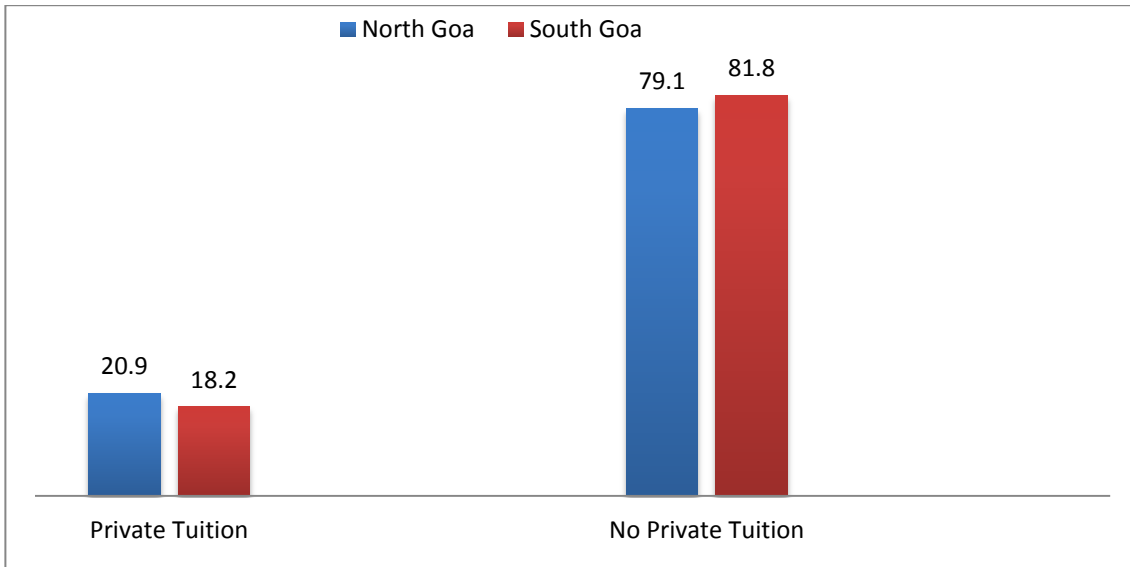


Fig. 7.2.39: Students attending and not attending Private Tuition (Comparison between North Goa and South Goa Districts)

d) Goa State

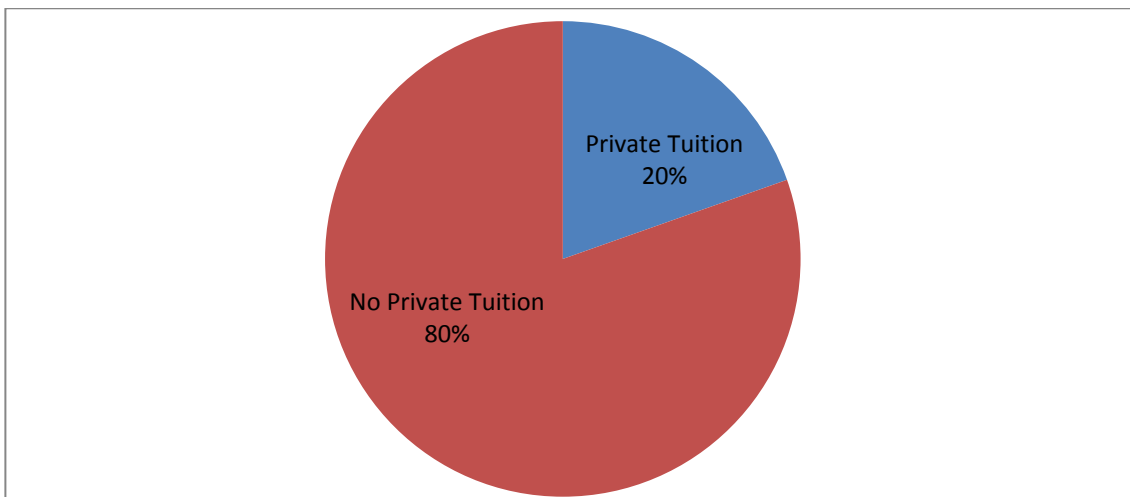


Fig. 7.2.40: Percentage of Students attending and not attending Private Tuition (Goa State) Only one-fifth of students of Class VII of the State used to attend private tuition (Figure 7.2.40).

7.3 School Details

7.3.1 Incidents happened to Students in School

a) North Goa District

Nearly two-fifths of the students of North Goa district stated that they were hit/hurt by other students and insulted by others in the school (Table 7.3.1 and Figure 7.3.1). Incidents like theft, forced to do something against one's wish and left out of activities by others happened with a substantial percentage of students.

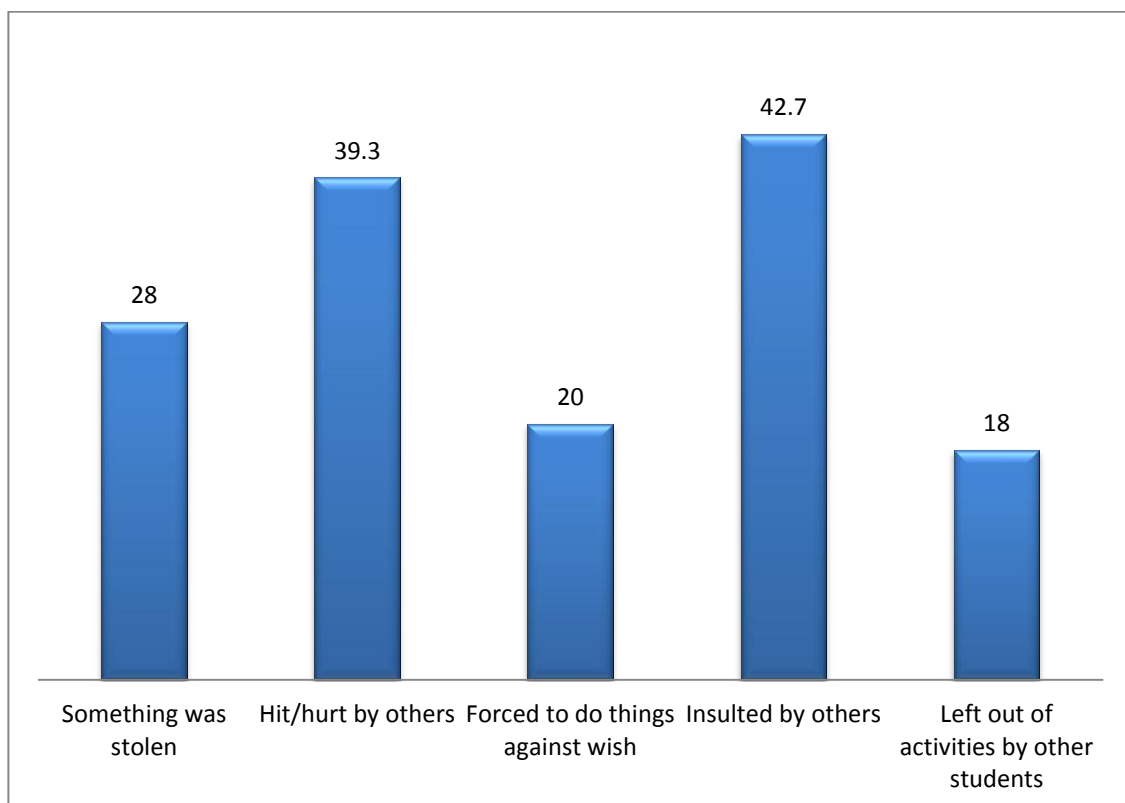


Fig.7.3.1: Incidents happened to Students in School (North Goa District)

Table 7.3.1: Incidents happened to Students in School

Incidents	North Goa Dist.	South Goa Dist.	Goa State
Something was stolen	28.0	26.5	27.2
Hit/hurt by others	39.3	40.9	40.0
Forced to do things against wish	20.0	18.2	19.1
Insulted by others	42.7	53.4	47.9
Left out of activities by other students	18.0	19.0	18.5

Note – Figures indicate percentage of students

b) South Goa District

Nearly two-fifths of the students of South Goa district mentioned they were hit/hurt by other students and more than half of the students reported that they were insulted by others. Considerable percentages of students stated that something of theirs' was stolen at one point of time or other, forced to do something against one's wish and left out of activities by others (Figure 7.3.2).

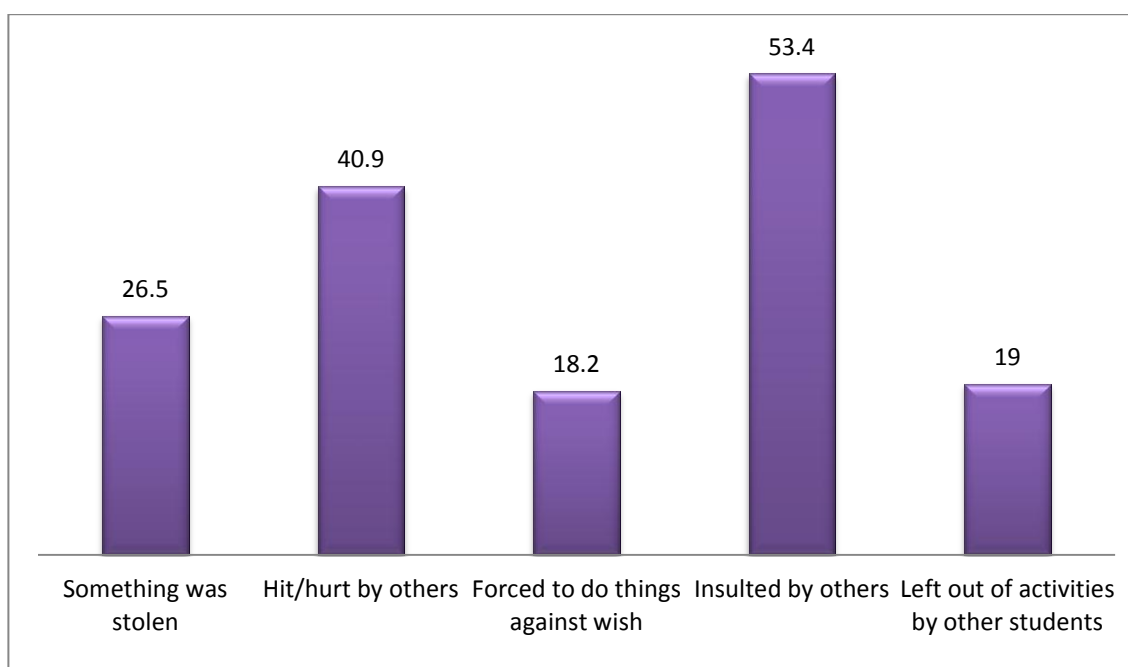


Fig.7.3.2: Incidents happened to Students in School (South Goa District)

c) Comparison between North Goa and South Goa Districts

Incident like insult by others occurred to a higher percentage of students of South Goa than North Goa district schools. Other incidents happened to nearly equal percentages of students of both the district (Figure 7.3.3).

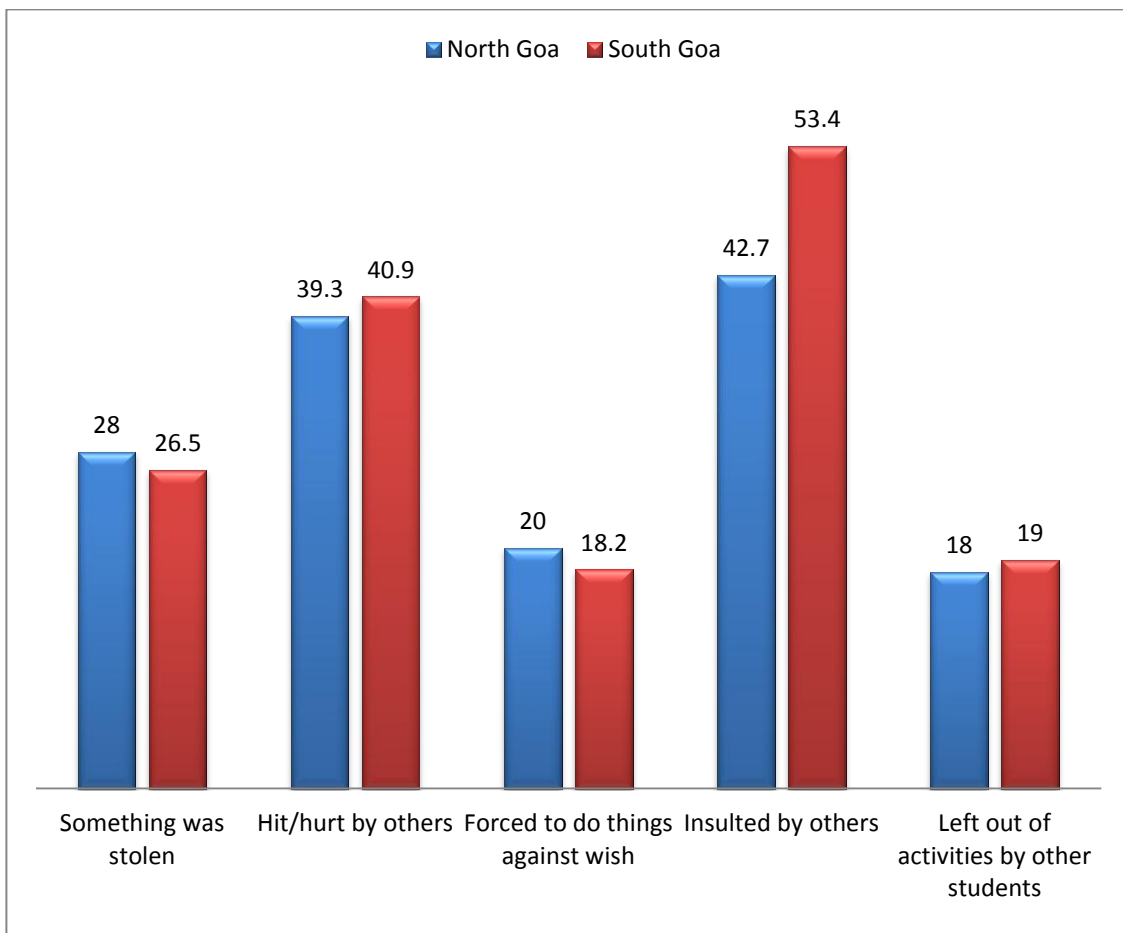


Fig.7.3.3: Incidents happened to Students in School (Comparison between North Goa and South Goa Districts)

d) Goa State

About half of the students of Class-VII of the State reported that they were insulted by others in the school at one point of time or other. Two-fifths of the students of Goa mentioned that they were hit/hurt by other students in School. Incidents like something was stolen at one point of time or other, forcing a student to do something against his/her wish and leaving some one out of activities by other students happened to a considerable number of students of Class-VII of the State (Figure 7.3.4).

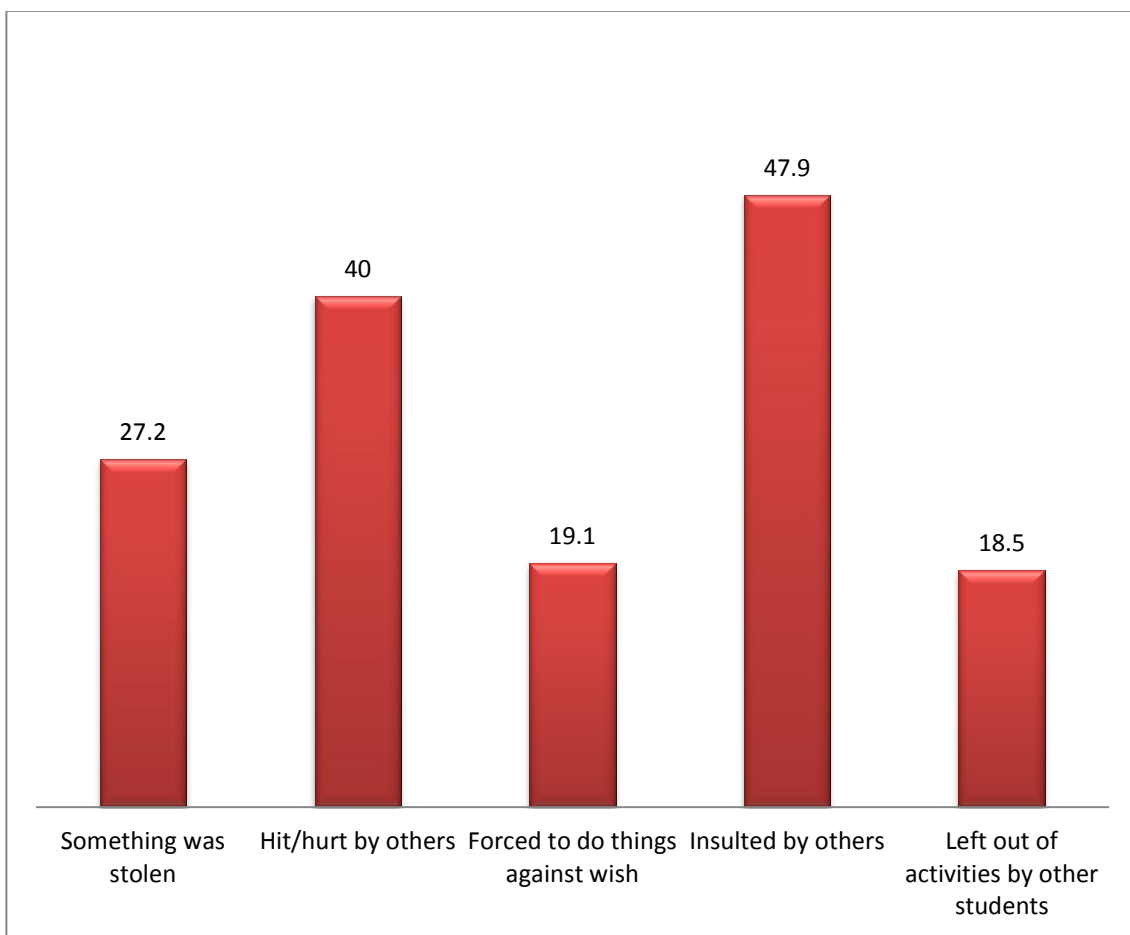


Fig.7.3.4 Incidents happened to Students in School (Goa State)

The above findings indicated that many unpleasant incidents happened to many of the students of Class-VII of the State of Goa.

7.3.2 Absenteeism in School in Class VII

a) North Goa District

Sixty-one percent students of North Goa district were absent from school in Class-VII for less than 5 days (Figure 7.3.5). About one-fifth of the students had never missed school. Only about 4 percent of students had remained absent from school for more than 15 days.

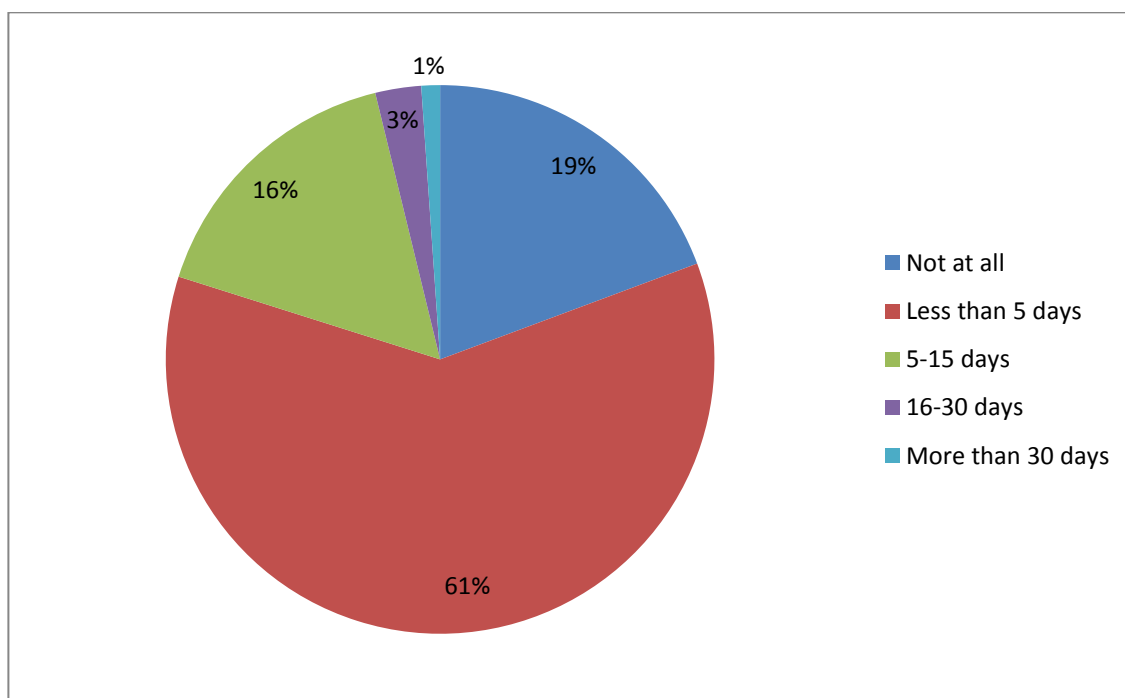


Fig. 7.3.5: Absent from School by Students in Class VII (North Goa District)

Table 7.3.2: Absent from School in Class VII

No. of Days	North Goa Dist.	South Goa Dist.	Goa State
Not at all	19.3	13.7	16.6

Less than 5 days	60.5	60.1	60.3
5-15 days	16.3	21.1	18.6
16-30 days	2.7	3.3	3.0
More than 30 days	1.1	1.8	1.4
Total	100	100	100

Note – Figures indicate percentage of students

b) South Goa District

Figure 7.3.6 shows that nearly 14 percent of students of South Goa district had never missed school in Class-VII. Sixty percent students of were absent from school in Class-VII for less than 5 days. One-fifth of the students of Class-VII remained absent for 5-15 days and about 5 percent did not attend school for more than 15 days.

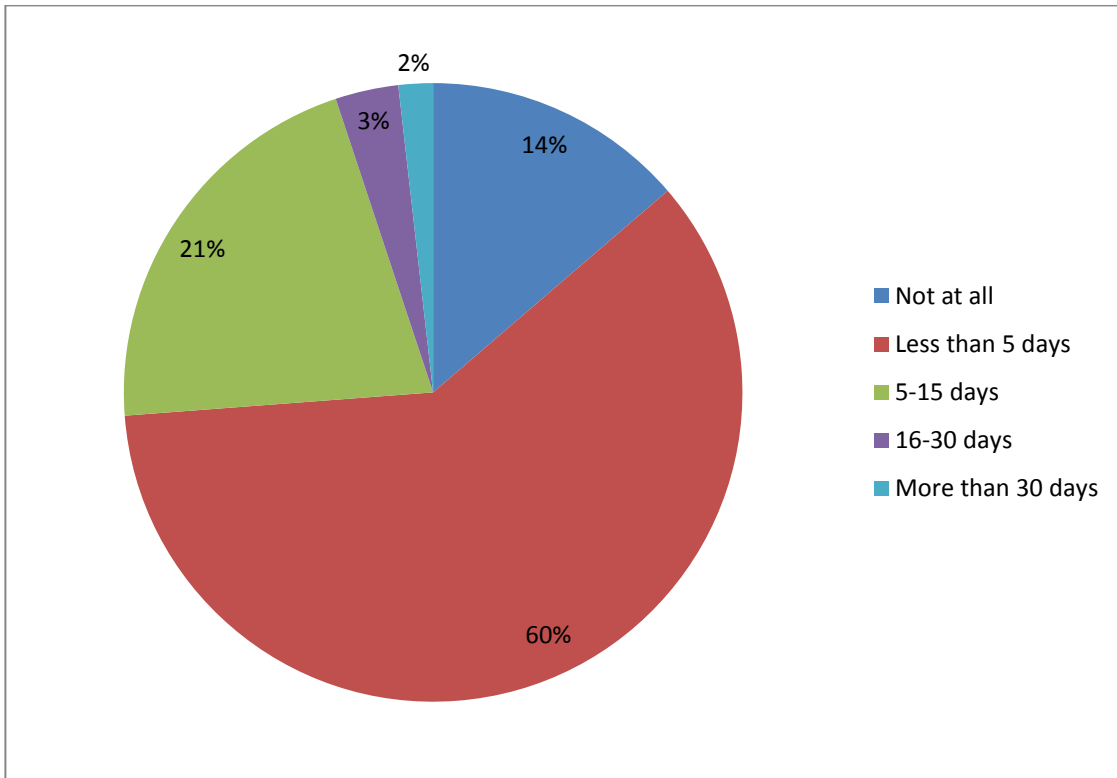


Fig. 7.3.6: Absent from School by Students in Class VII (South Goa District)

c) Comparison between North Goa and South Goa Districts

No substantial difference was observed between North Goa and South Goa districts as far as absenteeism among students of Class-VII is concerned (Figure 7.3.7).

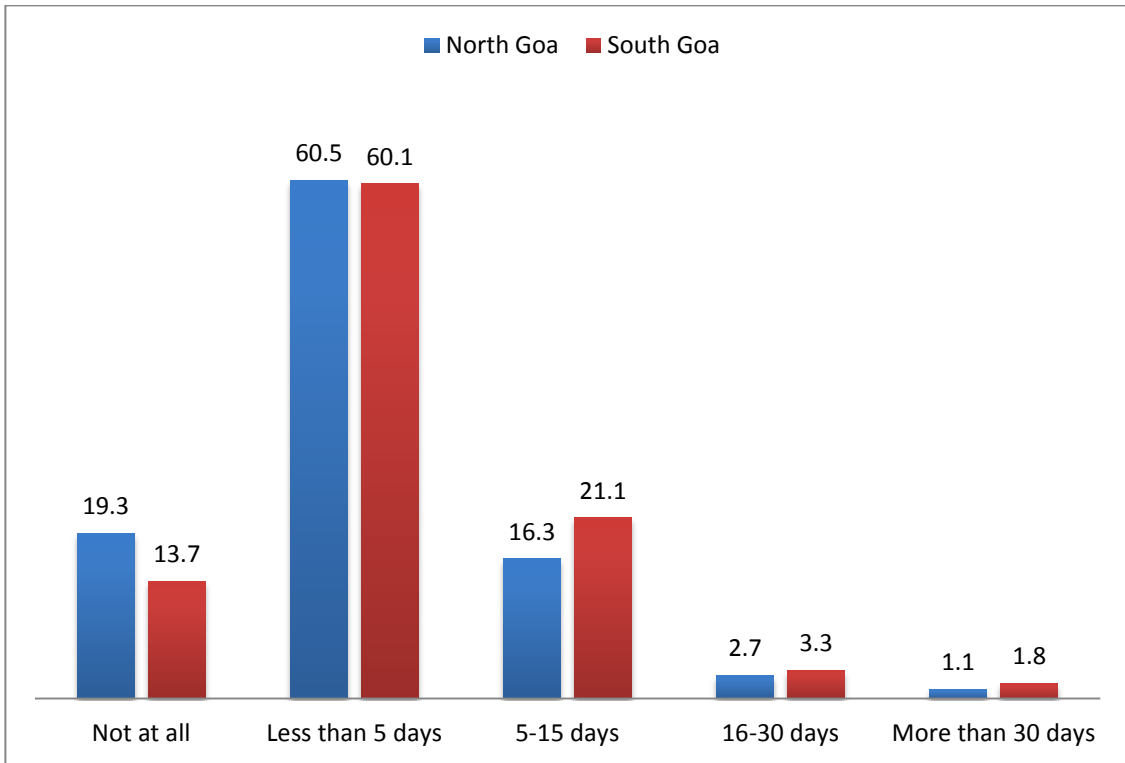


Fig. 7.3.7: Absent from School by Students in Class VII: North Goa and South Goa Districts

d) Goa State

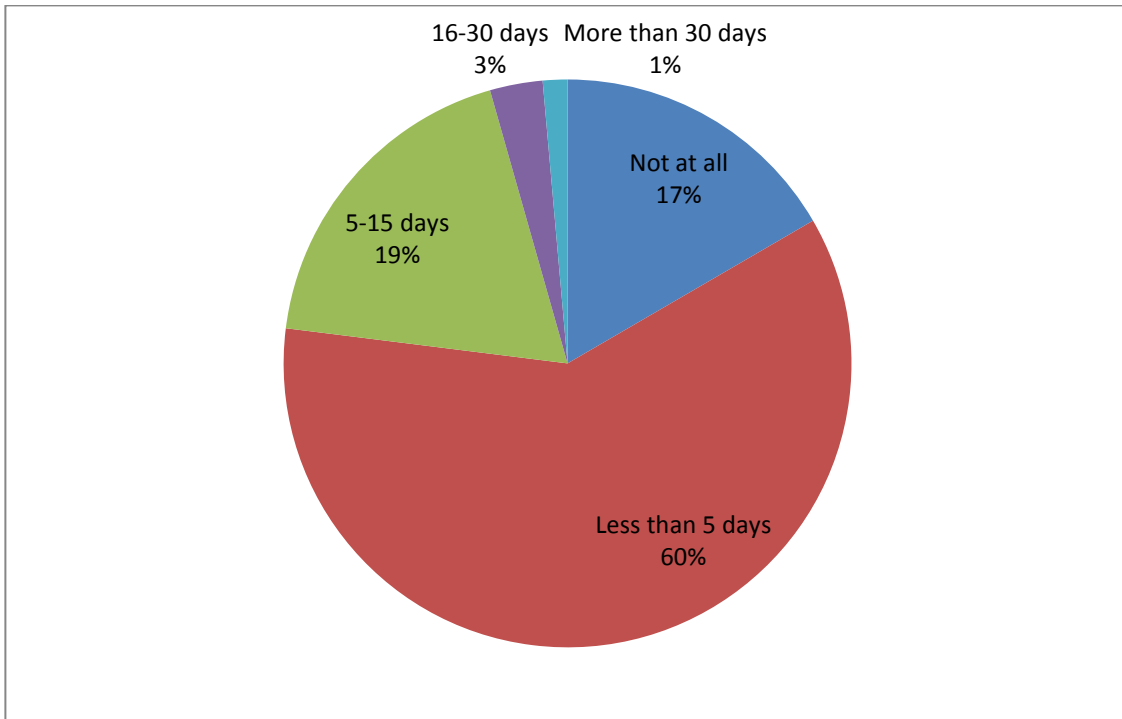


Fig. 7.3.8: Absent from School by Students in Class VII (Goa State)

Figure 7.3.8 shows that 17 percent of students of Goa had never missed school in Class-VII. Sixty percent students remained absent from school in Class-VII for less than 5 days. About one-fifth of the students of Class-VII stated that they were absent for 5-15 days from school and about 5 percent students reported that they did not attend school for more than 15 days.

7.3.3 Use of Computer by Students in School

a) North Goa District

Only 30 percent students of North Goa district used to use computer frequently (Figure 7.3.9 and Table 7.3.3). Three-fifths of the students stated that they used computer only once a week. Seven percent students used only once a month and 3 percent never used.

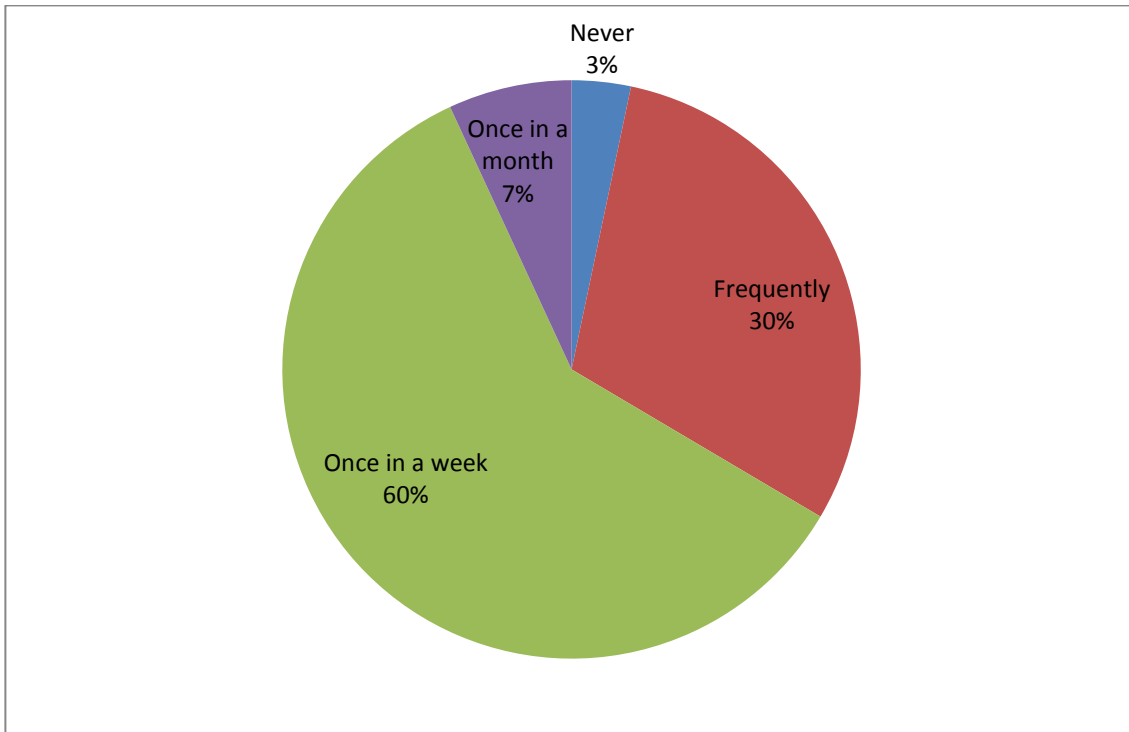


Fig. 7.3.9: Use of Computer by Students in Schools (North Goa District)

Table 7.3.3: Frequency of Use of Computer by Students in School

Frequency	North Goa Dist.	South Goa Dist.	Goa State
Never	3.3	3.4	3.3
Frequently	30.2	13.9	22.2
Once in a week	59.6	77.9	68.5
Once in a month	6.9	4.7	5.8
Total	100	100	100

Note – Figures indicate percentage of students

b) South Goa District

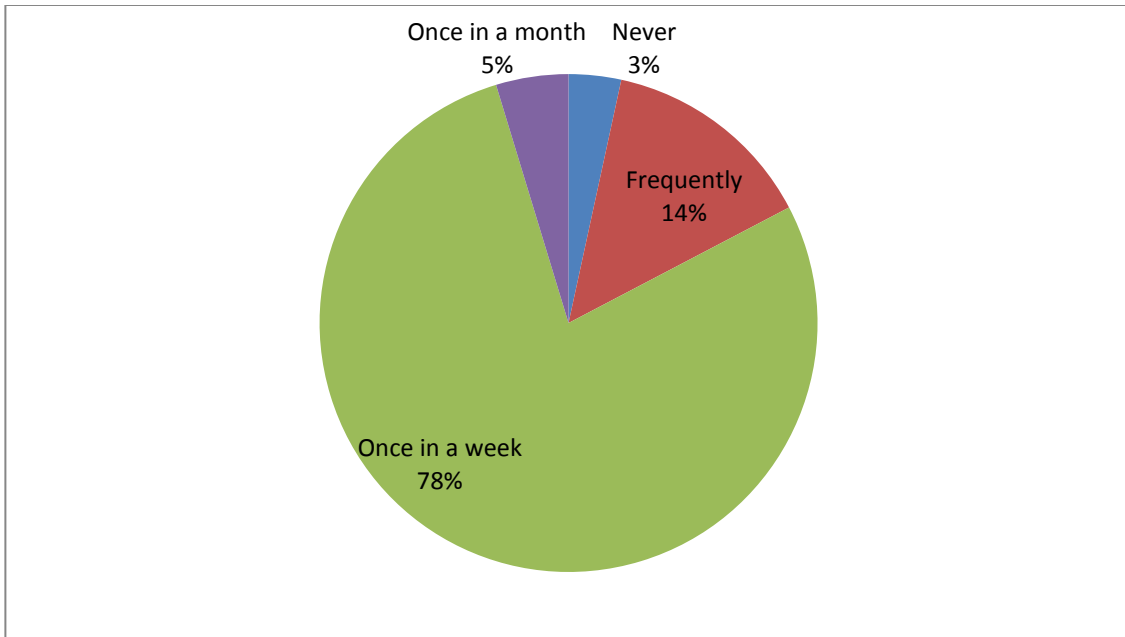


Fig. 7.3.10: Use of Computer by Students in Schools (South Goa District)

Figure 7.3.10 shows that more than three-fourths of the students of South Goa district used to make use of computer in school only once in a week. Only 14 percent students of Class-VII used computer frequently in school.

c) Comparison between North Goa and South Goa Districts

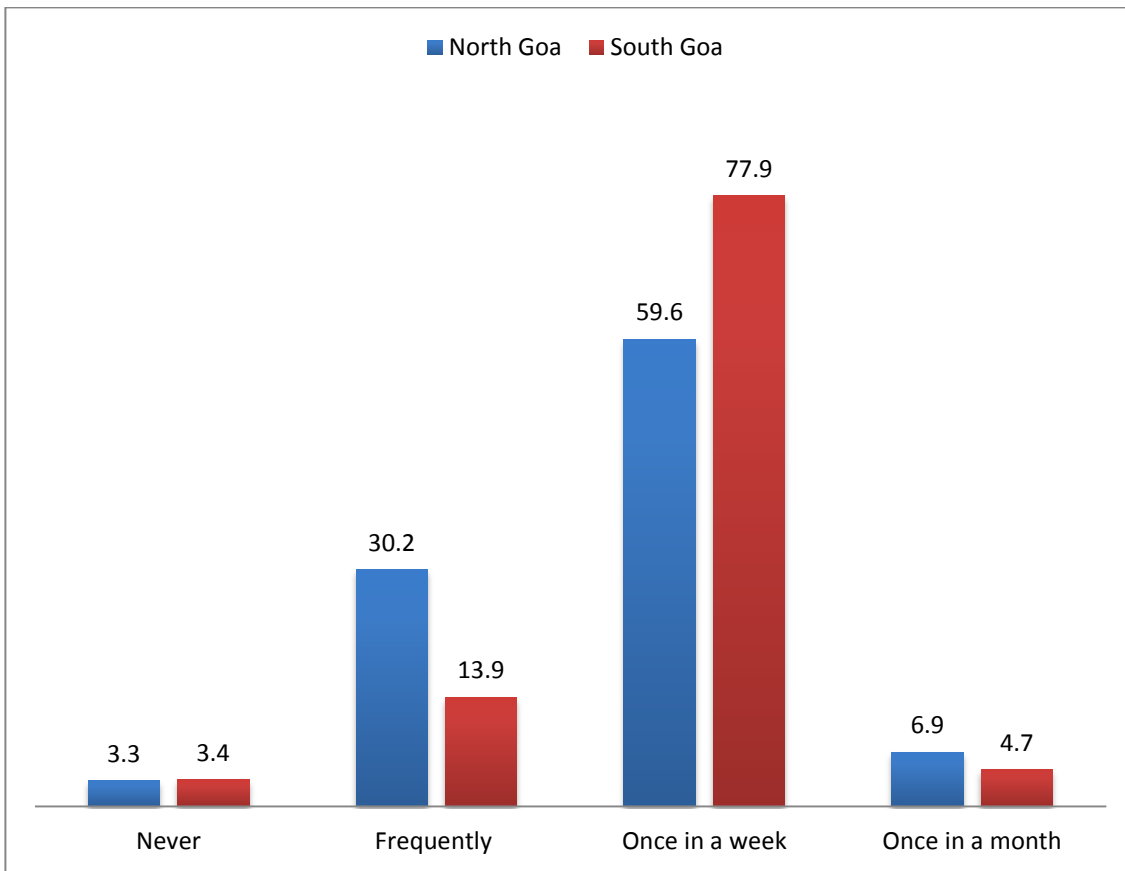


Fig. 7.3.11: Use of Computer by Students in Schools: North Goa and South Goa Districts

Figure 7.3.11 shows that higher percentage of students of North Goa than South Goa district schools used to make use of computer frequently in school.

d) Goa State

So far as use of computer in school by the students of Class-VII of the State is concerned it was found more than one-fifth of the students used to do so frequently and about 69 percent once a week (Figure 7.3.12). The remaining 6 percent students used computer once in Month and 3 percent never got the opportunity to use computer.

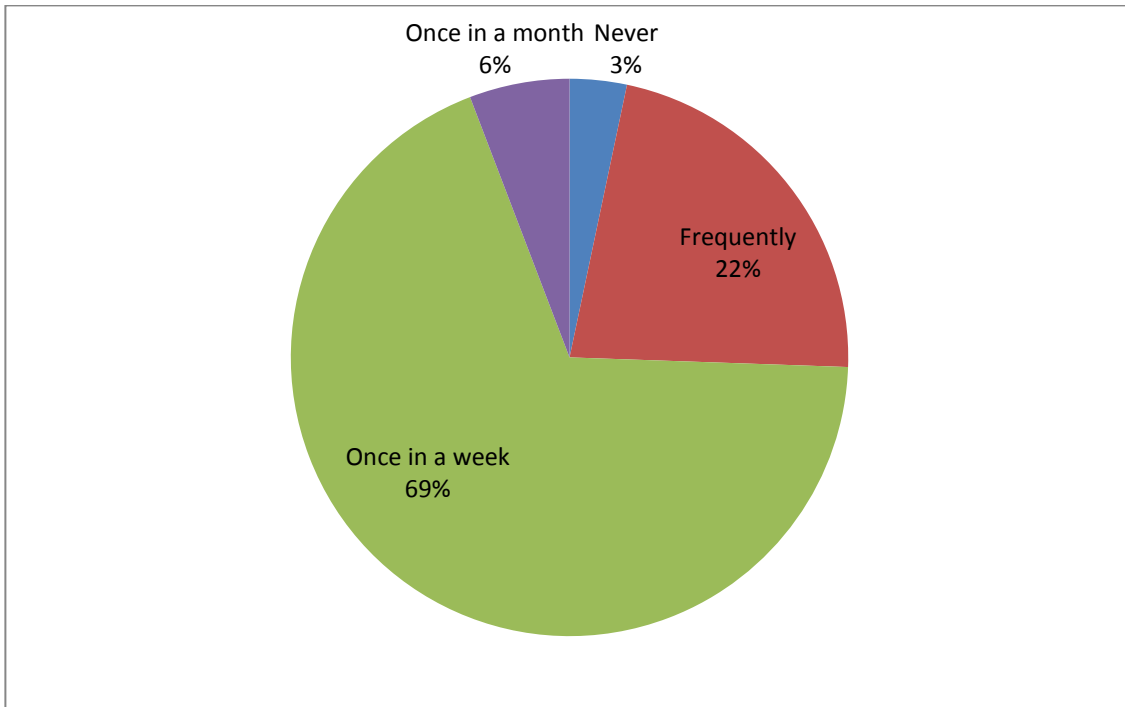


Fig. 7.3.12: Use of Computer by Students in Schools (Goa State)

7.3.4 Borrowing of Books from School Library

Data regarding how frequently students (percentage of students) borrow books from library are given in Table 7.3.4 and the same are graphically represented in different figures separately for (a) North Goa district, (b) south Goa district, (c) comparison between the two districts and (d) the State of Goa. The figures are self explanatory and therefore no further explanations are provided for each one separately.

a) North Goa District

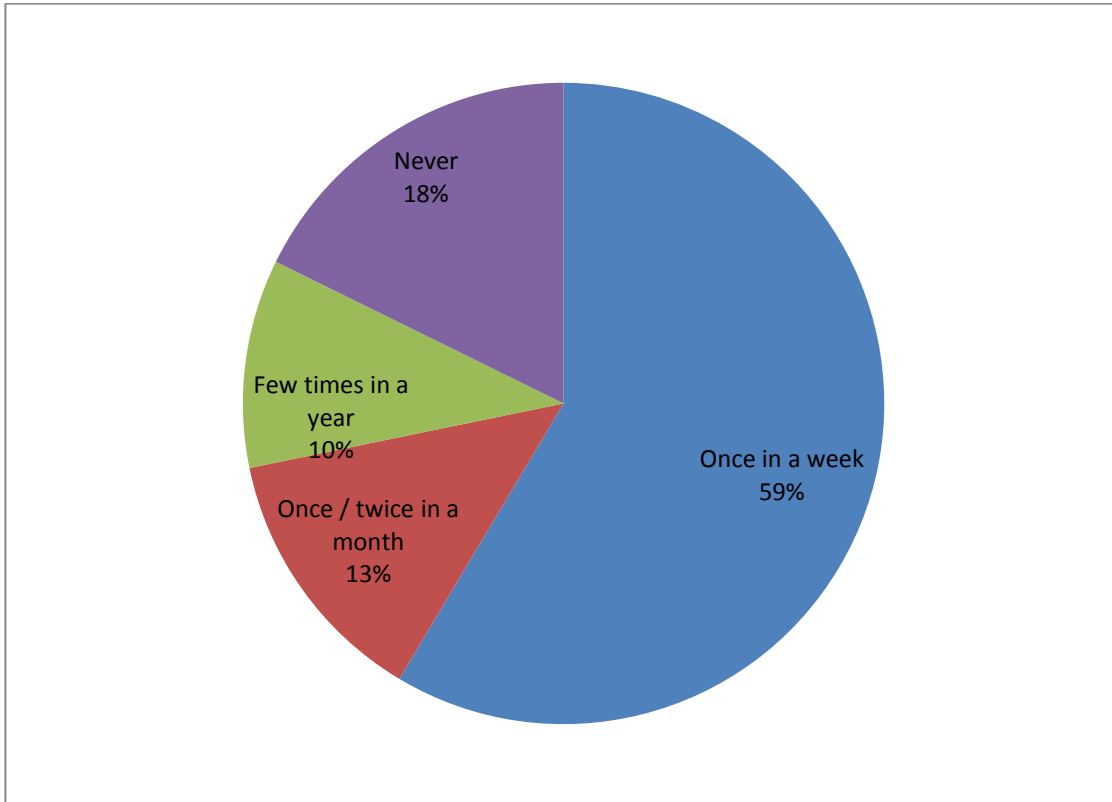


Fig. 7.3.13: Frequency of Borrowing of Books from Library (North Goa District)

Table 7.3.4: Borrowing of Books from School Library

Frequency	North Goa Dist.	South Goa Dist.	Goa State
Once in a week	58.5	56.1	57.3
Once / twice in a month	13.2	15.8	14.5
Few times in a year	10.5	11.4	10.9
Never	17.7	16.7	17.2

Total	100	100	100
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Note – Figures indicate percentage of students

b) South Goa District

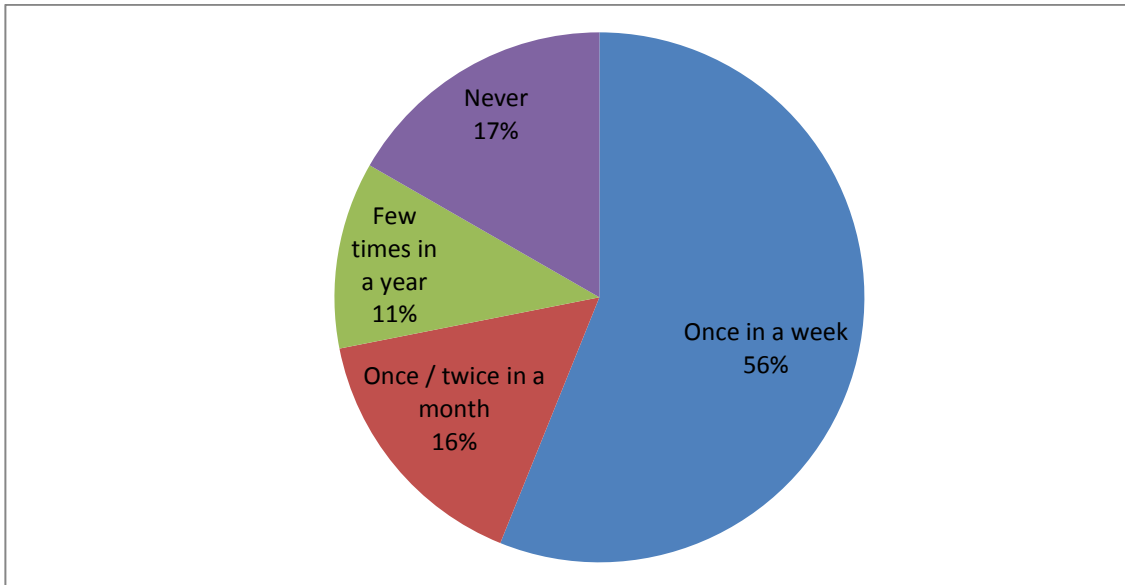


Fig. 7.3.14: Frequency of Borrowing of Books from Library (South Goa District)

c) Comparison between North Goa and South Goa Districts

Data in Figure 7.3.15 indicated that the students of North Goa and South Goa districts did not differ as far as borrowing of books by them from the school library is concerned.

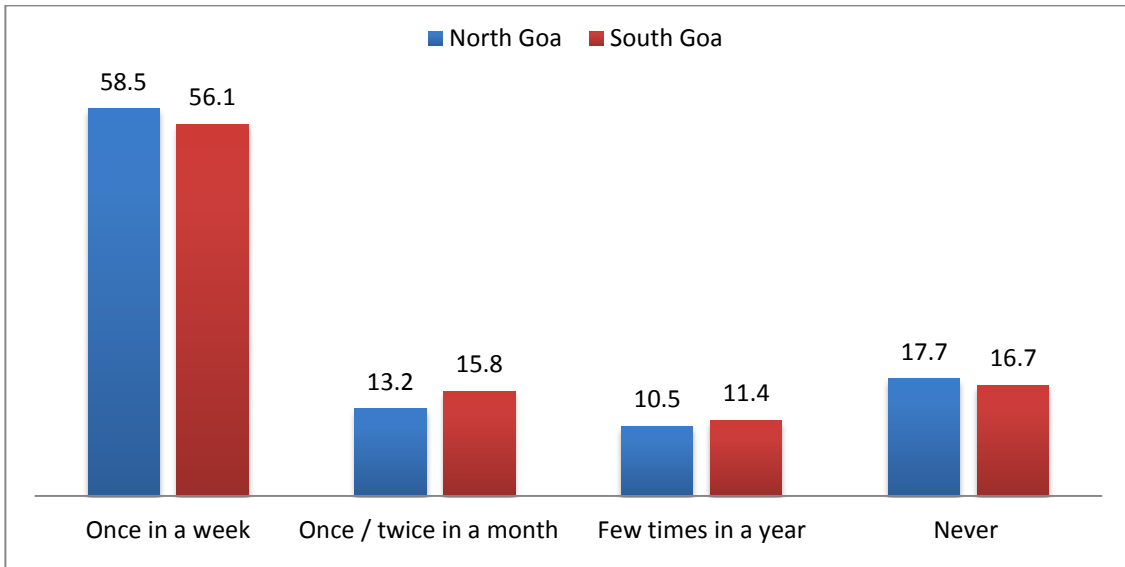


Fig. 7.3.15: Frequency of Borrowing of Books from Library (Comparison between North Goa and South Goa Districts)

d) Goa State

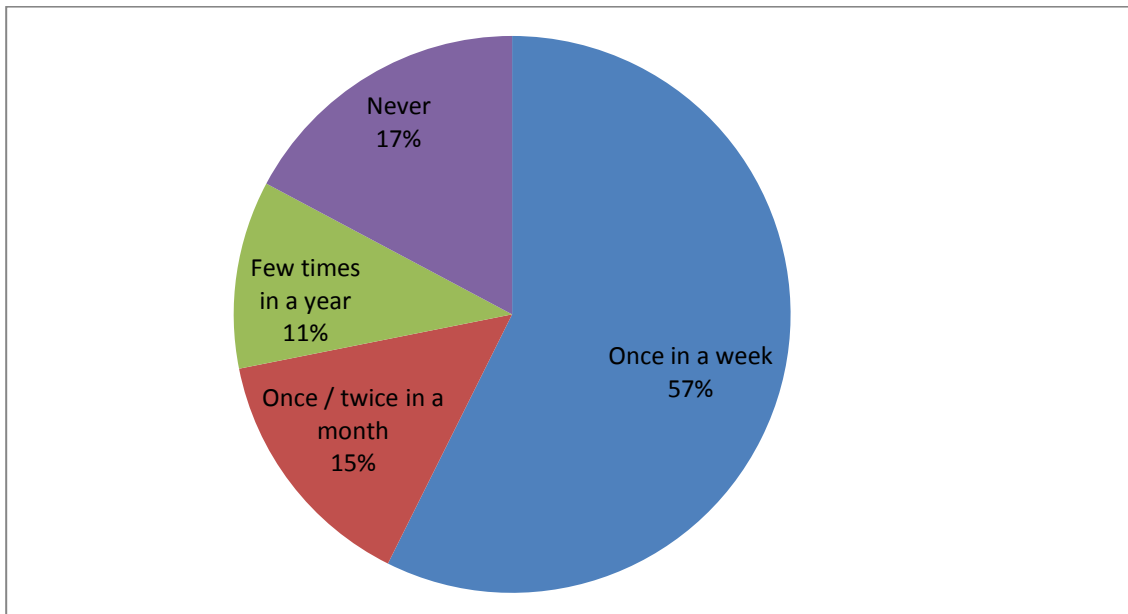


Fig. 7.3.16: Frequency of Borrowing of Books from Library (Goa State)

The findings presented above revealed that majority of the students of Class-VII of both the districts used to borrow books from the school library once in a week. A

substantial percentage of students never borrow books from the library. The remaining students borrow books from school library occasionally.

7.4 Learning Activities in School

7.4.1 Home Work in Different Subjects

i) English

Data regarding how frequently homework in English language were given according to students (percentage of students) are given in Table 7.4.1 and the same are graphically represented in different figures separately for (a) North Goa district, (b) south Goa district, (c) comparison between the two districts and (d) the State of Goa. The Tables and Figures are self explanatory.

a) North Goa District

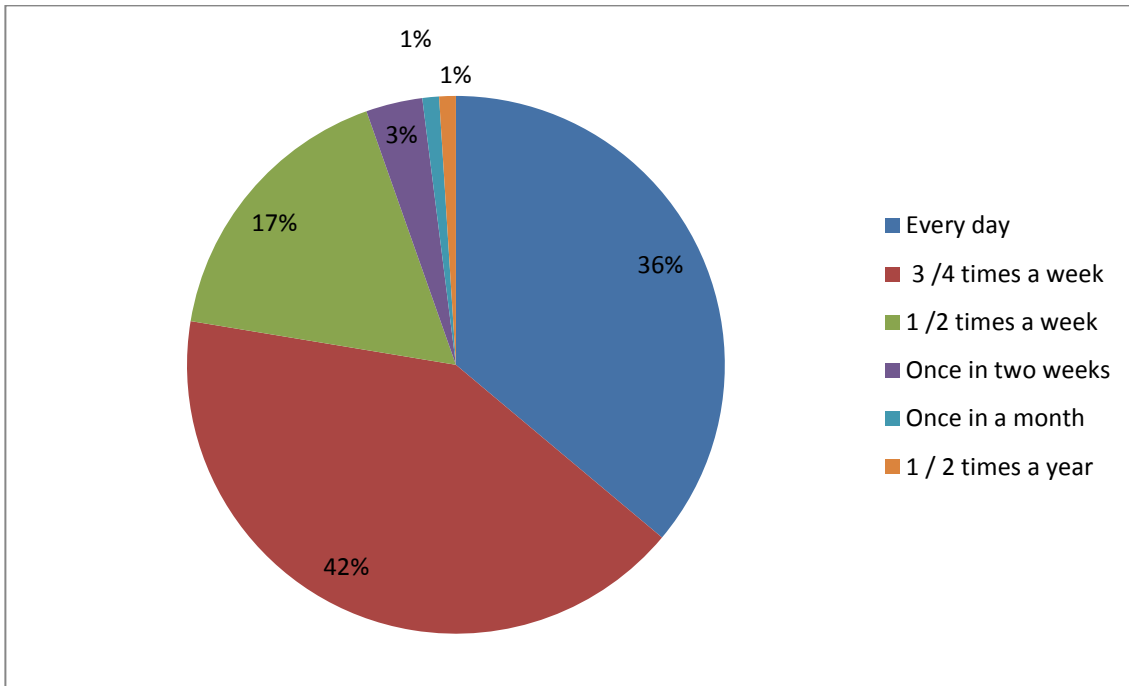


Fig.7.4.1: Frequency of Homework given in English (North Goa District)

Table 7.4.1: Frequency of Homework in English

Frequency	North Goa Dist.	South Goa Dist.	Goa State
Every day	36.1	35.3	35.8
3 / 4 times a week	41.5	36.7	39.1
1 / 2 times a week	17.0	17.5	17.2
Once in two weeks	3.4	3.1	3.2
Once in a month	1.0	6.9	3.9
1 / 2 times a year	1.0	0.4	0.7
Total	100	100	100

Note – Figures indicate percentage of students

b) South Goa District

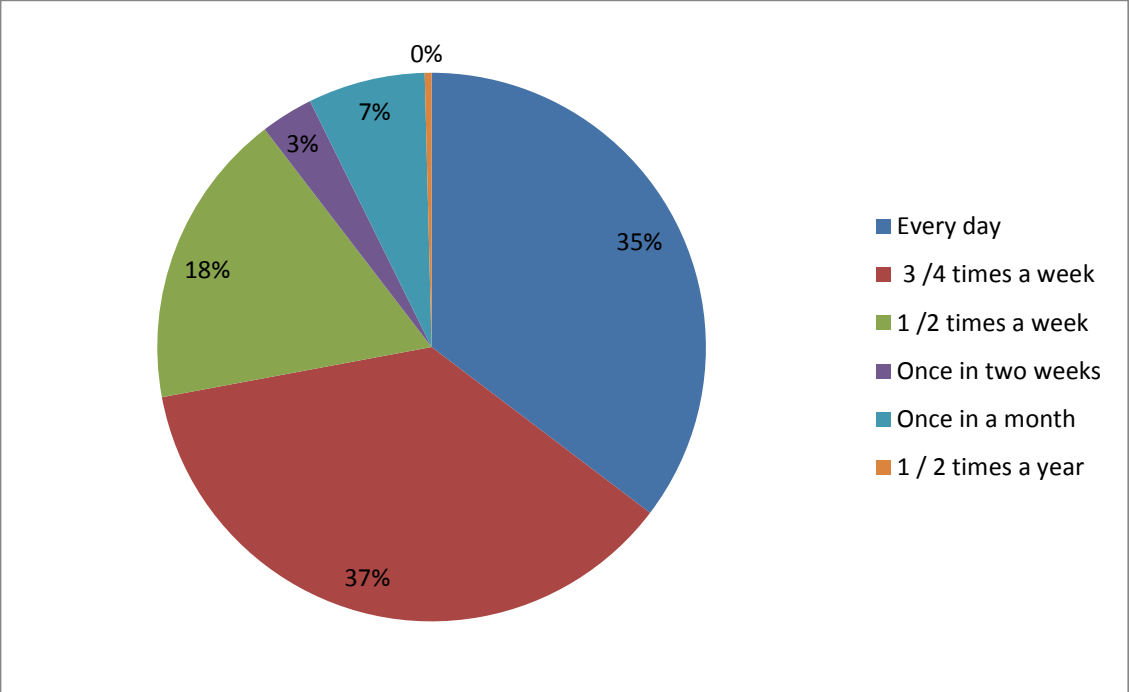


Fig.7.4.2: Frequency of Homework given in English (South Goa District)

c) Comparison between North Goa and South Goa Districts

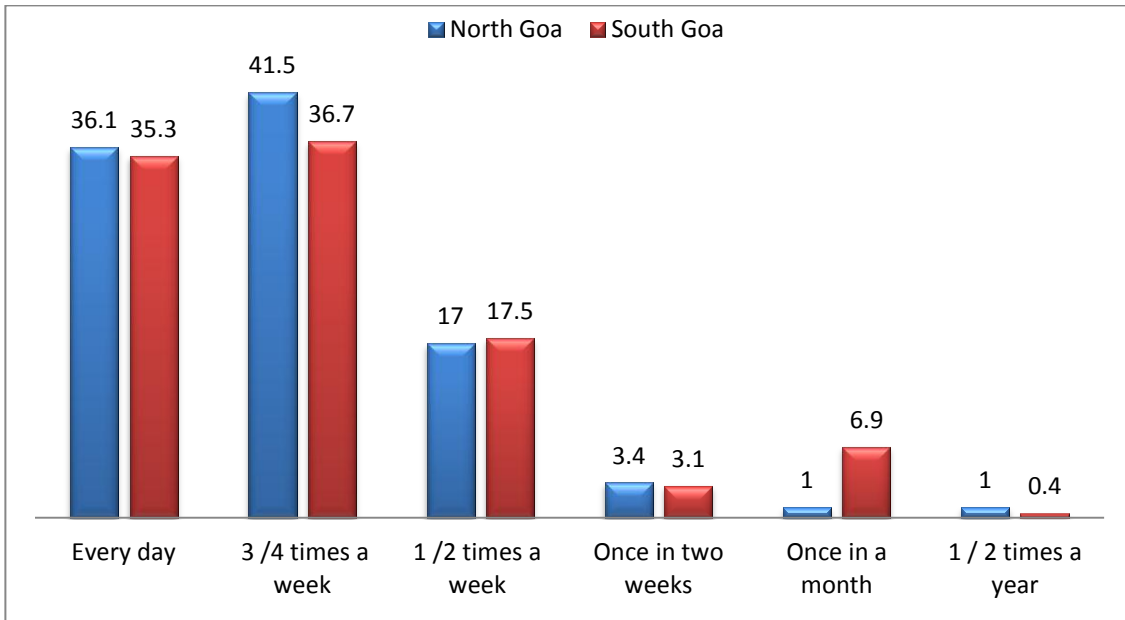


Fig.7.4.3: Frequency of Homework given in English (Comparison between North Goa and South Goa Districts)

d) Goa State

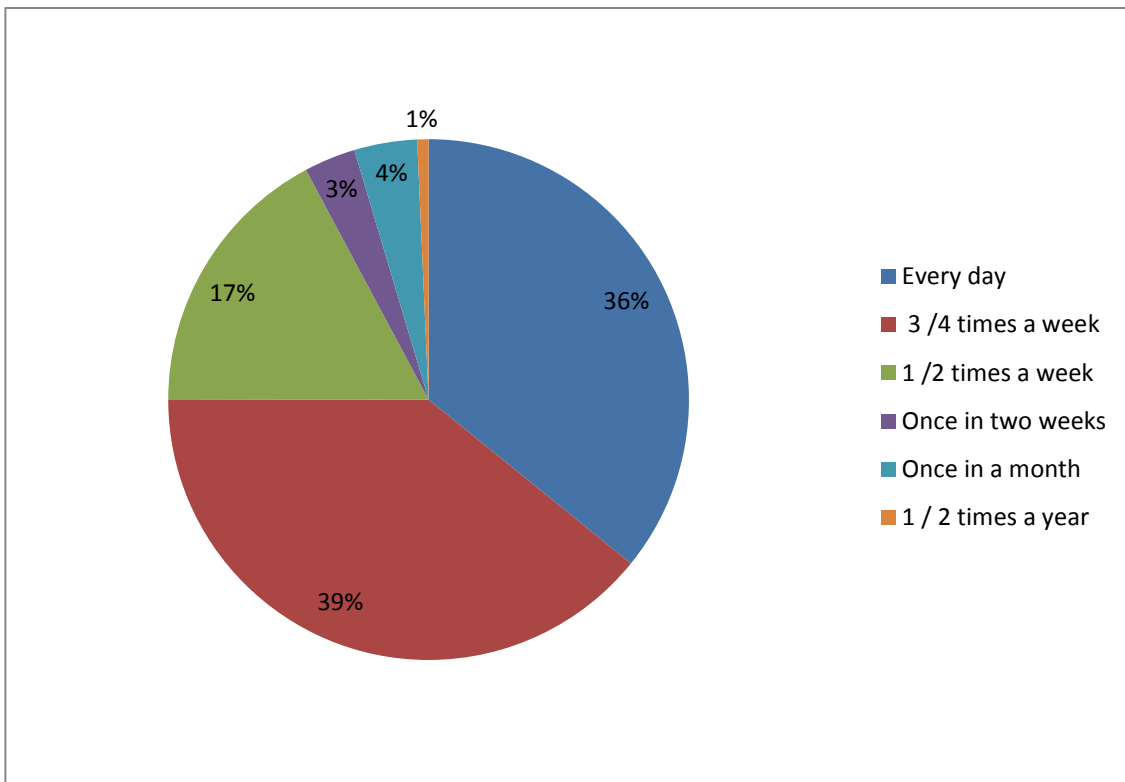


Fig.7.4.4: Frequency of Homework given in English (Goa State)

ii) Mathematics

Data regarding how frequently homework in Mathematics were given according to students (percentage of students) are given in Table 7.4.2 and the same are graphically represented in different figures separately for (a) North Goa district, (b) south Goa district, (c) comparison between the two districts and (d) the State of Goa. The Table and Figures are self explanatory.

a) North Goa District

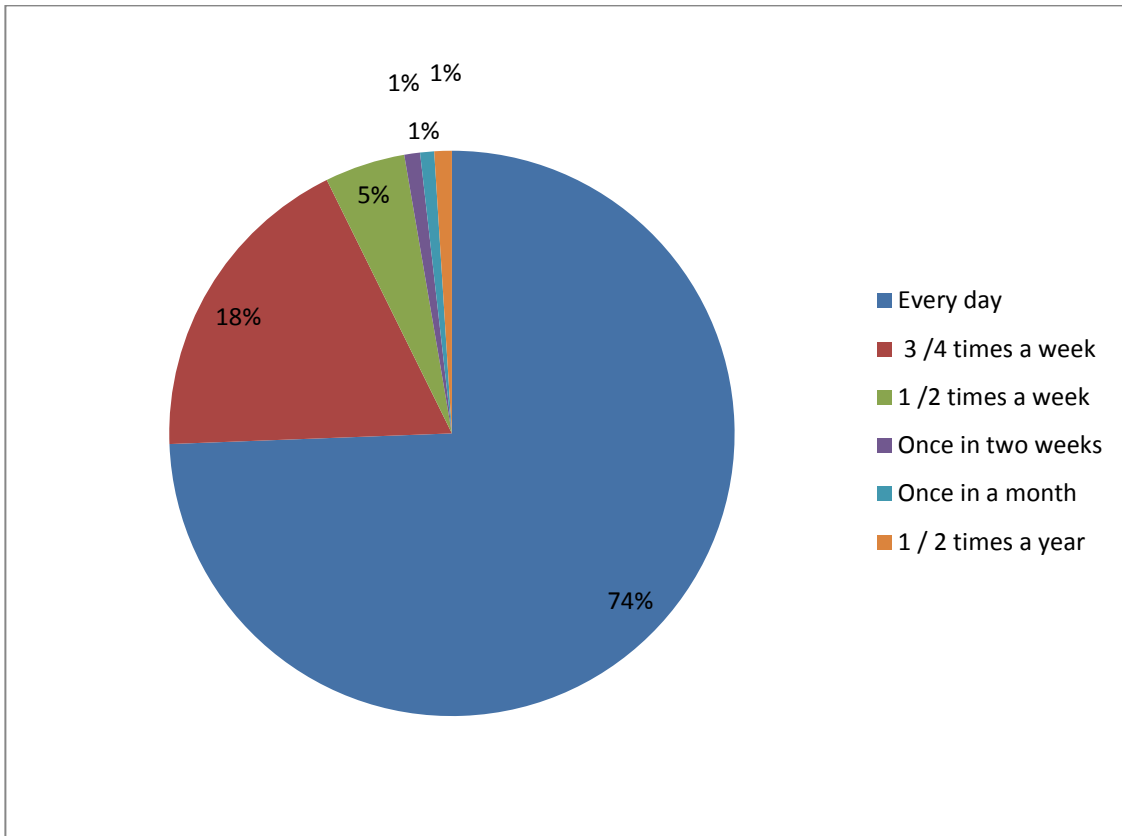


Fig. 7.4.5: Frequency of Homework in Mathematics (North Goa District)

Table 7.4.2: Frequency of Homework in Mathematics

Frequency	North Goa Dist.	South Goa Dist.	Goa State
Every day	74.4	73.1	73.7
3 / 4 times a week	18.3	17.1	17.7
1 / 2 times a week	4.6	7.2	5.9
Once in two weeks	0.9	1.0	0.9
Once in a month	0.8	0.8	0.8
1 / 2 times a year	1.0	0.8	0.9
Total	100	100	100

Note – Figures indicate percentage of students.

b) South Goa District

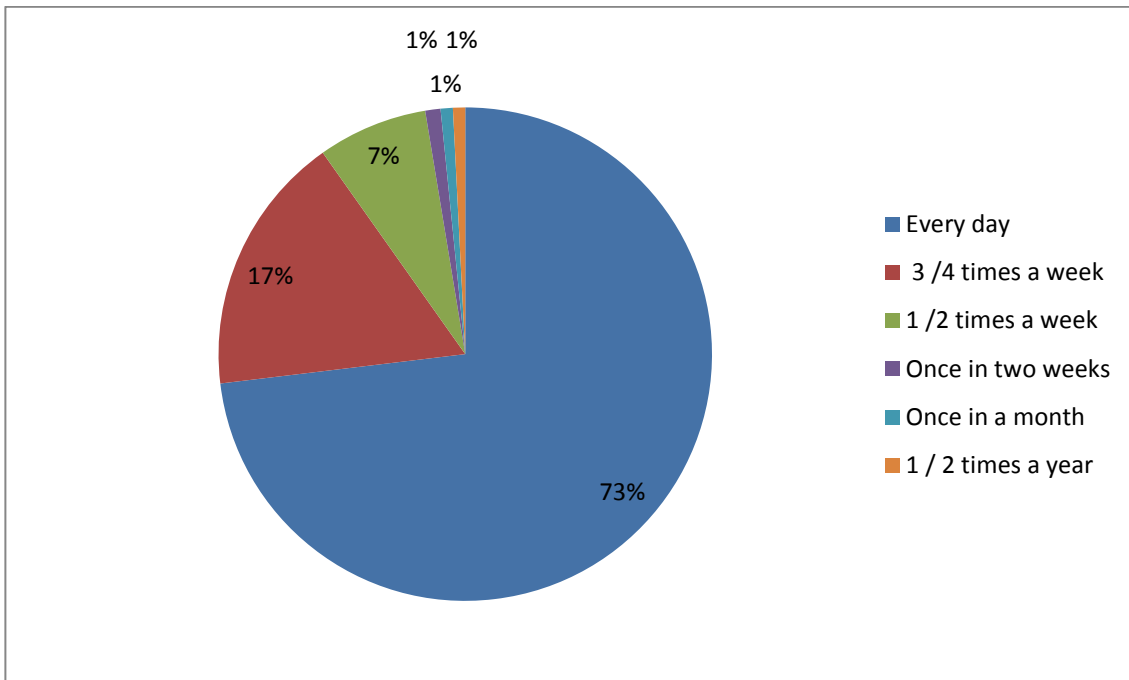


Fig. 7.4.6: Frequency of Homework in Mathematics (South Goa District).

c) Comparison between North Goa and South Goa Districts

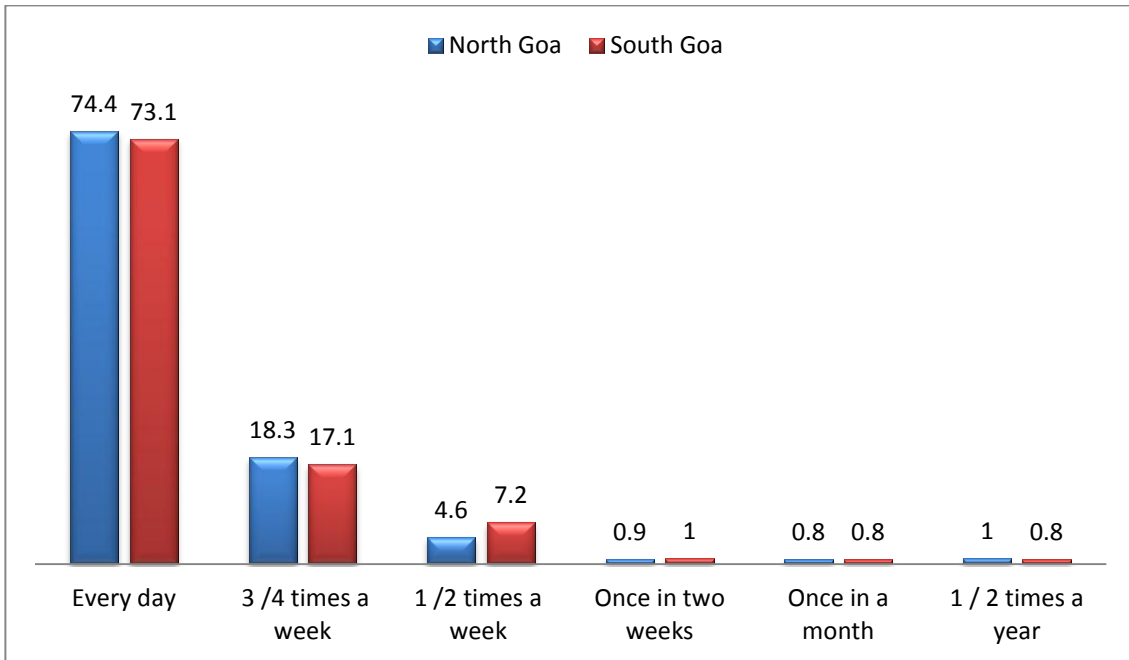


Fig. 7.4.7: Frequency of Homework in Mathematics (Comparison between North Goa and South Goa Districts).

d) Goa State

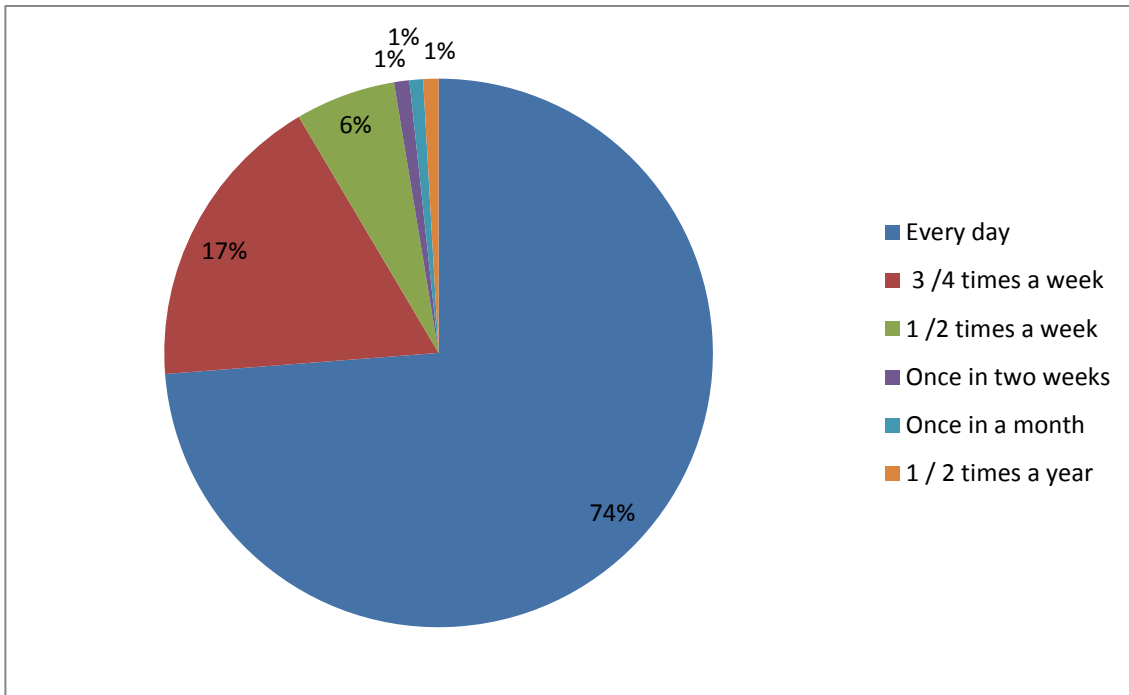


Fig. 7.4.8: Frequency of Homework in Mathematics (Goa State).

iii) Science

Information about how frequently homework in Science were given according to students (percentage of students) are given in Table 7.4.3 and the same are graphically represented in different figures separately for (a) North Goa district, (b) south Goa district, (c) comparison between the two districts and (d) the State of Goa. The Table and Figures are self explanatory.

a) North Goa District

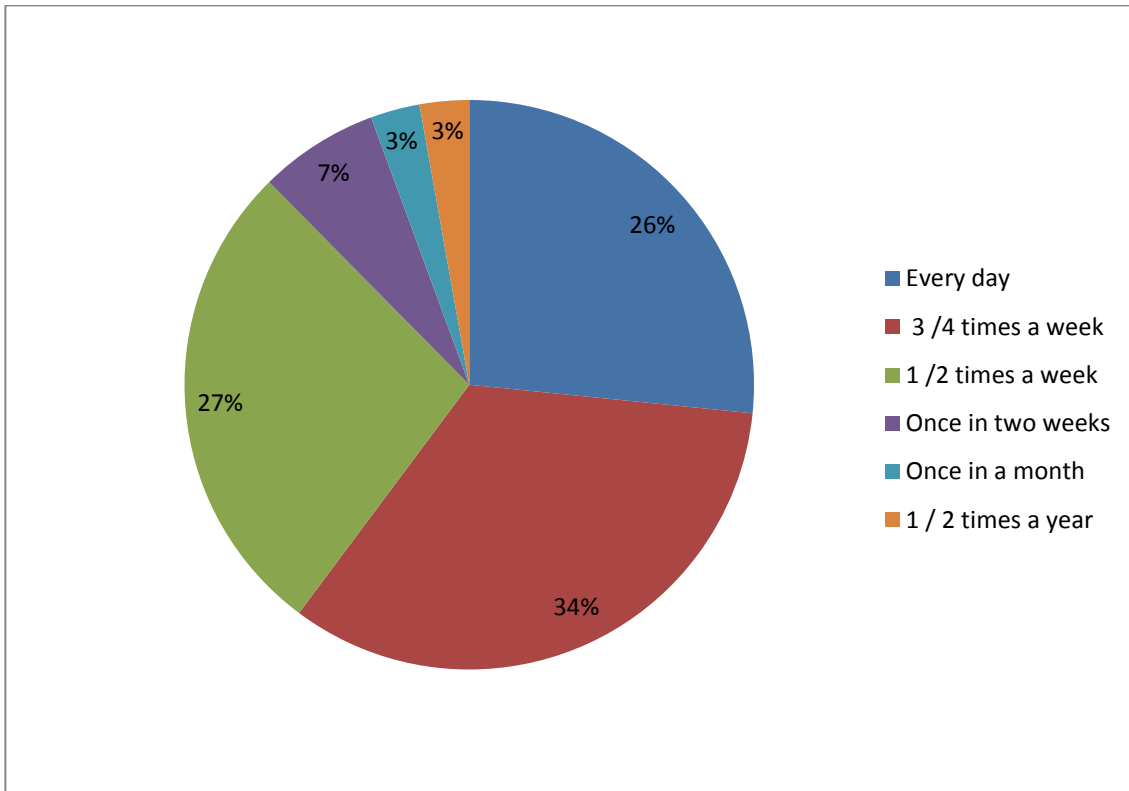


Fig.7.4.9: Frequency of Homework in Science (North Goa District).

Table 7.4.3: Frequency of Homework in Science.

Frequency	North Goa Dist.	South Goa Dist.	Goa State
Every day	26.6	34.4	30.4
3 / 4 times a week	33.6	34.2	34.0
1 / 2 times a week	27.4	15.8	21.6
Once in two weeks	6.8	11.2	8.9
Once in a month	2.8	3.7	3.4
1 / 2 times a year	2.8	0.7	1.7
Total	100	100	100

Note – Figures indicate percentage of students.

b) South Goa District

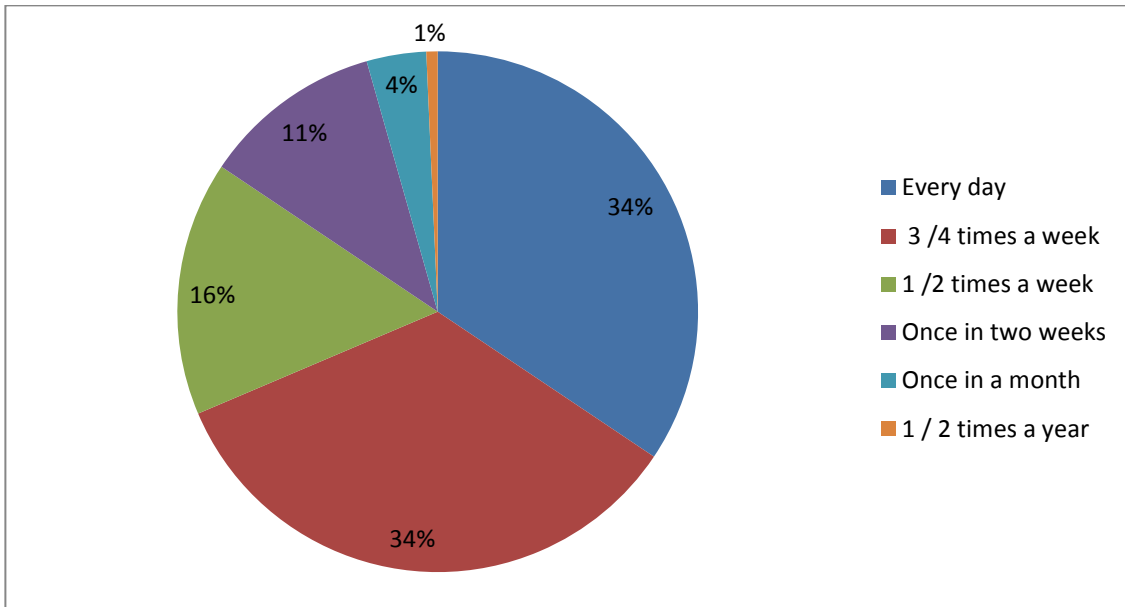


Fig.7.4.10: Frequency of Homework in Science (South Goa District).

c) Comparison between North Goa and South Goa Districts

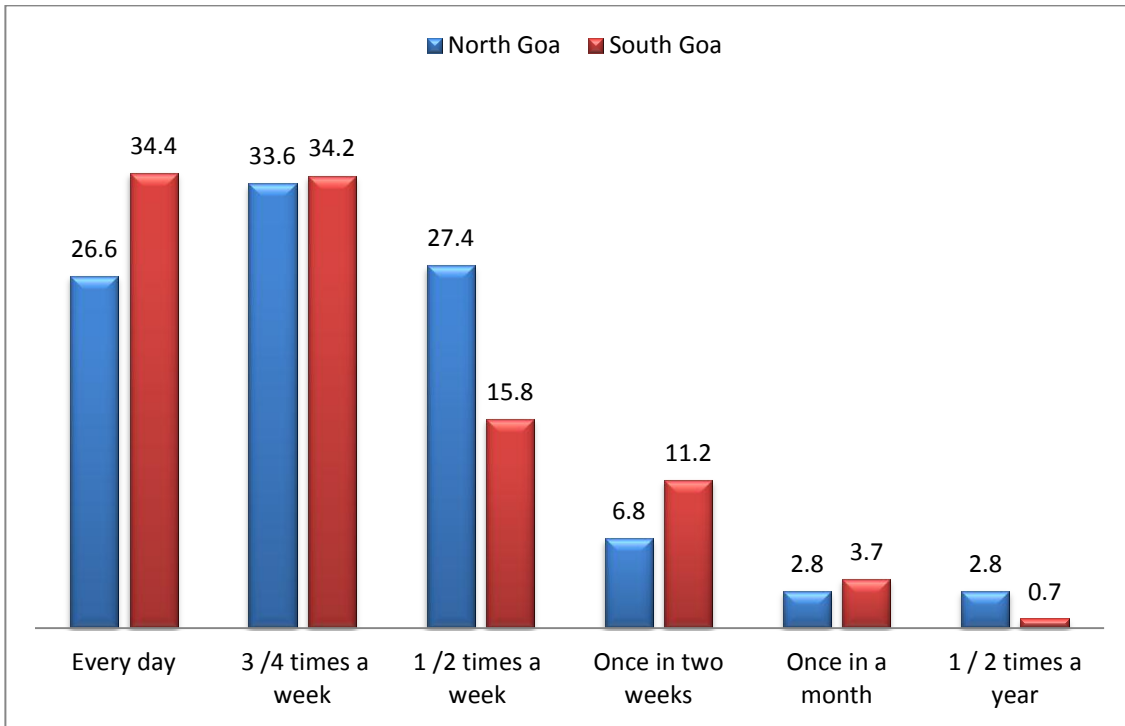


Fig.7.4.11: Frequency of Homework in Science (Comparison between North Goa and South Goa Districts).

d) Goa State

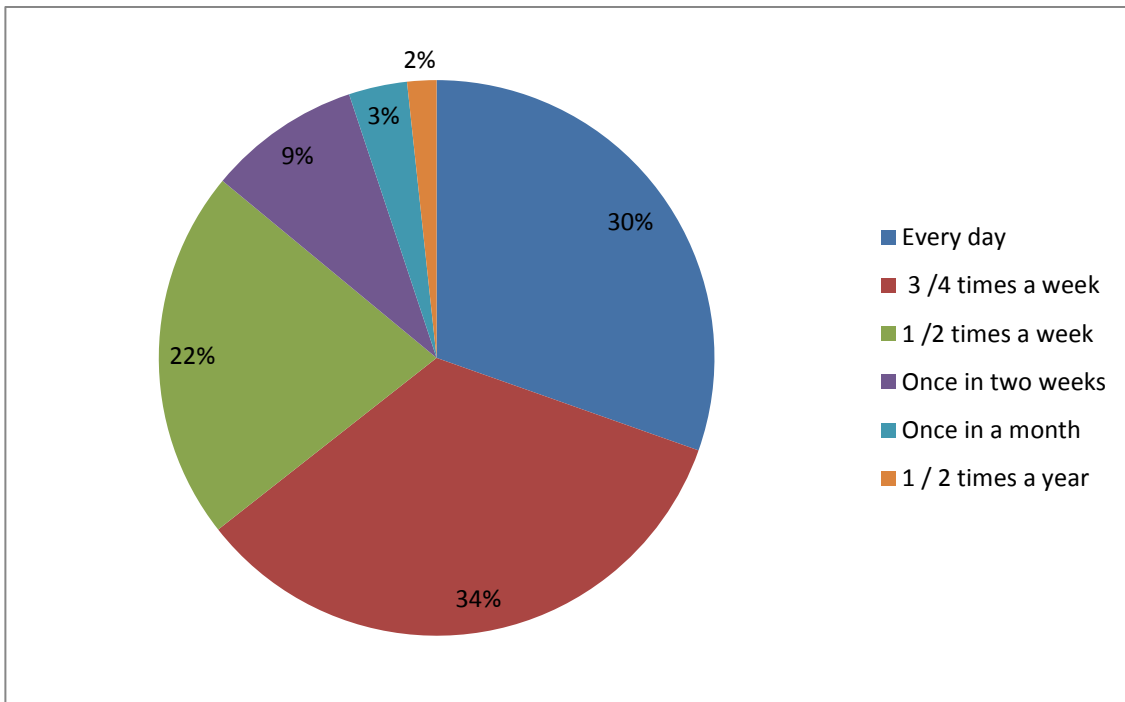


Fig.7.4.12: Frequency of Homework in Science (Goa State).

iv) Social Science

- History and Political and Social Life

Information about how frequently homework in History and Political and Social Life were given according to students (percentage of students) are specified in Table 7.4.4 and the data are graphically represented in different figures separately for (a) North Goa district, (b) South Goa district, (c) comparison between the two districts and (d) the State of Goa. The Tables and Figures are self explanatory.

a) North Goa District

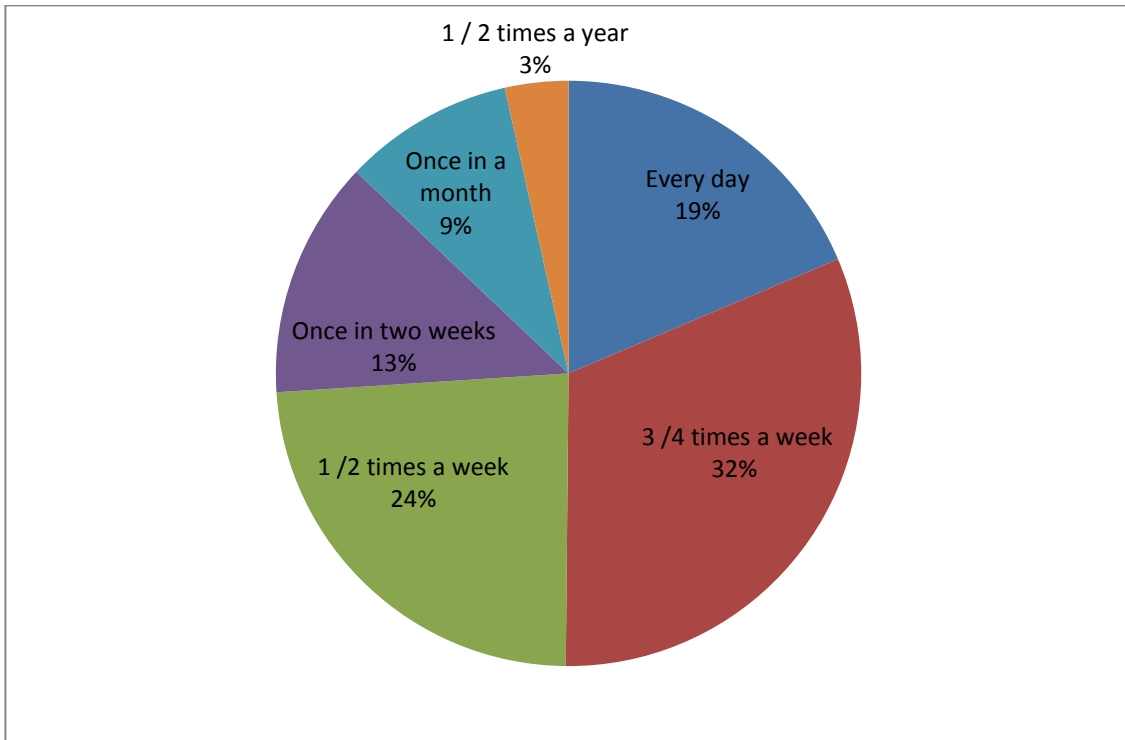


Fig. 7.4.13: Frequency of Homework in History and Political and Social Life (North Goa District)

Table 7.4.4: Frequency of Homework in History and Political and Social Life

Frequency	North Goa Dist.	South Goa Dist.	Goa State
Every day	18.6	20.0	19.2
3/4 times a week	31.5	31.5	31.5
1/2 times a week	23.8	25.8	24.8
Once in two weeks	13.1	8.6	10.8
Once in a month	9.4	8.3	8.9
1/2 times a year	3.5	5.8	4.8
Total	100	100	100

Note – Figures indicate percentage of students

b) South Goa District

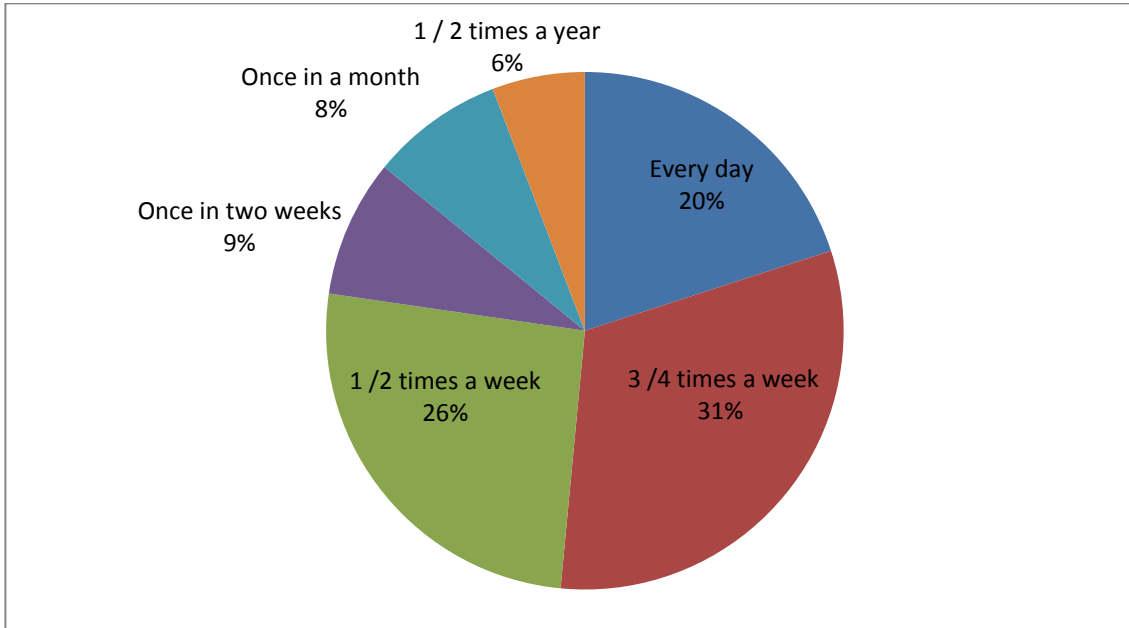


Fig. 7.4.14: Frequency of Homework in History and Political and Social Life (South Goa District)

c) Comparison between North Goa and South Goa Districts

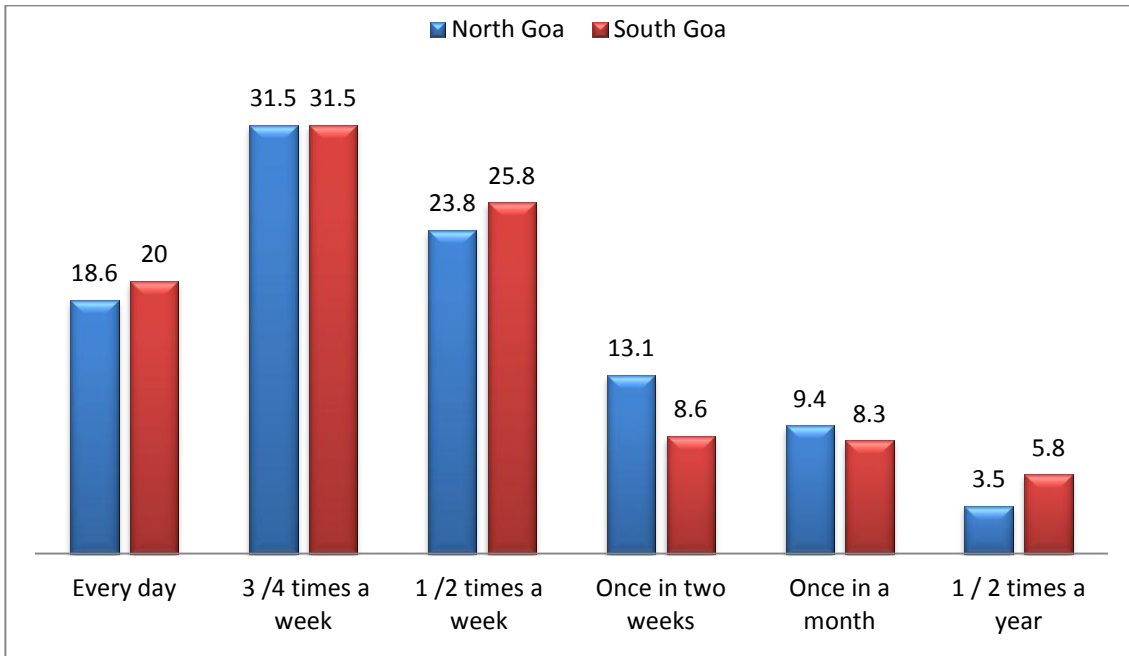


Fig.7.4.15: Frequency of Homework in History and Political and Social Life
(Comparison between North Goa and South Goa Districts)

d) Goa State

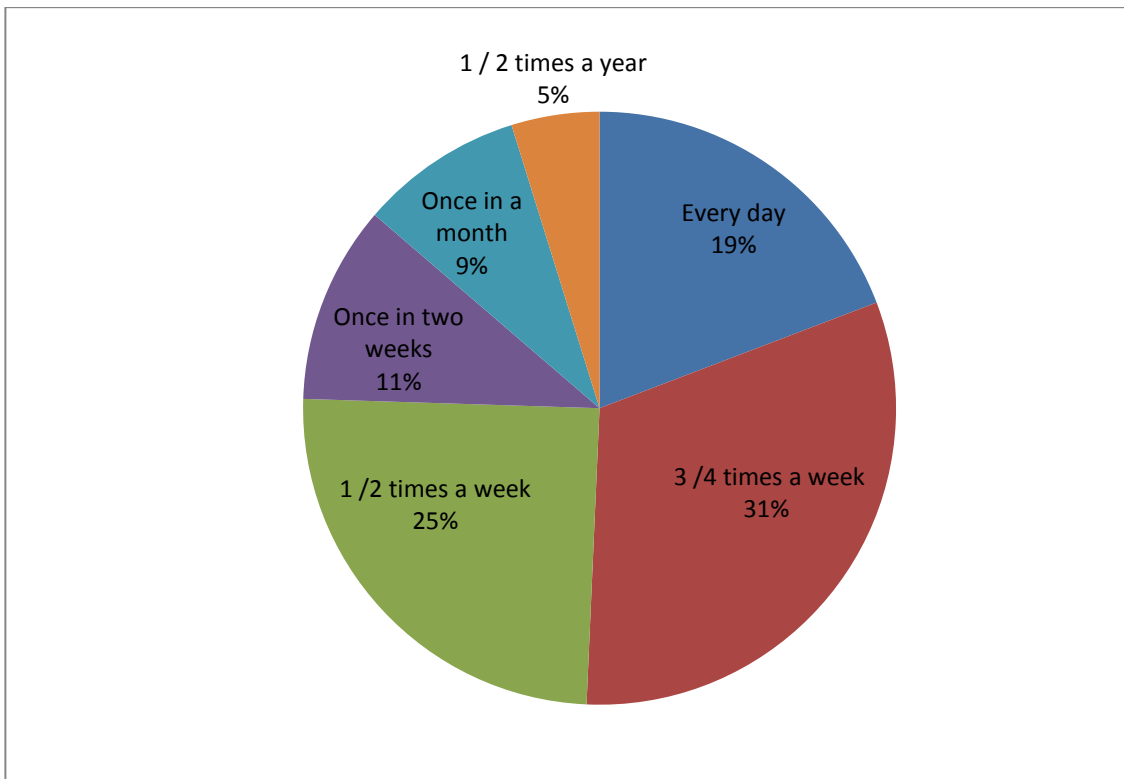


Fig. 7.4.16: Frequency of Homework in History and Political and Social Life (Goa State)

- **Geography**

Information about how frequently homework in Geography were assigned according to students (percentage of students) are given in Table 7.4.5 and the data are graphically represented in different figures separately for (a) North Goa district, (b) south Goa district, (c) comparison between the two districts and (d) the State of Goa. The Tables and Figures are self explanatory.

a) North Goa District

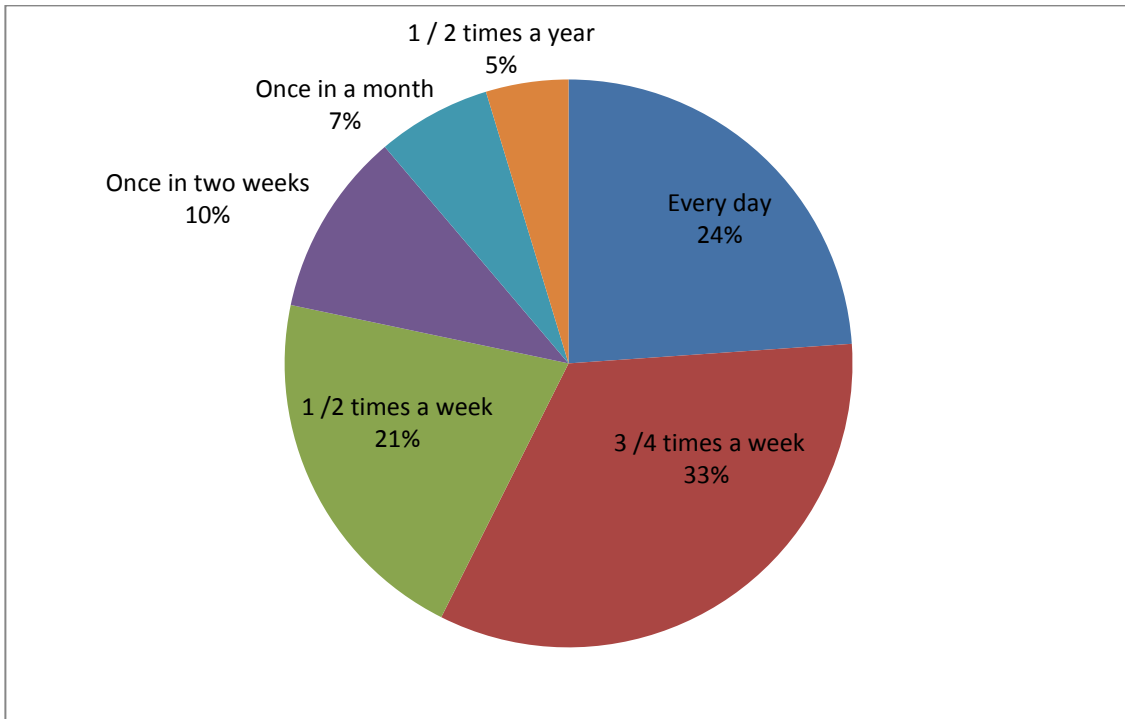


Fig. 7.4.17: Frequency of Homework in Geography (North Goa District)

Table 7.4.5: Frequency of Homework in Geography

Frequency	North Goa Dist.	South Goa Dist.	Goa State
Every day	23.9	19.0	21.5
3/4 times a week	33.5	32.7	33.1
1/2 times a week	20.9	28.8	20.9
Once in two weeks	10.5	15.5	13.0
Once in a month	6.5	8.4	7.4
1/2 times a year	4.7	3.6	4.1
Total	100	100	100

Note – Figures indicate percentage of students

b) South Goa District

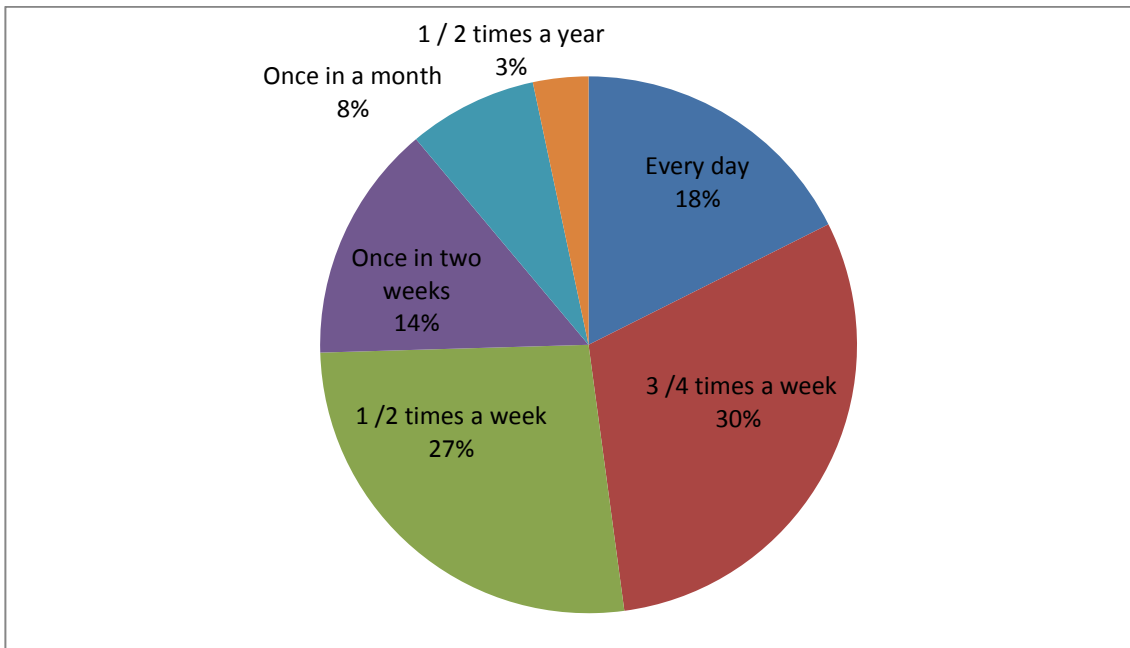


Fig. 7.4.18: Frequency of Homework in Geography (South Goa District)

c) Comparison between North Goa and South Goa Districts

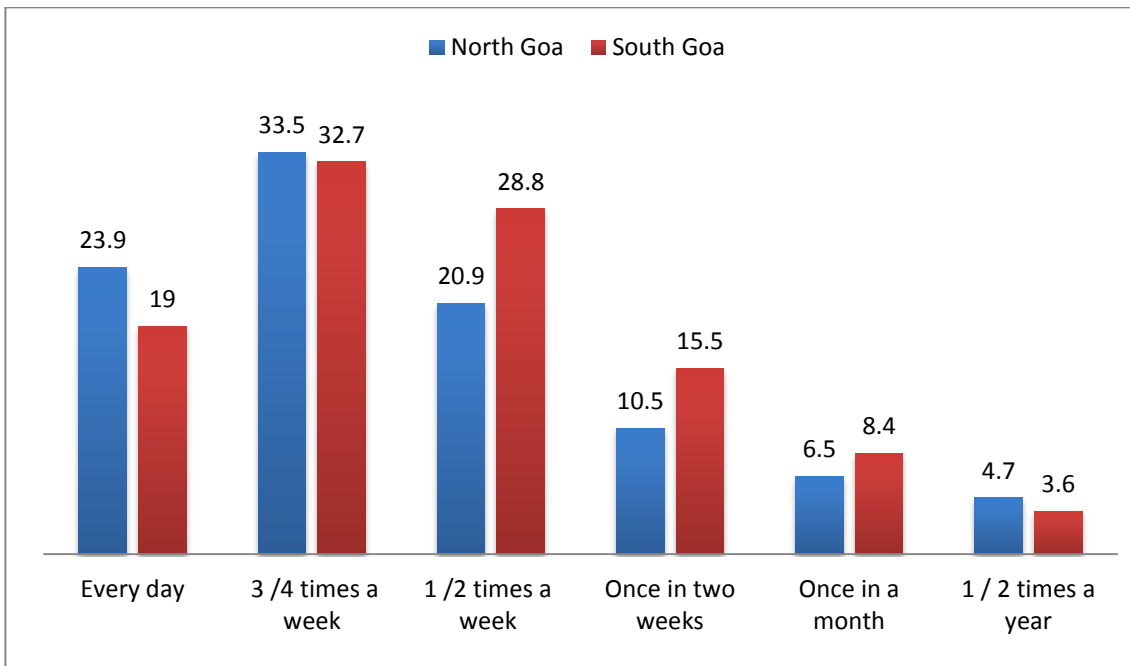


Fig. 7.4.19: Frequency of Homework in Geography (Comparison between North Goa and South Goa Districts)

d) Goa State

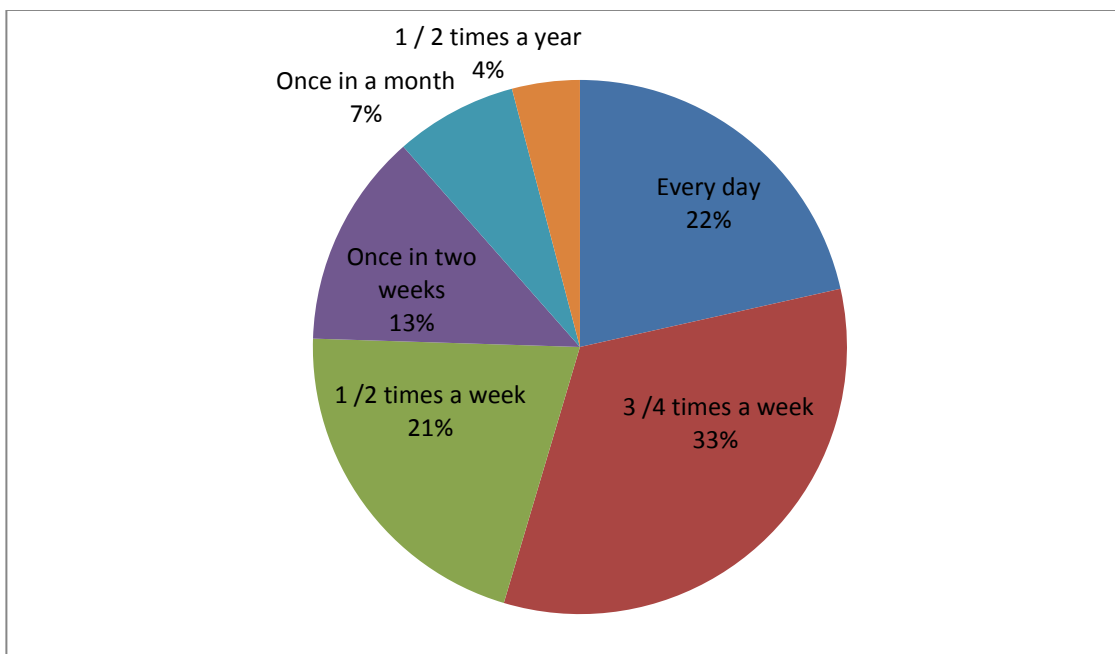


Fig. 7.4.20: Frequency of Homework in Geography (Goa State)

v) Comparison between different Subjects

Table 7.4.6: Frequency of Homework in Different Subjects according to Students of North Goa District

Frequency	English	Maths.	Science	Hist. & Pol. & Soc Life	Geog.
Every day	36.1	74.4	26.6	18.6	23.9
3 / 4 times a week	41.5	18.3	33.6	31.5	33.5
1 / 2 times a week	17.0	4.6	27.4	23.8	20.9
Once in two weeks	3.4	0.9	6.8	13.1	10.5

Once in a month	1.0	0.8	2.8	9.4	6.5
1 / 2 times a year	1.0	1.0	2.8	3.5	4.7

Note – Figures indicate percentage of students

Table 7.4.7: Frequency of Homework in Different Subjects according to Students of South Goa District

Frequency	English	Maths.	Science	Hist. & Pol. & Soc Life	Geog.
Every day	35.3	73.0	34.4	20.0	19.0
3 / 4 times a week	36.7	17.4	34.2	31.5	32.7
1 / 2 times a week	17.5	7.8	15.8	25.8	28.8
Once in two weeks	3.1	1.0	11.2	8.6	15.5
Once in a month	6.9	0.4	3.7	8.3	8.4
1 / 2 times a year	0.4	0.4	0.7	5.8	3.6

Note – Figures indicate percentage of students

Table 7.4.8: Frequency of Homework in Different Subjects according to Students of Goa State

Frequency	English	Maths.	Science	Hist. & Pol. & Soc Life	Geog.
Every day	35.8	73.7	30.4	19.2	21.5
3 / 4 times a week	39.1	17.9	34.0	31.5	33.1
1 / 2 times a week	17.2	6.2	21.6	24.8	20.9
Once in two weeks	3.2	0.9	8.9	10.8	13.0
Once in a month	3.9	0.6	3.4	8.9	7.4
1 / 2 times a year	0.7	0.7	1.7	4.8	4.1

Note – Figures indicate percentage of students

Table 7.4.6, Table 7.4.7 and Table 7.4.8 indicated the following:

- Around three-fourths of the students of North Goa district, South Goa district and Goa State stated that teachers used to assign to them homework in Mathematics every day.
- According to slightly more than one-third of the students of North Goa district, South Goa district and Goa State, English teacher used to assign homework every day.
- Frequency of homework in Science was less than in English.
- In Social Science, frequency of homework assigned was least compared to the other three subjects.

7.4.2 Checking of Homework in School

Data relating of persons checking homework according to students (percentage of students) of North Goa district, South Goa district and Goa State are given in Table 7.4.9 and the said data are graphically represented in different figures which are self explanatory.

a) North Goa District

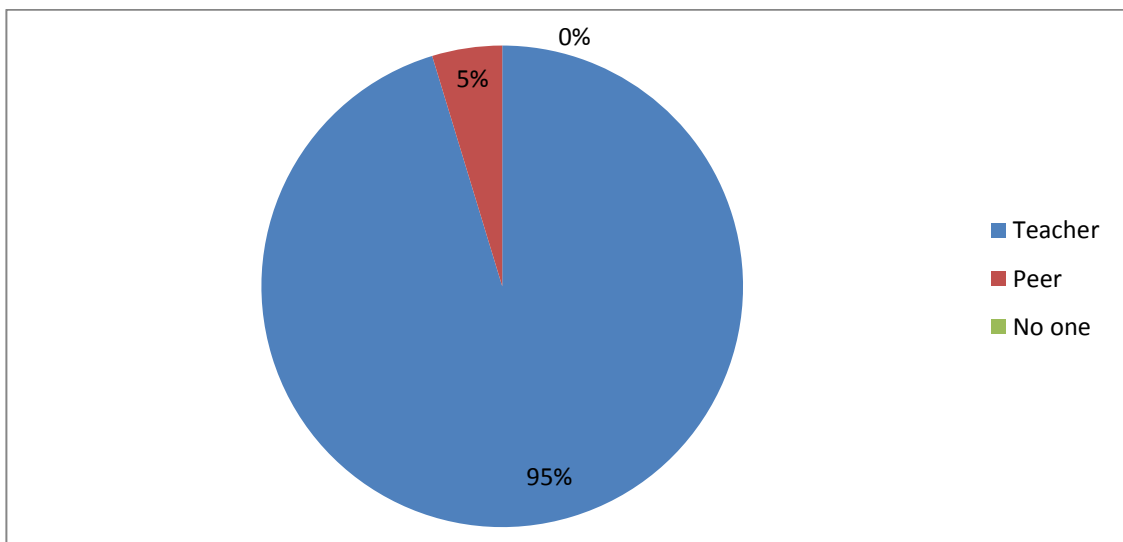


Fig.7.4.21: Checking of Homework by Different Persons (North Goa District)

Table 7.4.9: Checking of Homework in School.

Person	North Goa Dist.	South Goa Dist.	Goa State
Teacher	95.3	93.4	94.3
Peer	4.7	6.2	5.4
No one	0.00	0.4	0.2
Total	100	100	100

Note – Figures indicate percentage of students

b) South Goa District

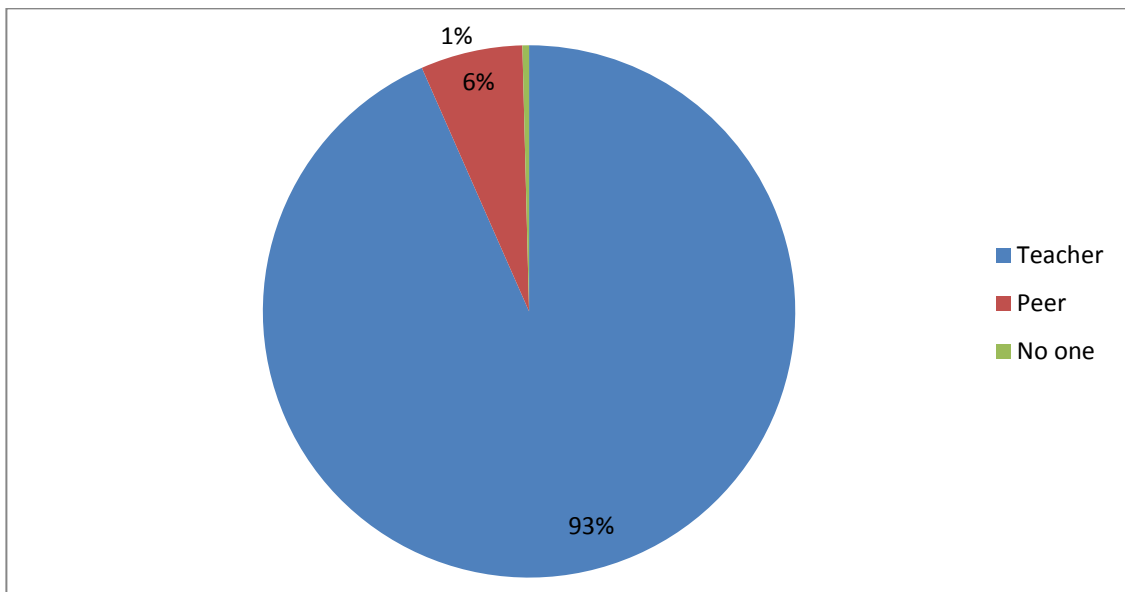


Fig.7.4.22: Checking of Homework by Different Persons (South Goa District)

c) Comparison between North Goa and South Goa Districts

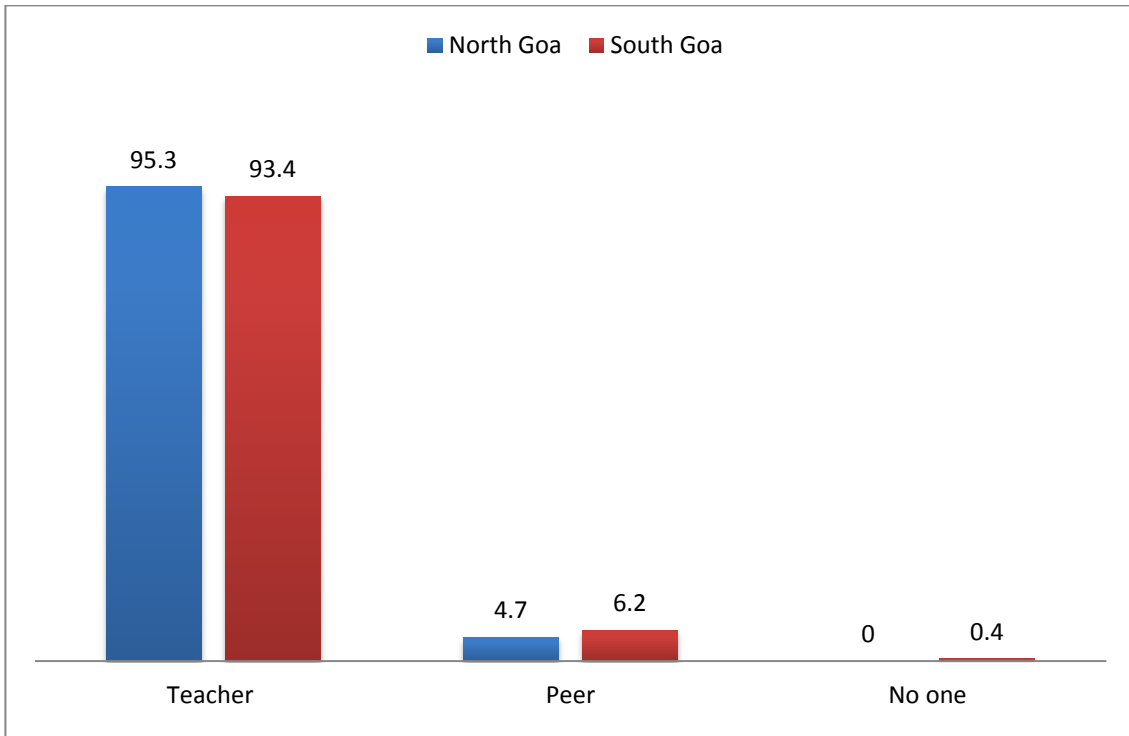


Fig.7.4.23: Checking of Homework by Different Persons (Comparison between North Goa and South Goa Districts)

d) Goa State

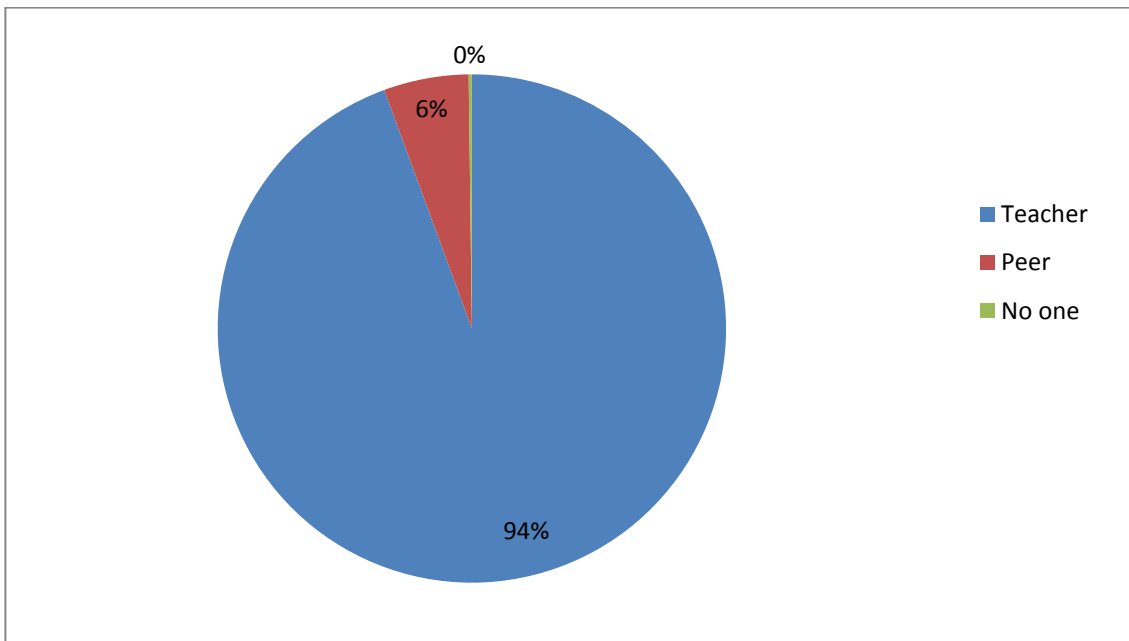


Fig.7.4.24: Checking of Homework by Different Persons (Goa State)

7.4.3 Activities in Languages after reading something

Table 7.4.10, Table 7.4.11 and Table 7.4.12 and Figure 7.4.25, Figure 7.4.26 and Figure 7.4.27 which are self explanatory indicated the following:

- According to majority of students of North Goa district, South Goa district and Goa State, all the four activities (i.e. answering question in works/book sheet, writing what is read, answering question aloud and talking with other students) take place 'sometimes' after reading something in language classes.
- A substantial percentage of students of all the three groups, reported that these four activities 'always' take place.
- Lowest percentage of students stated that these activities never took place.

a) North Goa District

Table 7.4.10: How often different Activities take place after reading something in Language Classes (North Goa District)

Frequency	Answering question in works/book sheet	Writing what is read	Answering question aloud	Talking with other students
Always	30.8	19.2	35.7	43.0
Sometimes	58.5	60.4	50.4	48.4

Never	10.7	20.3	13.8	8.6
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Note- Figures indicate percentage of students

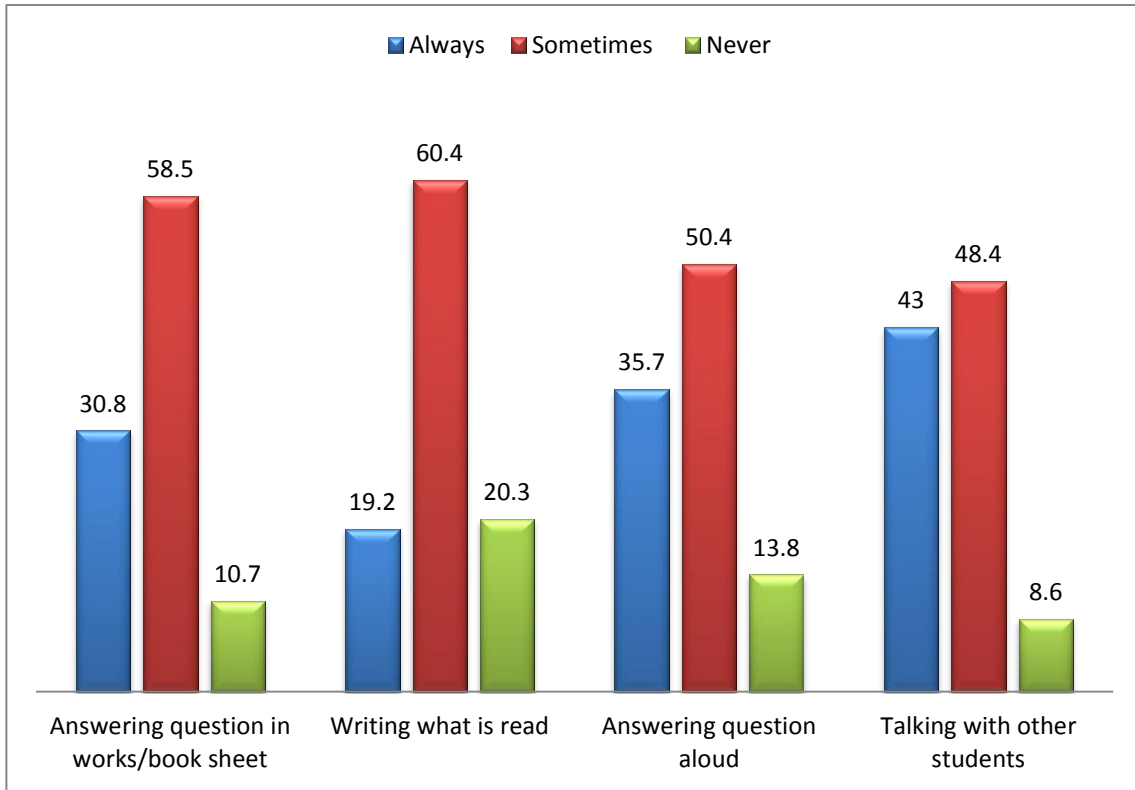


Fig. 7.4.25: Frequency of Occurrence of different Activities after reading something in Language Classes (North Goa District)

b) South Goa District

Table 7.4.11: How often different Activities take place after reading something in Language Classes (South Goa District)

Frequency	Answering question in works/book sheet	Writing what is read	Answering question aloud	Talking with other students
Always	32.0	18.1	32.0	36.1

Sometimes	60.0	54.5	52.7	53.9
Never	8.0	27.4	15.3	10.0

Note- Figures indicate percentage of students

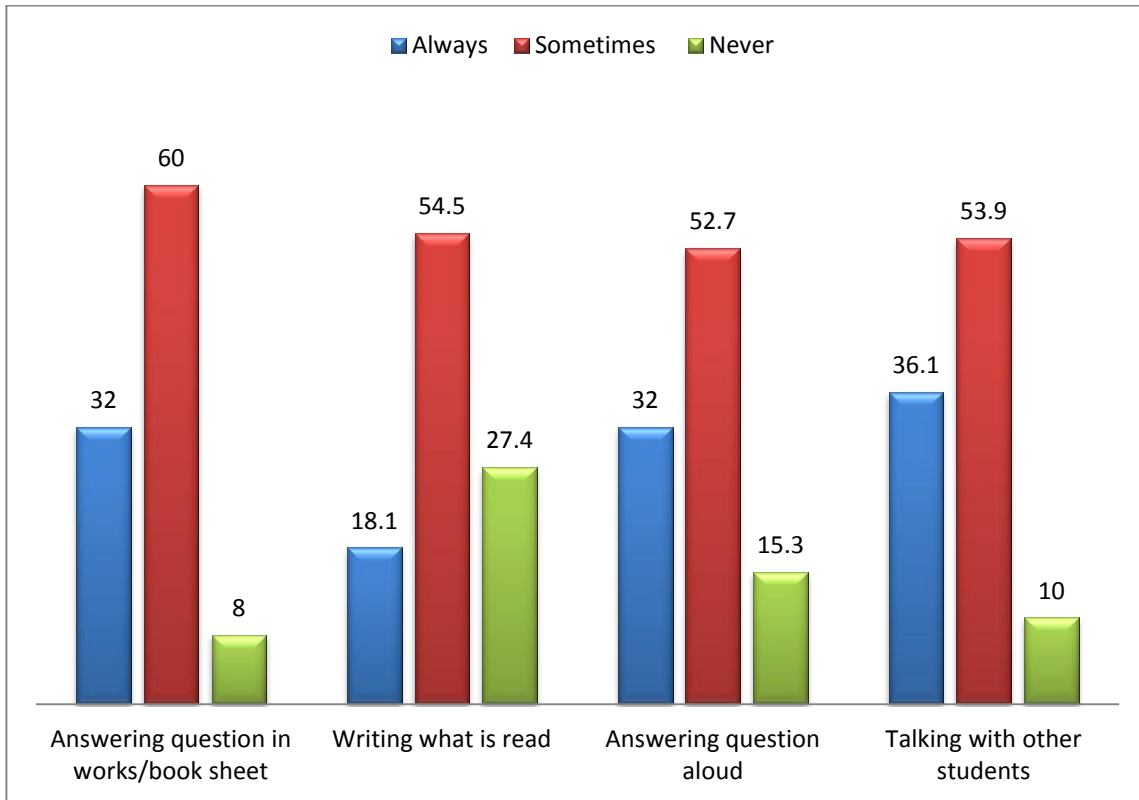


Fig. 7.4.26: Frequency of Occurrence of different Activities after reading something in Language Classes (South Goa District)

c) Goa State

Table 7.4.12: How often different Activities take place after reading something in Language Classes (Goa State)

Frequency	Answering	Writing	Answering	Talking with
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	question in works/book sheet	what is read	question aloud	other students
Always	31.4	18.7	33.9	39.6
Sometimes	59.3	57.5	51.5	52.4
Never	9.3	23.8	14.5	9.3

Note- Figures indicate percentage of students

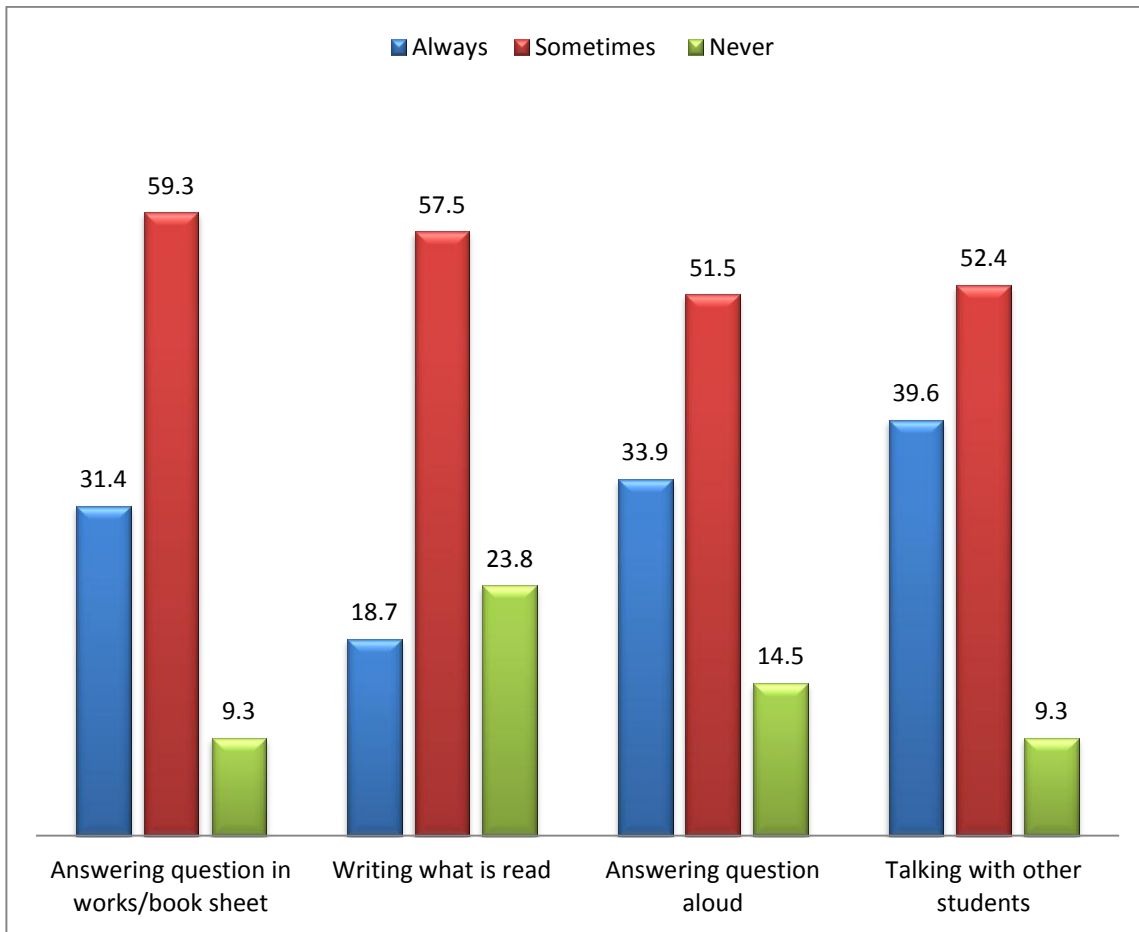


Fig. 7.4.27: Frequency of Occurrence of different Activities after reading something in Language Classes (Goa State)

d) Comparison between North Goa and South Goa Districts

Table 7.4.13 shows no substantial difference between North Goa and South Goa district in each of the three levels of responses, i.e. 'Always', 'Sometimes' and 'Never' in respect of each of the four activities. In other words, nearly equal percentages of students of both the districts had responded to each category of response for each of the four activities listed.

Table 7.4.13: How often different Activities take place after reading something in Language Classes

Frequency	Group	Answering question in works/book sheet	Writing what is read	Answering question aloud	Talking with other students
Always	North Goa	30.8	19.2	35.7	43.0
	South Goa	32.0	18.1	32.0	36.1
Sometimes	North Goa	58.5	60.4	50.4	48.4
	South Goa	60.0	54.5	52.7	53.9
Never	North Goa	10.7	20.3	13.8	8.6
	South Goa	8.0	27.4	15.3	10.0

7.4.4 Activities in Mathematics lessons

Data in Table 7.4.14 revealed the following:

- Most of the students of North Goa, South Goa and Goa State mentioned that all the seven activities listed were done 'sometimes'.
- More than one-third of students of North Goa, South Goa and Goa State stated that activities like learning about shapes, memorizing Mathematics

problem, working in small groups, explaining answer and solving problem alone were 'always' done in Mathematics classes.

Table 7.4.14: Activities in Mathematics Lessons

Activity	Always			Sometimes			Never		
	N. G	S. G	Goa	N. G	S. G	Goa	N. G	S. G	Goa
Measurement Of something	15.4	10.5	12.9	63.0	69.0	66.0	21.6	20.5	21.1
Making Charts etc.	25.8	21.6	23.7	61.8	73.2	63.3	12.5	5.2	8.9
Learning about shapes	47.4	52.9	50.1	50.0	44.8	47.5	2.6	2.3	2.4
Memorizing Maths. problem	38.7	43.2	41.0	47.7	42.3	45.1	13.6	14.5	13.9
Working in small groups	36.0	35.8	35.9	55.5	53.8	54.7	8.5	10.4	9.4
Explaining answer	42.0	32.8	37.5	52.7	57.9	55.2	5.3	9.3	7.3
Solving problem alone	35.3	32.7	34.0	58.4	60.3	59.3	6.3	7.0	6.6

Note- Figures indicate percentage of students
N.G. – North Goa, S.G. – South Goa,

7.4.5 Activities in Science/Social Science

Table 7.4.15 indicated that:

- Majority of students of North Goa, South Goa and Goa State stated that almost all the activities were done 'sometimes.'

- Nearly three-fifths of the students of North Goa, South Goa and Goa State mentioned that they 'always' used to watch teacher doing experiments.
- About one-fourth of the students stated that they 'never' used to /design plan experiment or conduct own experiment.

Table 7.4.15: Activities in Science/Social Science

Activity	Always			Sometimes			Never		
	N. G	S. G	Goa	N. G	S. G	Goa	N. G	S. G	Goa
Looking at change	32.1	23.2	27.7	59.8	69.0	64.3	8.1	7.8	8.0
Watching teacher doing experiment	55.9	60.4	58.1	41.5	35.5	38.6	2.6	4.1	3.3
Design/ Plan experiment	21.8	21.3	21.5	57.5	55.2	56.4	20.7	23.5	22.1
Own experiment	23.4	17.6	20.5	57.4	56.6	57.0	19.2	25.8	22.5
Working with other students	34.4	28.2	31.3	56.2	64.0	60.0	9.4	7.8	8.6
Memorizing lessons	45.2	44.7	44.9	48.8	50.5	49.7	6.0	4.8	5.4
Giving explanation	27.4	27.2	27.3	59.2	55.3	57.3	13.4	17.5	15.4
Independently working on problems	33.8	22.9	28.4	55.5	62.8	59.2	10.6	14.3	12.4
Using computer	15.1	13.9	14.5	47.2	48.7	48.0	37.7	37.3	37.5

Note- Figures indicate percentage of students
N.G. – North Goa, S.G. – South Goa.

7.5 Reading of other Materials outside the School

(a) North Goa District

Figure 7.5.1 and Table 7.5.1 represent the data concerning how frequently students of North Goa district used to read different materials outside school hours. The data shows that substantial percentages of students never used to read the reading materials listed.

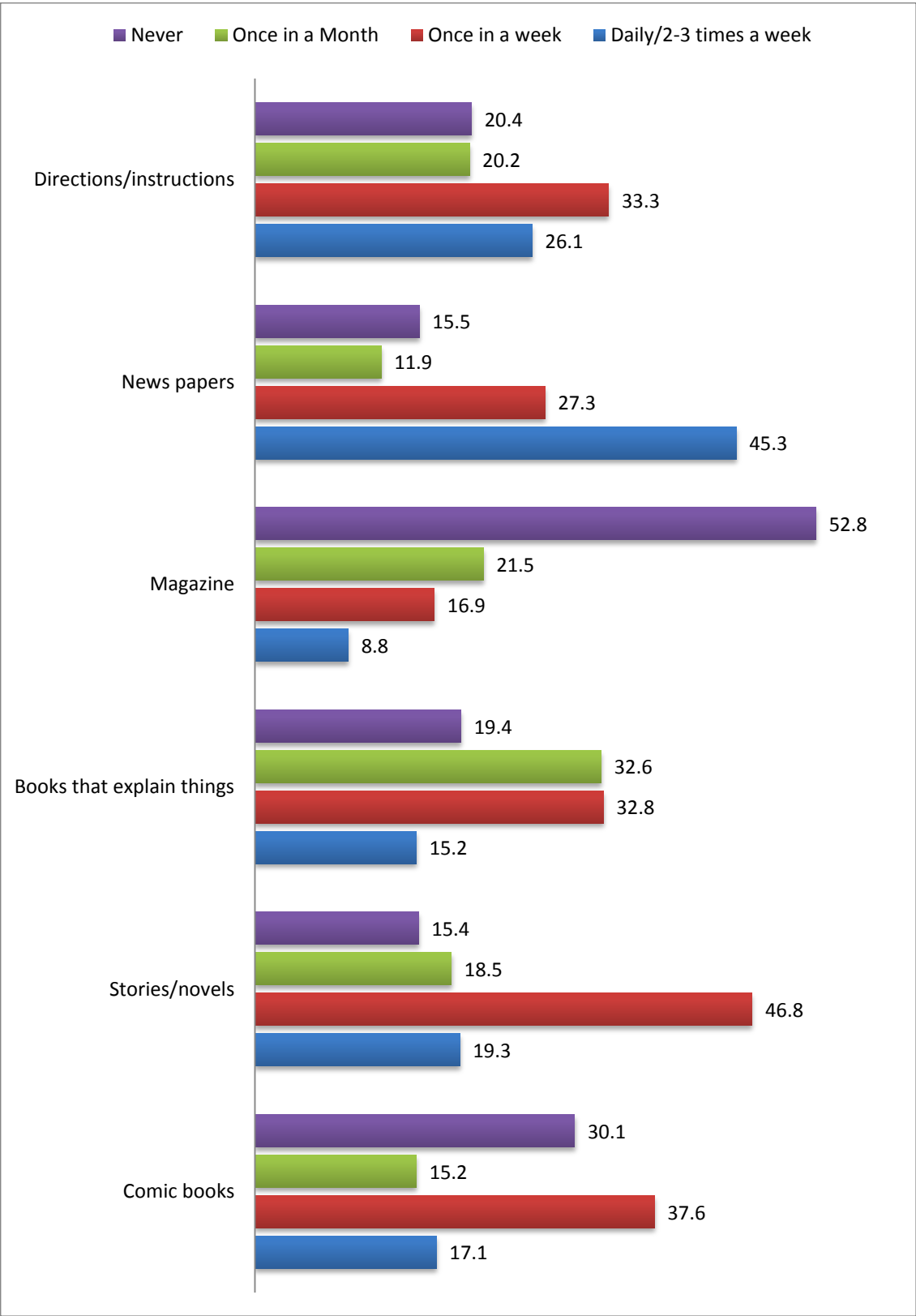


Fig.7.5.1: Reading of Different Reading Materials by Students outside the School
(North Goa District)

Table 7.5.1: Reading of Different Reading Materials by Students outside the School
(North Goa District)

Reading Materials	Daily/2-3 times a week	Once in a week	Once in a Month	Never
Comic books	17.1	37.6	15.2	30.1
Stories/novels	19.3	46.8	18.5	15.4
Books that explain things	15.2	32.8	32.6	19.4
Magazine	8.8	16.9	21.5	52.8
News papers	45.3	27.3	11.9	15.5
Directions/instructions	26.1	33.3	20.2	20.4

Note- Figures indicate percentage of students

(b) South Goa District

Table 7.5.2 and Figure 7.5.2 clearly show the data concerning how frequently the students of South Goa district used to read different materials outside school hours. It was observed that significant percentages of students never used to read different reading materials listed.

Table 7.5.2: Reading of Different Reading Materials by outside the School Students
(South Goa District)

Reading Materials	Daily/2-3 times a	Once in a week	Once in a Month	Never
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	week			
Comic books	11.7	37.5	17.2	33.5
Stories/novels	13.3	49.0	24.3	13.4
Books that explain things	14.4	31.5	31.3	22.8
Magazine	7.0	19.5	20.0	53.5
News papers	37.2	31.6	11.6	19.6
Directions/instructions	25.4	29.1	24.6	20.9

Note- Figures indicate percentage of students.

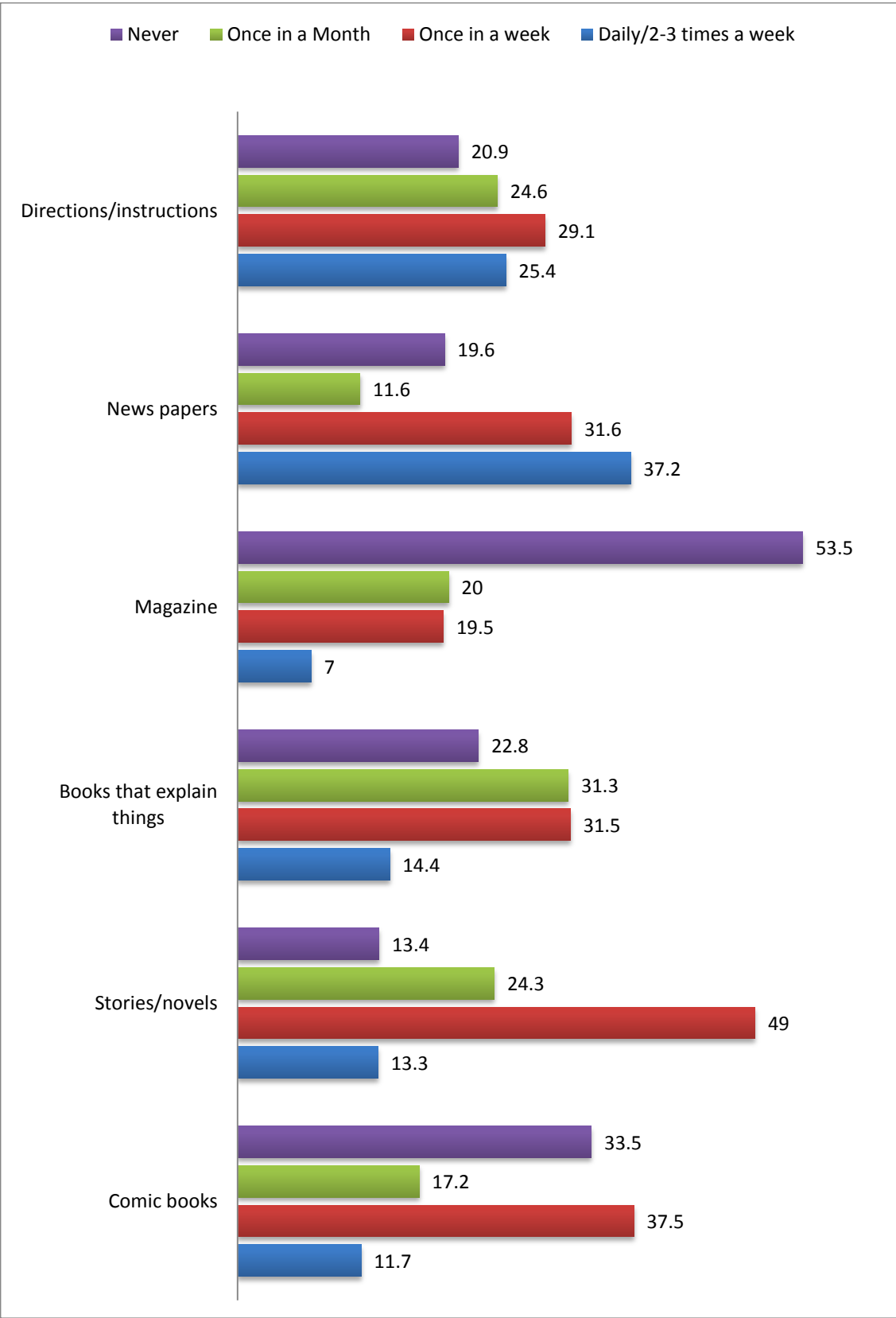


Fig.7.5.2: Reading of Different Reading Materials by Students outside the School
(South Goa District)

(c) Goa State

Table 7.5.3 and Figure 7.5.3 represent the data relating to the frequency with which students of Class- VII of Goa State used to read different materials outside the school hours.

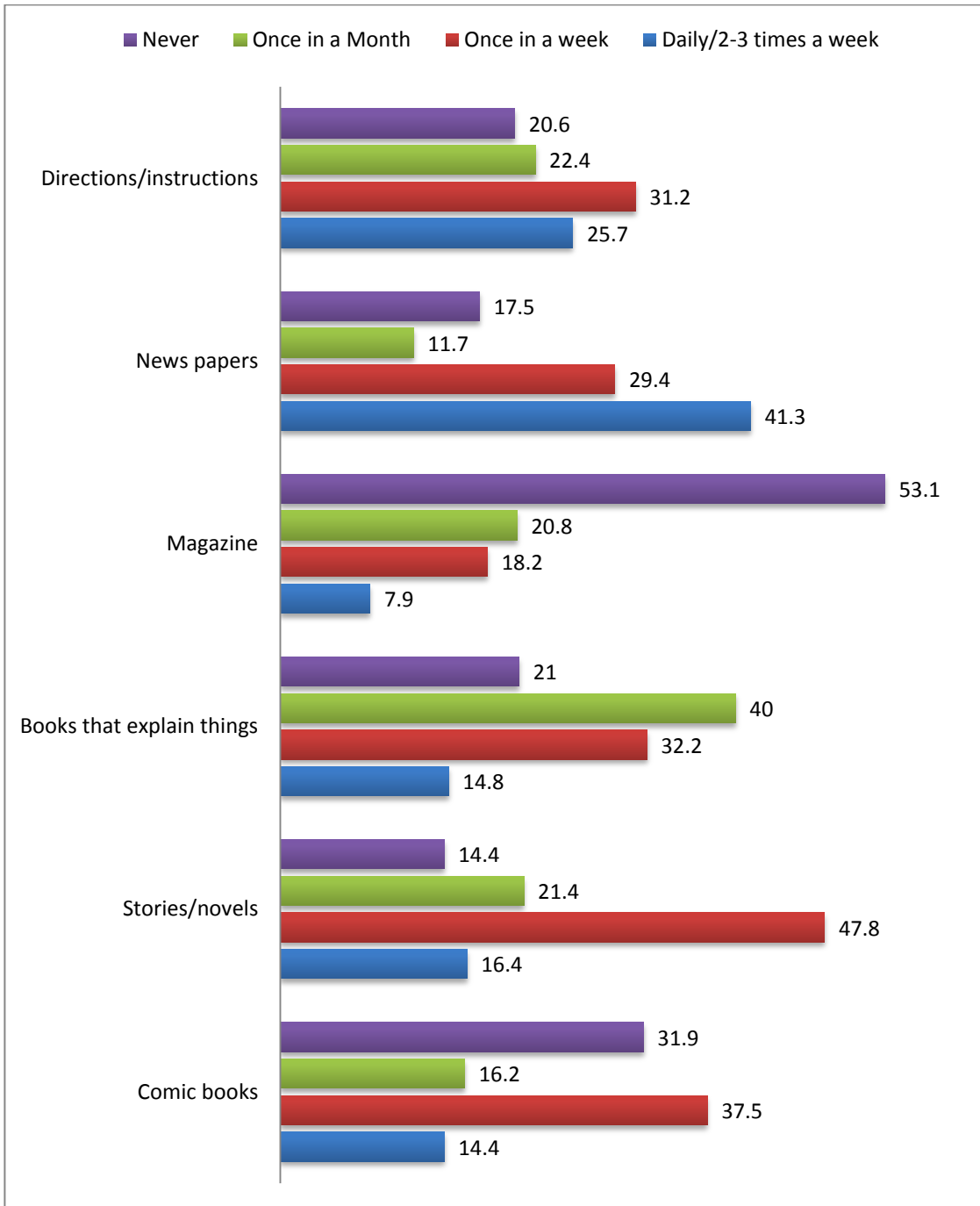


Fig.7.5.3: Reading of Different Reading Materials by Students outside the School (Goa State)

Table 7.5.3: Reading of Different Reading Materials by outside the School Students (Goa State)

Reading Materials	Daily/2-3 times a week	Once in a week	Once in a Month	Never
Comic books	14.4	37.5	16.2	31.9
Stories/novels	16.4	47.8	21.4	14.4
Books that explain things	14.8	32.2	40.0	21.0
Magazine	7.9	18.2	20.8	53.1
News papers	41.3	29.4	11.7	17.5
Directions/instructions	25.7	31.2	22.4	20.6

Note- Figures indicate percentage of students

The above findings indicated that low percentages of students used to read everyday comic books, story books/novels, magazine and books that explain things. About two-fifths of the students stated that they used to read news paper daily/2-3 times a week. Substantial percentages of students of Class-VII never read these types of reading materials outside the school hours.

7.6 Activities by Students outside the School

(a) North Goa District

Majority of students of North Goa district used to watch T.V./Videos, interact with students, play games/sports, do homework, and tell family about what is learnt in school either daily or 2-3 times a week (Table 7.6.1 and Figure 7.6.1). Only one-fifth of the students used to work with computer and 16 percent used internet daily/2-3 times a week and 27.5 percent and 50 percent students had never used computer and internet respectively. About 43 percent of students stated that they read books for enjoyment only once a week.

Table 7.6.1: Activities by Students of North Goa District outside the School Hours

Activities	Daily/2-3 times a week	Once in a week	Once in a Month	Never
Watching TV/Videos	83.6	9.8	2.6	4.0
Working with computer	20.9	42.8	8.8	27.5
Interaction with students	68.8	15.7	4.2	11.4
Playing games/sports	73.2	18.2	5.4	3.2
Reading book for enjoyment	33.9	42.9	12.3	10.8
Using of internet	16.4	19.4	14.4	49.8
Doing homework	87.4	8.8	1.8	1.9
Discuss with friends about what is learnt in school	53.7	30.2	6.1	10.0
Telling family about what is learnt in school	63.9	22.2	6.2	7.7

Note- Figures indicate percentage of students

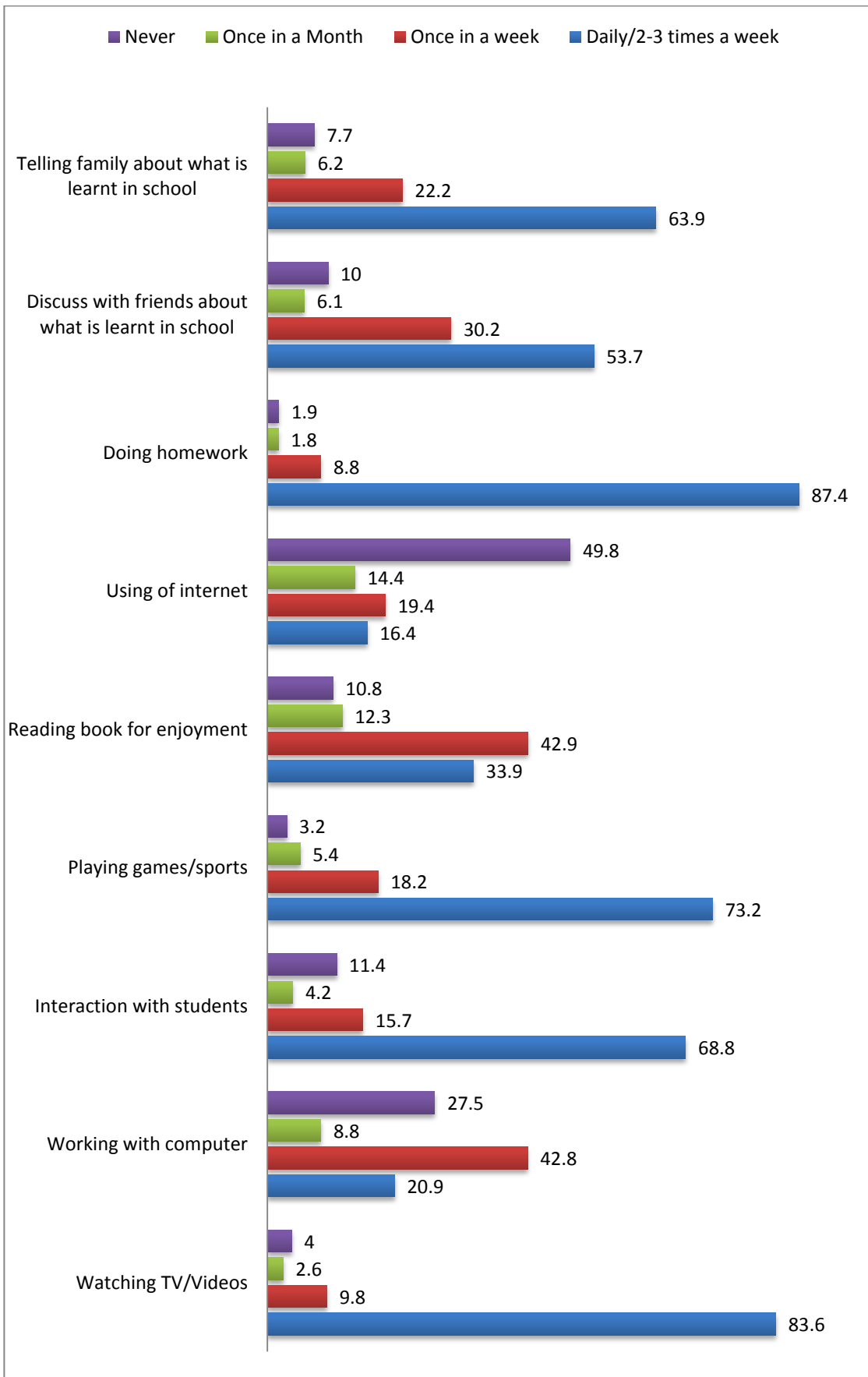


Fig.7.6.1: Activities by Students of North Goa District outside the School Hours

(b) South Goa District

Table 7.6.2 and Figure 7.6.2 indicated that most of the students of South Goa district used to watch T.V./Videos, interact with students, play games/sports, do homework, and tell family about what is learnt in school either daily or 2-3 times a week. Only one-fourth of the students used to work with computer and use internet daily/2-3 times a week and 21 percent and 55 percent students had never used computer and internet respectively. About 43 percent of students stated that they used computer once in a week and 45 percent mentioned reading of books for enjoyment only once a week. One-half of the students stated that they used to discuss with friends about what is learnt in school daily/ 2-3 times a week and 25.5 percent used to do so only once a week.

Table 7.6.2: Activities by Students of South Goa District outside the School Hours

Activities	Daily/2-3 times a week	Once in a week	Once in a Month	Never
Watching TV/Videos	86.8	8.6	2.1	2.5
Working with computer	26.3	43.0	9.4	21.3
Interaction with students	74.2	12.3	3.7	9.8
Playing games/sports	74.2	19.6	4.3	1.8
Reading book for enjoyment	26.4	45.2	17.7	10.7
Using of internet	17.1	15.5	12.2	55.2
Doing homework	79.8	14.9	2.7	2.6
Discuss with friends about	50.0	32.8	6.4	10.9

what is learnt in school				
Telling family about what is learnt in school	58.0	25.5	8.3	8.2

Note- Figures indicate percentage of students.

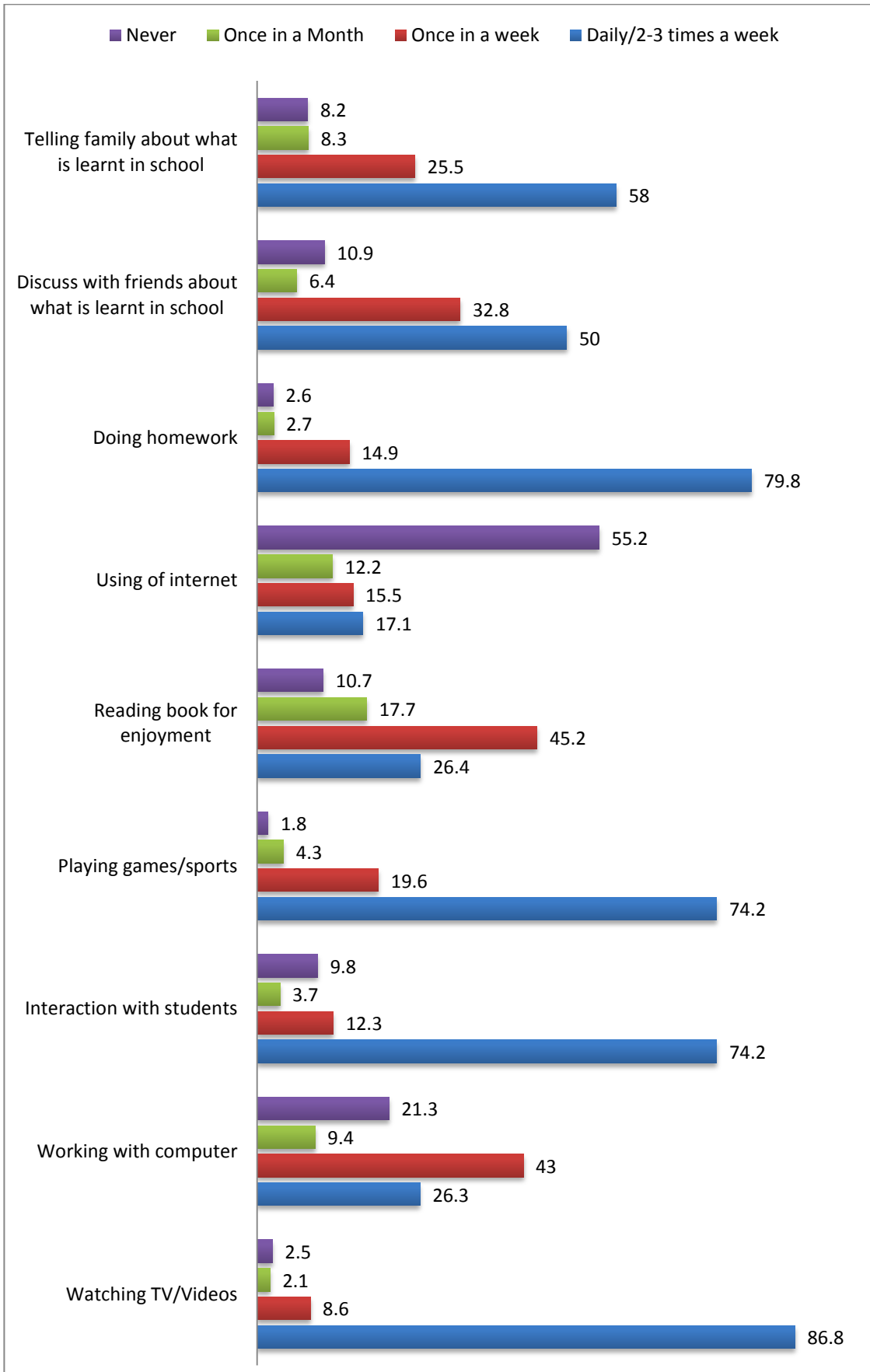


Fig.7.6.2: Activities by Students of South Goa District outside the School Hours

(c) Goa State

Table 7.6.3 and Figure 7.6.3 revealed that 85 percent, 71 percent, 74 percent, 84 percent, 52 percent and 61 percent of students Class – VII of Goa State respectively used to watch T.V./Videos, interact with students, play games/sports, do homework, discuss with friends about what is learnt in school and tell family about what is learnt in school either daily or 2-3 times a week. About 24 percent students used to work with computer and 16.7 percent used internet daily/2-3 times a week. Nearly one-fourth and 52.5 percent students respectively had never worked with computer and used internet outside school hours.

Table 7.6.3: Activities by Students of Goa State outside the School Hours

Activities	Daily/2-3 times a week	Once in a week	Once in a Month	Never
Watching TV/Videos	85.1	9.2	2.3	3.3
Working with computer	23.6	42.9	9.1	24.4
Interaction with students	71.4	14.0	4.0	10.6
Playing games/sports	73.6	19.0	4.9	2.5
Reading book for enjoyment	30.2	44.0	15.0	10.8
Using of internet	16.7	17.5	13.3	52.5
Doing homework	83.7	11.8	2.3	2.2
Discuss with friends about what is learnt in school	51.9	31.5	6.2	10.4
Telling family about what is	61.0	23.8	7.2	8.0

learnt in school				
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Note- Figures indicate percentage of students

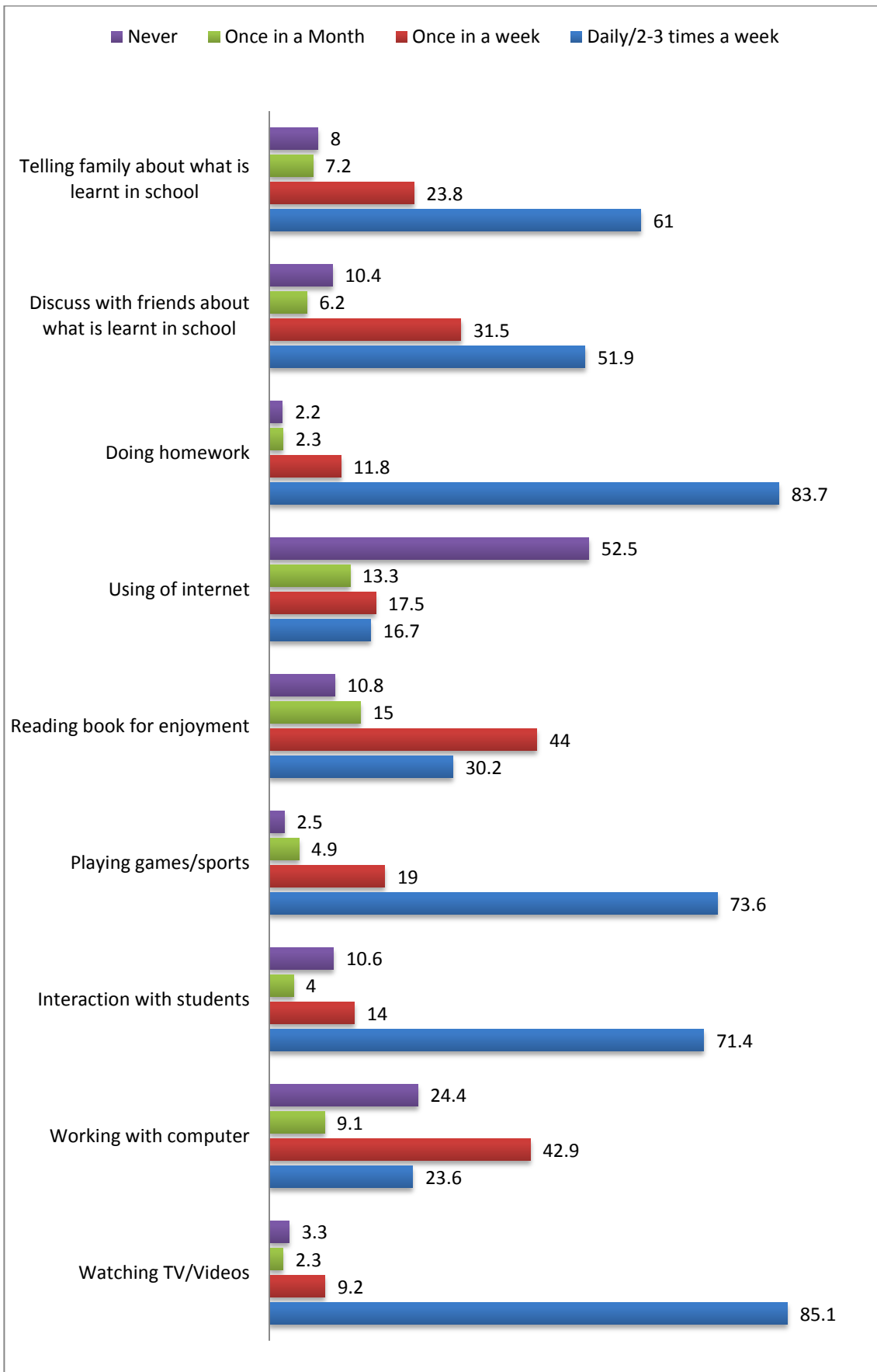


Fig.7.6.3: Activities by Students of Goa State outside the School Hours

7.7 Activities Performed at Home

7.7.1 Looking after Family members by Students

a) North Goa District

Table 7.7.1 and Figure 7.7.1 clearly show how frequently students of North Goa district used to look after their family members.

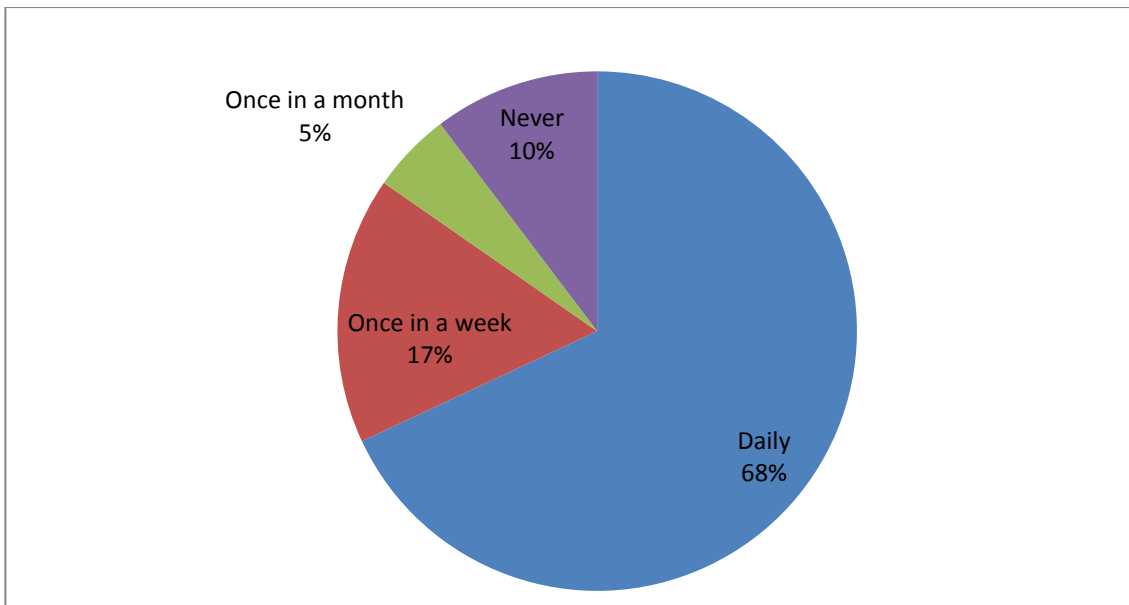


Fig.7.7.1: Looking after Family members by Students of North Goa District

Table 7.7.1: Looking after Family members by Students

Frequency	North Goa District	South Goa District	Goa State
Daily	67.9	66.2	67.1
Once in a week	16.6	17.6	17.1

Once in a month	5.0	5.4	5.2
Never	10.3	10.8	10.6
Total	100	100	100

Note- Figures indicate percentage of students.

b) South Goa District

Table 7.7.1 and Figure 7.7.2 clearly show how frequently students studying in schools located in South Goa district used to look after their family members.

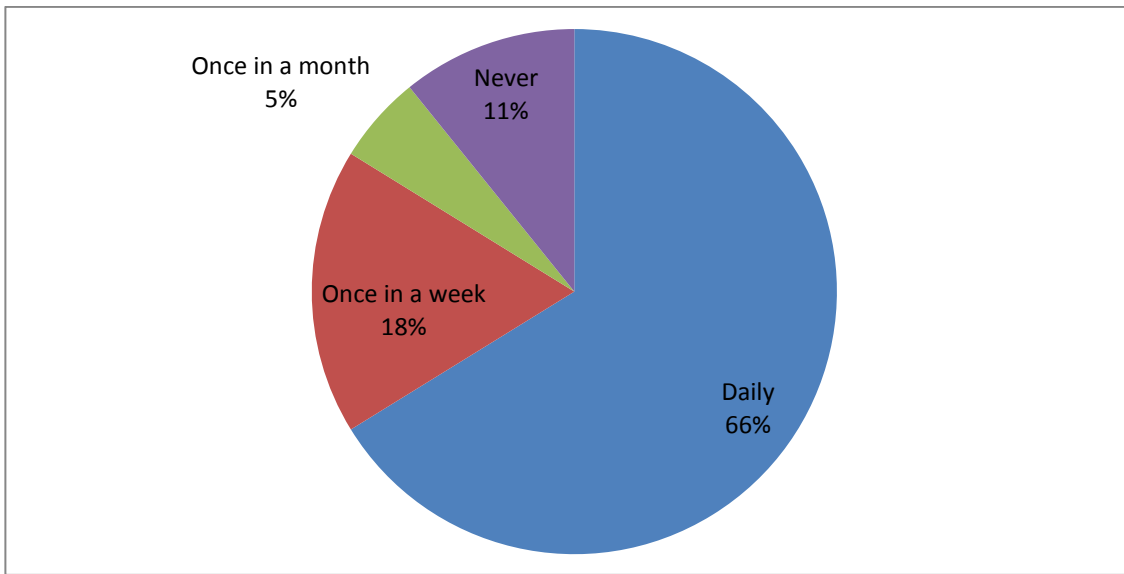


Fig.7.7.2: Looking after Family members by Students of South Goa District

c) Comparison between North Goa and South Goa Districts

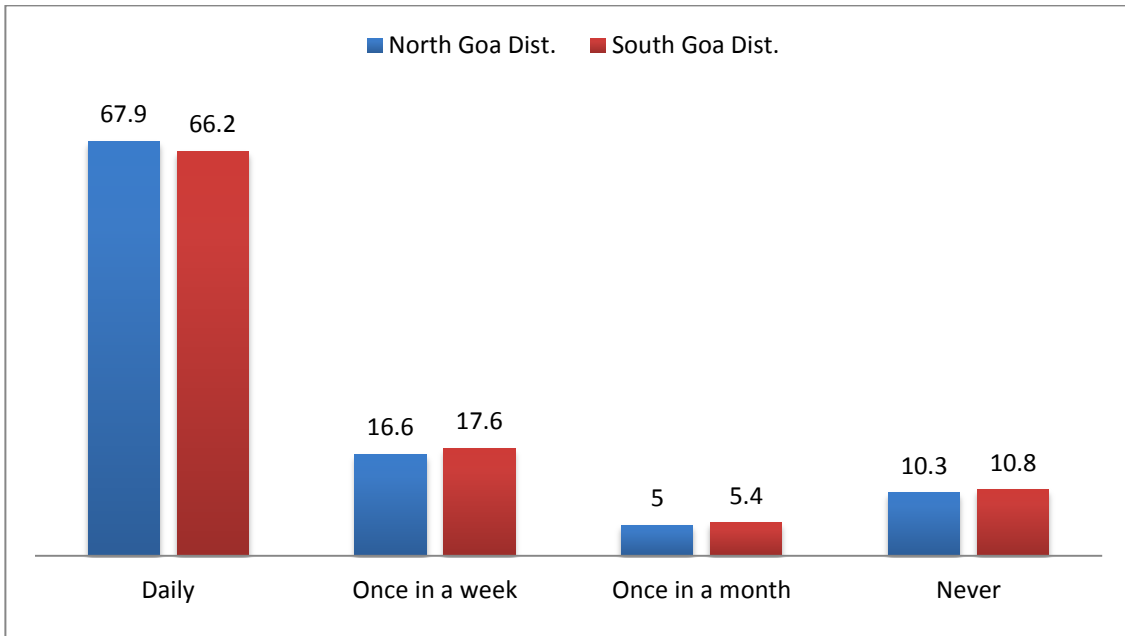


Fig.7.7.3: Looking after Family members by Students (Comparison between North Goa and South Goa Districts)

Figure 7.7.3 shows no difference in percentages of students of North Goa and South Goa looking after their family members daily, once in a week and once in a month.

d) Goa State

Two-third of the students of Class – VII of the State used to look after their family members daily, 17 percent once in a week and 5 percent once in a month (Table 7.7.1 and Figure 7.7.4). Only 11 percent never looked after their family members.

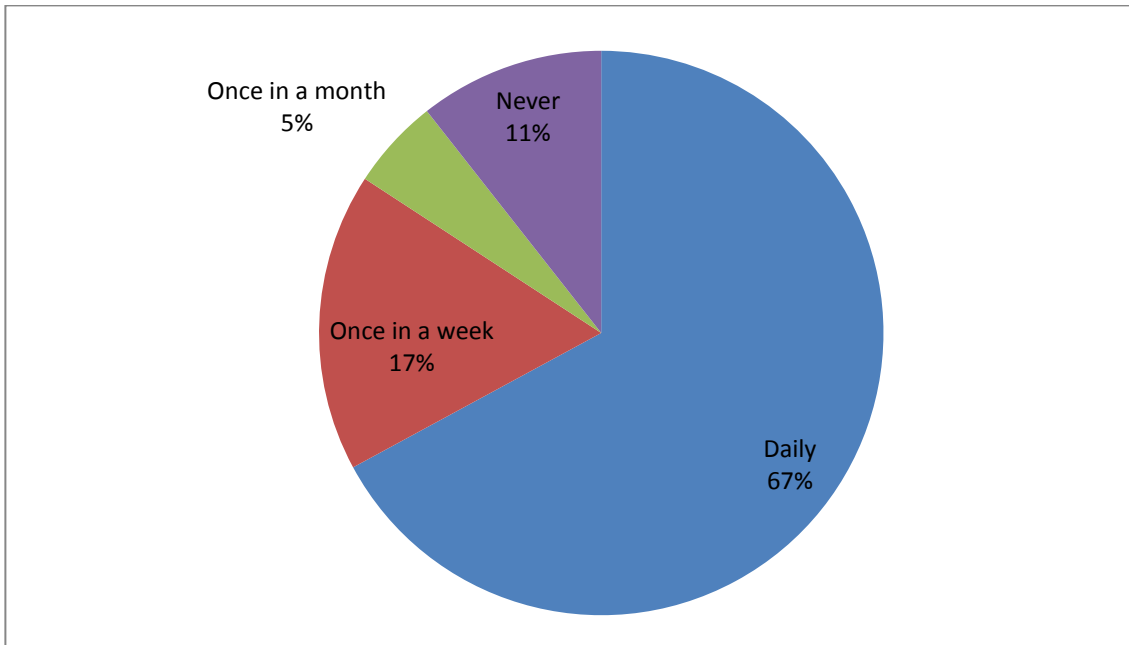


Fig.7.7.4: Looking after Family members by Students (Goa State)

7.7.2 Preparation of food at Home by Students

a) North Goa District

Table 7.7.2 and Figure 7.7.5 provide the data about percentage of students preparing food at home daily, once in a week, once in a month and never.

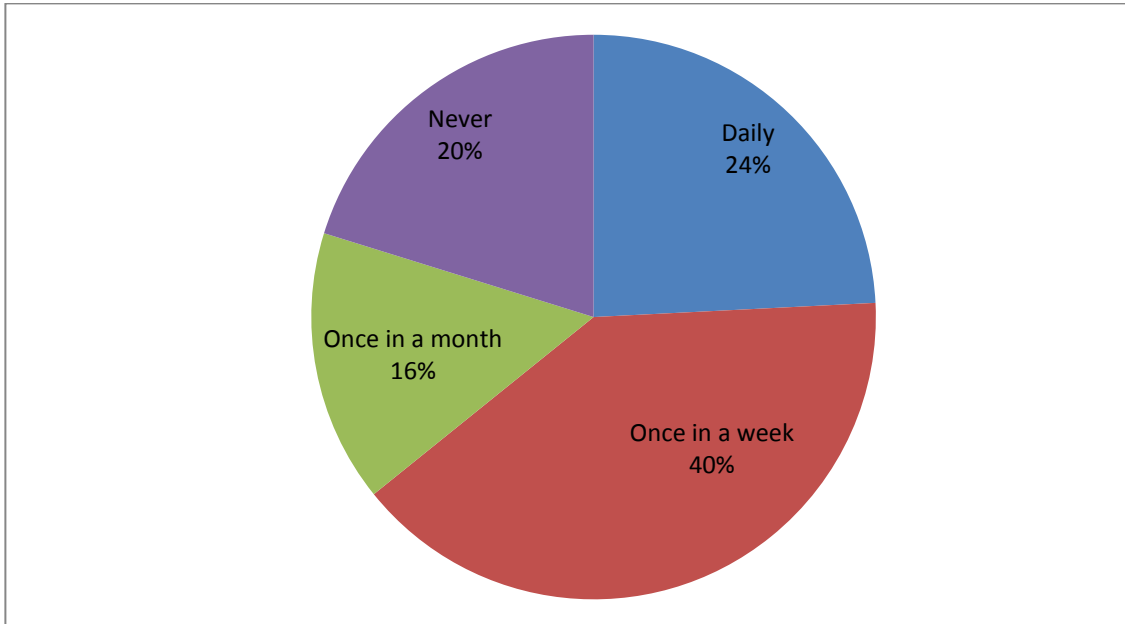


Fig.7.7.5: Preparation of food at Home by Students (North Goa District)

Table 7.7.2: Preparation of food at Home by Students

Frequency	North Goa District	South Goa District	Goa State
Daily	24.2	21.8	23.0
Once in a week	40.0	37.8	38.8
Once in a month	15.6	11.9	13.7
Never	20.2	28.5	24.3
Total	100	100	100

Note- Figures indicate percentage of students

b) South Goa District

Figure 7.7.6 shows the data about percentage of students preparing food at home daily, once in a week, once in a month and never.

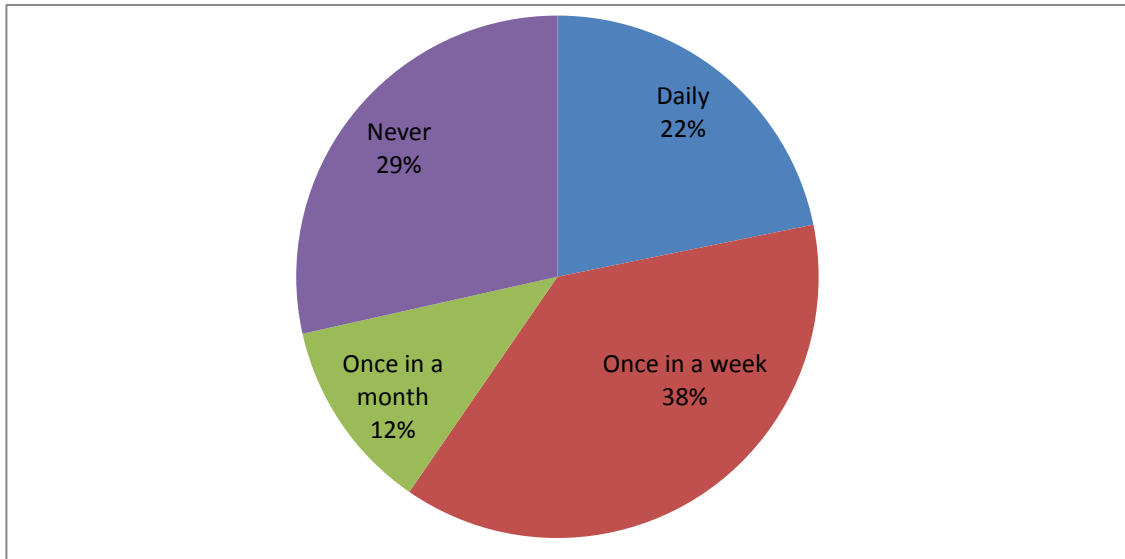


Fig.7.7.6: Preparation of food at Home by Students (South Goa District)

c) Comparison between North Goa and South Goa Districts

Table 7.7.2 and Figure 7.7.7 indicate that higher percentage of students of North Goa district than South Goa district used to prepare food at home daily, once in a week and once in a month. Higher percentage of students of South Goa district than North Goa district never used to prepare food at home.

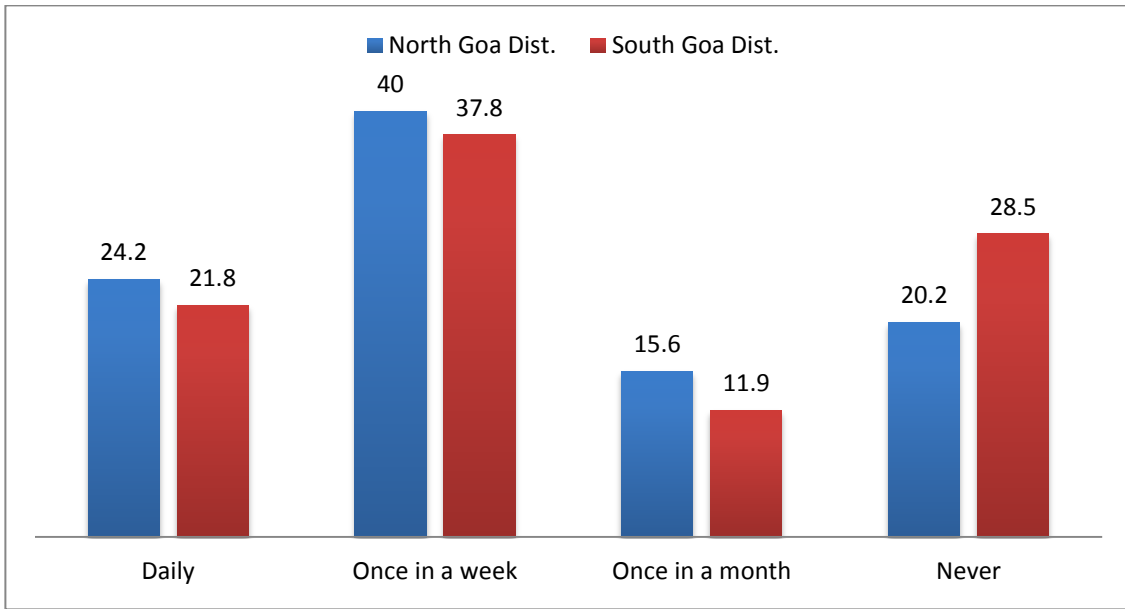


Fig.7.7.7: Preparation of food at Home by Students (Comparison between North Goa and South Goa Districts)

d) Goa State

Figure 7.7.8 shows 23 percent, 39 percent and 14 percent students of Class-VII of the State used to prepare food at home daily, once in a week and, once in a month respectively.

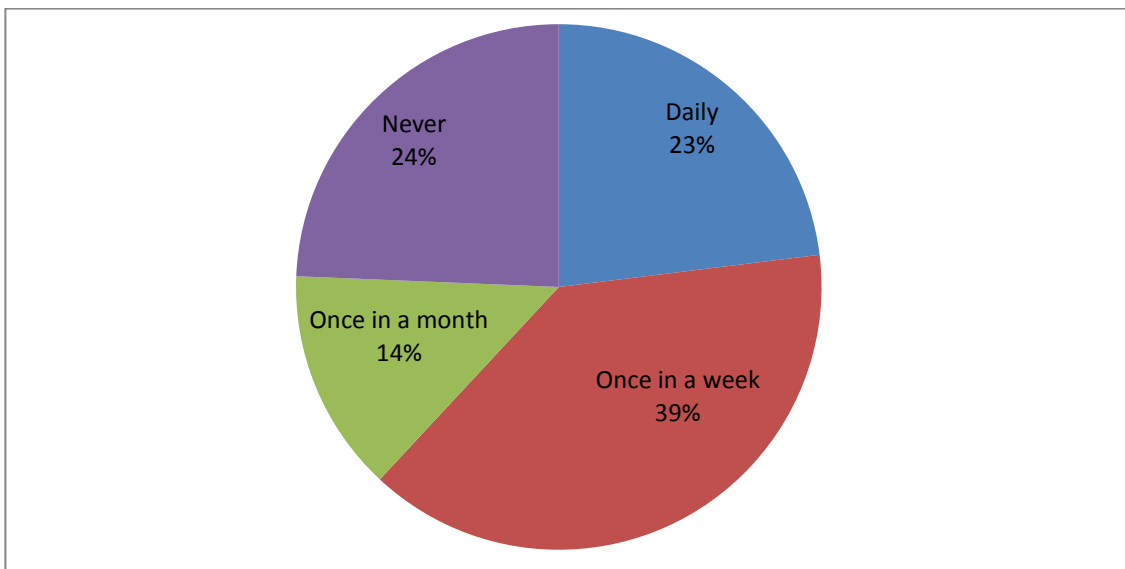


Fig.7.7.8: Preparation of food at Home by Students (Goa State)

7.7.3 Cleaning of own House by Students

a) North Goa District

Table 7.7.3: Cleaning of own House by Students

Frequency	North Goa Dist.	South Goa Dist.	Goa State
Daily	47.5	46.2	46.9
Once in a week	34.8	32.8	32.8
Once in a month	9.8	12.2	12.2
Never	7.9	8.8	8.8
Total	100	100	100

Note- Figures indicate percentage of students

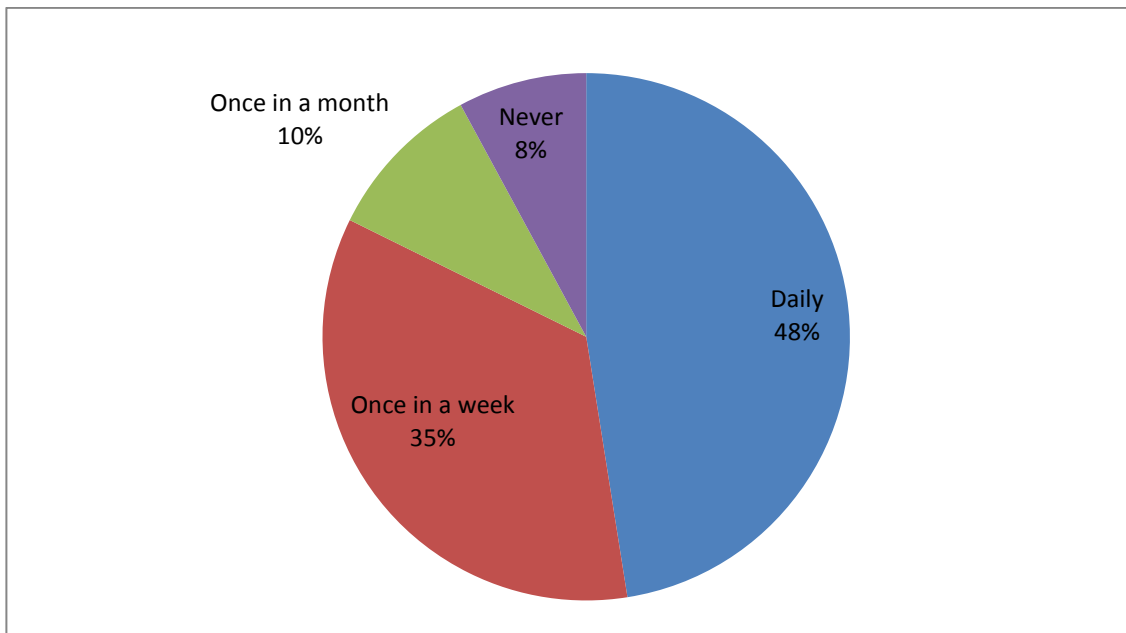


Fig.7.7.9: Cleaning of own House by Students (North Goa District)

Table 7.7.3 and Figure 7.7.9 revealed that 47 percent, 35 percent and 10 percent of students of North Goa district respectively used to clean their own house daily, once in a week and once in a month.

b) South Goa District

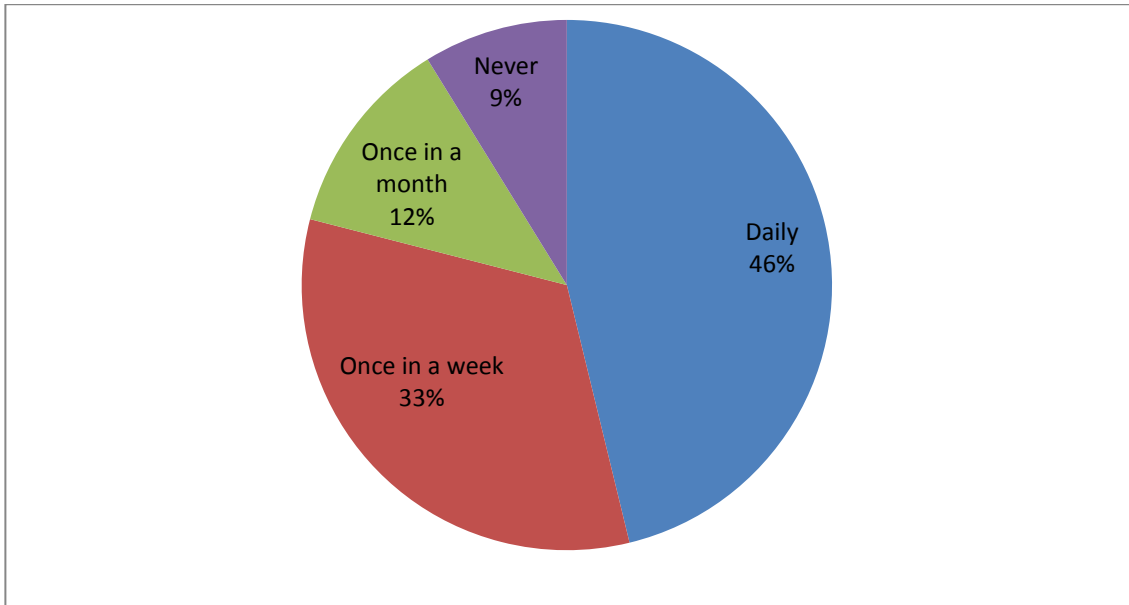


Fig.7.7.10: Cleaning of own House by Students (South Goa District)

Figure 7.7.10 and Table 7.7.3 provide information about percentages of students of South Goa district cleaning their own house daily, once in a week, once in a month and never.

c) Comparison between North Goa and South Goa Districts

Figure 7.7.11 indicated that equal percentage of students of both the districts used to clean their own house daily, once in a week and once in a month.

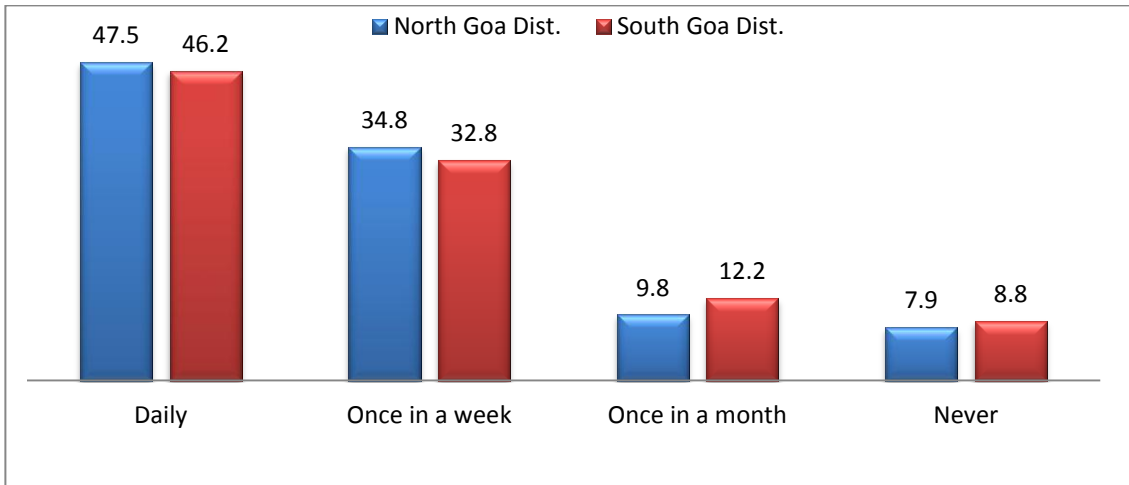


Fig.7.7.11: Cleaning of own House by Students (Comparison between North Goa and South Goa Districts)

d) Goa State

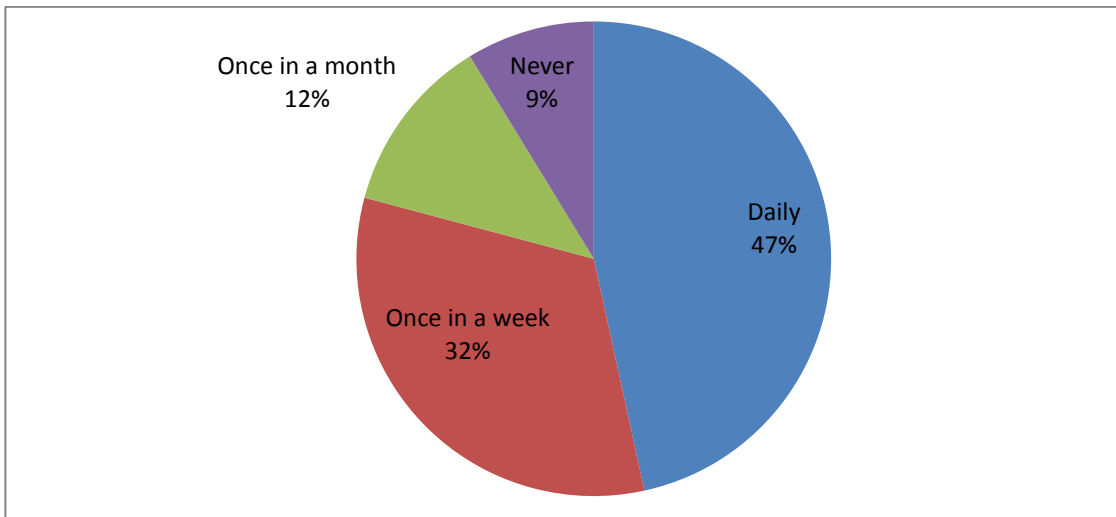


Fig.7.7.12: Cleaning of own House by Students (Goa State)

Figure 7.7.12 and Table 7.7.3 showed that 47 percent, 32 percent and 12 percent of students of Class-VII of Goa respectively used to clean their own house daily, once in a week and once in a month.

The findings relating to the household activities by students indicated that most of the students used to look after/ help their family members, prepare food/ help in preparing food at home and clean their own house though in varying frequency.

Section-II: *Regression Results*

Considering the nature of the variables under study it may not be exclusively possible to establish cause-effect relationship between the variables. But using regression analysis one could find out whether the student related variables had any influence/effect on academic performance of students in different subjects. Or at least we could determine the relationship between the student factors and their academic attainment.

In this section the regression results are presented in tabular form district-wise and findings are discussed.

7.8 Students Background Factors and Academic Achievement

7.8.1 Gender

(a) North Goa District

Table 7.8.1 indicates that girls scored 0.24 and 0.39 less in English and Mathematics respectively than boys. But in Science and Social Science girls scored 0.40 and 0.23 respectively more than boys. However none of the differences were found significant.

Table 7.8.1 Regression Results: Gender-wise (North Goa District)

Subject	Coefficient	SE	t-value	Level of Significance
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English	-0.20	0.38	0.53	Not significant
Mathematics	-0.35	0.34	1.03	Not significant
Science	0.46	0.39	1.17	Not significant
Soc. Science	0.21	0.33	0.63	Not significant

(b) South Goa District

Table 7.8.2 indicates that in South Goa sample, the girls scored 0.67 less in Mathematics than boys. But in English, Science and Social Science girls scored 0.40, 0.56 and 0.46 respectively more than boys. However none of the differences were found significant.

Table 7.8.2: Regression Results: Gender-wise (South Goa District)

Subject	Coefficient	SE	t-value	Level of Significance
English	0.31	0.45	0.69	Not significant
Mathematics	-0.71	0.39	1.82	Not significant
Science	0.47	0.43	1.09	Not significant
Soc. Science	0.31	0.30	1.03	Not significant

(c) Goa State

Girls scored 0.06 and 0.59 less in English and Mathematics respectively than boys (Table 7.8.3). In Science and Social Science girls scored 0.40 and 0.23 respectively more than boys. But none of the differences were found significant.

Table 7.8.3: Regression Results: Gender-wise (Goa State)

Subject	Coefficient	SE	t-value	Level of Significance
English	-0.03	0.30	0.10	Not significant
Mathematics	-0.51	0.27	1.88	Not significant
Science	0.39	0.29	1.34	Not significant
Soc. Science	0.21	0.23	0.91	Not significant

The findings presented above indicated that gender of students is a factor not associated with academic attainment of students. Being a boy or girl did not make any difference as far as academic attainment is concerned.

7.8.2 Category / Caste - wise

(a) North Goa District

Table 7.8.4: Regression Results: Category –wise (North Goa District)

		English	Mathematics	Science	Soc. Sci.
S.C.	Coefficient	- 1.44	- 2.51	- 1.12	- 2.47
	SE	1.32	1.36	1.44	2.02
	t-value	1.08	1.84	0.77	1.22
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
S.T.	Coefficient	0.13	-0.19	0.04	0.49
	SE	0.13	0.56	0.34	0.39
	t-value	1.06	0.34	0.12	1.25
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

OBC	Coefficient	0.17	0.29	-0.03	0.55
	SE	0.11	0.22	0.41	0.41
	t-value	1.59	1.27	0.07	1.34
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

N.S – Not significant at 0.05 level

Table 7.8.4 showed that the SC students of North Goa district scored less in all the subjects compared to the general castes/category students but the same was not significant. The scores of ST and OBC students were not different from the general caste /category students in any of the subjects

(b) South Goa District

The coefficient values in Table 7.8.5 though the scores of SC students of South Goa district in all the subjects were lower than the General category/ caste students, the differences were not significant. The scores of OBC students were not different from those of the general category/ caste students in any of the subjects. The ST students underperformed significantly in English but over performed in Mathematics compared to general category/ caste students. In Science and Social Sciences the performance of ST students was not different from general caste students.

Table 7.8.5: Regression Results: Category –wise (South Goa District)

		English	Mathematics	Science	Soc. Sci.
S.C.	Coefficient	-2.24	-0.37	-2.75	-0.82
	SE	2.09	0.86	2.09	1.89
	t-value	1.07	0.43	1.31	0.43
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
S.T.	Coefficient	-1.45	1.29	0.04	-0.32
	SE	0.52	0.33	0.40	0.42
	t-value	2.79	3.90	0.10	0.76

	Level of Sig.	0.01	0.01	N.S.	N.S.
OBC	Coefficient	-0.71	0.54	0.78	0.56
	SE	0.62	0.41	0.61	0.54
	t-value	1.15	1.32	1.28	1.03
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

N.S – Not significant at 0.05 level

(c) Goa State

As far as the entire sample is concerned it was found that the SC students scored significantly lower than the general caste students in all the four subjects but the difference was significant in the case of English and Mathematics and not in Science and Social Science (Table 7.8.6). The ST students scored higher than the general caste students in Mathematics and both groups exhibited equal performance in other three subjects. The performance of OBC students was same as that of the general caste students in all four subjects.

Table 7.8.6: Regression Results: Category –wise (Goa State)

		English	Mathematics	Science	Soc. Sci.
S.C.	Coefficient	-2.59	-2.06	-1.81	-2.28
	SE	1.19	1.01	1.19	1.49
	t-value	2.17	2.04	1.52	1.53
	Level of Sig.	0.05	0.05	N.S.	N.S.
S.T.	Coefficient	-0.38	1.04	0.39	0.21
	SE	1.65	0.29	0.31	0.24
	t-value	0.23	3.58	1.26	0.87
	Level of Sig.	N.S.	0.05	N.S.	N.S.
	Coefficient	-0.43	0.30	0.10	0.40
	SE	1.15	0.20	0.37	0.31
	t-value	0.37	1.50	0.27	1.29

OBC	Level of Sig.	N.S.	N.S.	N.S.	N.S.
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N.S – Not significant at 0.05 level

7.8.3 Physical Health Status

(a) North Goa District

The coefficient values in Table 7.8.7 indicate that though the physically challenged students of North Goa district scored lower than the other students in English, Mathematics and Science, the differences were not significant.

Table 7.8.7 Regression Results: Physically Challenged (North Goa District)

Subject	Coefficient	SE	t-value	Level of Significance
English	-1.13	1.40	0.81	Not significant
Mathematics	-1.07	1.24	0.86	Not significant
Science	-1.99	1.44	1.38	Not significant
Soc. Science	0.03	1.33	0.02	Not significant

(b) South Goa District

Table 7.8.8 showed that the physically challenged students of South Goa district scored 4.22, 1.67, 3.27 and 3.31 less respectively in English, Mathematics, Science and Social Science than the physically normal children.

Table 7.8.8: Regression Results: Physically Challenged (South Goa District)

Subject	Coefficient	SE	t-value	Level of Significance
English	- 4.22	1.02	4.13	0.01
Mathematics	-1.67	0.74	2.27	0.05
Science	- 3.27	1.03	3.17	0.01
Soc. Science	- 3.31	0.93	3.54	0.01

c) Goa State

Table 7.8.9 revealed that physically challenged students of Class- VII of Goa underperformed in English, Mathematics and Science compared to the students who were physically normal. In Social Science also the former scored less than the latter but the difference was statistically not significant.

Table 7.8.9 Regression Results: Physically Challenged (Goa State)

Subject	Coefficient	SE	t-value	Level of Significance
English	- 2.76	0.91	3.03	0.01.
Mathematics	-1.28	0.59	2.17	0.05
Science	- 2.56	0.83	3.08	0.01
Soc. Science	-1.87	1.26	1.48	Not significant

7.8.4 Educational Status of Parents

(a) North Goa District

Compared to the children of illiterate parents (Fathers), the children of literate parents (fathers) performed significantly better in English and Science (Table 7.8.10). Similarly, the children of parents (fathers) studied up to primary stage scored higher in Mathematics and Science than the children of fathers who were illiterate. The children of parents (fathers) educated beyond primary stage scored significantly higher than those whose parents were illiterate in all subjects. Table 7.8.10 also indicated that higher the educational qualifications of parents (fathers), higher the performance of children. Similar results were found with regard to the relationship between academic performance of students and mothers' educational qualifications (Table 7.8.11).

Table 7.8.10: Regression Results: Fathers' Education (North Goa District)

		English	Maths.	Science	Soc. Sci.
Literate	Coefficient	2.09	1.59	2.47	1.61
	SE	0.97	0.88	0.94	0.88
	t-value	2.15	1.79	2.62	1.83
	Level of Sig.	0.05	N.S	0.01	N.S
Primary	Coefficient	0.85	1.37	1.64	0.97
	SE	0.75	0.70	0.71	0.68
	t-value	1.13	1.97	2.32	1.44
	Level of Sig.	N.S	0.05	0.05	N.S
	Coefficient	2.05	2.62	2.71	2.21

Secondary	SE	0.69	0.66	0.72	0.67
	t-value	2.99	3.96	3.75	3.28
	Level of Sig.	0.01	0.01	0.01	0.01
Higher Sec.	Coefficient	3.45	2.79	3.61	3.17
	SE	0.81	0.68	0.81	0.78
	t-value	4.26	4.09	4.47	4.06
	Level of Sig.	0.01	0.01	0.01	0.01
Bachelor Deg.	Coefficient	9.19	6.76	9.29	7.30
	SE	1.06	1.08	1.10	1.03
	t-value	8.66	6.25	8.46	7.10
	Level of Sig.	0.01	0.01	0.01	0.01
Masters Deg.	Coefficient	9.29	5.36	7.00	8.58
	SE	1.21	1.30	1.27	1.21
	t-value	7.66	4.15	5.50	7.08
	Level of Sig.	0.01	0.01	0.01	0.01

N.S – Not significant at 0.05 level

Table 7.8.11: Regression Results: Mothers' Education (North Goa District)

		English	Maths.	Science	Soc. Sci.
Literate	Coefficient	2.01	1.45	1.61	1.96
	SE	0.84	0.82	0.84	0.82
	t-value	2.39	1.75	1.93	2.37
	Level of Sig.	0.05	N.S	N.S	0.05
	Coefficient	0.67	0.12	0.66	0.72
	SE	0.65	0.56	0.65	0.60

Primary	t-value	1.03	0.21	1.02	1.20
	Level of Sig.	N.S	N.S	N.S	N.S
Secondary	Coefficient	2.46	2.13	2.65	2.60
	SE	0.62	0.59	0.64	0.61
	t-value	3.95	3.60	4.17	4.25
	Level of Sig.	0.01	0.01	0.01	0.01
Higher Sec.	Coefficient	4.53	2.77	4.36	3.60
	SE	0.72	0.69	0.74	0.68
	t-value	6.33	4.03	5.87	5.28
	Level of Sig.	0.01	0.01	0.01	0.01
Bachelor Deg.	Coefficient	8.02	5.21	8.28	7.76
	SE	0.95	0.99	1.03	0.96
	t-value	8.66	5.27	8.00	8.08
	Level of Sig.	0.01	0.01	0.01	0.01
Masters Deg.	Coefficient	12.14	6.44	9.70	10.09
	SE	1.60	1.76	1.72	1.65
	t-value	7.61	3.67	5.62	6.13
	Level of Sig.	0.01	0.01	0.01	0.01

N.S – Not significant at 0.05 level

(b) South Goa District

Table 7.8.12: Regression Results: Fathers' Education (South Goa District)

		English	Maths.	Science	Soc. Sci.
	Coefficient	-0.29	1.30	0.88	0.48
	SE	1.00	0.78	0.91	0.80

Literate	t-value	0.29	1.68	0.97	0.60
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Primary	Coefficient	-0.01	1.54	1.04	0.82
	SE	0.87	0.64	0.72	0.65
	t-value	0.01	2.40	1.45	1.25
	Level of Sig.	N.S	0.05	N.S	N.S
Secondary	Coefficient	3.14	3.30	3.40	3.24
	SE	0.79	0.62	0.70	0.63
	t-value	3.99	5.30	4.81	5.15
	Level of Sig.	0.01	0.01	0.01	0.01
Higher Sec.	Coefficient	4.41	3.98	4.46	4.80
	SE	0.90	0.75	0.83	0.68
	t-value	4.88	5.33	5.35	7.07
	Level of Sig.	0.01	0.01	0.01	0.01
Bachelor Deg.	Coefficient	6.87	5.81	7.31	6.96
	SE	1.00	0.79	0.95	0.79
	t-value	6.87	7.32	7.67	8.80
	Level of Sig.	0.01	0.01	0.01	0.01
Masters Deg.	Coefficient	9.95	8.15	10.13	8.53
	SE	2.23	1.58	1.98	1.78
	t-value	4.47	5.15	5.12	4.78
	Level of Sig.	0.01	0.01	0.01	0.01

N.S – Not significant at 0.05 level

Table 7.8.13: Regression Results: Mothers' Education (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	1.80	2.10	1.96	0.94

Literate	SE	0.99	0.72	0.83	0.75
	t-value	1.82	2.89	2.37	1.25
	Level of Sig.	N.S	0.01	0.05	N.S
Primary	Coefficient	2.51	2.40	2.36	0.99
	SE	0.76	0.60	0.65	0.58
	t-value	3.28	3.96	3.64	1.71
	Level of Sig.	0.01	0.01	0.01	N.S
Secondary	Coefficient	2.89	2.49	2.76	2.89
	SE	0.62	0.48	0.58	0.49
	t-value	4.67	5.22	4.78	5.94
	Level of Sig.	0.01	0.01	0.01	0.01
Higher Sec.	Coefficient	5.75	3.14	4.72	4.75
	SE	0.79	0.59	0.73	0.64
	t-value	7.27	5.36	6.48	7.40
	Level of Sig.	0.01	0.01	0.01	0.01
Bachelor Deg.	Coefficient	7.60	6.68	8.15	7.06
	SE	0.96	0.75	0.93	0.77
	t-value	7.91	8.94	8.72	9.18
	Level of Sig.	0.01	0.01	0.01	0.01
Masters Deg.	Coefficient	9.95	8.15	10.12	8.53
	SE	2.22	1.58	1.99	1.78
	t-value	4.46	5.15	5.12	4.78
	Level of Sig.	0.01	0.01	0.01	0.01

N.S – Not significant at 0.05 level

No significant difference was found (Table 7.8.12) between the performance of children whose fathers were illiterate and those who studied up to primary stage except in Mathematics. The children of parents (fathers) educated up to secondary stage and above scored significantly higher in all subjects than those whose fathers were illiterate. Table 7.8.12 revealed that higher the educational qualifications of fathers, higher the academic performance of children. Similar results were reported

as far as the relationship between academic performance of students and mothers' educational qualification was concerned (Table 7.8.13).

(c) Goa State

Table 7.8.14: Regression Results: Father's Education (Goa State)

		English	Maths.	Science	Soc. Sci.
Literate	Coefficient	0.81	1.42	1.60	0.98
	SE	0.71	0.58	0.66	0.59
	t-value	1.15	2.43	2.44	1.66
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Primary	Coefficient	0.31	1.44	1.26	0.88
	SE	0.58	0.45	0.51	0.47
	t-value	0.53	3.05	2.48	1.87
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Secondary	Coefficient	2.40	2.90	2.91	2.64
	SE	0.53	0.45	0.51	0.46
	t-value	4.48	6.40	5.69	5.71
	Level of Sig.	0.01	0.01	0.01	0.01
Higher Sec.	Coefficient	3.65	3.27	3.83	3.89
	SE	0.61	0.50	0.58	0.52
	t-value	5.97	6.50	6.58	7.45
	Level of Sig.	0.01	0.01	0.01	0.01
Bachelors' Deg.	Coefficient	7.93	6.22	8.25	7.14
	SE	0.70	0.65	0.72	0.63
	t-value	10.86	9.51	11.44	11.23
	Level of Sig.	0.01	0.01	0.01	0.01
Masters'	Coefficient	9.28	8.87	8.22	9.34
	SE	1.09	0.97	1.05	0.96
	t-value	8.53	7.07	7.83	9.78

Deg.	Level of Sig.	0.01	0.01	0.01	0.01
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N.S – Not significant at 0.05 level

Table 7.8.15: Regression Results: Mother's Education (Goa State)

		English	Maths.	Science	Soc. Sci.
Literate	Coefficient	1.69	1.76	1.57	1.34
	SE	0.66	0.54	0.59	0.55
	t-value	2.55	3.25	2.66	2.42
	Level of Sig.	0.05	0.01	0.01	0.05
Primary	Coefficient	1.18	1.12	1.21	0.70
	SE	0.51	0.41	0.46	0.70
	t-value	2.32	2.71	2.63	1.68
	Level of Sig.	0.05	0.01	0.01	N.S.
Secondary	Coefficient	2.38	2.27	2.46	2.56
	SE	0.44	0.37	0.42	0.38
	t-value	5.43	6.13	5.80	6.72
	Level of Sig.	0.01	0.01	0.01	0.01
Higher Sec.	Coefficient	4.81	2.87	4.29	3.95
	SE	0.53	0.44	0.51	0.46
	t-value	9.05	6.54	8.39	8.57
	Level of Sig.	0.01	0.01	0.01	0.01
Bachelors' Deg.	Coefficient	7.73	5.89	8.11	7.40
	SE	0.67	0.60	0.68	0.60
	t-value	11.52	9.88	11.86	12.40
	Level of Sig.	0.01	0.01	0.01	0.01
Masters' Deg.	Coefficient	10.91	7.34	9.61	9.53
	SE	1.34	1.15	1.27	1.18
	t-value	8.14	6.40	7.52	8.05
	Level of Sig.	0.01	0.01	0.01	0.01

N.S – Not significant at 0.05 level

No significant difference was found (Table 7.8.14) between the performance of children whose fathers were illiterate and those who were literate and those studied up to primary stage. But the children of parents (fathers) educated up to secondary stage and above scored significantly higher in all subjects than those whose fathers were illiterate. The coefficient values in Table 7.8.14 clearly revealed that higher the educational qualifications of fathers, higher the academic performance of children of Class-VII of the State of Goa. The children whose mothers were literate and studied beyond primary stage scored higher in all subjects than those whose mothers were illiterate. Also, the coefficient values in Table 7.8.15 showed that higher the educational qualifications of mothers, higher the academic performance of children of Class-VII of the State of Goa

7.8.5 Facilities at Home

(a) North Goa District

Table 7.8.16: Regression Results: Facilities at Home (North Goa District).

		English	Maths.	Science	Soc. Sci.
Calculator	Coefficient	3.60	2.25	2.87	3.40
	SE	0.39	0.36	0.41	0.37
	t-value	9.17	6.28	7.05	9.18
	Level of Sig.	0.01	0.01	0.01	0.01
Computer	Coefficient	3.34	1.71	3.13	2.71
	SE	0.40	0.37	0.41	0.38
	t-value	8.26	4.65	7.56	7.07
	Level of Sig.	0.01	0.01	0.01	0.01
Study Desk	Coefficient	2.91	1.41	2.45	2.00
	SE	0.38	0.35	0.39	0.37
	t-value	7.60	4.04	6.23	5.47
	Level of Sig.	0.01	0.01	0.01	0.01
Dictionary	Coefficient	3.25	2.32	3.06	2.78
	SE	0.52	0.47	0.53	0.49
	t-value	6.30	4.99	5.80	5.70
	Level of Sig.	0.01	0.01	0.01	0.01
	Coefficient	2.48	0.83	2.52	1.90

Internet	SE	0.44	0.40	0.45	0.42
	t-value	5.63	2.07	5.58	4.56
	Level of Sig.	0.01	0.05	0.01	0.01
Newspaper	Coefficient	3.47	2.68	3.03	3.00
	SE	0.37	0.33	0.38	0.35
	t-value	9.45	8.05	7.98	8.61
	Level of Sig.	0.01	0.01	0.01	0.01
Magazine	Coefficient	3.77	2.27	3.43	3.55
	SE	0.49	0.44	0.50	0.46
	t-value	7.77	5.13	6.88	7.74
	Level of Sig.	0.01	0.01	0.01	0.01

All the coefficient values in Table 7.8.16 were found significant. It indicated that each of the listed facilities at home had positive influence on performance in all four subjects of students of the schools located in North Goa district.

(b) South Goa District

Table 7.8.17: Regression Results: Facilities at Home (South Goa District)

		English	Maths	Science	Soc. Sci.
Calculator	Coefficient	2.14	1.16	1.86	1.84
	SE	0.47	0.39	0.45	0.38
	t-value	4.54	2.96	4.17	4.80
	Level of Sig.	0.01	0.01	0.01	0.01
Computer	Coefficient	1.19	-0.16	0.28	1.55
	SE	0.45	0.37	0.43	0.37
	t-value	2.62	0.41	0.66	4.23
	Level of Sig.	0.01	N.S.	N.S.	0.01
Study Desk	Coefficient	2.69	1.74	2.35	2.07
	SE	0.48	0.40	0.46	0.39
	t-value	5.57	4.33	5.15	5.29
	Level of Sig.	0.01	0.01	0.01	0.01
Dictionary	Coefficient	1.27	1.34	2.69	2.03
	SE	0.62	0.51	0.57	0.50
	t-value	2.06	2.63	4.67	4.09

	Level of Sig.	0.05	0.01	0.01	0.01
Internet	Coefficient	3.07	1.52	2.55	2.54
	SE	0.57	0.47	0.54	0.46
	t-value	5.42	3.21	4.76	5.53
	Level of Sig.	0.01	0.01	0.01	0.01
Newspaper	Coefficient	3.47	2.72	3.20	2.76
	SE	0.45	0.37	0.42	0.36
	t-value	7.77	7.32	7.59	7.61
	Level of Sig.	0.01	0.01	0.01	0.01
Magazine	Coefficient	3.91	2.05	2.74	3.10
	SE	0.56	0.47	0.53	0.46
	t-value	6.97	4.36	5.12	6.80
	Level of Sig.	0.01	0.01	0.01	0.01

N.S – Not significant at 0.05 level

All the coefficient values except two in Table 7.8.17 were found significant. It revealed that each of the listed facilities at home had positive impact on performance of students of the schools located in South Goa district.

(c) Goa State

Table 7.8.18: Regression Results: Facilities at Home (Goa State)

		English	Maths.	Science	Soc. Sci.
Calculator	Coefficient	2.80	1.67	2.30	2.58
	SE	0.31	0.27	0.30	0.27
	t-value	9.03	6.27	7.60	9.63
	Level of Sig.	0.01	0.01	0.01	0.01
Computer	Coefficient	2.51	0.92	1.87	2.24
	SE	0.30	0.26	0.29	0.26
	t-value	8.35	3.53	6.34	8.62
	Level of Sig.	0.01	0.01	0.01	0.01
Study Desk	Coefficient	2.92	1.63	2.50	2.10
	SE	0.31	0.26	0.30	0.27
	t-value	9.56	6.21	8.35	7.86

	Level of Sig.	0.01	0.01	0.01	0.01
Dictionary	Coefficient	2.25	1.83	2.86	2.40
	SE	0.40	0.35	0.39	0.35
	t-value	5.57	5.30	7.03	6.88
	Level of Sig.	0.01	0.01	0.01	0.01
Internet	Coefficient	2.60	1.07	2.42	2.11
	SE	0.36	0.31	0.35	0.31
	t-value	7.29	3.48	6.96	6.80
	Level of Sig.	0.01	0.01	0.01	0.01
Newspaper	Coefficient	3.36	2.64	3.03	2.82
	SE	0.29	0.25	0.28	0.25
	t-value	11.60	10.59	10.66	11.20
	Level of Sig.	0.01	0.01	0.01	0.01
Magazine	Coefficient	3.87	2.19	3.11	3.34
	SE	0.37	0.32	0.37	0.32
	t-value	10.38	6.78	8.49	10.32
	Level of Sig.	0.01	0.01	0.01	0.01

All the coefficient values in Table 7.8.18 were found significant at 0.01 level. The findings thus revealed that each of the listed facilities at home had positive effect on performance of students of Goa in all the four subjects.

7.8.6 Number of Books at Home

(a) North Goa District

In the case of North Goa district it was observed that compared to the students having no books, the students having 1-10 books scored more in English, students having 11-25 books performed better in Science and Social Science and students having more than 25 books scored higher in all the four subject (Table 7.8.19).

Table 7.8.19: Regression Results: Books at Home (North Goa District)

		English	Maths.	Science	Soc. Sci.
1 - 10	Coefficient	1.14	0.88	3.19	-0.91
	SE	0.78	0.66	0.77	0.75
	t-value	0.81	1.34	4.11	1.21
	Level of Sig.	N.S	N.S	0.01	N.S
11 - 25	Coefficient	-0.62	0.32	2.58	1.97
	SE	0.72	0.57	0.72	0.66
	t-value	0.86	0.55	3.57	2.96
	Level of Sig.	N.S	N.S	0.01	0.01
>25	Coefficient	1.21	- 0.18	2.02	1.46
	SE	0.51	0.44	0.52	0.49
	t-value	2.37	0.40	3.88	2.99
	Level of Sig.	0.05	N.S	0.01	0.01

N.S – Not significant at 0.05 level

(b) South Goa District

Table 7.8.20 shows that the students who had more than 25 books scored significantly higher in English and Mathematics than the students who did not have any books at home. The other coefficients were not found significant.

Table 7.8.20: Regression Results: Books at Home (South Goa District)

		English	Maths.	Science	Soc. Sci.
1 - 10	Coefficient	1.53	- 0.55	0.45	0.69
	SE	0.86	0.67	0.81	0.72
	t-value	1.77	0.83	0.54	0.96

	Level of Sig.	N.S	N.S	N.S	N.S
11 - 25	Coefficient	- 0.26	0.80	1.33	-0.07
	SE	0.76	0.63	0.78	0.64
	t-value	0.34	1.27	1.71	0.11
	Level of Sig.	N.S	N.S	N.S	N.S
> 25	Coefficient	1.28	1.15	0.41	0.87
	SE	0.63	0.53	0.60	0.51
	t-value	2.03	2.17	0.68	1.72
	Level of Sig.	0.05	0.05	N.S	N.S

N.S – Not significant at 0.05 level

(c) Goa State

Coefficient values in Table 7.8.21 revealed the following:

- Students of Class-VII of the State of Goa who had other books at home scored significantly higher in all subjects than those who did not have any other books at home.
- The more the number of other books, the higher the performance of students in different subjects.

Table 7.8.21: Regression Results: Books at Home (Goa State)

		English	Maths.	Science	Soc. Sci.
1 - 10	Coefficient	1.46	1.60	1.59	1.17
	SE	0.40	0.35	0.38	0.34
	t-value	3.63	4.55	4.14	3.41

	Level of Sig.	0.01	0.01	0.01	0.01
11 - 25	Coefficient	2.77	2.33	2.85	2.27
	SE	0.49	0.44	0.49	0.45
	t-value	5.61	5.28	5.84	5.03
	Level of Sig.	0.01	0.01	0.01	0.01
> 25	Coefficient	4.88	3.73	4.99	4.44
	SE	0.47	0.42	0.47	0.42
	t-value	10.29	8.85	10.5	10.54
	Level of Sig.	0.01	0.01	0.01	0.01

7.8.7 Mode of Conveyance

(a) North Goa District

Table 7.8.22 indicates that students of North Goa district who used to go to school by walking and those who used bicycle and school bus as modes of transport did not differ significantly in their achievement in any of the school subjects. But the students using public bus and own vehicles performed better than those going school by walking.

Table 7.8.22: Regression Results: Mode of Conveyance (North Goa District)

		English	Maths.	Science	Soc. Sci.
Cycle	Coefficient	0.24	-3.08	1.28	0.05
	SE	1.79	1.72	1.88	1.63
	t-value	0.13	1.78	0.68	0.03

	Level of Sig.	N.S	N.S	N.S	N.S
Public Bus	Coefficient	1.49	0.88	1.63	2.51
	SE	0.75	0.70	0.78	0.68
	t-value	1.99	1.25	2.08	3.71
	Level of Sig.	0.01	N.S	0.05	0.01
School Bus	Coefficient	1.00	0.69	0.79	0.56
	SE	0.52	0.38	0.41	0.38
	t-value	1.92	1.83	1.90	1.45
	Level of Sig.	N.S	N.S	N.S	N.S
Own Vehicle.	Coefficient	3.99	1.34	4.52	4.00
	SE	0.71	0.66	0.74	0.65
	t-value	5.62	2.04	6.09	6.14
	Level of Sig.	0.01	0.05	0.01	0.01

N.S – Not significant at 0.05 level

(b) South Goa District

The students of South Goa reaching school using bicycle and public bus and those attending school by walking did not differ significantly in their academic performance in any of the subjects. But, students using school bus and own vehicles as means of transport scored higher than those going school by walking.

Table 7.8.23: Regression Results: Mode of Conveyance (South Goa District)

	English	Maths.	Science	Soc. Sci.
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Cycle	Coefficient	-1.24	-0.58	-0.72	-0.20
	SE	1.72	1.46	1.52	1.33
	t-value	0.72	0.40	0.47	0.15
	Level of Sig.	N.S	N.S	N.S	N.S
Public Bus	Coefficient	2.23	0.81	1.79	0.71
	SE	1.18	0.99	1.05	0.92
	t-value	1.89	0.83	1.70	0.77
	Level of Sig.	N.S	N.S	N.S	N.S
School bus	Coefficient	-1.89	-1.05	-0.76	-0.84
	SE	0.49	0.42	0.47	0.40
	t-value	3.86	2.52	1.63	2.10
	Level of Sig.	0.01	0.05	N.S	0.05
Own Vehicle	Coefficient	2.32	0.45	1.46	2.07
	SE	0.86	0.72	0.79	0.68
	t-value	2.69	0.67	1.85	3.05
	Level of Sig.	0.01	N.S	N.S	0.01

N.S – Not significant at 0.05 level

(c) Goa State

The coefficient values in Table 7.8.24 and the corresponding t-values indicated that the students of the State using cycle and school bus as modes of conveyance to reach school and the students reaching school by walking did not differ in their academic achievement in any of the Subjects. But, students of Goa using public bus

and own vehicles in reaching school performed better than those reaching school by walking.

Table 7.8.24: Regression Results: Mode of Conveyance (Goa State)

		English	Maths.	Science	Soc. Sci.
Cycle	Coefficient	-0.163	-0.96	0.38	0.23
	SE	1.25	1.10	1.18	1.02
	t-value	0.13	0.87	0.32	0.23
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Public Bus	Coefficient	1.55	0.75	1.51	1.63
	SE	0.68	0.59	0.64	0.56
	t-value	2.27	1.27	2.33	2.89
	Level of Sig.	0.05	N.S.	0.05	0.01
School bus	Coefficient	-0.38	-0.14	0.05	-0.11
	SE	0.32	0.28	0.31	0.28
	t-value	1.18	0.50	0.17	0.38
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Own Vehicle	Coefficient	3.23	1.01	3.04	3.07
	SE	0.57	0.49	0.55	0.47
	t-value	5.68	2.05	5.57	6.50
	Level of Sig.	0.01	0.05	0.01	0.01

N.S – Not significant at 0.05 level

7.8.8 Incidents happened with the Students in School

(a) North Goa District

Table 7.8.25 showed that students hurt/hit by fellow students and others making fun of a student had negative impact on achievement in Mathematics. Making students

do something against their wish affected negatively performance of students of North Goa in English, Mathematics and Science.

Table 7.8.25: Regression Results: Incidents in School (North Goa District)

		English	Maths.	Science	Soc. Sci.
Something stolen	Coefficient	0.15	-0.60	-0.69	0.41
	SE	0.43	0.39	0.44	0.41
	t-value	0.34	1.55	1.56	1.00
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Hurt/hit by others	Coefficient	-0.24	-0.97	-0.08	0.42
	SE	0.39	0.35	0.40	0.37
	t-value	0.61	2.74	0.19	1.13
	Level of Sig.	N.S.	0.01	N.S.	N.S.
Doing something against wish	Coefficient	-1.13	-1.13	-1.46	-0.72
	SE	0.48	0.43	0.49	0.45
	t-value	2.36	2.62	2.97	1.57
	Level of Sig.	0.05	0.01	0.01	N.S.
Called by names/made fun	Coefficient	-0.01	-0.74	-0.36	0.08
	SE	0.39	0.34	0.39	0.37
	t-value	0.02	2.13	0.91	0.22
	Level of Sig.	N.S.	0.05	N.S.	N.S.
Left out of activities	Coefficient	-1.02	-0.76	-0.23	-0.56
	SE	0.50	0.45	0.51	0.48
	t-value	2.02	1.67	0.44	1.18
	Level of Sig.	0.05	N.S.	N.S.	N.S.

N.S – Not significant at 0.05 level

(b) South Goa District

Something of the student stolen in school, students hit/hurt by others, making students do something against wish and leaving students out of activities by fellow students had negative impact on students' performance in Mathematics. Students made to do something against their wish and leaving students out of activities by other fellow students had negative influence on performance of students of South Goa district in all four subjects.

Table 7.8.26: Regression Results: Incidents in School (South Goa District)

		English	Maths.	Science	Soc. Sci.
Something stolen	Coefficient	0.21	-1.15	-0.95	-0.73
	SE	0.52	0.43	0.49	0.42
	t-value	0.41	2.68	1.93	1.69
	Level of Sig.	N.S.	0.01.	N.S.	N.S.
Hurt/hit by others	Coefficient	-0.68	-1.61	-0.86	0.67
	SE	0.47	0.39	0.44	0.38
	t-value	1.43	4.13	1.93	1.76
	Level of Sig.	N.S.	0.01.	N.S.	N.S.
Doing something against wish	Coefficient	-2.71	-1.83	-2.54	-2.07
	SE	0.59	0.49	0.55	0.48
	t-value	4.60	3.74	4.56	4.33
	Level of Sig.	0.01.	0.01.	0.01.	0.01.
Called by names/made fun	Coefficient	0.11	-0.39	-0.35	-0.56
	SE	0.46	0.38	0.43	0.37
	t-value	0.24	0.62	0.81	1.50
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Left out of activities	Coefficient	-1.77	-1.13	-1.45	-1.57
	SE	0.58	0.48	0.54	0.47
	t-value	3.02	2.34	2.64	3.35
	Level of Sig.	0.01	0.05	0.01	0.01

N.S – Not significant at 0.05 level

(c) Goa State

Something of the student stolen in school had negative impact on students' performance in Mathematics and students hurt/hit by fellow students had affected students' performance in Mathematics and Social Science negatively (Table 7.8.27). Students made to do something against their wish and leaving students out of activities by other fellow students negatively influenced performance of students of the State of Goa in all four subjects.

Table 7.8.27: Regression Results: Incidents in School (Goa State)

		English	Maths.	Science	Soc. Sci.
Something stolen	Coefficient	0.15	-0.89	-0.14	-0.15
	SE	0.34	0.29	0.33	0.29
	t-value	0.43	3.08	0.40	0.51
	Level of Sig.	N.S.	0.01.	N.S.	N.S.
Hurt/hit by others	Coefficient	-0.44	-1.25	-0.43	-0.53
	SE	0.31	0.26	0.31	0.26
	t-value	1.42	4.77	1.45	1.99
	Level of Sig.	N.S.	0.01.	N.S.	0.05
Doing something against wish	Coefficient	-1.93	-1.49	-2.01	-1.38
	SE	0.38	0.33	0.37	0.33
	t-value	5.07	4.56	5.41	4.18
	Level of Sig.	0.01	0.01	0.01	0.01
Called by	Coefficient	0.24	-0.37	-0.19	-0.11

names/mad e fun	SE	0.30	0.25	0.29	0.26
	t-value	0.82	1.45	0.66	0.43
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Left out of activities	Coefficient	-1.32	-0.93	-0.80	-1.03
	SE	0.39	0.33	0.38	0.34
	t-value	3.43	2.80	2.12	3.09
	Level of Sig.	0.01	0.01	0.05	0.01

N.S – Not significant at 0.05 level

7.8.9 Absenteeism

(a) North Goa District

Table 7.8.28 indicates that students remaining absent from school for 5-15 days and 16-30 days did not affect significantly the performance of students in any of the school subjects. The students remaining absent from school less than 5 days affected negatively (significantly) their performance only in Science and not in other subjects. Students remaining absent for 30 days and more in the year 2013-14 scored significantly less in Mathematics but not in other subjects.

Table 7.8.28: Regression Results: Absent from School (North Goa District)

		English	Maths.	Science	Soc. Sci.
< 5 days	Coefficient	-0.82	-0.81	-1.33	-0.04
	SE	0.49	0.44	0.50	0.47
	t-value	1.67	1.83	2.67	0.09
	Level of Sig.	N.S	N.S	0.01	N.S
5 – 15 days	Coefficient	-0.18	-0.40	-0.02	0.58
	SE	0.65	0.60	0.68	0.61

	t-value	0.27	0.66	1.49	0.49
	Level of Sig.	N.S	N.S	N.S	N.S
16 – 30 days	Coefficient	0.37	-1.22	-1.95	-0.45
	SE	1.26	1.23	1.35	1.20
	t-value	0.30	0.98	1.44	0.38
	Level of Sig.	N.S	N.S	N.S	N.S
>30 days	Coefficient	0.59	-3.61	-3.82	-0.60
	SE	1.90	1.82	2.01	1.82
	t-value	0.31	1.99	1.90	0.33
	Level of Sig.	N.S	0.05	N.S	N.S

N.S – Not significant at 0.05 level

(b) South Goa District

It was observed that the students who were absent from school for less than 5 days in the year (2013-14) scored significantly more in all the four subjects than the students who were never absent. No significant impact of remaining absent from school for 5-15 days, 16-30 days and more than 30 days on the performance of students in any of the four subjects was found (Table 7.8.29).

Table 7.8.29: Regression Results: Absent from School (South Goa District)

		English	Maths.	Science	Soc. Sci.
< 5 days	Coefficient	1.91	1.81	1.62	1.29
	SE	0.67	0.56	0.61	0.54
	t-value	2.84	3.21	2.62	2.41
	Level of Sig.	0.01	0.01	0.01	0.05
	Coefficient	1.39	0.83	0.50	0.01

5 – 15 days	SE	0.72	0.58	0.71	0.62
	t-value	1.92	1.43	0.71	0.02
	Level of Sig.	N.S	N.S	N.S	N.S
16 – 30 days	Coefficient	-0.19	-1.59	-2.15	-0.73
	SE	1.21	0.90	1.11	1.06
	t-value	0.16	1.76	1.93	0.68
	Level of Sig.	N.S	N.S	N.S	N.S
> 30 days	Coefficient	-0.37	-0.71	-3.08	2.40
	SE	1.54	1.16	1.36	1.33
	t-value	0.24	0.62	2.26	1.80
	Level of Sig.	N.S	N.S	0.05	N.S

N.S – Not significant at 0.05 level

(c) Goa State

Table 7.8.30 shows that remaining absent from school for less than 5 days and 6-15 days did not affect the performance of students of the State of Goa in any of the subjects. But remaining absent for 16-30 days affected negatively the performance of students Mathematics and Science but not in English and Social Science. Remaining absent from school for more than 30 days affected negatively performance of students only in Science subject.

Table 7.8.30: Regression Results: Absent from School (Goa State)

		English	Maths.	Science	Soc. Sci.
< 5 days	Coefficient	0.51	0.40	0.07	0.65
	SE	0.41	0.35	0.39	0.35

	t-value	1.24	1.15	0.18	1.82
	Level of Sig.	N.S	N.S	N.S	N.S
5 – 15 days	Coefficient	0.65	0.12	-0.29	0.30
	SE	0.48	0.41	0.49	0.43
	t-value	1.38	0.30	0.58	0.70
	Level of Sig.	N.S	N.S	N.S	N.S
16 – 30 days	Coefficient	0.05	-1.61	-2.06	-0.62
	SE	0.86	0.77	0.88	0.79
	t-value	0.06	2.09	2.35	0.77
	Level of Sig.	N.S	0.05	0.05	N.S
> 30 days	Coefficient	0.03	-1.99	-3.45	-1.61
	SE	1.19	1.05	1.18	1.10
	t-value	0.02	1.89	2.92	1.46
	Level of Sig.	N.S	N.S	0.01	N.S

N.S – Not significant at 0.05 level

7.8.10 Use of Computer in School

a) North Goa District

Data in Table 7.8.31 indicate that using of computer in school by the students of North Goa district has significant positive impact on the performance in Mathematics, Science and Social Science. The students using computer frequently, once in a week and once in a Month scored 2.35, 1.86 and 1.82 respectively more in Mathematics. Students using computer once in a week scored 1.95 more in Science than the student's not using computer at all. Students using computer once in a month scored

2.85 more in Social Science than those who never use computer. No significant impact of the use of computer in school by the students on their performance in English was found.

Table 7.8.31: Regression Results: Use of Computer in School (North Goa District)

		English	Maths.	Science	Soc. Sci.
Frequently	Coefficient	-0.26	2.35	-1.15	0.96
	SE	1.01	0.93	1.10	0.96
	t-value	0.26	2.52	1.05	1.00
	Level of Sig.	N.S	0.05	N.S	N.S
Once in a Week	Coefficient	-0.48	1.86	1.95	1.36
	SE	1.00	0.88	0.99	0.92
	t-value	0.48	2.12	1.98	1.49
	Level of Sig.	N.S	0.05	0.05	N.S
Once in a Month	Coefficient	1.39	2.82	-0.10	2.85
	SE	1.39	0.99	1.41	1.19
	t-value	1.00	2.82	0.07	2.38
	Level of Sig.	N.S	0.01	N.S	0.05

(b) South Goa District

In the South Goa sample, there was significant positive effect of the use of computer in school by the students on their performance in all the four subjects irrespective of the frequency with computer was used. All the observed coefficients were found statistically significant (Table 7.8.32).

Table 7.8.32: Regression Results: Use of Computer in School (South Goa District)

		English	Maths.	Science	Soc. Sci.
Frequently	Coefficient	4.85	1.77	3.45	2.38
	SE	1.14	0.90	1.16	0.92
	t-value	4.25	1.96	2.96	2.59
	Level of Sig.	0.01	0.05	0.01	0.01
Once in a Week	Coefficient	4.24	2.22	3.34	2.54
	SE	1.16	0.97	1.07	0.94
	t-value	3.65	2.30	3.12	2.72
	Level of Sig.	0.01	0.05	0.01	0.01
Once in a Month	Coefficient	6.11	2.79	4.96	4.27
	SE	1.23	1.16	1.48	1.19
	t-value	4.97	2.40	3.35	3.60
	Level of Sig.	0.01	0.05	0.01	0.01

(c) Goa State

Students of the State of Goa who used to use computer frequently, once in a week and once in a month scored significantly more in English, Mathematics and Social Science (Table 7.8.33) than the students who never used computer in school. Students using computer once in a Month scored higher in Science than those never using computer. The finding indicated that use of computer in school by the students whether frequently or occasionally positively affected the performance of students in different school subjects.

Table 7.8.33: Regression Results: Use of Computer in School (Goa State)

		English	Maths.	Science	Soc. Sci.
	Coefficient	1.80	2.07	0.91	1.44
	SE	0.75	0.65	0.79	0.67

Frequently	t-value	2.40	3.17	1.15	2.14
	Level of Sig.	0.05	0.01	N.S.	0.05
Once in a Week	Coefficient	1.99	2.10	0.78	2.01
	SE	0.78	0.66	0.74	0.66
	t-value	2.56	3.18	1.05	3.06
	Level of Sig.	0.05	0.01	N.S.	0.01
Once in a Month	Coefficient	3.55	2.69	2.25	3.43
	SE	0.95	0.75	1.03	0.84
	t-value	3.75	3.57	2.18	4.09
	Level of Sig.	0.01	0.01	0.05	0.01

7.8.11 Borrowing of Books from Library

(a) North Goa District

Borrowing of books from school library few times in a year, once/twice in a month and once in a week impacted the performance of students negatively in Science (Table 7.8.34). The students who used to borrow books from library once/twice in a month scored 2.58 and 1.97 less in Science and Social Science respectively than the students who never borrowed books from library. Students who borrowed books once in a week scored significantly less in English, Science and Social Science than those who never borrowed books from library.

Table 7.8.34: Regression Results: Borrowing of Books from Library (North Goa District)

		English	Maths.	Science	Soc. Sci.
Few times in a year	Coefficient	-0.14	0.88	-3.19	-0.91
	SE	0.79	0.66	0.77	0.75
	t-value	0.18	1.34	4.11	1.21
	Level of Sig.	N.S	N.S	0.01	N.S
Once/twice in a month	Coefficient	0.32	0.32	-2.58.	-1.97
	SE	0.57	0.57	0.72	0.66
	t-value	0.56	0.56	3.57	2.96
	Level of Sig.	N.S	N.S	0.01	0.01
Once in a week	Coefficient	-1.20	0.18	-2.02	-1.46
	SE	0.51	0.44	0.52	0.49
	t-value	2.37	0.40	3.88	3.00
	Level of Sig.	0.05	N.S	0.01	0.01

(b) South Goa District

Table 7.8.35 shows that in the case of South Goa district sample, borrowing of books by students from library did not have significant impact on performance of students in any of the subjects.

Table 7.8.35: Regression Results: Borrowing of Books from Library (South Goa District)

		English	Maths.	Science	Soc. Sci.
Few times in a year	Coefficient	1.53	-0.55	0.45	0.69
	SE	0.86	0.67	0.81	0.72
	t-value	1.77	0.83	0.55	0.96
	Level of Sig.	N.S	N.S	N.S	N.S
Once/twice in a month	Coefficient	-0.26	0.80	-1.33	-0.07
	SE	0.76	0.63	0.78	0.64
	t-value	0.34	1.26	1.71	0.11
	Level of Sig.	N.S	N.S	N.S	N.S
Once in a week	Coefficient	1.26	1.15	0.40	0.87
	SE	0.65	0.53	0.60	0.51
	t-value	1.95	2.17	0.67	1.71
	Level of Sig.	N.S	0.05	N.S	N.S

(c) Goa State

Borrowing of books from the library had negative effect on the performance students of the state of Goa in Science and Social Science (Table 7.8.36). It was found that the students who borrowed books from the library scored significantly less in Science and Social Science than the students who did not do so.

Table 7.8.36: Regression Results: Borrowing of Books from Library (Goa State)

		English	Maths.	Science	Soc. Sci.
Few times in a year	Coefficient	0.74	0.22	-1.33	-0.10
	SE	0.58	0.47	0.57	0.52
	t-value	1.28	0.47	2.34	0.19
	Level of Sig.	N.S	N.S	0.05	N.S
Once/twice in a month	Coefficient	-0.40	0.60	-1.95	-1.00
	SE	0.52	0.43	0.53	0.46
	t-value	0.77	1.41	3.69	2.15
	Level of Sig.	N.S	N.S	0.01	0.05
Once in a week	Coefficient	0.01	0.65	-0.87	-0.35
	SE	0.41	0.34	0.40	0.35
	t-value	0.02	1.88	2.19	1.00
	Level of Sig.	N.S	N.S	0.05	N.S

7.8.12 Private Tuition**(a) North Goa District**

Table 7.8.37 shows that the students of North Goa district taking private tuition scored 1.31, 1.24, 1.69 and 1.42 less in English, Mathematics, Science and Social

Science respectively than the students who were not taking private tuition. All these differences were found statistically significant.

Table 7.8.37: Regression Results: Private Tuition (North Goa District)

Subject	Coefficient	SE	t-value	Level of Significance
English	-1.31	0.47	2.77	0.01
Mathematics	-1.24	0.42	2.95	0.01
Science	-1.69	0.48	3.52	0.01
Soc. Science	-1.42	0.44	3.19	0.01

(b) South Goa District

Students of South Goa district taking private tuition scored 1.63 less in Mathematics than the students who were not taking private tuition. In the other subjects the effect of private tuition though negative on students' performance, the same was not statistically significant (Table 7.8.38).

Table 7.8.38: Regression Results: Private Tuition (South Goa District)

Subject	Coefficient	SE	t-value	Level of Significance
English	-0.25	0.52	0.48	Not significant
Mathematics	-1.63	0.43	3.79	0.01
Science	-0.68	0.49	1.39	Not significant

Soc. Science	-0.60	0.42	1.43	Not significant
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(c) Goa State

The impact of private tuition on students' performance was significantly negative (Table 7.8.39) in the subjects except in English. The students attending private tuition scored 1.36, 1.05 and 0.91 less in Mathematics, Science and Social Science in comparison to students who did not attend the same.

Table 7.8.39: Regression Results: Private Tuition (Goa State)

Subject	Coefficient	SE	t-value	Level of Significance
English	-0.62	0.35	1.75	Not significant
Mathematics	-1.36	0.30	4.50	0.01
Science	-1.05	0.35	3.05	0.01
Soc. Science	-0.91	0.31	2.96	0.01

7.8.13 Reading of different reading materials outside the School

(a) North Goa District

Table 7.8.40 indicates that reading of stories/novels; magazines and news papers by the students of North Goa district outside the school hours had positive effect on their performance in all the four school subjects. But, reading of comic books and directions/instructions did not have any significant effect on students' performance in

any of the subjects. Reading of books that explain things positively influenced students' performance in English and Social Science and not in Mathematics and Science.

Table 7.8.40: Regression Results: Reading of materials other than Course materials (North Goa District)

		English	Maths.	Science	Soc. Sci.
Reading of Comic Books	Coefficient	0.03	-0.02	-0.09	-0.03
	SE	0.17	0.16	0.18	0.17
	t-value	0.17	0.13	0.52	0.22
	Level of Sig.	N.S	N.S	N.S	N.S
Reading of Stories/novels	Coefficient	1.16	0.85	1.00	0.96
	SE	0.19	0.17	0.20	0.18
	t-value	6.09	4.92	5.10	5.29
	Level of Sig.	0.01	0.01	0.01	0.01
Reading of Books that explain things	Coefficient	0.66	0.26	0.30	0.50
	SE	0.19	0.17	0.19	0.18
	t-value	3.44	1.52	1.53	2.75
	Level of Sig.	0.01	N.S	N.S	0.01
	Coefficient	0.83	0.47	0.58	0.45

Reading of Magazines	SE	0.19	0.17	0.19	0.18
	t-value	4.37	2.74	2.98	2.52
	Level of Sig.	0.01	0.01	0.01	0.05
Reading of News Paper	Coefficient	1.35	1.25	1.41	1.21
	SE	0.16	0.15	0.17	0.15
	t-value	8.30	8.56	8.51	7.88
	Level of Sig.	0.01	0.01	0.01	0.01
Reading of Directions/Instructions	Coefficient	0.20	-0.11	0.24	-0.01
	SE	0.17	0.15	0.17	0.16
	t-value	1.16	0.07	1.38	0.06
	Level of Sig.	N.S	N.S	N.S	N.S

(b) South Goa District

Table 7.8.41: Regression Results: Reading of materials other than Course Materials
(South Goa District)

		English	Maths.	Science	Soc. Sci.
Reading of Comic Books	Coefficient	0.27	0.03	0.32	0.40
	SE	0.21	0.18	0.20	0.17
	t-value	1.27	0.17	1.58	2.32
	Level of Sig.	N.S	N.S	N.S	0.05
Reading of Stories/novels	Coefficient	-0.09	0.10	0.28	0.24
	SE	0.25	0.21	0.24	0.21
	t-value	0.37	0.47	1.18	1.15
	Level of Sig.	N.S	N.S	N.S	N.S
Books that explain things	Coefficient	1.12	0.66	0.65	0.83
	SE	0.22	0.19	0.21	0.18
	t-value	5.01	3.51	3.06	4.56

	Level of Sig.	0.01	0.01	0.01	0.01
Reading of Magazines	Coefficient	1.12	0.85	0.61	1.10
	SE	0.23	0.19	0.22	0.18
	t-value	5.39	4.50	2.85	6.00
	Level of Sig.	0.01	0.01	0.01	0.01
Reading of News Paper	Coefficient	1.30	1.05	1.24	1.19
	SE	0.19	0.16	0.18	0.16
	t-value	6.70	6.51	6.72	7.61
	Level of Sig.	0.01	0.01	0.01	0.01
Reading of Directions/Instructions	Coefficient	1.04	0.50	0.56	0.84
	SE	0.21	0.17	0.20	0.17
	t-value	5.08	2.89	2.87	5.06
	Level of Sig.	0.01	0.01	0.01	0.01

In the case of the students of the South Goa district it was observed that Reading of books that explain things, magazines, news papers and directions/instructions by the students outside the school hours had positive effect on their performance in all the four school subjects. But reading of stories/novels and comic books did not have significant impact on performance in any of the subjects of the students of South Goa district.

(c) Goa State

Table 7.8.42: Regression Results: Reading of materials other than Course materials (Goa State)

		English	Maths.	Science	Soc. Sci.
Reading of Comic Books	Coefficient	0.09	-0.02	0.07	0.14
	SE	0.14	0.12	0.13	0.12
	t-value	0.67	0.16	0.48	1.19
	Level of Sig.	N.S	N.S	N.S	N.S

Reading of Stories/novels	Coefficient	0.59	0.50	0.67	0.63
	SE	0.16	0.13	0.15	0.14
	t-value	3.72	3.72	4.33	4.59
	Level of Sig.	0.01	0.01	0.01	0.01
Books that explain things	Coefficient	0.87	0.45	0.46	0.65
	SE	0.15	0.13	0.15	0.13
	t-value	5.85	3.51	3.17	5.06
	Level of Sig.	0.01	0.01	0.01	0.01
Reading of Magazines	Coefficient	1.02	0.65	0.60	0.77
	SE	0.15	0.13	0.14	0.13
	t-value	6.88	5.14	4.12	5.95
	Level of Sig.	0.01	0.01	0.01	0.01
Reading of News Paper	Coefficient	1.28	1.12	1.29	1.18
	SE	0.13	0.11	0.12	0.11
	t-value	10.06	10.3	10.37	10.65
	Level of Sig.	0.01	0.01	0.01	0.01
Reading of Directions/Instructions	Coefficient	0.60	0.23	0.39	0.40
	SE	0.13	0.12	0.13	0.12
	t-value	4.40	2.01	2.97	3.41
	Level of Sig.	0.01	0.01	0.01	0.01

Data in Table 7.8.42 reveals that reading of different materials by the students of the state of Goa like stories/novels, books that explains things, magazines, news papers, books giving directions/instructions influenced positively the academic performance of the students in all the four school subjects. But reading of comic books had no impact on the performance of students in any of the subjects.

7.8.14 Activities Outside the School

(a) North Goa District

Table 7.8.43 indicates that students of North Goa district engaged in different activities outside the school hours helped in improving their performance significantly in different subjects. The students watching TV and videos outside school hours scored 0.98 and 0.70 in English and Science respectively more than those who were not used to do so. Students working with computer after school hours scored significantly higher in English, Mathematics and Social Science compared to the students not using computer after school hours. Interaction with friends about study matters, reading other books for enjoyment and doing homework regularly after school helped students scoring significantly higher in all the four school subjects included in the study (Table 7.8.43). Playing of games/ sports and use of internet helped students in improving their performance in English, Science and Social Science. Telling family members about what was learnt in school had positive impact on performance of students in Mathematics, Science and Social Science.

Table 7.8.43: Regression Results: Activities outside the School (North Goa District)

		English	Maths.	Science	Soc. Sci.
Watching TV and Videos	Coefficient	0.98	0.35	0.70	0.43
	SE	0.25	0.23	0.26	0.24
	t-value	3.89	1.52	2.72	1.79
	Level of Sig.	0.01	N.S	0.01	N.S
Working with Computer	Coefficient	0.67	0.33	0.22	0.47
	SE	0.17	0.15	0.17	0.16
	t-value	3.95	2.16	1.27	2.95
	Level of Sig.	0.01	0.05	N.S	0.01

Interaction with friends	Coefficient	0.73	0.53	0.71	0.65
	SE	0.18	0.16	0.18	0.17
	t-value	4.14	3.36	3.95	3.91
	Level of Sig.	0.01	0.01	0.01	0.01
Play sports/games	Coefficient	0.49	0.38	0.92	0.76
	SE	0.24	0.21	0.24	0.22
	t-value	2.07	1.80	3.83	3.43
	Level of Sig.	0.05	N.S	0.01	0.01
Reading Book for enjoyment	Coefficient	0.95	0.78	1.01	1.15
	SE	0.19	0.17	0.19	0.18
	t-value	5.02	4.60	5.24	6.48
	Level of Sig.	0.01	0.01	0.01	0.01
Using of internet	Coefficient	0.55	0.14	0.38	0.48
	SE	0.17	0.15	0.17	0.16
	t-value	3.28	0.94	2.22	3.06
	Level of Sig.	0.01	N.S	0.05	0.01
Doing Home work	Coefficient	1.19	1.17	1.70	1.29
	SE	0.25	0.23	0.25	0.24
	t-value	4.73	5.19	6.65	5.46
	Level of Sig.	0.01	0.01	0.01	0.01
Discussion with friends about learning in school	Coefficient	0.27	0.63	0.13	0.32
	SE	0.19	0.17	0.19	0.17
	t-value	1.46	3.76	0.68	1.81
	Level of Sig.	N.S	0.01	N.S	N.S
Telling family about what is learnt in school	Coefficient	0.24	0.60	0.45	0.35
	SE	0.19	0.17	0.19	0.18
	t-value	1.26	3.51	2.32	1.97
	Level of Sig.	N.S	0.01	0.05	0.05

(b) South Goa District

Table 7.8.44: Regression Results: Activities outside the School (South Goa District)

		English	Maths.	Science	Soc. Sci.
Watching TV and Videos	Coefficient	1.92	1.29	1.63	1.34
	SE	0.36	0.30	0.34	0.29
	t-value	5.32	4.28	4.76	4.55
	Level of Sig.	0.01	0.01	0.01	0.01

Working with Computer	Coefficient	0.99	0.21	0.41	0.61
	SE	0.21	0.17	0.20	0.17
	t-value	4.70	1.16	2.06	3.57
	Level of Sig.	0.01	N.S	0.05	0.01
Interaction with friends	Coefficient	0.76	0.31	0.47	0.53
	SE	0.23	0.19	0.21	0.18
	t-value	3.32	1.63	2.19	2.85
	Level of Sig.	0.01	N.S	0.05	0.01
Play sports/games	Coefficient	1.32	1.05	0.92	0.81
	SE	0.33	0.27	0.31	0.26
	t-value	4.06	3.88	2.97	3.07
	Level of Sig.	0.01	0.01	0.01	0.01
Reading Book for enjoyment	Coefficient	0.88	0.39	0.66	0.67
	SE	0.24	0.19	0.23	0.19
	t-value	3.69	2.05	2.92	3.44
	Level of Sig.	0.01	0.05	0.01	0.01
Using of internet	Coefficient	1.03	0.34	0.83	0.95
	SE	0.19	0.16	0.18	0.16
	t-value	5.29	2.10	4.51	6.09
	Level of Sig.	0.01	0.05	0.01	0.01
Doing Home work	Coefficient	0.68	0.67	0.78	0.53
	SE	0.31	0.26	0.30	0.25
	t-value	2.15	2.59	2.65	2.12
	Level of Sig.	0.05	0.01	0.01	0.05
Discussion with friends	Coefficient	0.59	0.12	0.19	0.31
	SE	0.22	0.19	0.21	0.18
	t-value	2.62	0.62	0.90	1.70
	Level of Sig.	0.01	N.S	N.S	N.S
Telling family what is learnt	Coefficient	0.92	0.48	0.29	0.75
	SE	0.23	0.19	0.22	0.19
	t-value	4.02	2.53	1.33	3.93
	Level of Sig.	0.01	0.05	N.S	0.01

Table 7.8.44 shows that engagement of the students of South Goa district in different activities outside the school hours had significant positive impact on their performance in different subjects. The students watching TV and videos, playing games/sports, reading books for enjoyment, using of internet and doing homework

outside school hours scored more than those who were not used to do so in all the four subjects. Students working with computer and interaction with friends after school hours had positively influenced performance of students in English, Science and Social Science. Telling family members about what was learnt in school had positive impact on performance of students of South Goa district in English, Mathematics and Social Science.

(c) Goa State

Data in Table 7.8.45 shows that the activities engaged in by the students of the state of Goa such as watching TV and Videos, working with computer, interaction with friends, playing of games/sports, reading of books for enjoyment, doing homework and telling family members about what is learnt in school positively influenced their performance in all the four school subjects. Use of internet by the students after school hours has positive impact on the performance in English, Science and Social Science and discussion with friends influenced performance in all subjects except in Science.

Table 7.8.45: Regression Results: Activities outside the School (Goa State)

	English	Maths.	Science	Soc. Sci.
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Watching TV and Videos	Coefficient	1.43	0.76	1.13	0.83
	SE	0.21	0.18	0.21	0.18
	t-value	6.72	4.18	5.43	4.48
	Level of Sig.	0.01	0.01	0.01	0.01
Working with Computer	Coefficient	0.88	0.31	0.36	0.57
	SE	0.13	0.12	0.13	0.12
	t-value	6.56	2.71	2.76	4.91
	Level of Sig.	0.01	0.01	0.01	0.01
Interaction with friends	Coefficient	0.80	0.46	0.65	0.63
	SE	0.14	0.12	0.14	0.12
	t-value	5.60	3.78	4.64	5.25
	Level of Sig.	0.01	0.01	0.01	0.01
Play sports/games	Coefficient	0.90	0.68	0.96	0.82
	SE	0.20	0.17	0.19	0.17
	t-value	4.50	4.06	5.03	4.79
	Level of Sig.	0.01	0.01	0.01	0.01
Reading Book for enjoyment	Coefficient	0.88	0.58	0.82	0.90
	SE	0.15	0.13	0.15	0.13
	t-value	5.79	4.45	5.52	6.88
	Level of Sig.	0.01	0.01	0.01	0.01
Using of internet	Coefficient	0.75	0.08	0.58	0.70
	SE	0.13	0.11	0.13	0.11
	t-value	5.87	0.73	4.59	6.36
	Level of Sig.	0.01	N.S	0.01	0.01
Doing Home work	Coefficient	0.93	0.92	1.25	0.92
	SE	0.20	0.17	0.20	0.17
	t-value	4.62	5.33	6.25	5.41
	Level of Sig.	0.01	0.01	0.01	0.01
Discussion with friends	Coefficient	0.42	0.37	0.15	0.31
	SE	0.15	0.12	0.14	0.13
	t-value	2.89	3.08	1.05	2.38
	Level of Sig.	0.01	0.01	N.S	0.05
Telling family what is learnt	Coefficient	0.55	0.53	0.36	0.53
	SE	0.15	0.13	0.15	0.13
	t-value	3.65	4.15	2.46	4.07

	Level of Sig.	0.01	0.01	0.05	0.01
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7.8.15 Attitude towards School Subject and Academic Performance

(a) North Goa District

Table 7.8.46 revealed that attitude of students of North Goa district towards each school subject had significant positive influence on their academic performance in the respective subjects.

Table 7.8.46: Regression Results: Attitude towards School Subject and Academic Performance (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.41	0.31	0.52	0.27
SE	0.08	0.05	0.05	0.05
t-value	5.12	6.20	10.40	5.40
Level of Significance	0.01	0.01	0.01	0.01

(b) South Goa District

It was observed that in the case of South Goa sample also, students' attitude towards a school subject had positive impact on performance of students in the subject concerned. All the coefficient values were significant at 0.01 level (Table 7.8.47).

Table 7.8.47: Regression Results: Attitude towards School Subject and Academic Performance (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.47	0.25	0.50	0.26
SE	0.09	0.05	0.06	0.05

t-value	5.22	5.00	8.33	5.20
Level of Significance	0.01	0.01	0.01	0.01

(c) Goa State

Table 7.8.48 showed that students' attitude towards each of the subject positively influenced their achievement in each of the subject concerned.

Table 7.8.48: Regression Results: Attitude towards School Subject and Academic Performance (Goa State)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.44	0.29	0.51	0.26
SE	0.06	0.04	0.04	0.04
t-value	7.33	7.25	12.75	6.5
Level of Significance	0.01	0.01	0.01	0.01

Findings presented above indicated that attitude of students towards school subjects had positive effect on their academic performance. Positive attitude of students towards a subject contribute for higher academic performance.

7.8.16 Activities in a Subject and Academic Performance

(a) North Goa District

Table 7.8.49: Regression Results: Activities in the School Subject and Academic Performance (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.30	0.35	0.01	0.06
SE	0.11	0.05	0.06	0.05
t-value	2.72	5.00	0.17	1.2
Level of Significance	0.01	0.01	N.S.	N.S.

N.S. – Not significant at 0.05 level

Different activities conducted in English and Mathematics had positive impact on the achievement of students of North Goa district in these subjects (Table 7.8.49). But the activities conducted/engaged in by students in Science and Social Science had no impact on their score in these two subjects

(b) South Goa District

Activities conducted/engaged in by students in all the four subjects had significant positive influence on performance of students in all four subjects (Table 7.8.50).

Table 7.8.50: Regression Results: Activities in the School Subject and Academic Performance (South Goa District).

	English	Maths.	Science	Soc. Sci.
Coefficient	0.32	0.25	0.25	0.30
SE	0.12	0.05	0.07	0.06
t-value	2.67	5.00	3.57	5.00
Level of Significance	0.01	0.01	0.01	0.01

(c) Goa State

Table 7.8.51: Regression Results: Activities in the School Subject and Academic Performance (Goa State)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.30	0.29	0.11	0.16
SE	0.08	0.03	0.04	0.04
t-value	3.75	9.67	2.75	4.00
Level of Significance	0.01	0.01	0.01	0.01

Coefficient values for all the four subjects were found significant at 0.01 level (Table 7.8.51). It revealed that the various activities conducted/engaged in by students in each of the school subject had positive impact on academic performance of students of the State in the concerned subject.

The findings presented above revealed that various activities conducted in different subjects or the various activities in which students were engaged in had positive effect on achievement of students in the concerned subjects. Conducting different activities and engagement of students in different activities in school subjects is beneficial for the students' academic progress.

7.8.17 Engagement in Domestic Work

i) Looking After Family Members

a) North Goa District

Looking after the family members by children of North Goa district affected their academic performance negatively in all the four subjects but it was significant in two subjects, Science and Social Science (Table 7.8.52).

Table 7.8.52: Regression Results: Looking after Family Members (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	- 0.13	- 0.26	- 0.52	- 0.30
SE	0.18	0.16	0.18	0.14
t-value	0.72	1.61	2.80	2.14
Level of Significance	N.S.	N.S.	0.01	0.05

b) South Goa District

Table 7.8.53 shows that in South Goa district looking after the family members by the students did not have significant impact on performance of students in any of the subjects.

Table 7.8.53: Regression Results: Looking after Family Members (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	- 0.05	-0.02	-0.03	-0.13
SE	0.22	0.18	0.21	0.18
t-value	0.21	0.11	0.14	0.72
Level of Significance	N.S.	N.S.	N.S.	N.S.

c) Goa State

It was found (Table 7.8.54) that looking after the family members by children of Goa affected their academic performance significantly negatively in Science and Social Science.

Table 7.8.54: Regression Results: Looking after Family Members (Goa State)

	English	Maths.	Science	Soc. Sci.
Coefficient	-0.03	-0.13	-0.27	- 0.22
SE	0.14	0.12	0.13	0.11
t-value	0.21	1.08	2.07	2.00
Level of Significance	N.S.	N.S.	0.05	0.05

ii) Preparing Food

a) North Goa District

Students of North Goa district preparing food at home negatively (significantly) affected their academic attainment in all the four subjects.

Table 7.8.55: Regression Results: Preparing Food (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	-0.70	-0.41	-0.67	-0.57

SE	0.18	0.16	0.18	0.17
t-value	3.87	2.49	3.61	3.33
Level of Significance	0.01	0.05	0.01	0.01

b) South Goa District

Though negative relationship was found between preparations of food at home by children of South Goa district and their academic attainment in all subjects, it was significant in the case of Science subject only (Table 7.8.56).

Table 7.8.56: Regression Results: Preparing Food (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	-0.16	- 0.21	- 0.38	-0.17
SE	0.20	0.17	0.19	0.16
t-value	0.80	1.23	2.00	0.94
Level of Significance	N.S.	N.S.	0.05	N.S.

c) Goa State

Preparation of food by students of the State of Goa at home negatively affected academic performance of students in all four subjects (Table 7.8.57).

Table 7.8.57: Regression Results: Preparing Food (Goa State)

	English	Maths.	Science	Soc. Sci.
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Coefficient	-0.29	-0.32	-0.54	- 0.22
SE	0.14	0.12	0.13	0.11
t-value	2.07	2.67	4.15	2.00
Level of Significance	0.05	0.01	0.01	0.05

iii) Cleaning the House

a) North Goa District

Table 7.8.58 indicated that cleaning of their own house by the students of North Goa district significantly and negatively influenced their performance in English, Mathematics and Science.

Table 7.8.58: Regression Results: Cleaning the House (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	-0.78	- 0.42	-0.54	- 0.24
SE	0.20	0.18	0.20	0.19
t-value	3.90	2.33	2.70	1.26
Level of Significance	0.01	0.05	0.01	N.S.

b) South Goa District

Though negative relationship was found between cleaning of house by the children of South Goa district and their academic attainment in all subjects, it was significant in the case of Science subject only (Table 7.8.59).

Table 7.8.59: Regression Results: Cleaning the House (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	-0.25	-0.14	-0.42	-0.26
SE	0.23	0.19	0.21	0.19
t-value	1.07	0.74	2.00	1.36
Level of Significance	N.S.	N.S.	0.05	N.S.

c) Goa State

Table 7.8.60 indicated that cleaning of their own house by the students of Goa significantly and negatively influenced their performance in the subjects of English, Mathematics and Science.

Table 7.8.60: Regression Results: Cleaning the House (Goa State)

	English	Maths.	Science	Soc. Sci.
Coefficient	- 0.27	- 0.29	- 0.47	- 0.01
SE	0.13	0.13	0.15	0.11
t-value	2.08	2.23	3.13	0.09
Level of Significance	0.05	0.05	0.01	N.S

The findings presented above indicated that engagement of students in different household activities like looking after family members, preparation of food and

cleaning of house negatively affected their academic attainment in school subjects. The more the frequency of their involvement in such activities, the less they score in school subjects. In other words, the findings revealed that there was negative relationship between the two variables.

7.9 Conclusions

Based on the findings presented above, the following conclusions were drawn.

1. Nearly equal percentages of boys and girls are enrolled in Class-VII in Goa. But gender difference in enrolment exists in each district.
2. In Goa, only 1.5 percent of the students enrolled in Class- VII are SC, 20.9 percent ST, 21.3 percent OBC and 56.3 percent general category. Compared to North Goa district, the percentage of ST students is higher in South Goa district. The reverse is true as far as enrolment of OBC students is concerned. The other categories students are almost equally enrolled in both the districts.
3. Most of the students (around three-fourths) of Class-VII are from Konkani speaking home background. Substantial percentages of students are from Marathi and Hindi speaking background. Negligible percentages of students used to speak in Kannada, English and Urdu languages at home. Differences exist between the two districts as far as language background is concerned.
4. Nearly half of the students of Class-VII have either one or no sibling and about one-third have two siblings. More students from North Goa than South Goa district are from small families.
5. A small percentage of students studying in Class-VII of both the districts are physically challenged.

6. Majority of the students' parents are educated up to secondary/higher secondary. Only a small percentage of parents possess Bachelor's/Master's degrees. But a considerable percentage of parents of the students of Class-VII are illiterate. No substantial difference exists in educational qualifications of parents of the students of North Goa and South Goa districts.
7. Amongst the occupations the parents (fathers) are engaged in, highest percentage are skilled/office workers followed by agriculture/farm labour, business/shopkeeper and farming. A substantial percentage of parents are in low paid/low level occupation like farm labour and small farmer. Negligible percentage of parents is professional and in teaching field.
8. One-fifth of the students of the State studying in Class-VII are from BPL families. Higher percentage students from North Goa than South Goa district belong to BPL families.
9. Majority of the students have calculator, study desk and dictionary at home. More than two-fifths of the students have computer and news papers at their home. Only about one-fifth of the students have access to internet and magazines at home.
10. Majority of the students have 1-10 books at home. About four –fifths of the students have books other than text books at home.
11. Nearly half of the students go to school by school bus and about one-third reach school by walking. A significant percentage (10 percent) of students goes to school by their own (parents'/guardian') vehicle.
12. Highest percentage of students gets help relating to their study from their siblings. Nearly one-fifth of the students get such help from their mothers and the rest from their fathers and tutors except 18 percent students who do not get help from any one.
13. Mostly the family members used to check the homework of students. But nobody checks the homework of about one-fourth of the students.
14. Only about one-fifth of the students of Class-VII attend private tuition classes.

15. Unpleasant incidents like theft, hit/hurt by other students, forcing students to do things against wish, insulted by others and left out of activities by others happen to a substantial number of students of both the districts of the State.
16. Most of the students remain absent from school for less than 5 days only in a year. Negligible percentage of students remain absent for more than 15 days.
17. In school majority of the students use computer only once in a week. Students of North Goa schools get more access to computer than the students of South Goa schools.
18. Most of the students borrow books once in a week from school library.
19. Most of the students are assigned homework in English and Science either every day or 3-4 times a week. In Mathematics most of the students get homework to do every day. In Social Science, only about one-fifth of the students are assigned home work daily.
20. Activities like answering question in works/book sheet, writing what is read, answering question aloud and talking with other students are mostly conducted 'sometimes' after reading something in language classes.
21. In Mathematics classes' activities like measurement of something, making charts, learning about shapes, memorizing Mathematics problem, working in small groups, explaining answer and solving problem alone are mostly done "Sometimes".
22. In Science and Social Science subjects activities such as looking at change, watching teacher doing experiment, design/ plan experiment, doing own experiment, working with other students, memorizing lessons, giving explanation, independently working on problems and using of computer are mostly conducted "Sometimes".
23. Majority of the students occasionally read comic books, story books/novels, and news papers, books that explain things and books on directions/instructions. Substantial number of students never read such reading materials.

24. Watching of T.V./Videos, interaction with students, playing of games/sports, doing homework, discussion with friends about what is learnt in School and telling family about what is learnt in school are the activities in which most of the students of Class-VII are engaged in on a regular basis outside the school hours. Majority of the students occasionally use computer and internet outside the school/at home.
25. Most of the students of Class-VII of the State look after their family members on a daily basis. Nearly one-fourth of the students used to prepare food at home daily and about two-fifths do so at least once a week. Nearly half of the students, everyday clean their house and one-third of the students do so once a week.
26. Gender of students is a factor not associated with academic attainment of students of Class-VII in any of the subjects.
27. Caste/social class category is a factor related to academic performance of students. The SC students underperform compared to general category students in English and Mathematics. The ST students score better in Mathematics but underperform in English than the general category students.
28. Being physically challenged negatively influence academic attainment of students in all school subjects.
29. Educational qualification of parents has positive impact on academic attainment of students of Class-VII. Higher the educational qualifications of parents, higher the academic performance of children and vice versa.
30. Availability of computer, study desk, dictionary, internet, newspaper and magazine at home has positive effect on academic attainment of students in school subjects.
31. Availability of books other than text books has positive impact on academic attainment of students. Higher the number of books available at home, betters the performance of statements in school subjects.

32. Mode of transport to school influences academic performance of students. Students using public bus and own vehicles perform better than those who go walking to school. Students going by school bus or by bi-cycle do not perform better than those who walk to school.
33. Unpleasant incidents (like theft, hit/hurt by other students, forcing students to do things against wish, insulted by others and left out of activities by other students) happening with students in school negatively affects their academic performance in different subjects.
34. Remaining absent from school for more than 15 days has negative impact on academic performance of students particularly in Mathematics and Science
35. Use of computer in school by students has positive effect on their academic performance in different school subjects.
36. Academic performance of students is negatively related to borrowing of books by students from school library. The students who borrow books from school library underperform compared to those who never borrow books from library.
37. Students taking private tuition underperform compared to those who do not attend private tuition classes.
38. Reading of different reading materials other than text books such as story books/novels, news papers, books that explain things and books on directions/instructions helps students in improving their academic performance.
39. Engagement of students in different activities outside the school hours such as watching of T.V./Videos, working with computer, interaction with friends, playing of games/sports, reading books for enjoyment, using of internet, doing homework, discussion with friends about what is learnt in School and telling family about what is learnt in school have positive impact on academic attainment of students.

40. Positive attitude of students towards a school subject contributes for their better academic performance in the said subject.
41. Conducting of various academic activities in school in each subject has positive effect on academic attainment of students in the concerned subject.

CHAPTER VIII

TEACHER- RELATED VARIABLES

8.0 Introduction

The first section of this chapter provides information about important characteristics of teachers teaching Class VII such as: teacher's background; in-service teachers training; teaching-learning process; opinion of teachers about their school related issues, views of teachers related to job satisfaction, parents and students and teachers' participation in different professional development activities. The findings are presented at four stages for each variable, (a) North Goa District, (b) South Goa District, (c) Comparison between the two Districts, and (d) Goa State. The second section consists of the results of regression analysis carried out by taking teacher's factors and students' academic attainment. The findings are presented for North Goa and South Goa districts separately. Conclusions are presented at the end of the chapter. A total of 405 teachers (206 from schools located in North Goa district and 199 teachers from the South Goa district) responded to the Questionnaire for Teachers.

Section- I: *Teacher Related Factors*

8.1 Teachers' Background

Different back ground factors of teachers considered in this study is presented in the following pages.

8.1.1 Gender

(a) North Goa District

Table 8.1.1 shows that 34 percent of the teachers teaching in schools located in North Goa district were male and 66 percent were female. Figure 8.1.1 represents the said data.

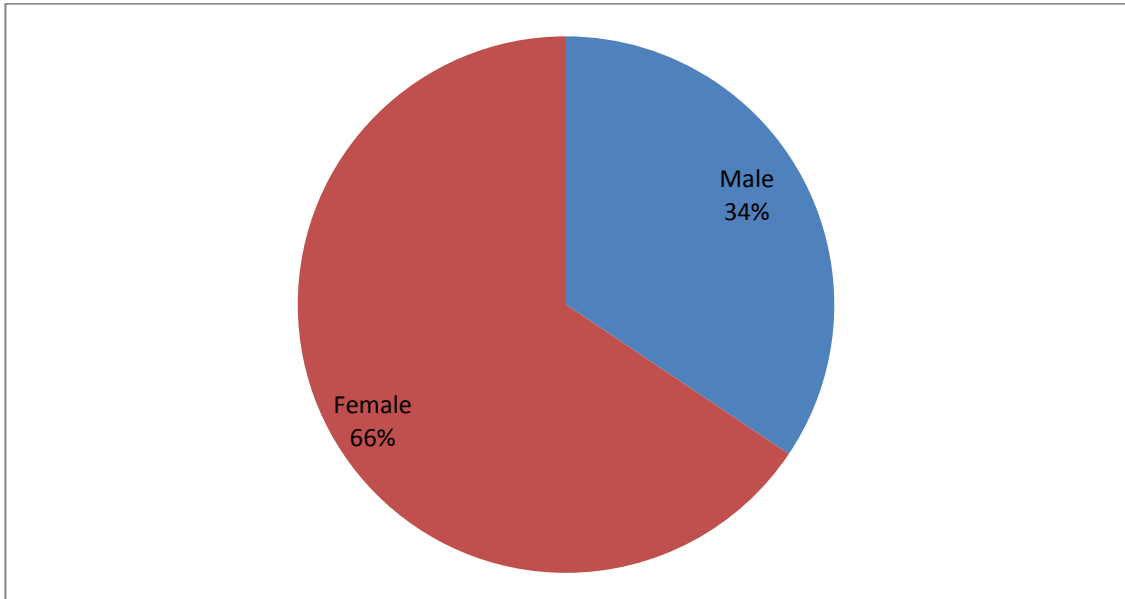


Fig. 8.1.1: Male and Female teachers (North Goa District)

(b) South Goa District

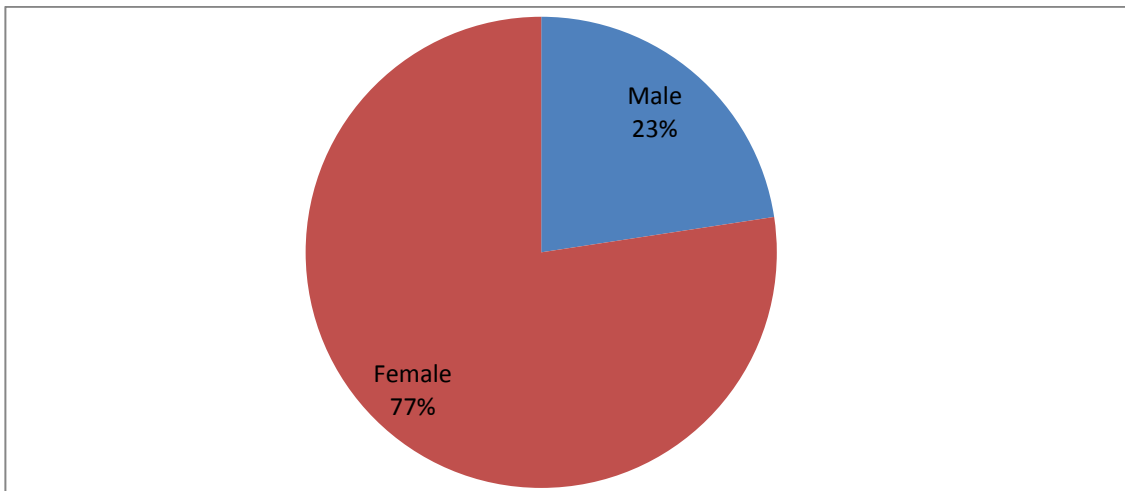


Fig. 8.1.2: Male and Female teachers (South Goa District)

Only about 23 percent of the teachers teaching in Class VII in the schools located in South Goa district were male and 77 percent were female. It means less than one-fourth of the teachers were male and more than three-fourth were female. Figure 8.1.2 represents the data.

(c) Comparison between North Goa and South Goa Districts

Compared to South Goa district, percentage of male teachers was more in North Goa district where as the percentage of female teachers was less in North Goa compared to South Goa district. The comparison is shown in Figure 8.1.3.

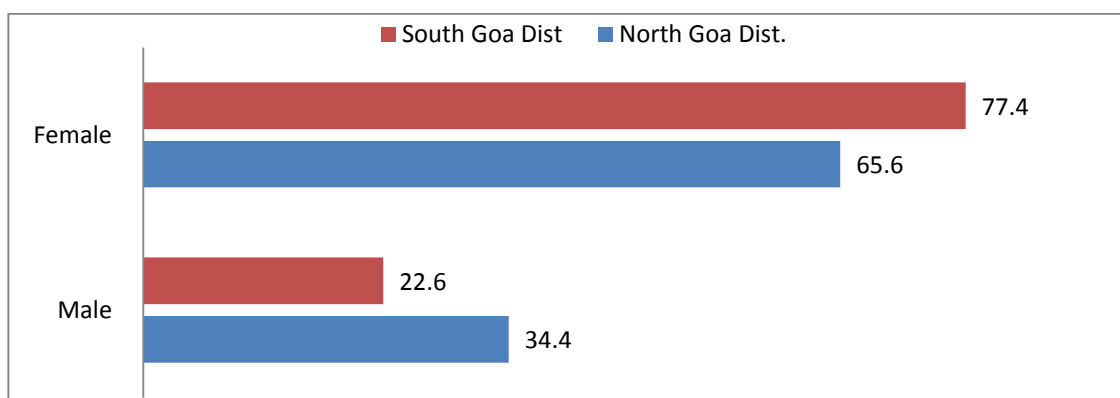


Fig. 8.1.3: Male and Female Teachers (Comparison between North Goa and South Goa Districts)

Table 8.1.1: Distribution of Teachers on the basis of Gender

Gender	North Goa Dist.	South Goa Dist.	Goa state
Male	34.4	22.6	28.6
Female	65.6	77.4	71.4
Total	100	100	100

Note: - Figures indicate percentage of teachers

(d) Goa State

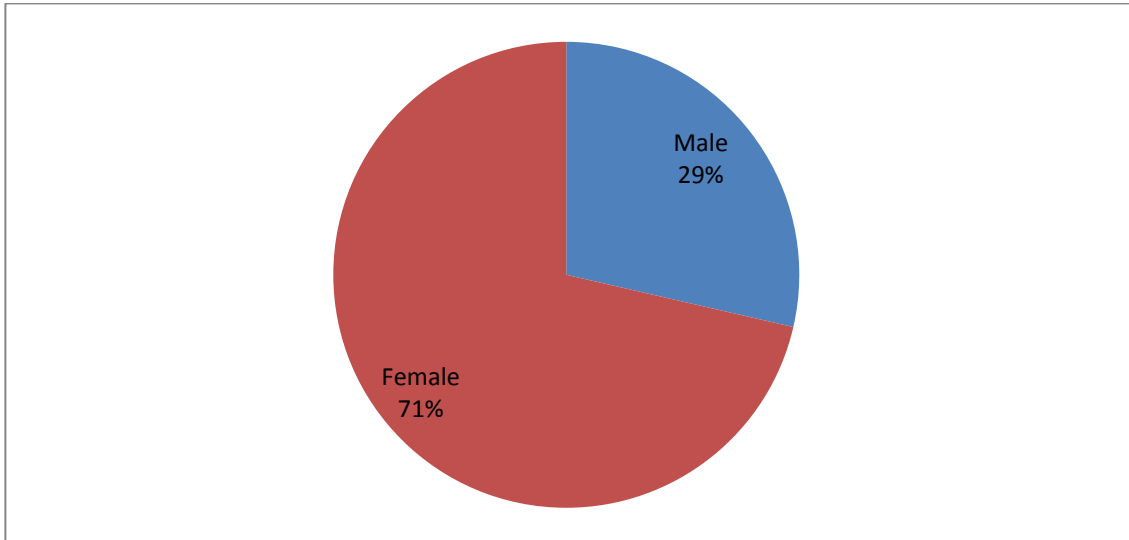


Fig. 8.1.4: Male and Female teachers (Goa State)

About 29 percent of teachers of the State of Goa were male and the remaining 71 percent were female. The finding indicated that the female teachers outnumber male teachers at the upper primary stage in Goa. Figure 8.1.4 represents the findings.

8.1.2 Age of the Teachers

(a) North Goa District

Percentages of teachers (teaching in schools located in North Goa district) belonging to different age groups are shown in Figure 8.1.5 and Table 8.1.2.

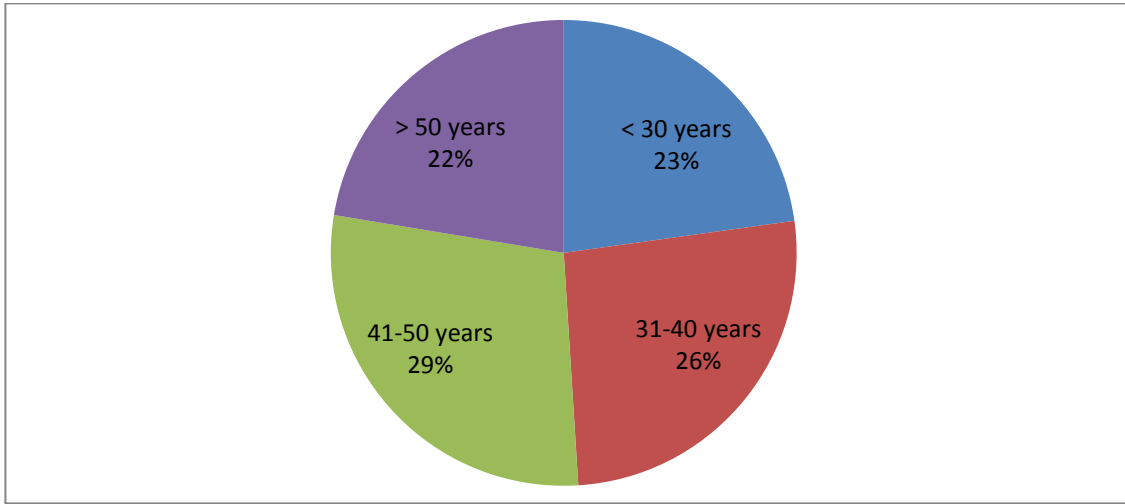


Fig. 8.1.5: Age of Teachers (North Goa District)

(b) South Goa District

Data regarding teachers of South Goa district schools belonging to different age groups are shown in Figure 8.1.6 and Table 8.1.2.

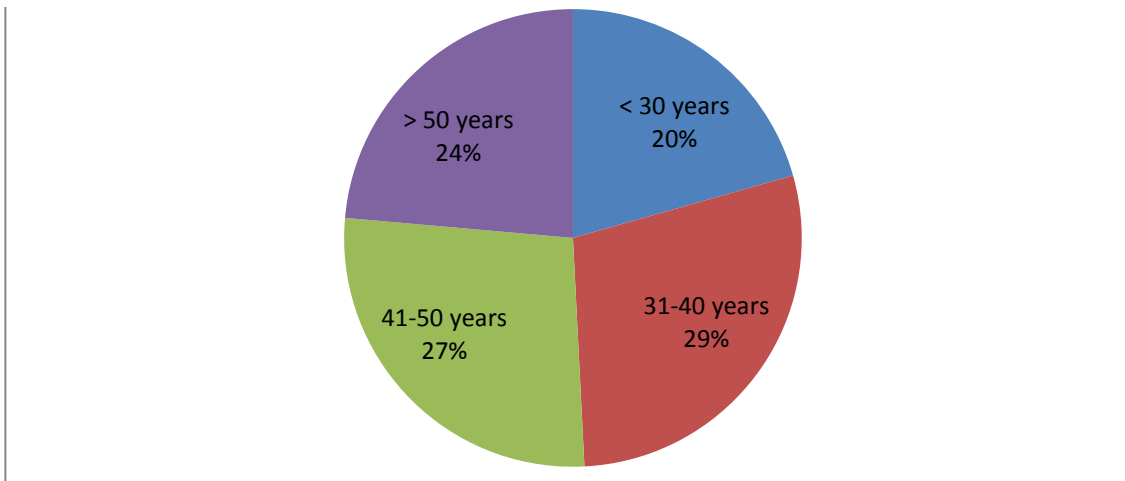


Fig. 8.1.6: Age of Teachers (South Goa District)

(c) Comparison between North Goa and South Goa Districts

Figure 8.1.7 revealed that in both the districts of the State the percentages of teachers belonging to different age groups were nearly equal.

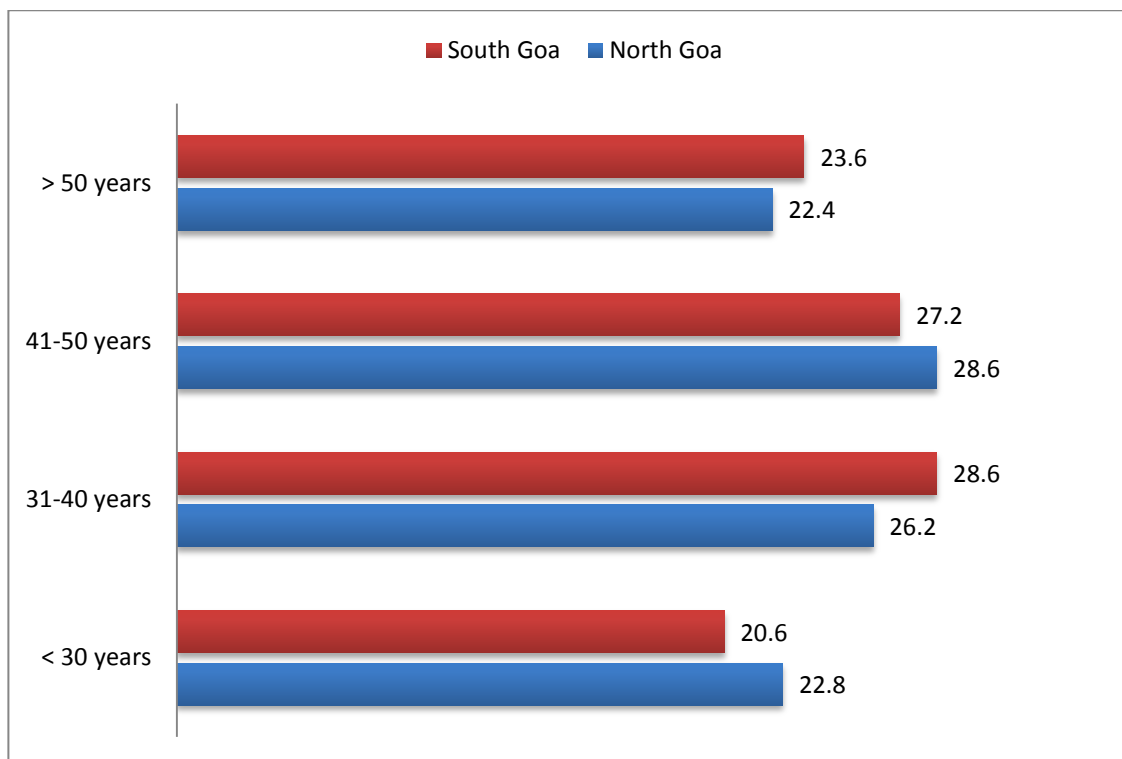


Fig. 8.1.7: Age of Teachers: Comparison between North Goa and South Goa Districts

Table 8.1.2: Age of the Teachers

years	North Goa Dist.	South Goa Dist.	Goa state
< 30 years	22.8	20.6	21.8
31-40 years	26.2	28.6	27.4
41-50 years	28.6	27.2	27.9
> 50 years	22.4	23.6	22.9
Total	100	100	100

Note: - Figures indicate percentage of teachers

(d) Goa State

Percentages of teachers teaching in elementary schools in Goa belonging to different age groups are shown in Figure 8.1.8 and Table 8.1.2.

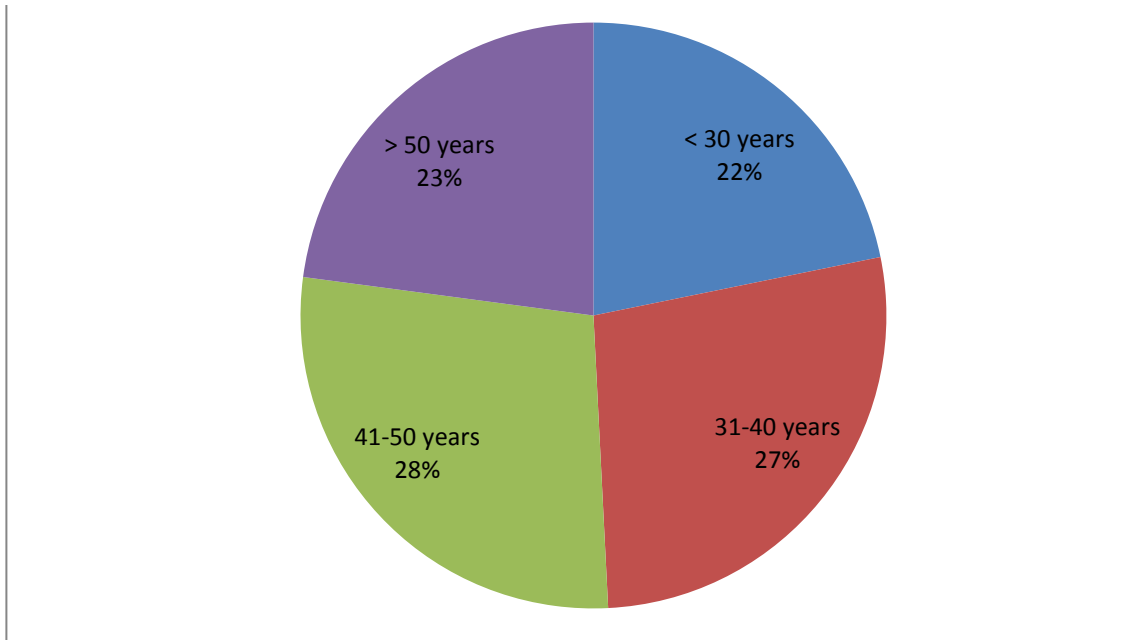


Fig. 8.1.8: Age of Teachers (Goa State)

In elementary schools of Goa nearly equal percentages of teachers were below 30 years and above 50 years of age. Also equal percentages of teachers were 31-40 and 41-50 years of age. No substantial difference was observed between North Goa district and South Goa district as far as age groups of teachers was concerned.

8.1.3 Category of Teachers

(a) North Goa District

Figure 8.1.9 indicates percentage of teachers of North Goa district belonging to different categories/ castes.

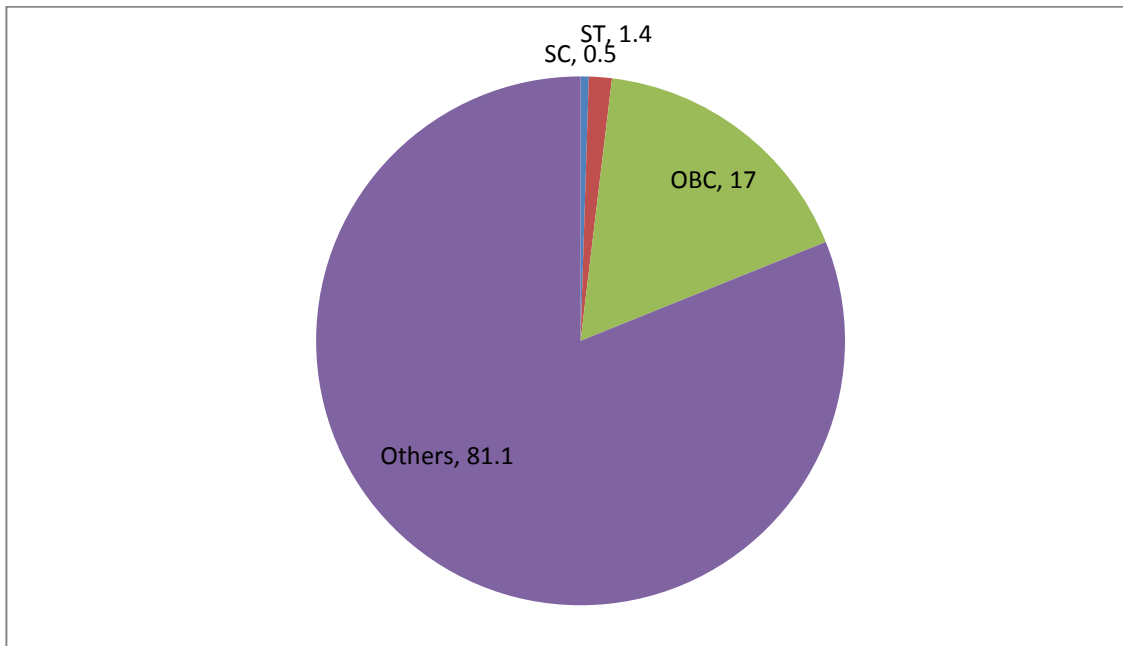


Fig. 8.1.9: Category of Teachers (North Goa District)

b) South Goa District

Figure 8.1.10 shows the percentage of teachers of South Goa district belonging to different categories/ castes.

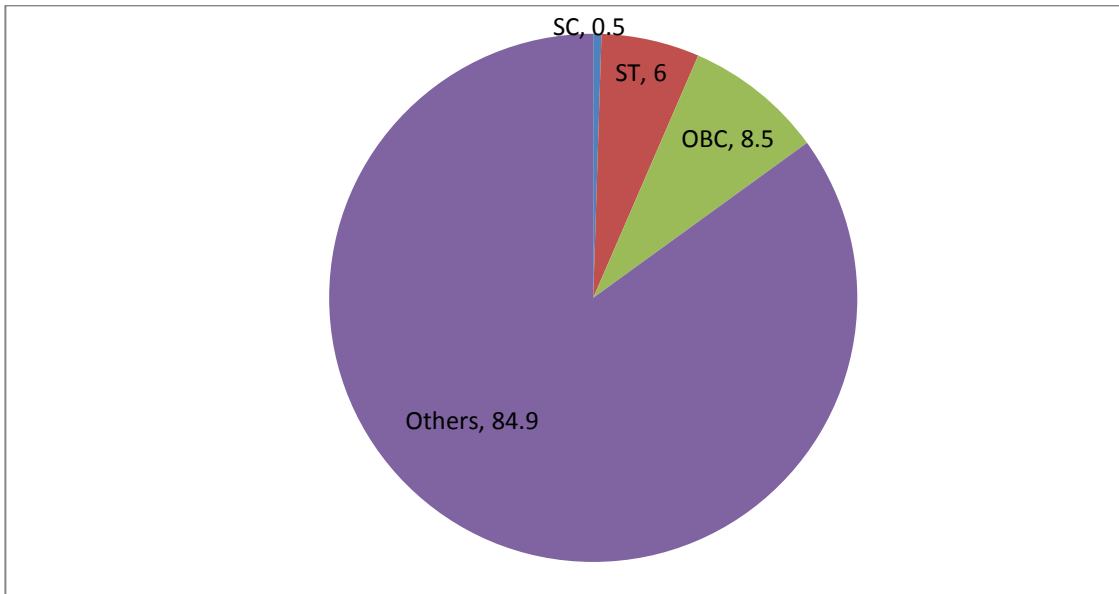


Fig. 8.1.10: Category of Teachers (South Goa District)

c) Comparison between North Goa and South Goa Districts

Figure 8.1.11 shows that the percentage of ST teachers and general/other category teachers was higher in South Goa compared to North Goa district. But the percentage of OBC teachers was higher in North Goa than in South Goa district.

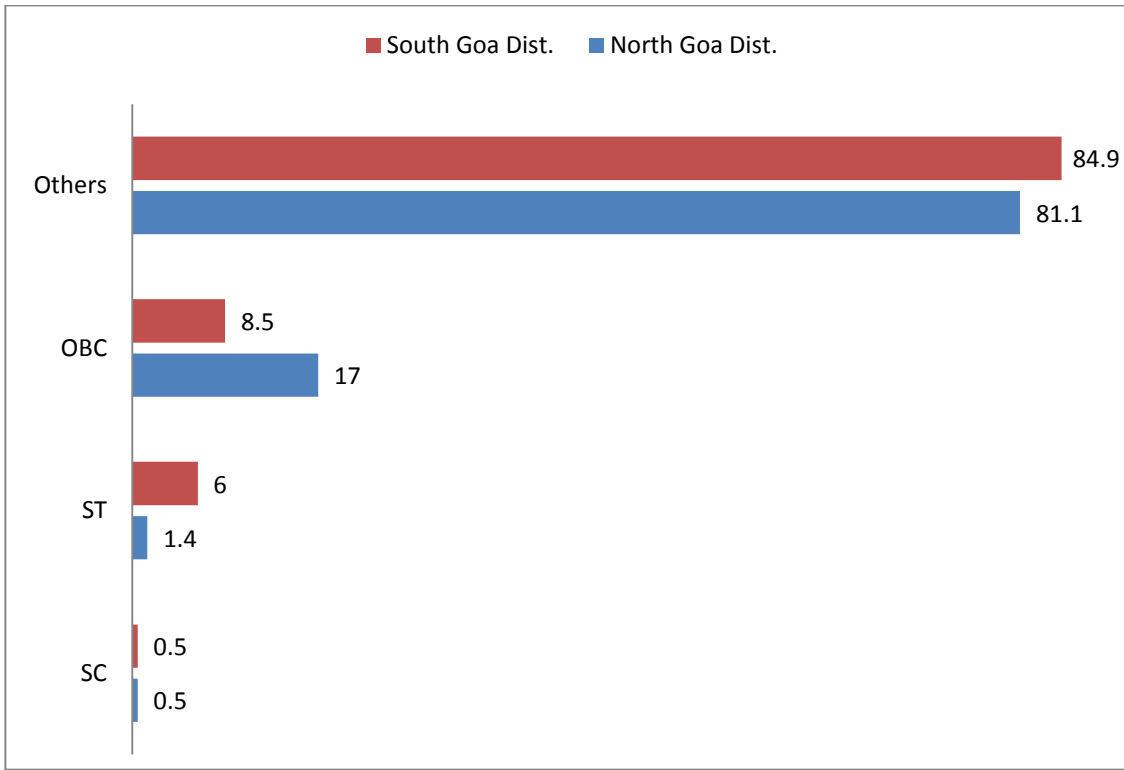


Fig. 8.1.11: Category of Teachers: Comparison between North Goa and South Goa Districts

Table 8.1.3: Different Categories of Teachers

Category	North Goa District	South Goa District	Goa state
SC	0.5	0.5	0.5
ST	1.4	6.0	3.7
OBC	17.0	8.5	12.8
Others	81.1	84.9	83.0
Total	100	100	100

Note: - Figures indicate percentage of teachers

(d) Goa state

Figure 8.1.12 and Table 8.1.3 show that only 0.5 percent, 3.7 percent and 12.8 percent elementary school teachers of the State were SC, ST and OBC respectively. More than four-fifths of the teachers were from general category/castes.

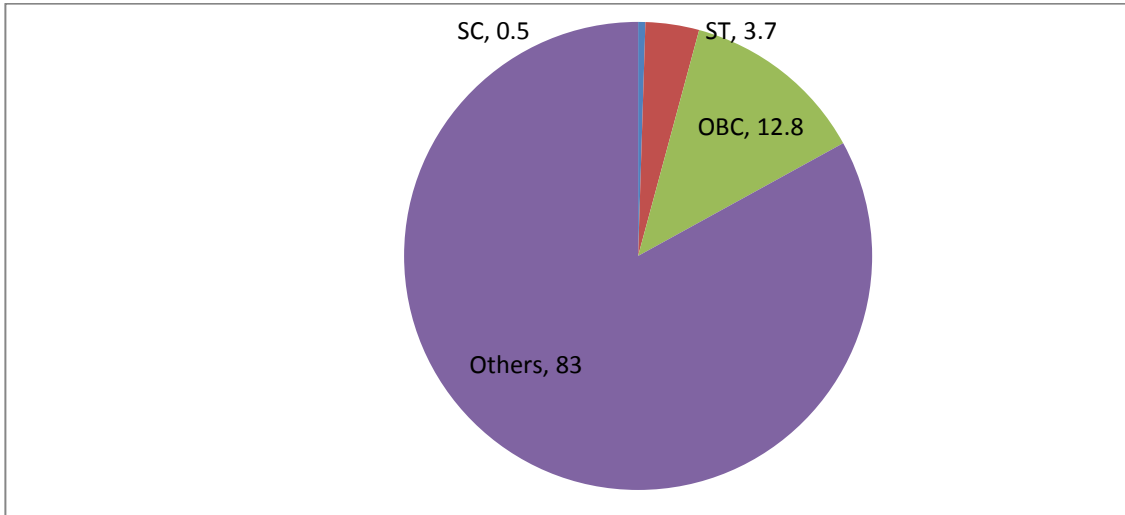


Fig. 8.1.12: Category of Teachers (Goa State)

8.1.4 Educational Qualification of Teachers

(a) North Goa District

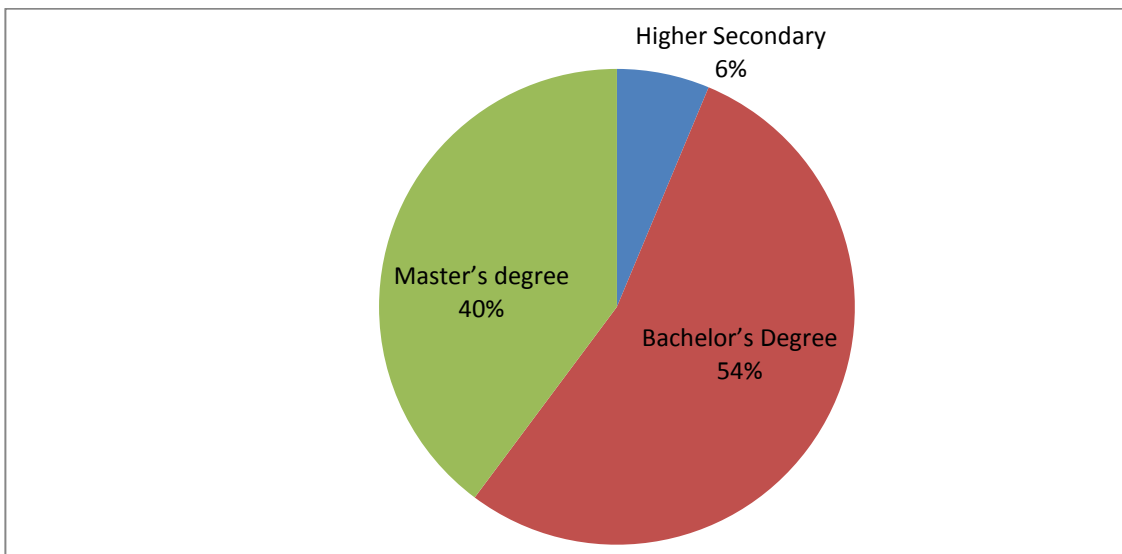


Fig. 8.1.13: Educational Qualification of Teachers (North Goa District)

More than half of the teachers of North Goa district were Bachelor's degree holders, two-fifths were Master's degree holders and only 6 percent had studied up to higher secondary (Figure 8.1.13).

d) South Goa District

More than half of the teachers teaching in elementary school of South Goa district were Bachelor's degree holders, about one-third were Master's degree holders and 12 percent had studied up to higher secondary (Figure 8.1.14).

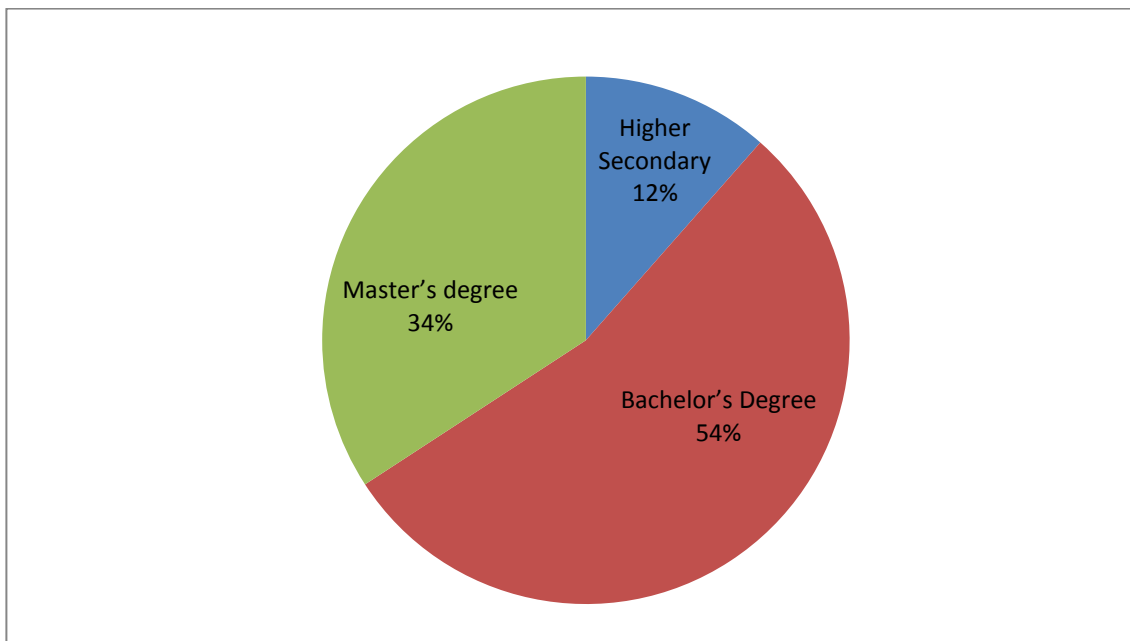


Fig.8.1.14: Educational Qualifications of Teachers (South Goa District).

(c) Comparison between North Goa and South Goa Districts

Figure 8.1.15 shows that higher percentage teachers of North Goa than South Goa district were Master's degree holder and lower percentage of teachers of North Goa than South Goa district higher secondary certificate holders. It indicated that teachers of North Goa district were relatively higher qualified compared to South Goa district.

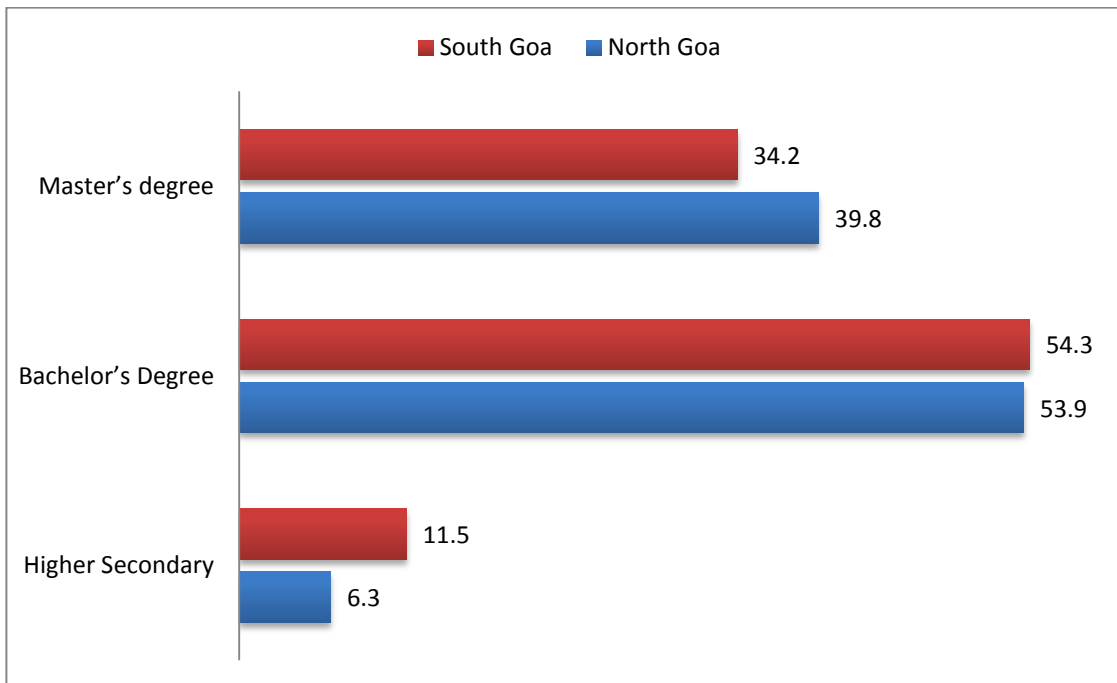


Fig.8.1.15: Educational Qualification of Teachers: Comparison between North Goa and South Goa Districts.

Table 8.1.4: Educational Qualification of Teachers.

Educational Qualification	North Goa District	South Goa District	Goa state
Higher Secondary	6.3	11.5	8.9
Bachelor's Degree	53.9	54.3	54.1
Master's degree	39.8	34.2	37.0
Total	100	100	100

Note: - Figures indicate percentage of teachers.

(d) Goa state

More than half of the teachers of the State were Bachelor's degree holders, nearly two-fifths were Master's degree holders and 9 percent were higher secondary certificate holders.

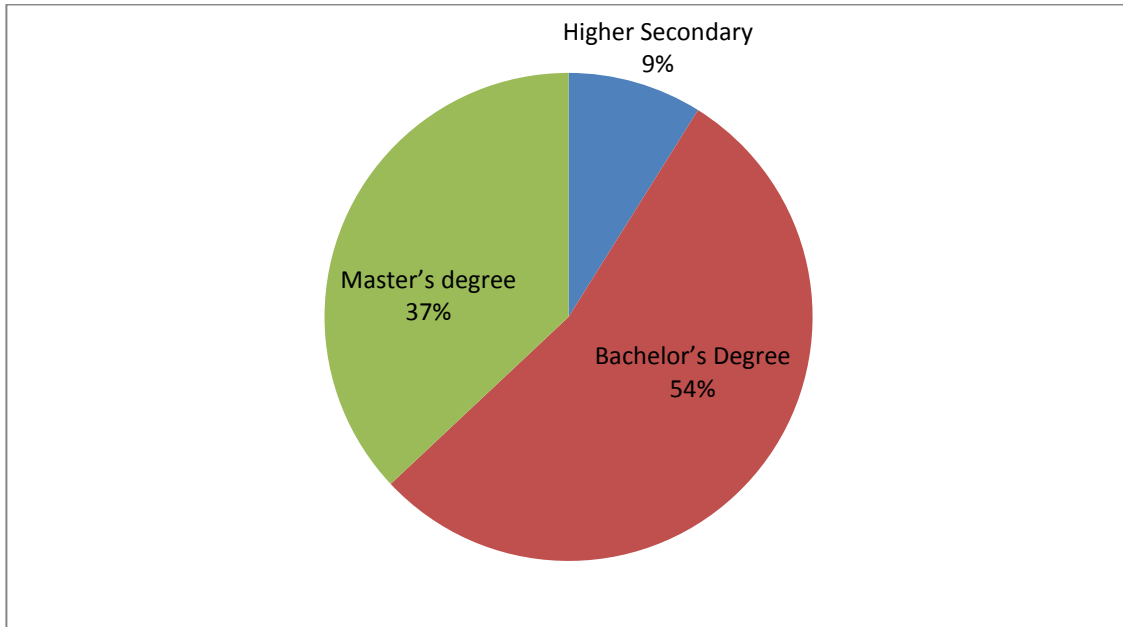


Fig. 8.1.16: Educational Qualification of Teachers (Goa State).

8.1.5 Professional Qualifications of Teachers

(a) North Goa District

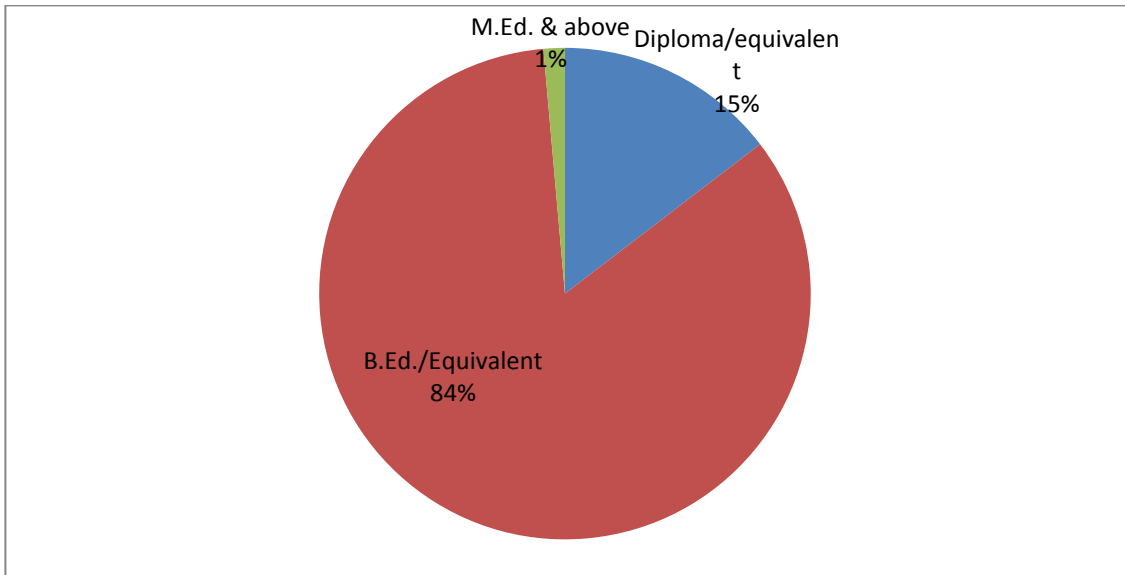


Fig. 8.1.17: Professional Qualification of Teachers (North Goa District).

More than four-fifths of the teachers of North Goa district possessed B.Ed./equivalent professional qualification, 15 percent had D.Ed. and 1.4 percent possessed M.Ed. degree.

Table 8.1.5: Professional Qualification of Teachers.

Professional Qualification	North Goa District	South Goa District	Goa state
Diploma/equivalent	14.6	19.0	16.8
B.Ed./Equivalent	84.0	79.0	81.5
M.Ed. & above	1.4	2.0	1.7
Total	100	100	100

Note: - Figures indicate percentage of teachers

(b) South Goa District

Percentage of teachers of South Goa district possessing B.Ed. / equivalent, D.Ed. / equivalent and M.Ed. are given in Figure 8.1.18 and Table 8.1.5.

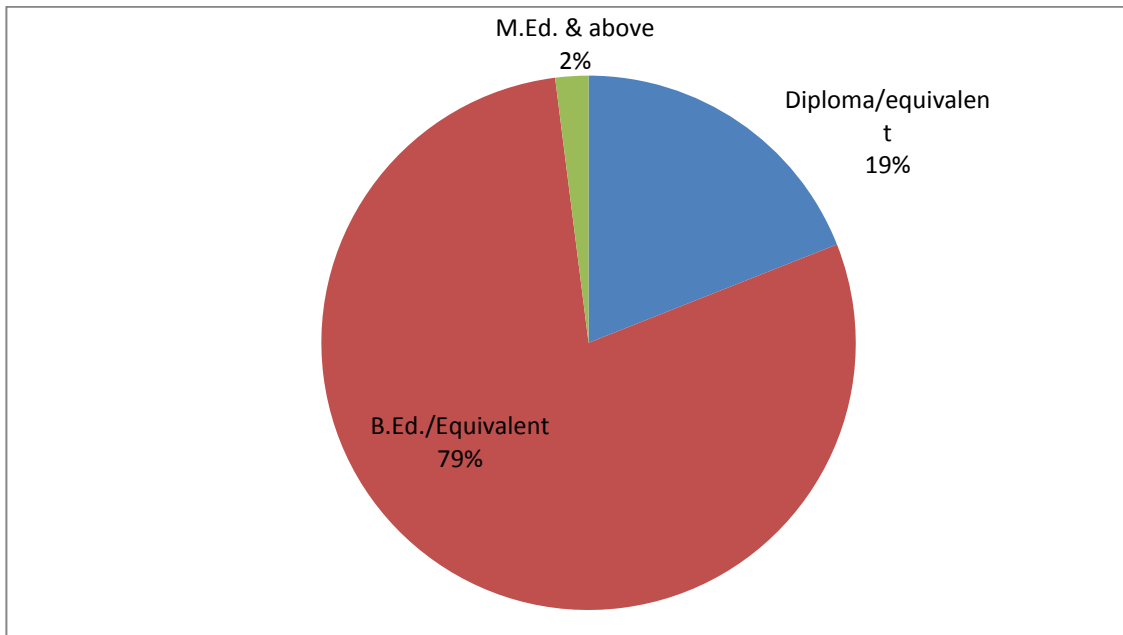


Fig. 8.1.18: Professional Qualification of Teachers (South Goa District)

(c) Comparison between North Goa and South Goa Districts

Difference was observed between North and South Goa districts as far as professional qualification of teachers was concerned Fig.8.1.19.

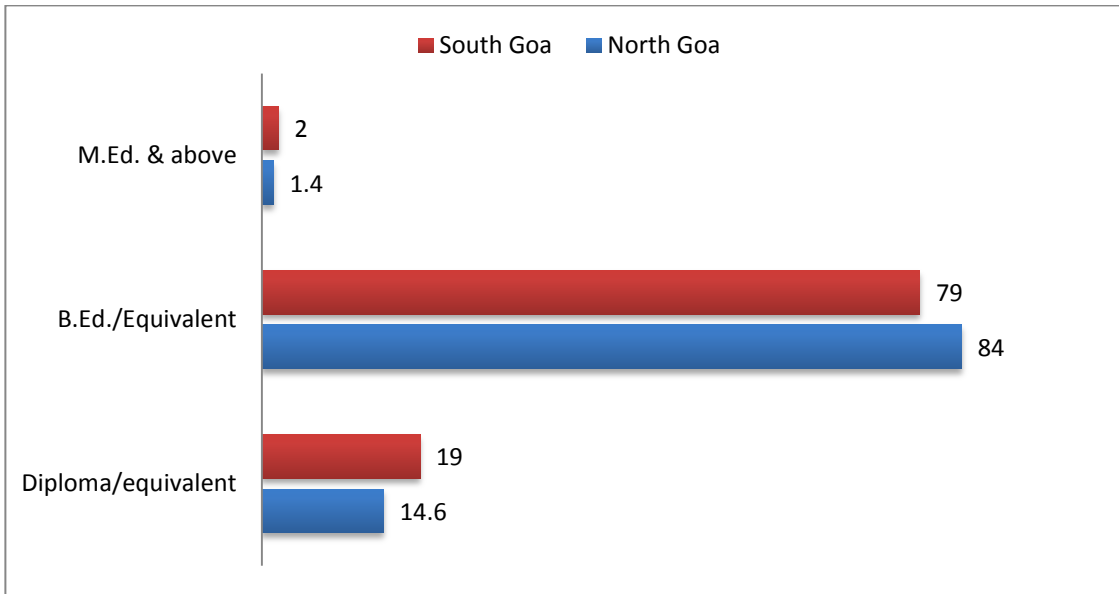


Fig. 8.1.19: Professional Qualification of Teachers: Comparison between North Goa and South Goa Districts

d) Goa state

Four-fifths of the elementary school teachers of the State possessed B.Ed. degree, 17 percent D.Ed. and about 2 percent M.Ed. degree (Fig. 8.1.20).

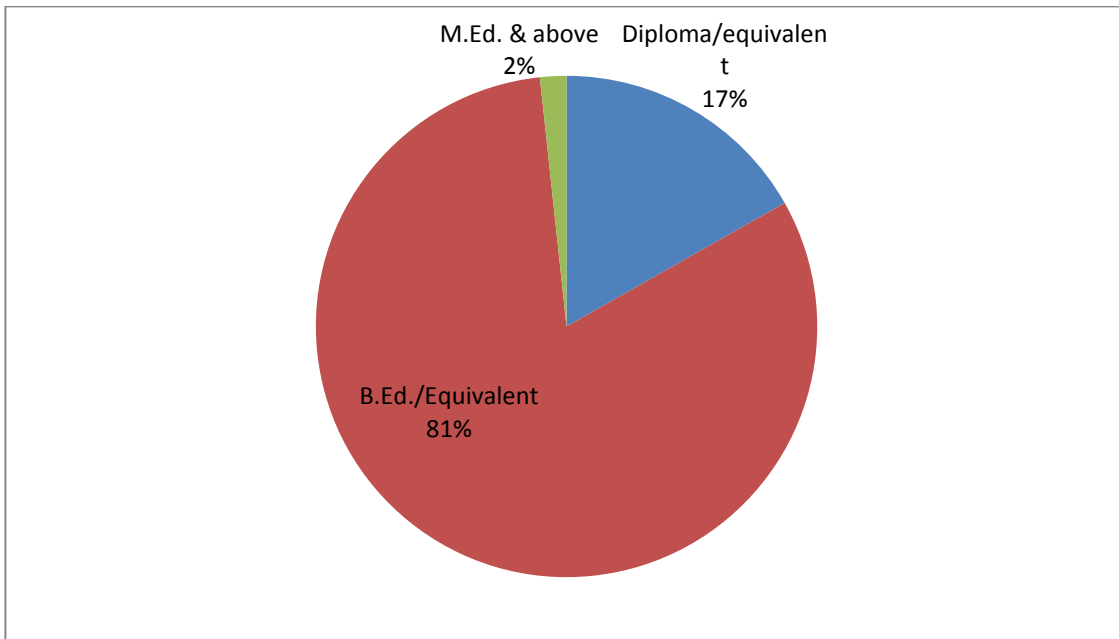


Table 8.1.20: Professional Qualification of Teachers (Goa State).

The findings presented above showed that most of the teachers of the State (four-fifths) teaching Class-VII possessed B.Ed. and about 2 percent possessed M.Ed. degree. The remaining were diploma holders.

8.1.6 Teaching Experience of Teachers

(a) North Goa District

Figure 8.1.21 and Table 8.1.6 show distribution of teachers of North Goa district in terms of years of teaching experience.

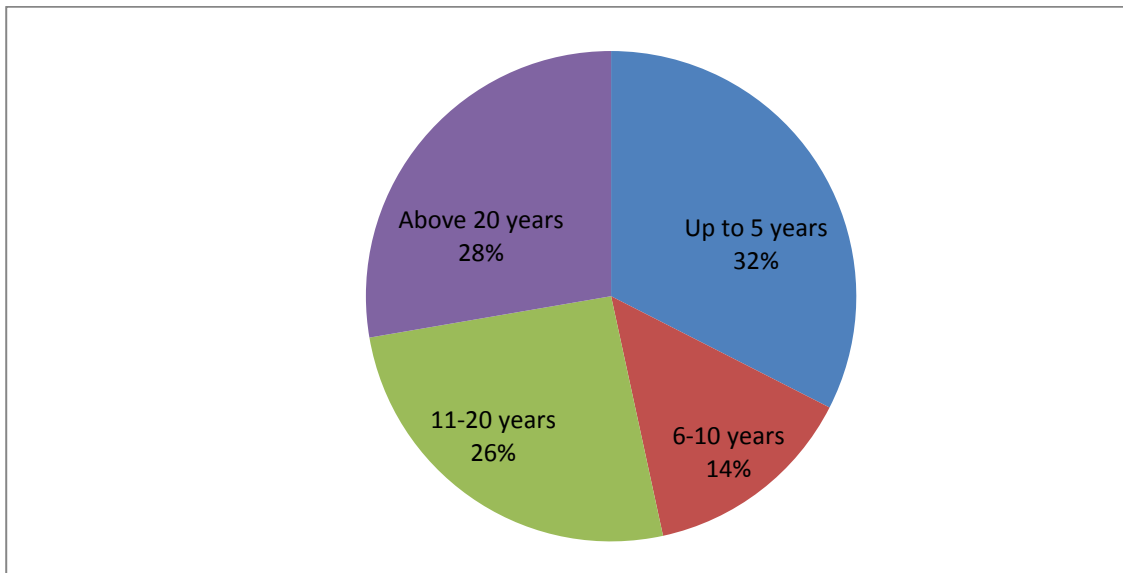


Fig. 8.1.21: Teaching Experience of Teachers (North Goa District).

Table 8.1.6: Teaching Experience of Teachers.

Experience	North Goa Dist.	South Goa Dist.	Goa state
Up to 5 years	32.5	31.6	32.1
6-10 years	14.1	16.1	15.1

11-20 years	25.7	19.6	22.7
Above 20 years	27.7	32.7	30.1
Total	100	100	100

Note: - Figures indicate percentage of teachers.

(b) South Goa District

Figure 8.1.22 and Table 8.1.6 show distribution of teachers of South Goa district in terms of years of teaching experience.

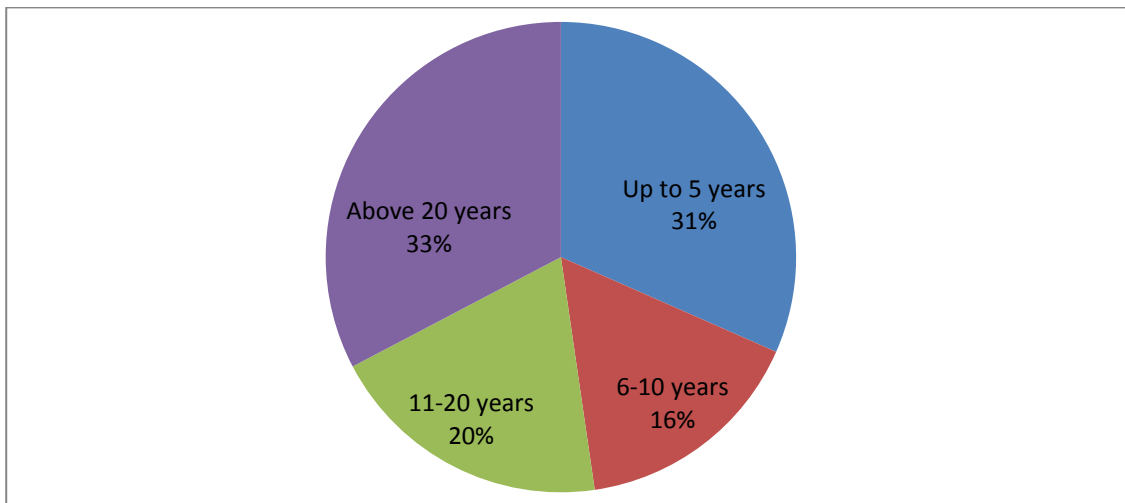


Fig. 8.1.22: Teaching Experience of Teachers (South Goa District).

(c) Comparison between North Goa and South Goa Districts

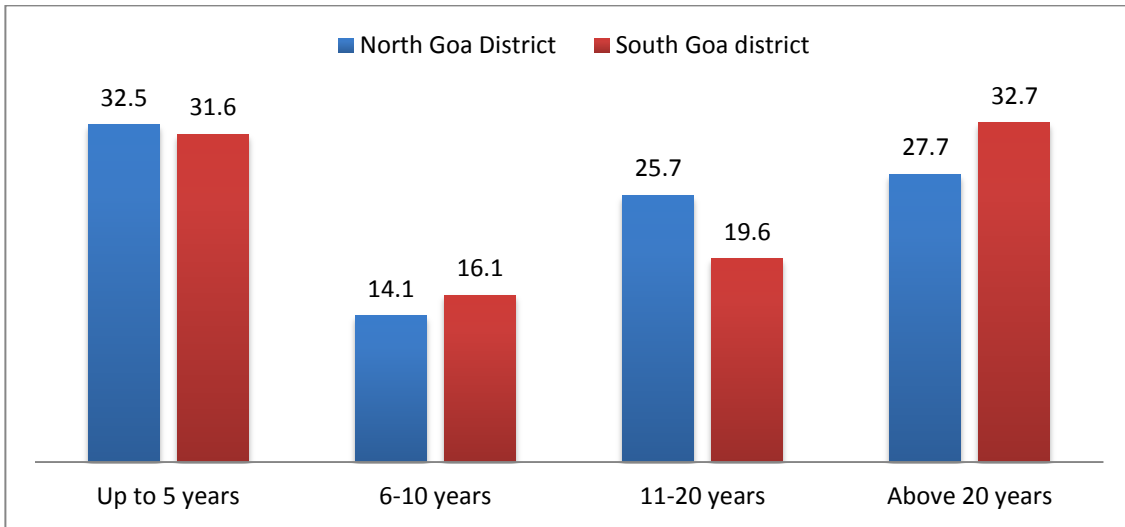


Fig. 8.1.23: Teaching Experience of Teachers (Comparison between North Goa and South Goa Districts).

The comparative data in Figure 8.1.23 show that equal percentage of teachers of both the districts had teaching experience up to 5 years and between 6-10 years. Higher percentage of teachers of North Goa than South Goa district had 11-20 years of experience but higher percentage of teachers of South Goa than North Goa district had above 20 years of experience.

(d) Goa state

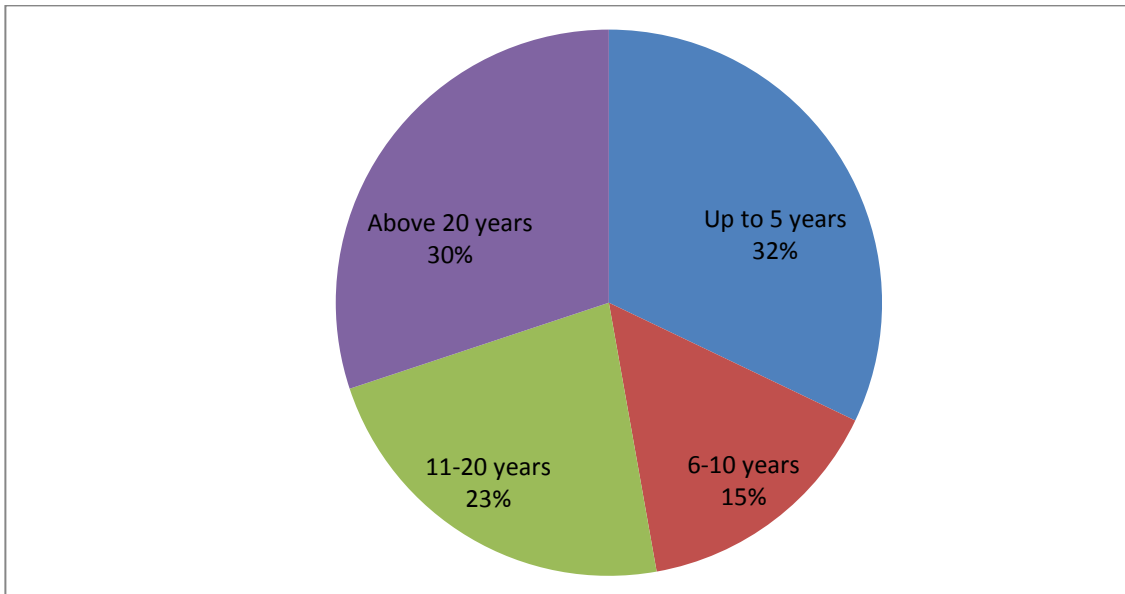


Fig. 8.1.24: Teaching Experience of Teachers (Goa State).

Nearly one-third of the teachers of the State had up to 5 years of experience, 15 percent had 6-10 years of experience, 23 percent had 11-20 years and 30 percent had above 20 years of experience (Figure 8.1.24).

8.1.7 Employment Status of Teachers

(a) North Goa District

Eighty-four percent of teachers of North Goa district were regular full time and the remaining working on temporary basis (Fig.8.1.25).

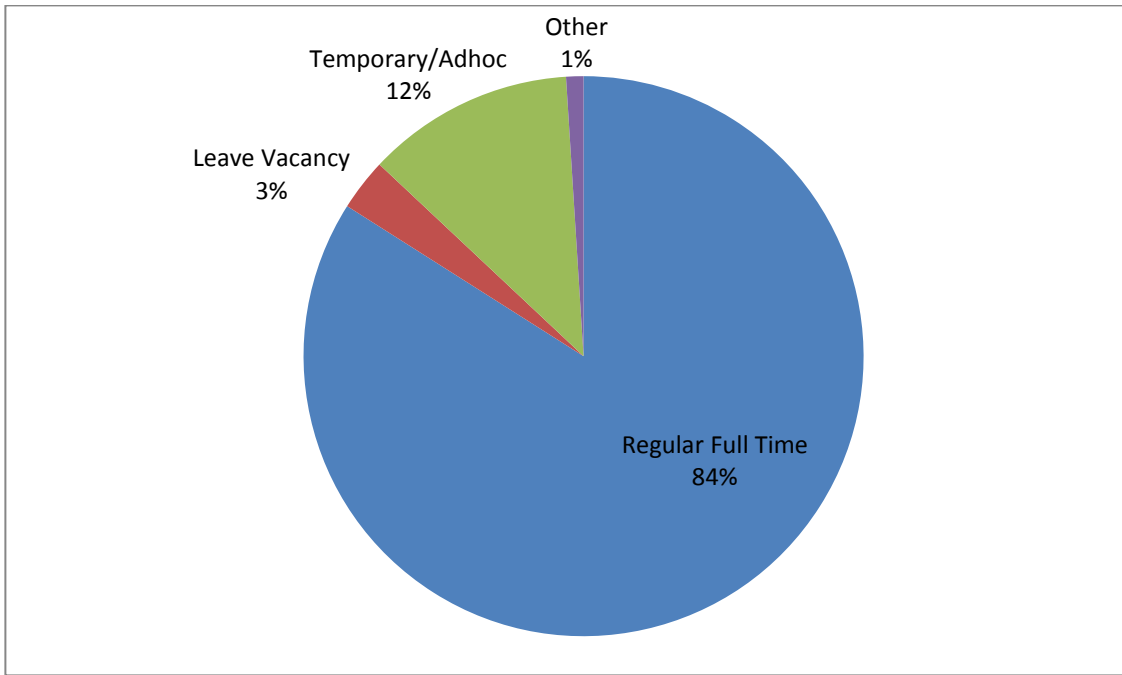


Fig. 8.1.25: Employment Status of Teachers (North Goa District)

Table 8.1.7: Employment Status of Teachers

Status	North Goa District	South Goa District	Goa state
Regular Full Time	84.0	88.5	86.0
Leave Vacancy	3.0	1.5	2.0
Temporary/Adhoc	12.0	8.0	10.0
Other	1.0	2.0	2.0
Total	100	100	100

Note: - Figures indicate percentage of teachers

(b) South Goa District

Nearly nine-tenths of the teachers of South Goa district were working on regular full time basis (Table 8.1.7 and Fig.8.1.26) and the remaining were temporary.

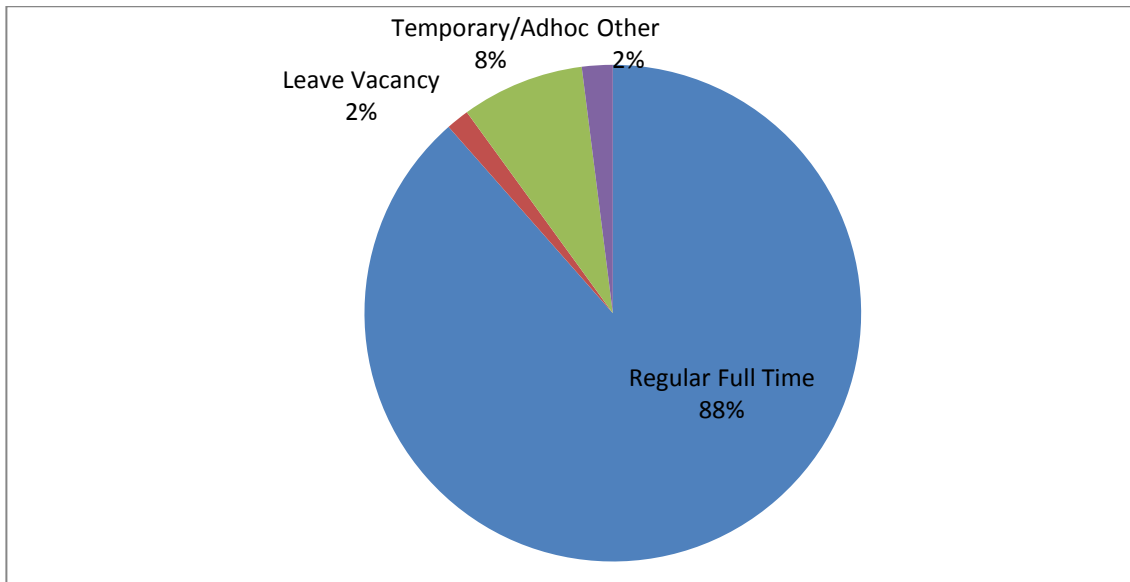


Fig. 8.1.26: Employment Status of Teachers (South Goa District).

(c) Comparison between North Goa and South Goa Districts

Compared to North Goa district, higher percentage of teachers of South Goa district were working on full time regular basis and higher percentage of teachers of North Goa district than South Goa district were temporary (Figure 8.1.27).

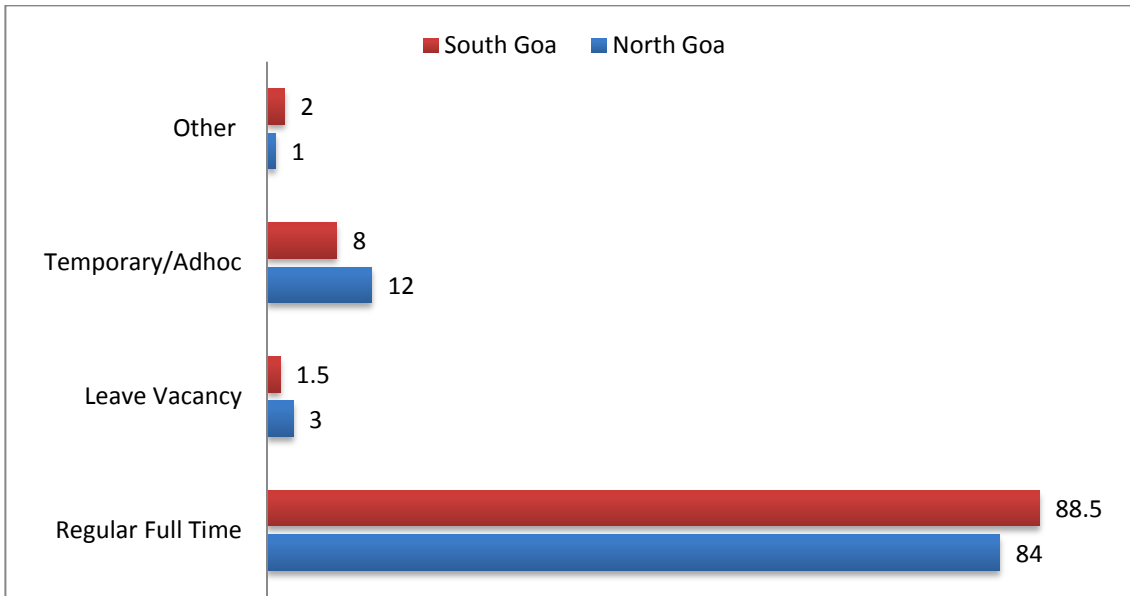


Fig.8.1.27: Employment Status of Teachers (Comparison between North Goa and South Goa Districts).

(d) Goa state

Figure 8.1.28 indicates the employment status of elementary school teachers of the State of Goa.

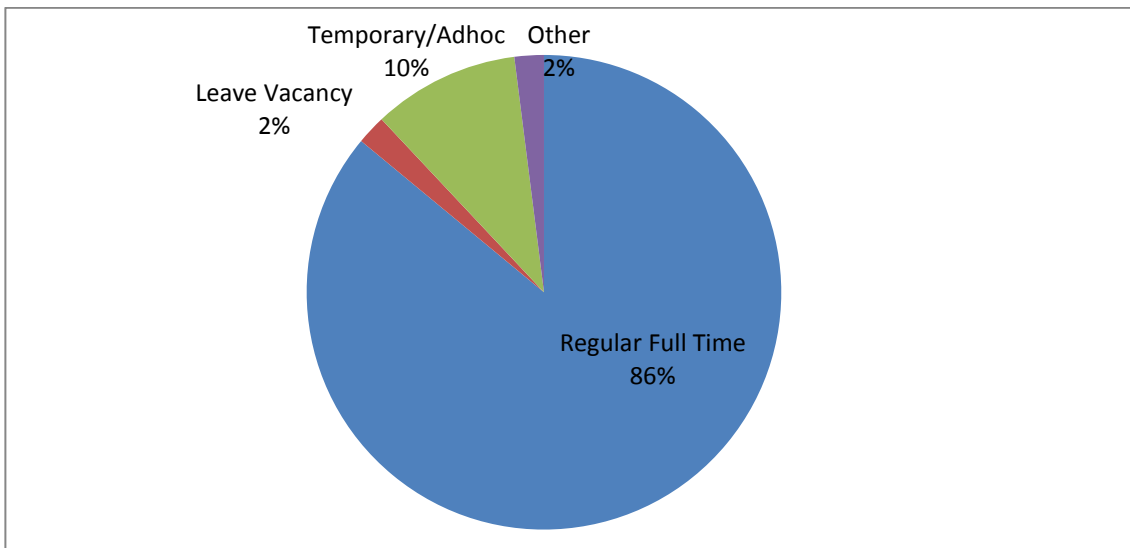


Fig. 8.1.28: Employment Status of Teachers (Goa State)

8.2 In-service Training Programme Attended

(a) North Goa District

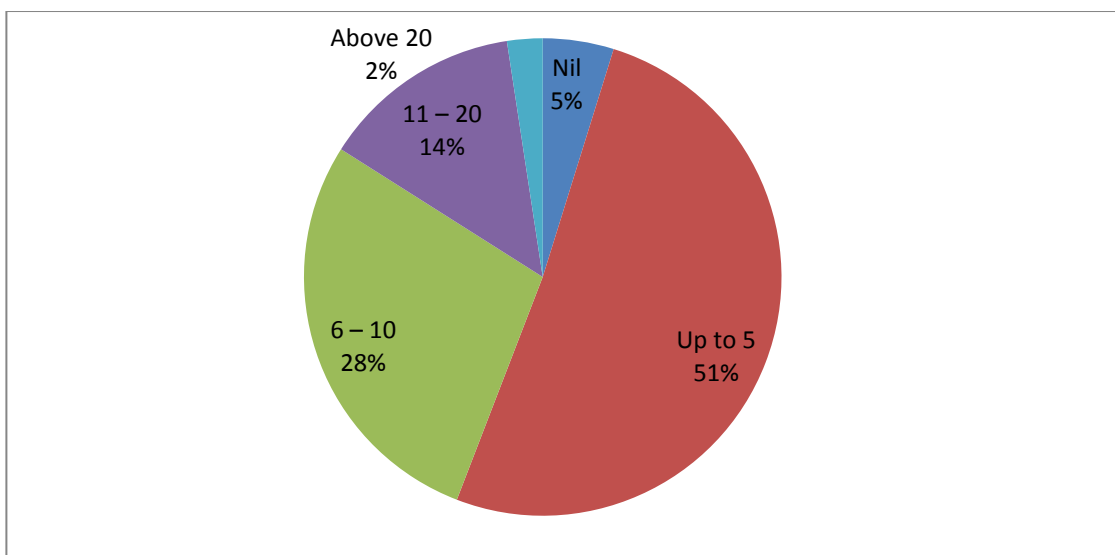


Fig. 8.2.1: In-service Training Programme attended by Teachers (North Goa District)

Half of the teachers of North Goa district informed that they had attended up to 5 in-service training programmes, 28 percent between 6-10 programmes and 16 percent more than 10 programmes.

Table 8.2.1: In-service Training Programme attended by Teachers during the last two Years

No. of Programmes	North Goa Dist.	South Goa Dist.	Goa state
Nil	4.8	4.0	4.4
Up to 5	51.0	32.7	42.0
6 – 10	28.1	36.7	32.3
11 – 20	13.6	19.6	16.5
Above 20	2.4	7.0	4.8

Total	100	100	100
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Note: - Figures indicate percentage of teachers

(b) South Goa District

Figure 8.2.2 shows number of in-service training programmes attended by teachers of South Goa district.

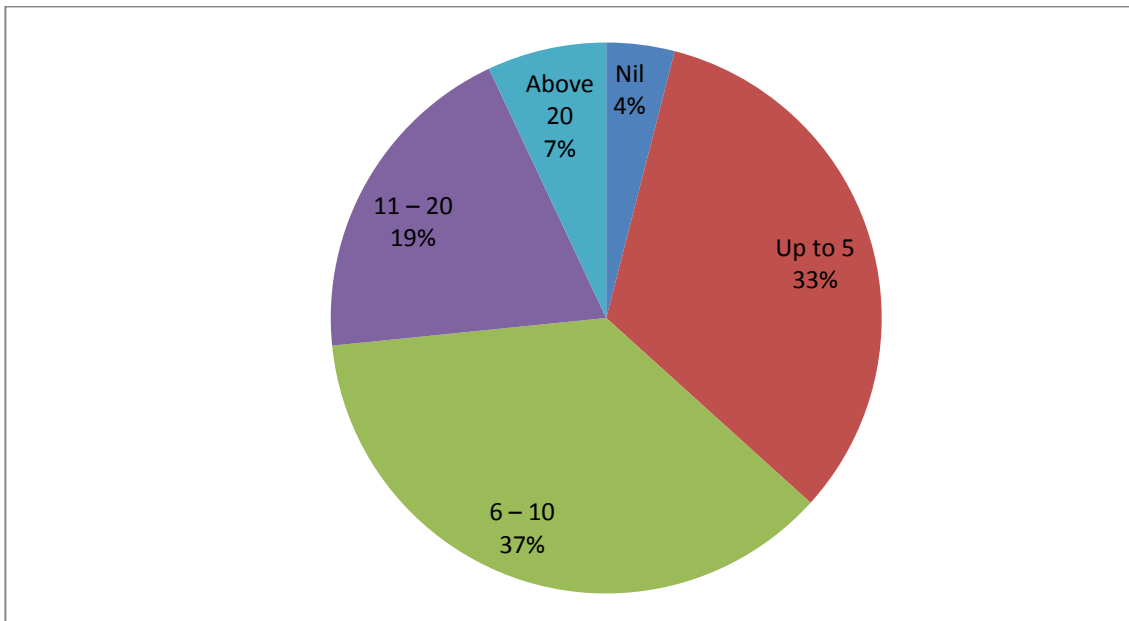


Fig. 8.2.2: In-service Training Programme attended by Teachers (South Goa District)

(c) Comparison between North Goa and South Goa Districts

Data in Figure 8.2.3 indicated that the teachers of South Goa district were better than their counterparts in North Goa district as far as participation in in-service training programmes is concerned.

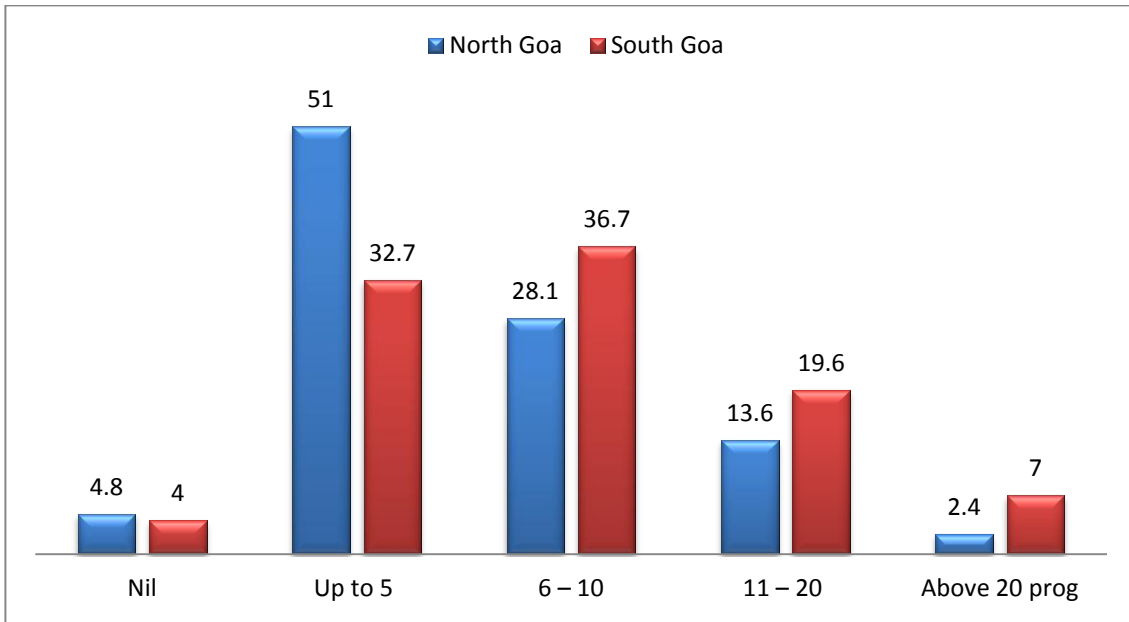


Fig. 8.2.3: In-service Training Programme attended by Teachers (Comparison between North Goa and South Goa Districts).

(d) Goa state

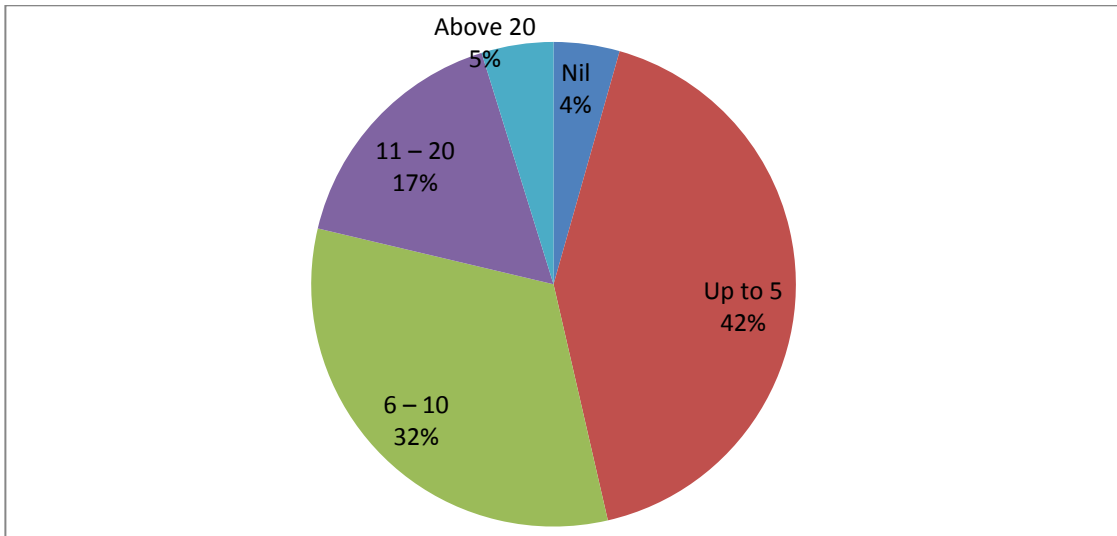


Fig 8.2.4: In-service Training Programme attended by Teachers (Goa State).

About two-fifths of the teachers of the State had attended up to 5 in-service programmes, around one-third had participated in 6-10 programmes and 17 percent had participated in 11-20 programmes and 5 percent in more than 20 programmes.

8.3 Teaching- Learning Process

8.3.1 Homework given by Teachers

(a) North Goa District

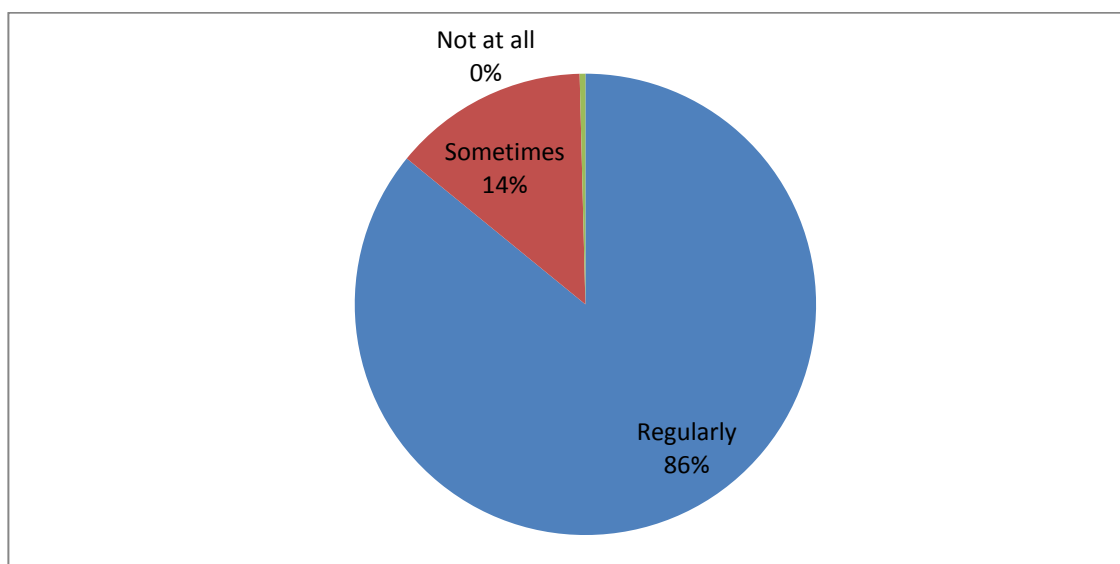


Fig. 8.3.1: Homework given by Teachers (North Goa District).

Table 8.3.1: Homework given by Teacher.

Frequency	North Goa District	South Goa District	Goa state
Regularly	85.9	85.4	85.7
Sometimes	13.6	14.6	14.1
Not at all	0.5	0.00	0.2

Total	100	100	100
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Note: - Figures indicate percentage of teachers.

Almost all the teachers of North Goa district used to assign homework to the students regularly (Table 8.3.1 and Figure 8.3.1).

(b) South Goa District

Eight –five percent teachers of South Goa district mentioned that they used to assign homework to students regularly and 15 percent used to do so sometimes (Figure 8.3.2).

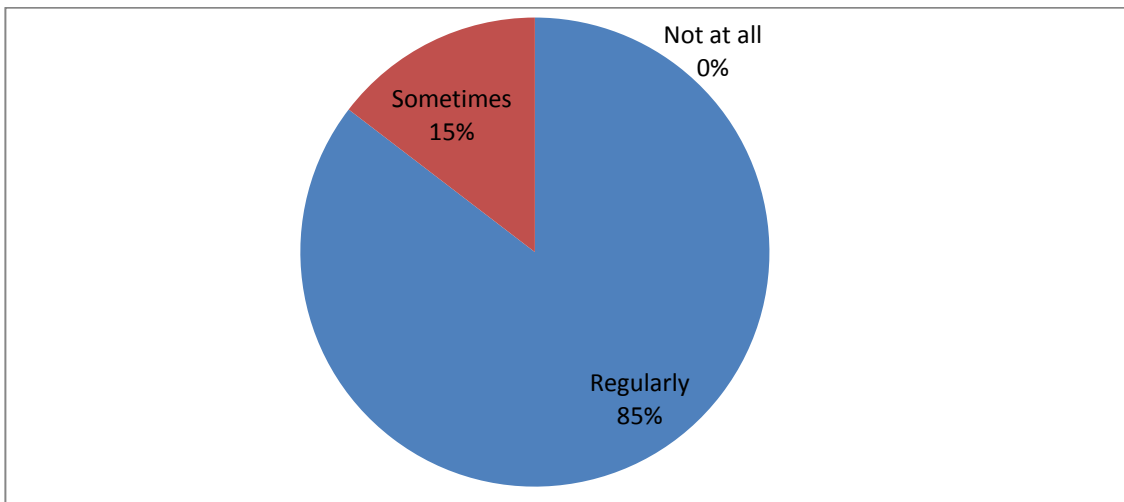


Fig. 8.3.2: Homework given by Teachers (South Goa District).

c) Comparison between North Goa and South Goa Districts

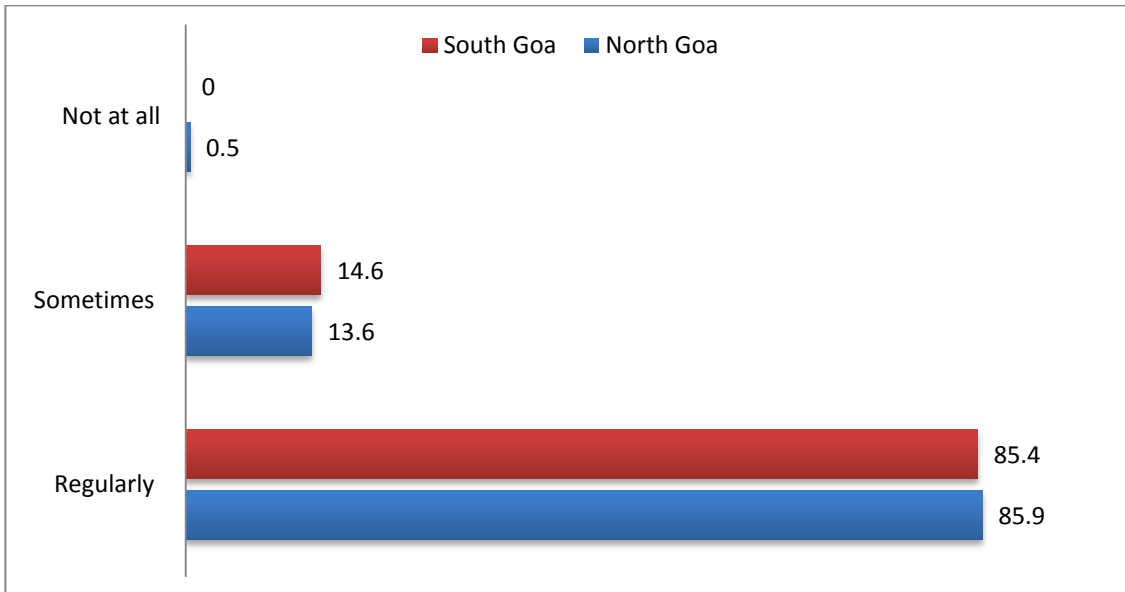


Fig. 8.3.3: Homework given by Teacher (Comparison between North Goa and South Goa Districts)

No difference was observed between the teachers of the two districts in assignment of homework to students (Figure 8.3.3).

d) Goa State

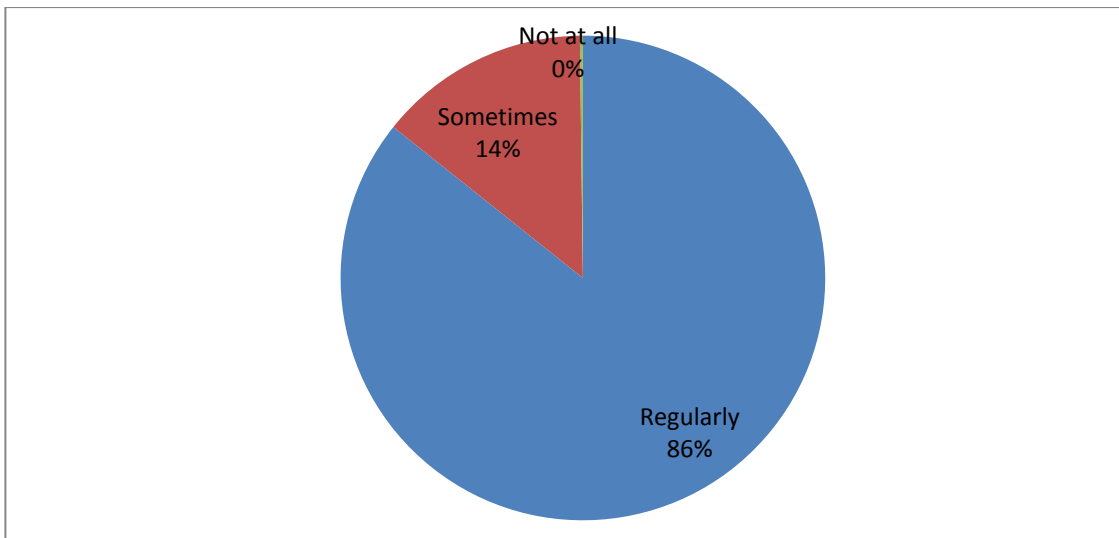


Fig. 8.3.4: Homework given by Teacher (Goa State).

Figure 8.3.2 indicated that 86 percent teachers used to assign homework to students regularly and 14 percent used to do so sometimes.

8.3.2 Teachers' Diary

(a) North Goa District

Almost all teachers of North Goa district used to maintain teachers' diary (Table 8.3.2 and Figure 8.3.5).

Table 8.3.2: Maintenance of Teachers' Diary.

Status	North Goa Dist.	South Goa Dist.	Goa state
Maintained	91.0	93.0	92.0
Not Maintained	9.0	7.0	8.0
Total	100	100	100

Note: - Figures indicate percentage of teachers

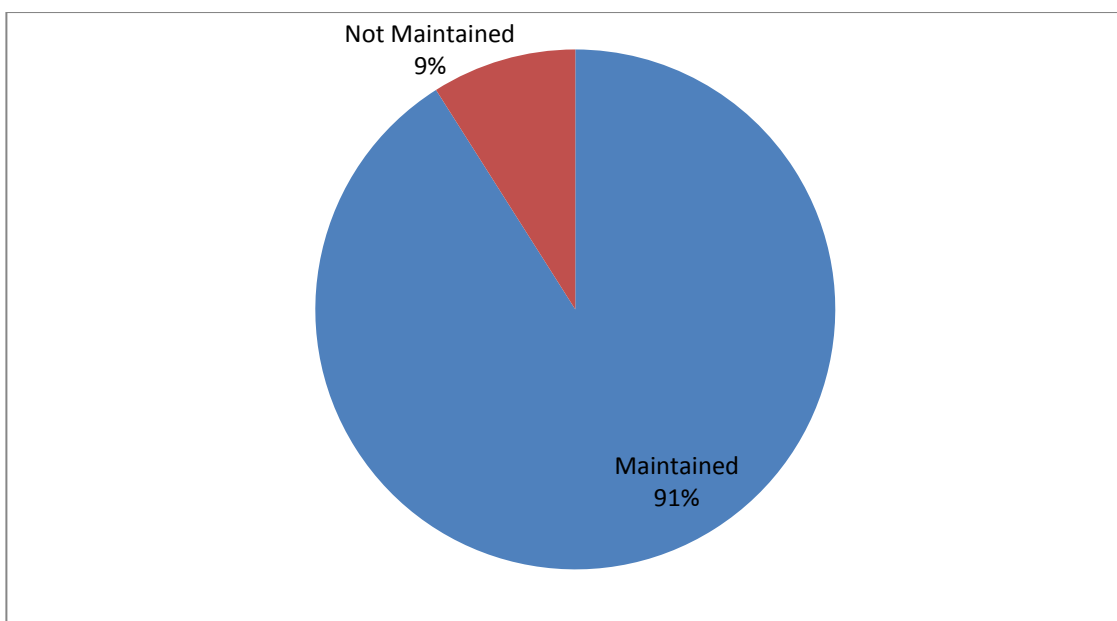


Fig. 8.3.5: Maintenance of Teachers' Diary (North Goa District).

b) South Goa District

Figure 8.3.6 and Table 8.3.2 shows that all most all the teachers of South Goa district used to maintain teachers' diary.

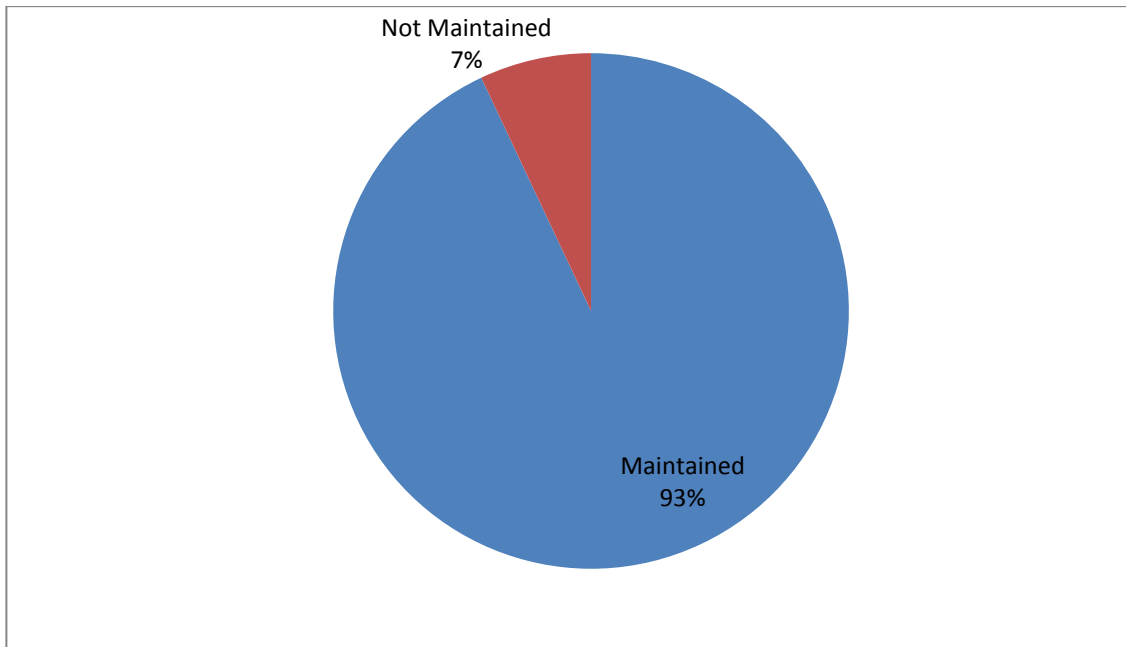


Fig. 8.3.6: Maintenance of Teachers' Diary (South Goa District).

(c) Comparison between North Goa and South Goa Districts

Nearly equal percentage of teachers of both the districts used to maintain teachers' diary (Figure 8.3.7 and Table 8.3.2).

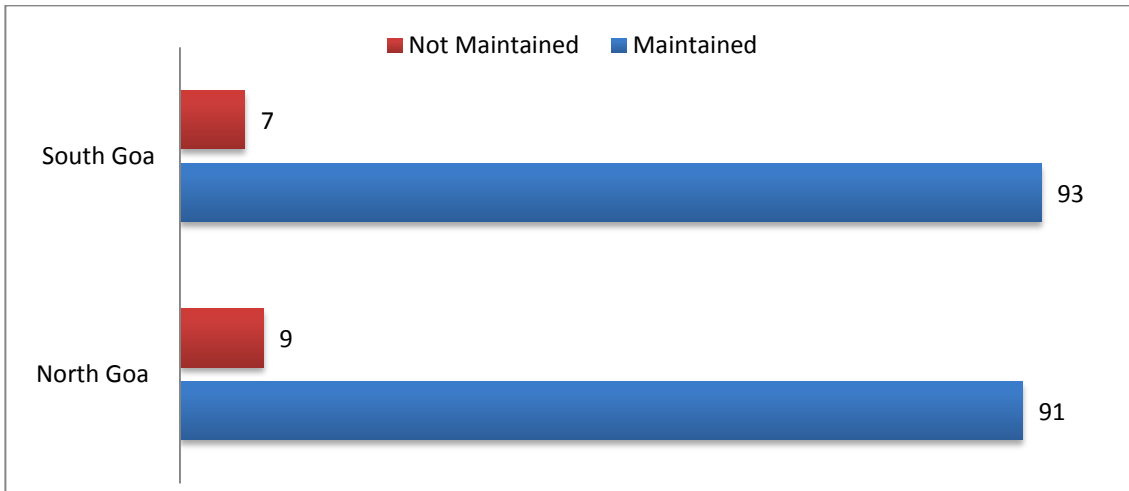


Fig. 8.3.7: Maintenance of Teachers' Diary (North Goa and South Goa District).

(d) Goa State

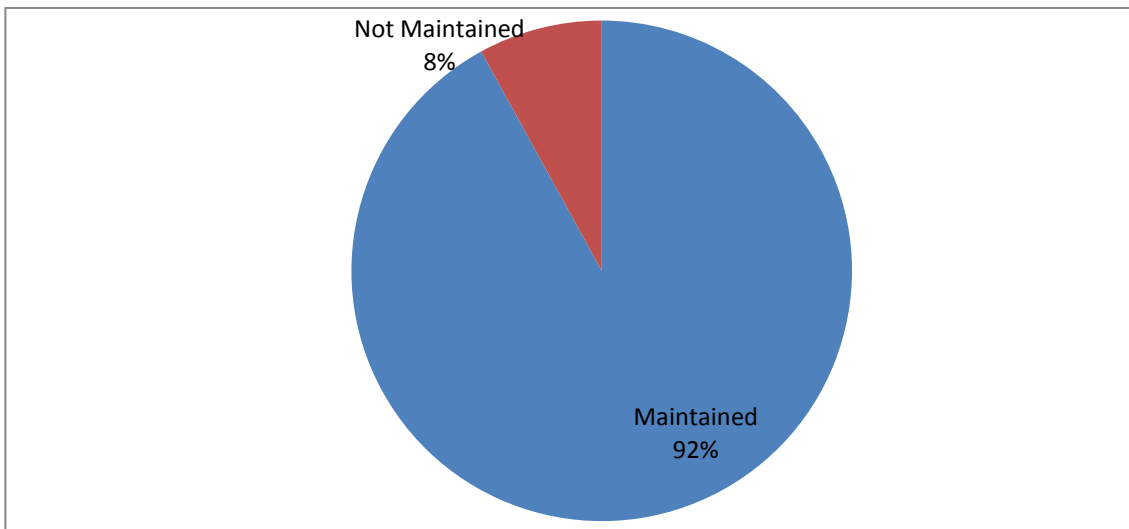


Fig. 8.3.8: Maintenance of Teachers' Diary (Goa State).

Figure 8.3.8 revealed that 92 percent of teachers of the State used to maintain teachers' diary.

8.3.3 Teaching Load of Teachers

(a) North Goa District

Figure 8.3.9 and Table 8.3.3 show percentage of teachers of North Goa district having workload in terms of number of periods per week.

Table 8.3.3: Teaching Load of Teacher per Week.

Periods	North Goa District	South Goa District	Goa state
Up to 10	13.6	23.1	18.3
11-20	1.4	4.0	2.7
21-30	15.0	22.6	18.8
31 & above	70.0	50.2	60.2
Total	100	100	100

Note: - Figures indicate percentage of teachers

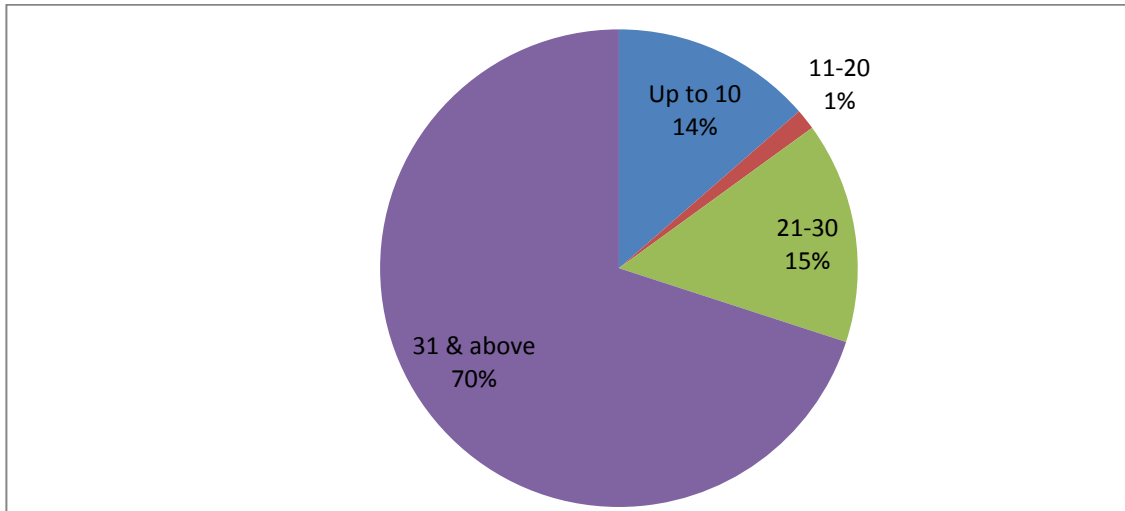


Fig.8.3.9: Teaching Load of Teachers (North Goa District).

(b) South Goa District

Percentage of teachers of South Goa district having workload in terms of number of periods per week is shown in Figure 8.3.10.

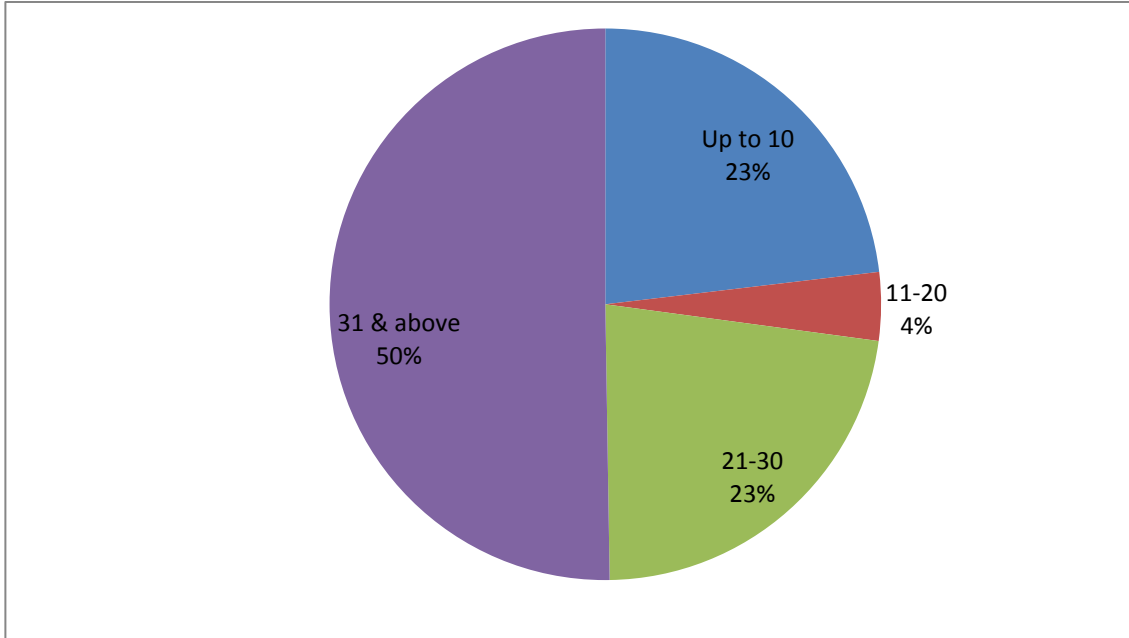


Fig.8.3.10: Teaching Load of Teachers (South Goa District)

c) Comparison between North Goa and South Goa Districts

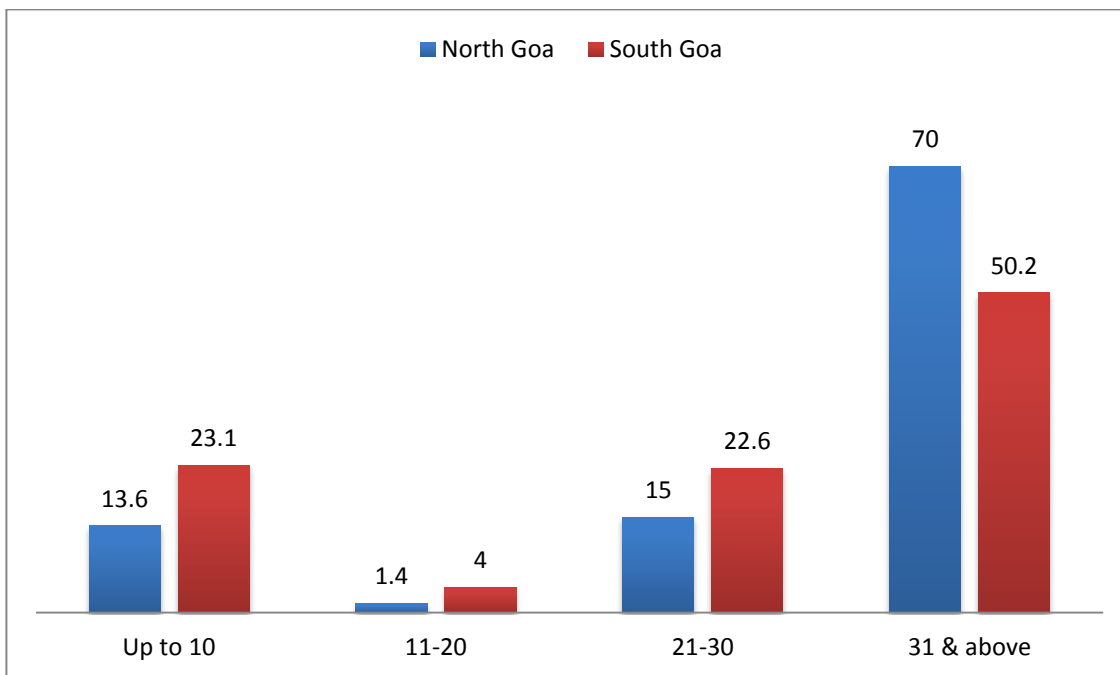


Fig.8.3.11: Teaching Load of Teachers (North Goa and South Goa Districts).

Figure 8.3.11 shows that higher percentage of teachers of North Goa district than South Goa district had workload above 31 periods per week. But higher percentage of teachers of South Goa district than North Goa district had less number of periods per week indicating the fact that the teachers of South Goa had less workload compared to the teachers of North Goa district.

(d) Goa State

Three-fifths of teachers teaching in Class-VII of the State had more than 30 periods per week. About one-fifth had between 21-30 periods and the rest had less than 21 periods per week (Figure 8.3.12).

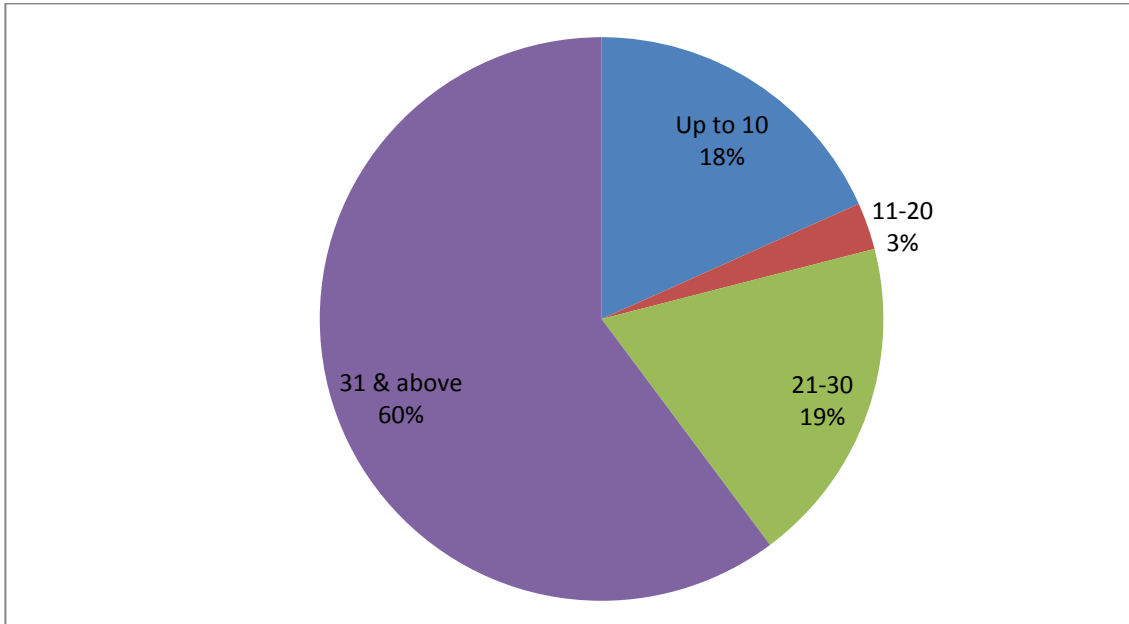


Fig.8.3.12: Teaching Load of Teachers (Goa State)

8.3.4 Academic Facilities in School

(a) North Goa District

Table 8.3.4 and Figure 8.3.13 revealed that 94 percent of teachers of North Goa district had TLM and little more than half of them had A.V. Facilities and teachers' handbooks.

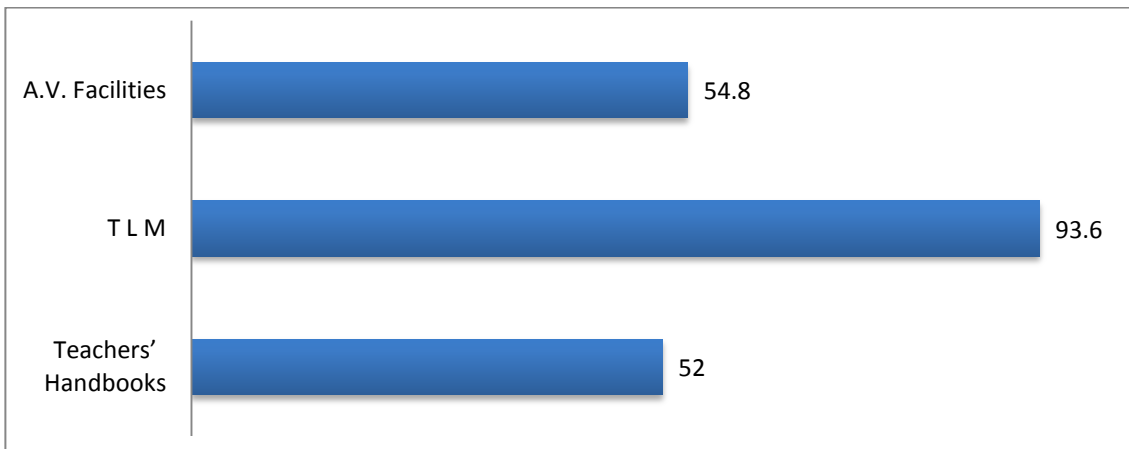


Fig. 8.3.13: Academic Facilities in School (North Goa District)

Table 8.3.4: Academic Facilities in School.

Facilities	North Goa District	South Goa District	Goa state
Teachers' Handbooks	52.0	63.3	57.5
T L M	93.6	92.0	92.8
A.V. Facilities	54.8	80.0	67.2

Note: - Figures indicate percentage of teachers.

(b) South Goa District



Fig. 8.3.14: Academic Facilities in School (South Goa District)

More than 90 percent, 80 percent and 63 percent of teachers of South Goa district had TLM; A.V. Facilities and teachers' handbooks respectively (Table 8.3.4 and Figure 8.3.14).

(c) Comparison between North Goa and South Goa Districts

Higher percentage of teachers of South Goa than North Goa district had A.V. facilities and teachers' hand book (Figure 8.3.15).

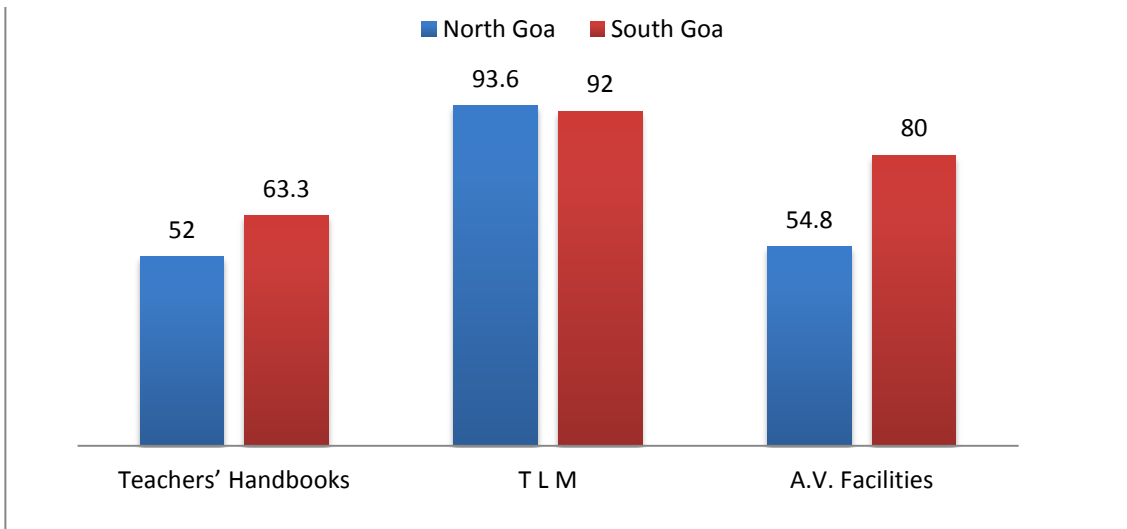


Fig. 8.3.15: Academic Facilities in School (Comparison between North Goa and South Goa Districts)

(d) Goa State

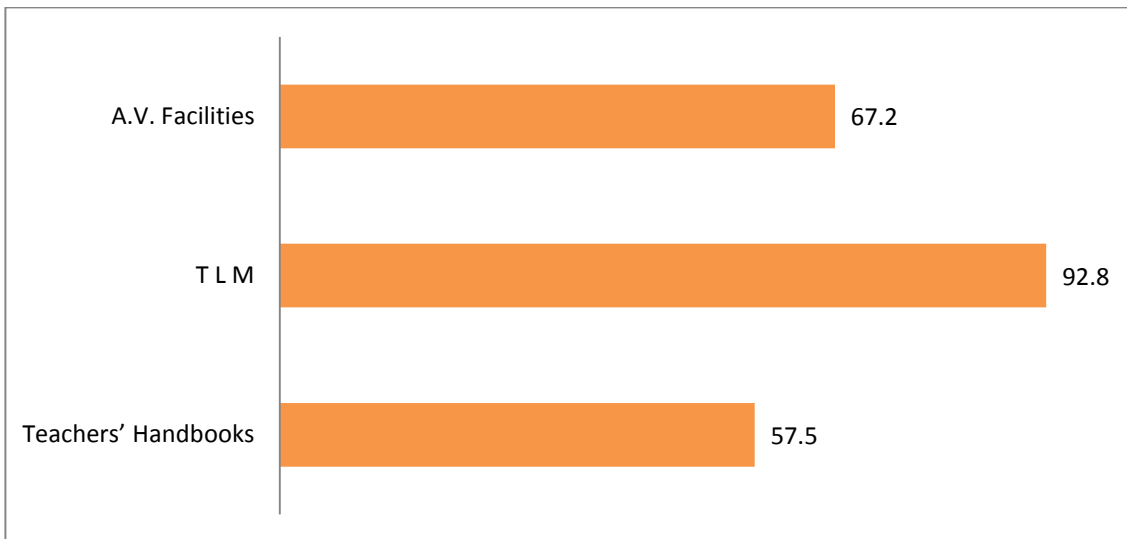


Fig. 8.3.16: Academic Facilities in School (Goa State)

Figure 8.3.16 shows that two-third of the teachers of the State had A.V. facilities, nearly three-fourths had Teachers' handbooks and 93 percent had TLM.

8.3.5 TLM Grants for Teachers

Only 11 percent teachers of North Goa district, 8.5 percent of South Goa district and 9.9 percent teachers of the State of Goa had received TLK grants during the academic year 2013-14 (Table 8.3.5 and Figure 8.3.17).

Table 8.3.5: TLM Grants received by Teachers in 2013-14.

Group	%
North Goa Dist	11.1
South Goa Dist.	8.5
Goa State	9.9

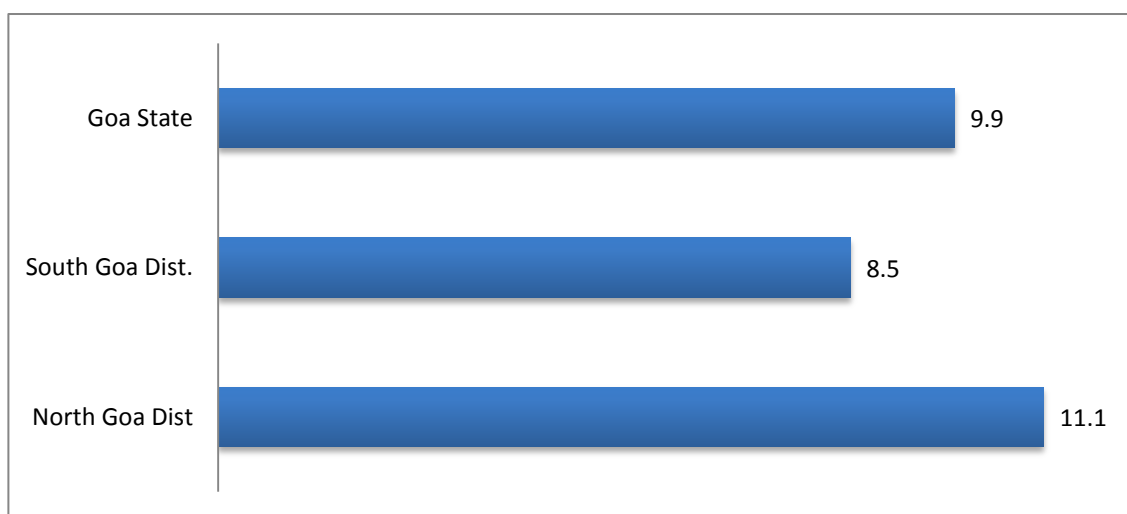


Fig 8.3.17 TLM Grants received by Teachers in 2013-14.

8.3.6 Academic support to Teachers

(a) North Goa District

Around two-third of the teachers of North Goa district did not received any academic help from resource persons/officials, 29 percent had received help up to 5 times and very negligible percentage of teachers had received help more than 5 times in the academic year 2013-14 (Figure 8.3.18 and Table 8.3.6).

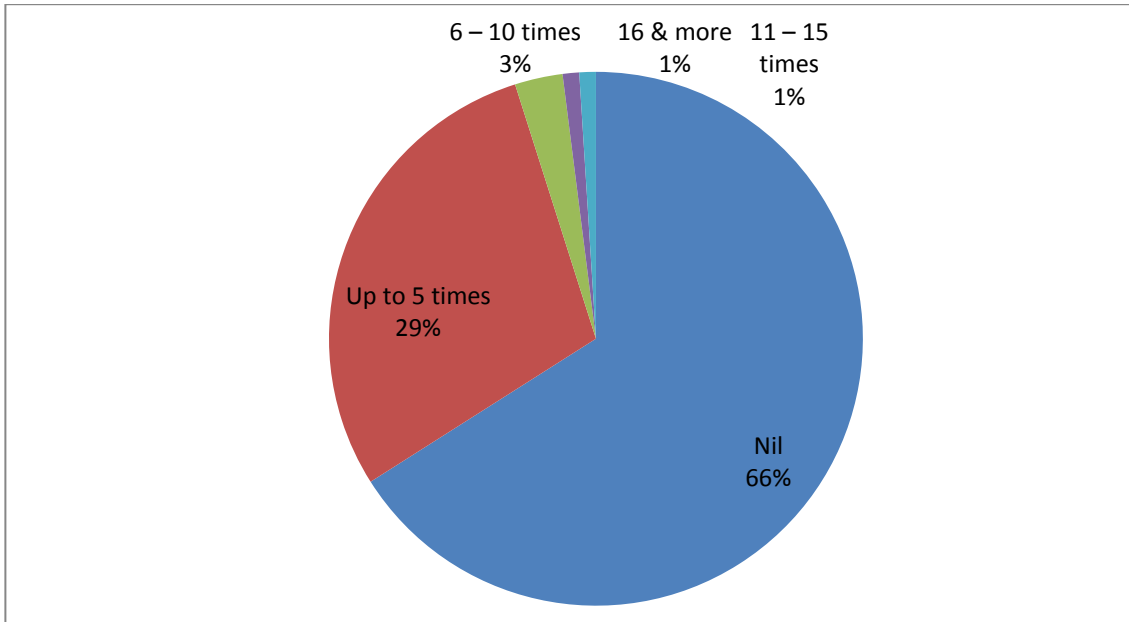


Fig. 8.3.18: Academic support received by Teachers in 2013-14 (North Goa Dist.)

Table 8.3.6: Academic support received by Teachers in 2013-14

Support	North Goa Dist.	South Goa Dist.	Goa state
Nil	66.0	51.8	59.0
Up to 5 times	29.1	31.5	30.1
6 – 10 times	2.9	9.0	5.9
11 – 15 times	1.0	1.5	1.2
16 & more	1.0	6.5	3.7
Total	100	100	100

Note:- Figures indicate percentage of teachers.

(b) South Goa District

Half of the teachers of South Goa district did not received any academic help from resource persons/officials, 31percent had received help up to 5 times, 9 percent had

received between 6-10 times and the remaining had received more than 10 times in the academic year 2013-14 (Figure 8.3.119 and Table 8.3.6).

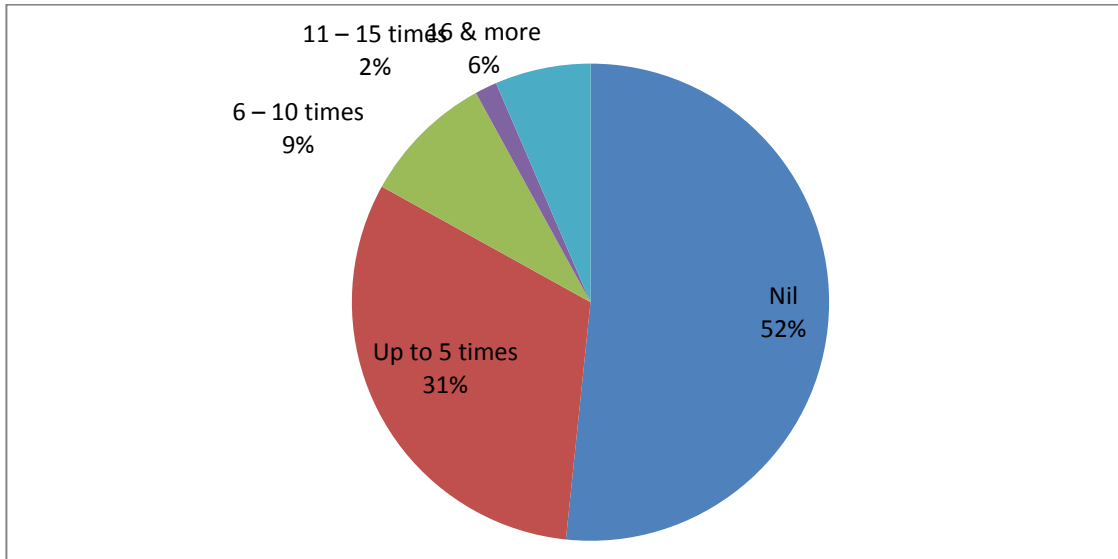


Fig. 8.3.19: Academic support received by Teachers in 2013-14 (South Goa District)

(c) Comparison between North Goa and South Goa Districts

Figure 8.3.20 revealed that the teachers of South Goa district were better than their counterparts from North Goa district as far as receiving academic help from resource persons/officials (in the year 2013-14) is concerned.

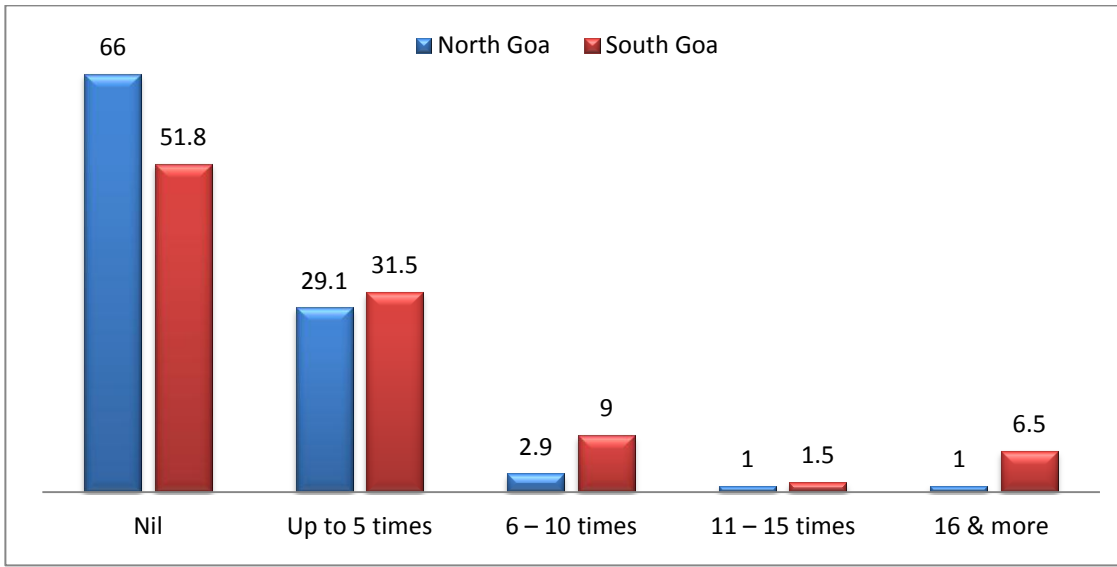


Fig. 8.3.20: Academic support received by Teachers in 2013-14 (Comparison between North Goa and South Goa Districts)

(d) Goa State

Nearly three-fifths of the teachers of the State of Goa received no academic help from resource persons/officials in the year 2013-14. Thirty percent had received help up to 5 times and the remaining had received more than 5 times (Figure 8.3.21).

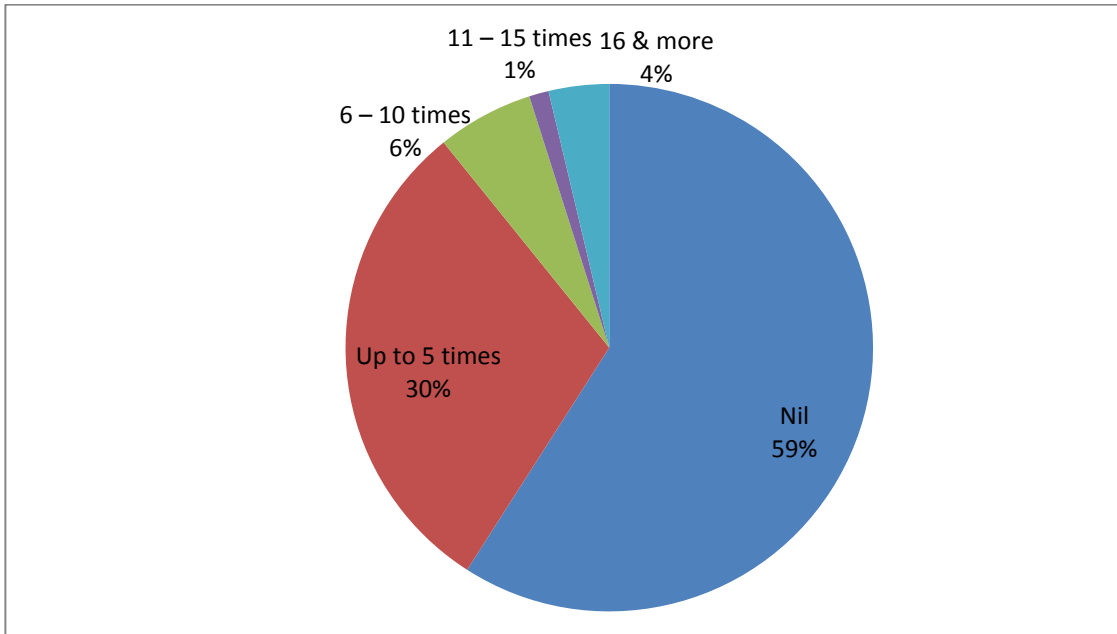


Fig. 8.3.21: Academic support received by Teachers in 2013-14 (Goa State).

8.3.7 Interaction with other Teachers

(i) Discussion about how to Teach a Particular Concept

(a) North Goa District

Nearly two-fifths of the teachers of North Goa district stated that they used to discuss with other teachers 1-3 times a week about how to teach a particular concept. Around three-fifths of the teachers used to do so 2-3 times per month (Fig. 8.3.22 and Table 8.3.7).

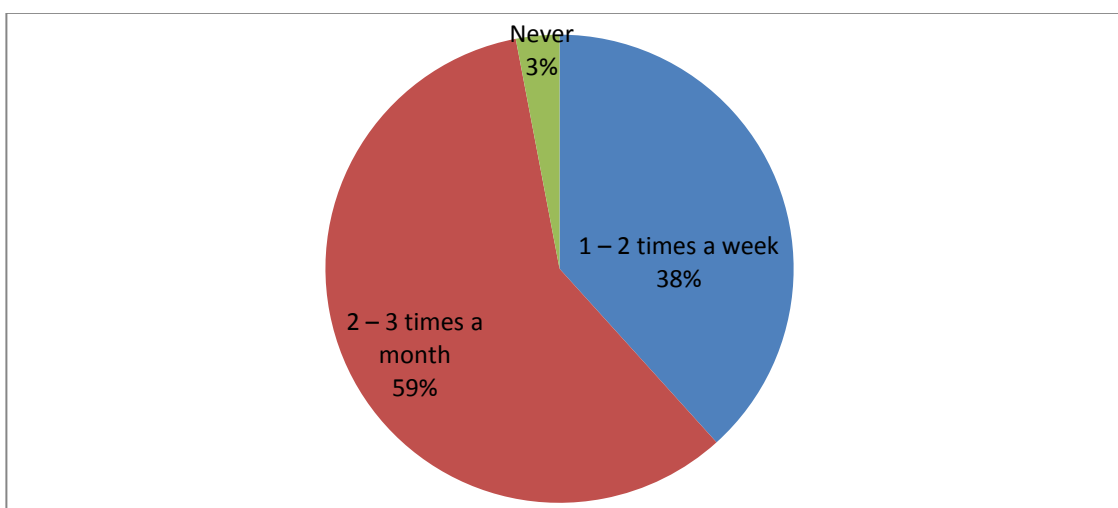


Fig. 8.3.22: Discussion about how to teach a Concept (North Goa District)

Table 8.3.7: Discussion with other teachers about how to teach a particular Concept

Support	North Goa Dist.	South Goa Dist.	Goa state
1 – 2 times a week	38.3	48.7	43.4
2 – 3 times a month	58.7	45.7	52.3

Never	3.0	5.6	4.2
Total	100	100	100

Note: - Figures indicate percentage of teachers.

(b) South Goa District

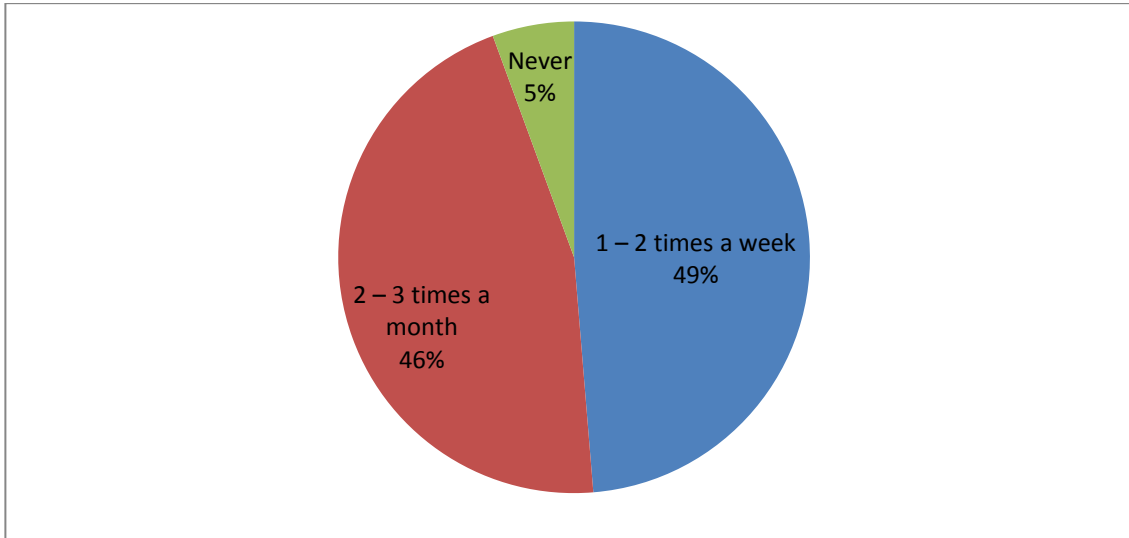


Fig. 8.3.23: Discussion about how to teach a Concept (South Goa District)

Around half of the teachers of South Goa district used to discuss 1-3 times a week with other teachers about how to teach a particular concept. Forty-six percent used to do so 2-3 times a month and around 5 percent never used to do so (Fig. 8.3.23).

(c) Comparison between North Goa and South Goa Districts

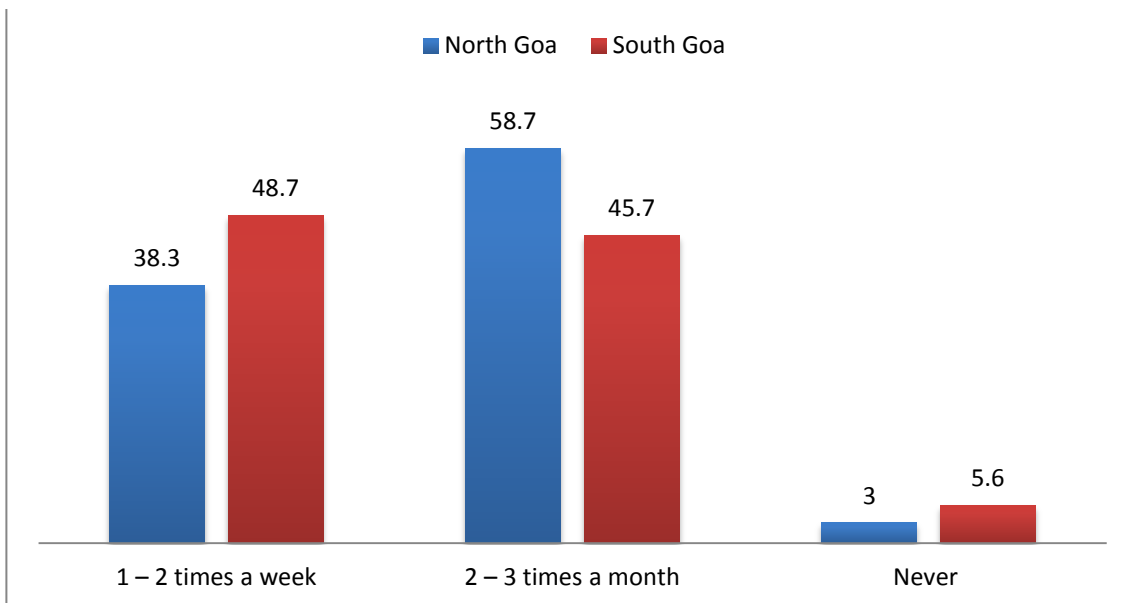


Fig. 8.3.24: Discussion about how to teach a Concept (North Goa and South Goa Districts)

Figure 8.3.24 shows that higher percentage of teachers of South Goa district than North Goa district used to discuss 1-3 times a week with other teachers about how to teach a particular concept. But higher percentage of teachers of North Goa district than South Goa district used to do so 2-3 times a month.

(d) Goa State

About 44 percent of teachers of the State used to discuss 1-3 times a week with other teachers about how to teach a particular concept. More than half of the teachers used to do so 2-3 times a month (Fig.8.3.25).

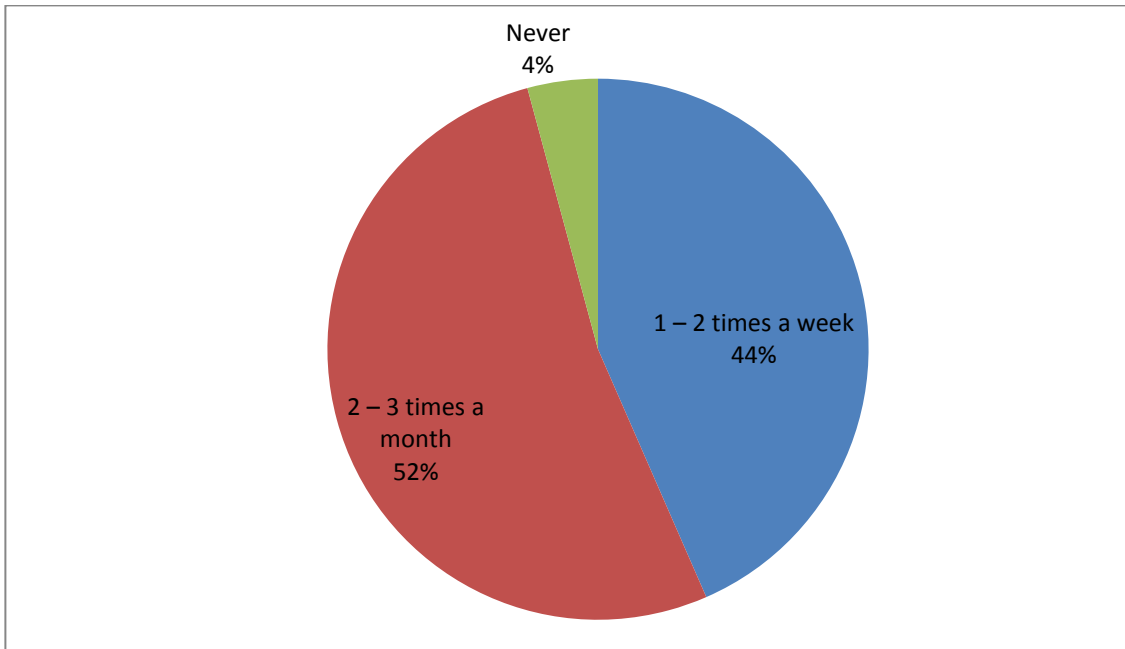


Fig. 8.3.25: Discussion about how to teach a Concept (Goa State)

(ii) Working with Teachers on Preparation of Instructional Materials

(a) North Goa District

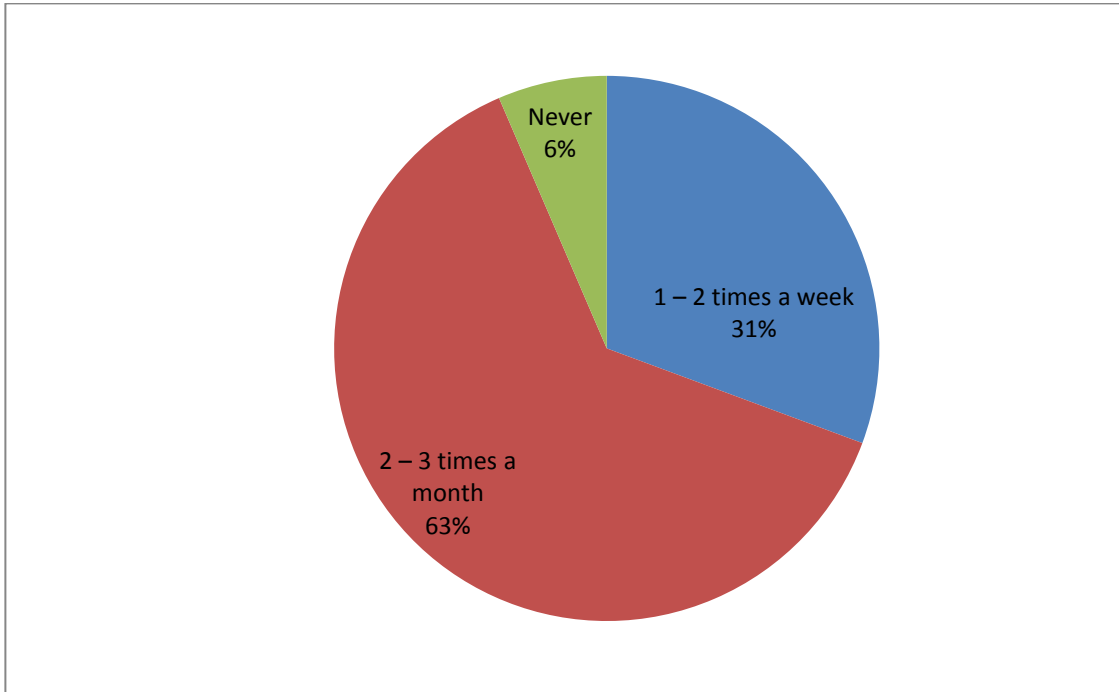


Fig. 8.3.26: Working with Teachers on Preparation of Instructional Materials (North Goa District)

Thirty- one percent of teachers of North Goa district used to work 1-3 times a week with other teachers to prepare instructional materials and 63 percent of teachers were doing so 2-3 times a month (Table 8.3.8 and Fig. 8.3.26).

Table 8.3.8: Working with Teachers on Preparation of Instructional Materials

Support	North Goa District	South Goa District	Goa state
1 – 2 times a week	30.8	33.0	31.8
2 – 3 times a month	63.2	59.7	61.3
Never	6.5	7.3	6.9
Total	100	100	100

Note: - Figures indicate percentage of teachers.

(b) South Goa District

Thirty- three percent of teachers of North Goa district used to work 1-3 times a week with other teachers to prepare instructional materials and 59.7 percent of used to do so 2-3 times in a month (Table 8.3.8 and Fig. 8.3.27).

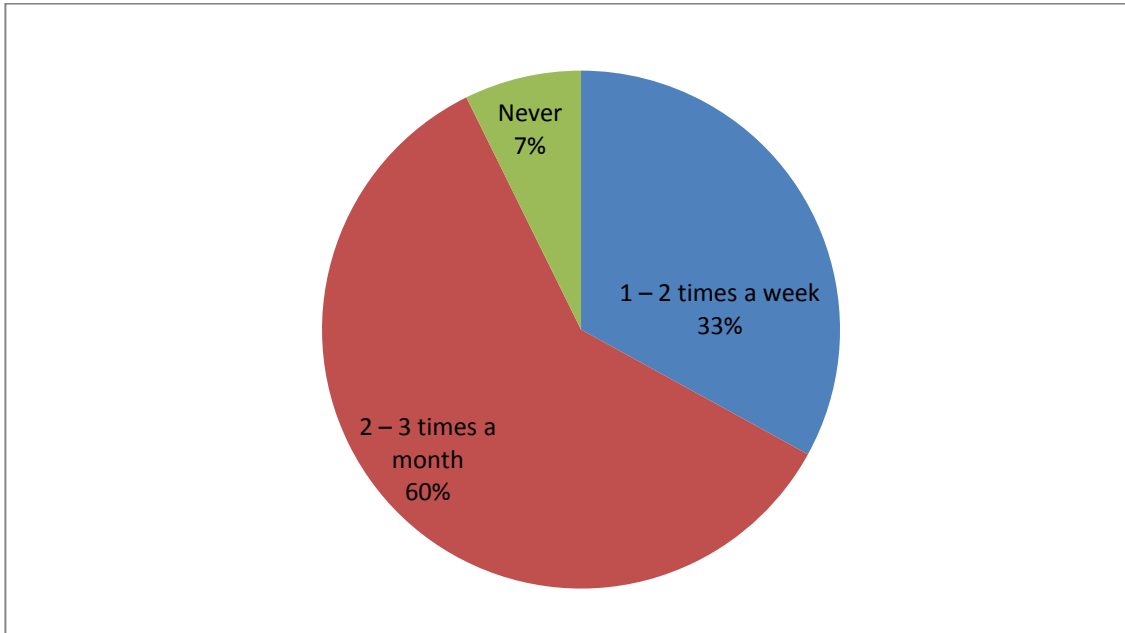


Fig. 8.3.27: Working with other Teachers for Preparation of Instructional Materials (South Goa District)

(c) Comparison between North Goa and South Goa Districts

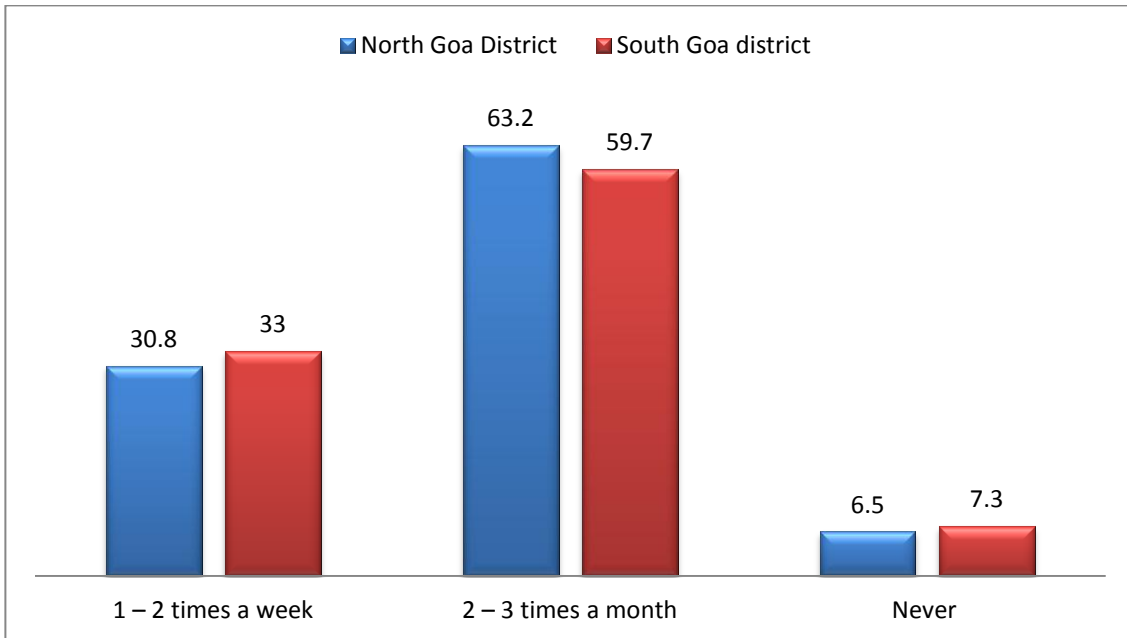


Fig. 8.3.28: Working with Teachers on Preparation of Instructional Materials (Comparison between North Goa and South Goa Districts)

Nearly equal percentages of teachers of both the districts used to work with other teachers 1-3 times a week and 2-3 times a month in preparing instructional materials (Figure 8.3.28)

(c) Goa State

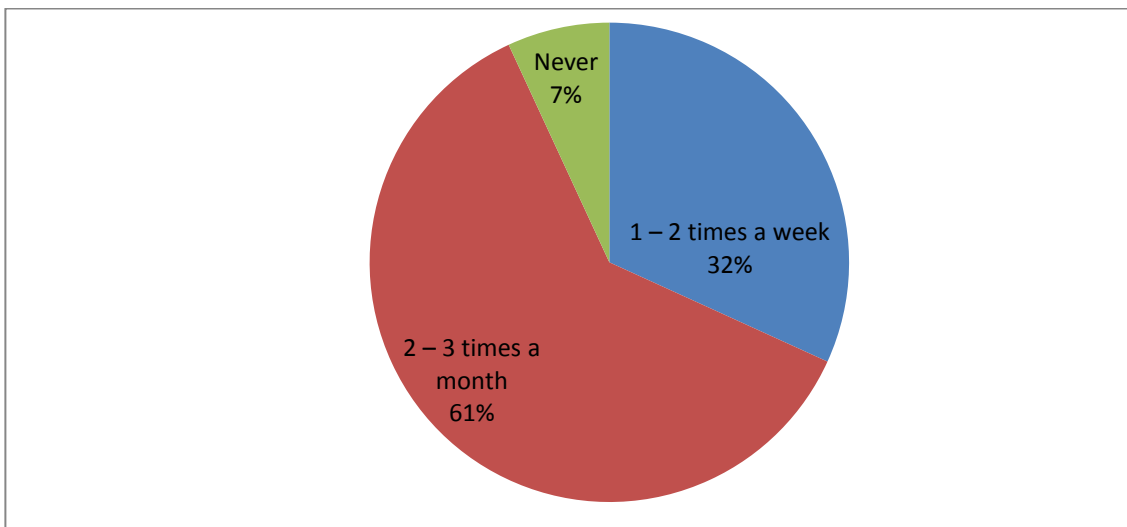


Fig. 8.3.29: Working with Teachers on Preparation of Instructional Materials (Goa State)

Thirty- two percent of teachers of the State of Goa stated that they used to work 1-3 times a week with other teachers in preparing instructional materials and 61.3 percent used to do so 2-3 times in a month (Table 8.3.8 and Fig. 8.3.29). Seven percent teachers informed that they never used to do such thing.

(iii) Observation of another Teacher’s Teaching

a) North Goa District

Only 6 percent of teachers of North Goa district used to observe teaching of other teachers 1-2 times a week and 19 percent used to do so 2-3 times a month. Three-fourths of the teachers never used to do so (Table 8.3.9 and Fig. 8.3.30).

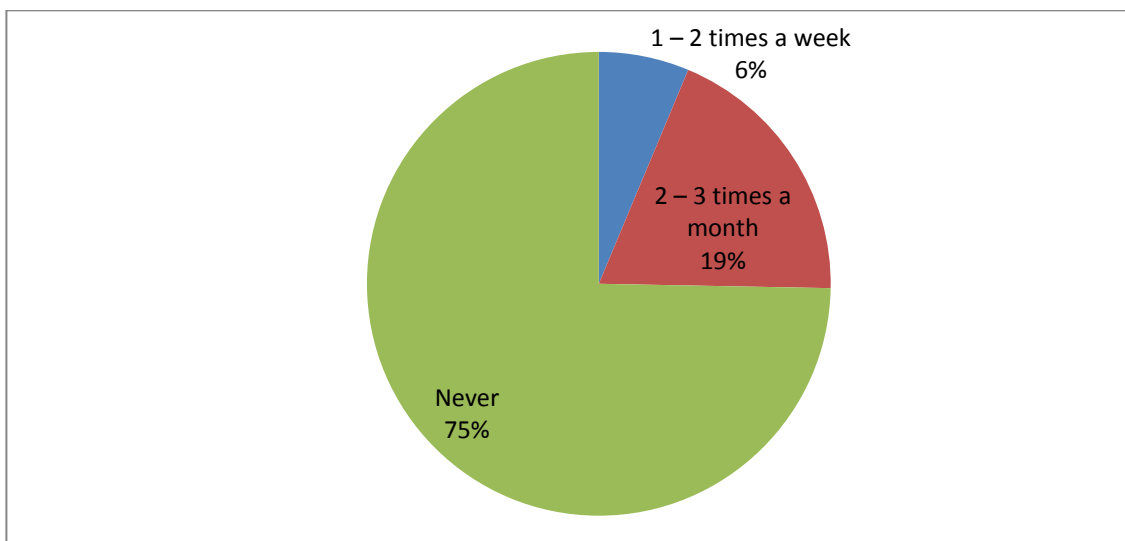


Fig. 8.3.30: Observation of Teaching of other Teachers (North Goa District).

Table 8.3.9: Observation of Teaching of other Teachers.

Support	North Goa Dist.	South Goa Dist.	Goa state
1 – 2 times a week	6.3	5.6	6.0
2 – 3 times a month	19.0	24.7	21.9

Never	74.7	69.7	72.2
Total	100	100	100

Note: - Figures indicate percentage of teachers

b) South Goa District

Figure 8.3.31 shows that only 6 percent of teachers of South Goa district used to observe teaching of other teachers 1-2 times a week and one-fourth of the teachers used to do so 2-3 times a month. Three-fourths of the teachers never used to do so.

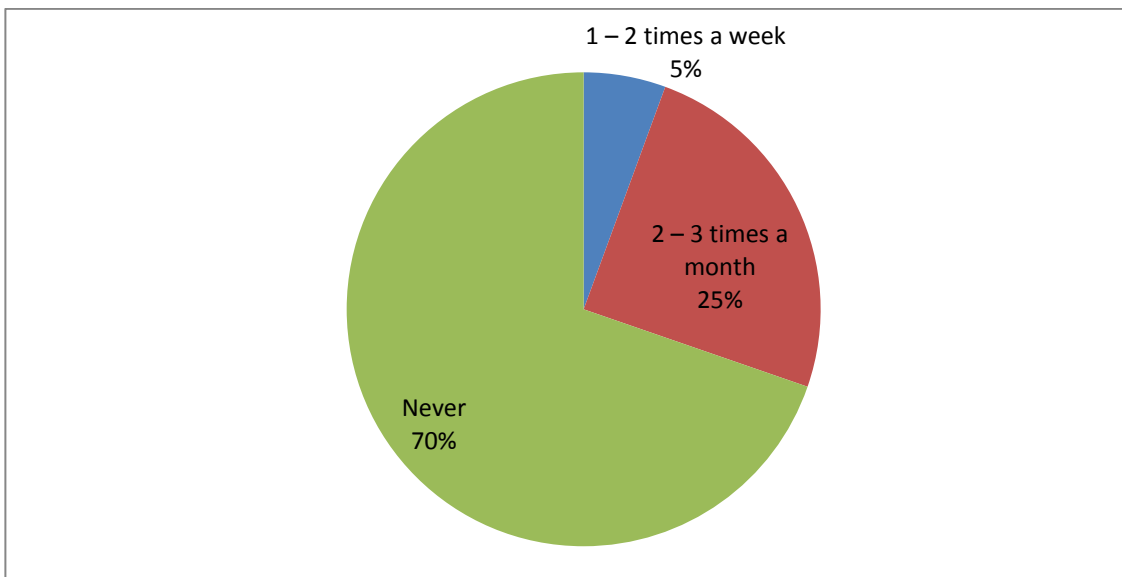


Fig. 8.3.31: Observation of Teaching of other Teachers (South Goa District).

(c) Comparison between North and South Goa Districts

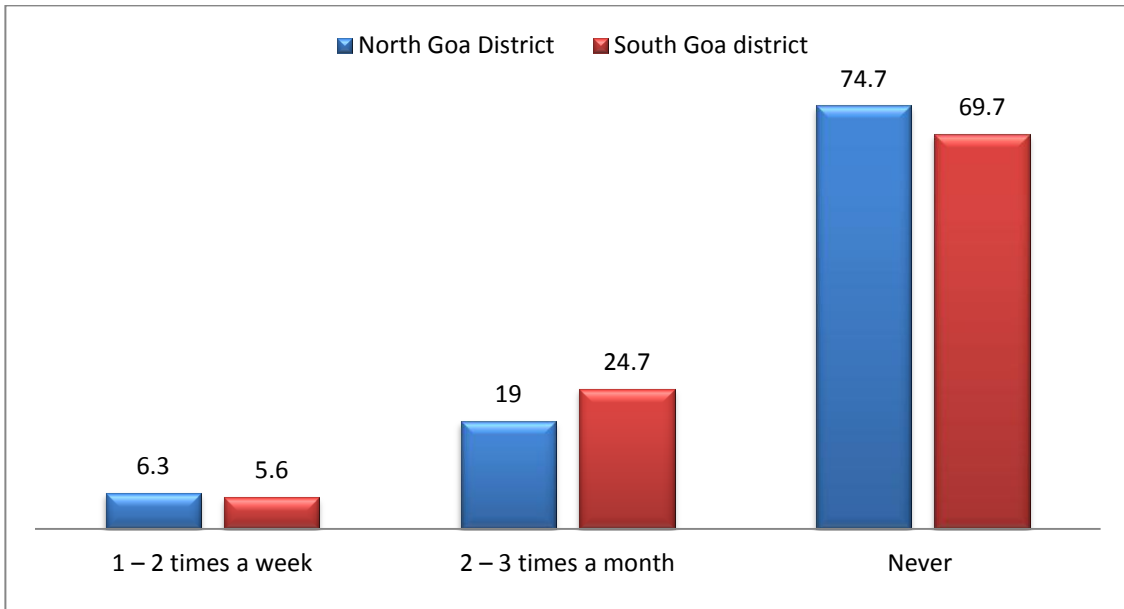


Fig. 8.3.32: Observation of Teaching of other Teachers (Comparison between North Goa and South Goa Districts)

Figure 8.3.32 indicated that teachers of South Goa schools were better than those of North Goa Schools so far as observation of teaching of a teacher by other teachers was concerned.

d) Goa State

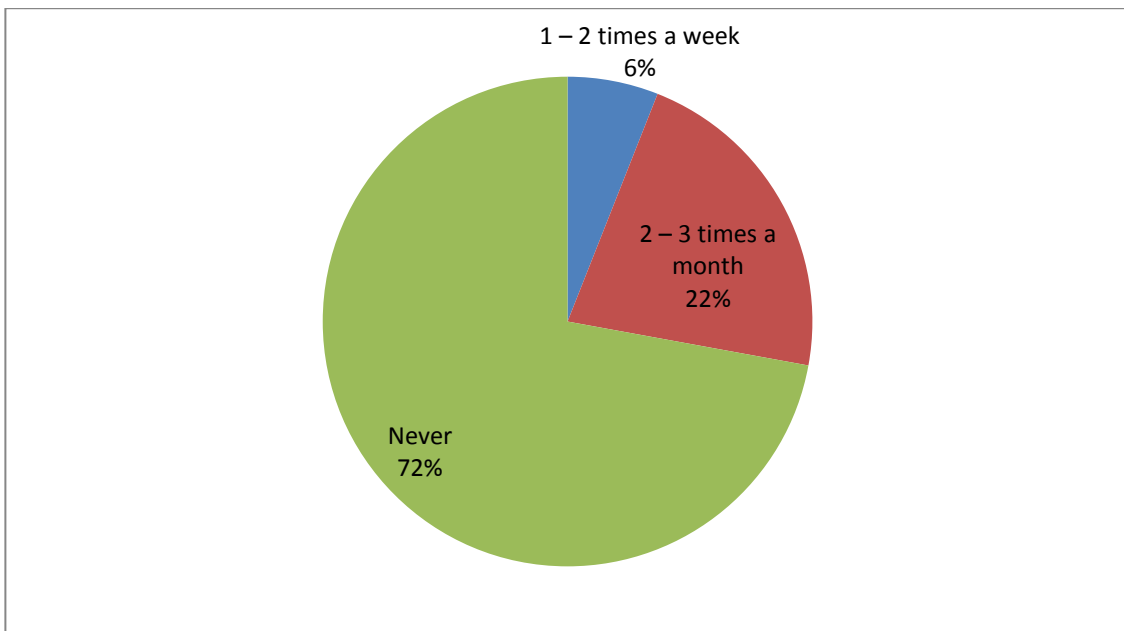


Fig. 8.3.33: Observation of Teaching of other Teachers (Goa State)

Six percent of teachers of the State used to observe teaching of other teachers 1-2 times a week and two-fifths of the teachers used to do so 2-3 times a month. Nearly 72 percent of teachers never used to do so.

iv) Observation of One's Own Classroom Teaching by other Teachers

a) North Goa District

Twelve percent of teachers of North Goa district stated that they allowed other teachers to observe their classroom teaching 1-2 times a week. Two-fifths of the teachers allowed others to do so 2-3 times a month but 48 percent of teachers never allowed such observation (Figure 8.3.34).

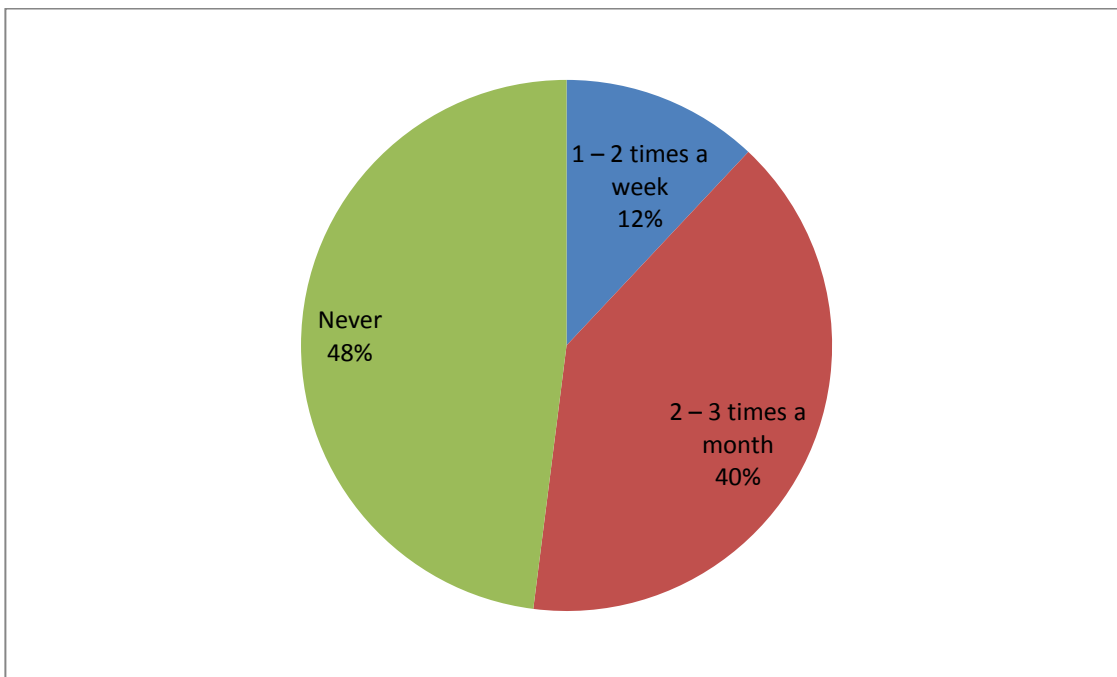


Fig. 8.3.34: Observation of Own Classroom Teaching by other Teachers (North Goa District)

Table 8.3.10: Observation of Classroom Teaching by other Teachers.

Support	North Goa Dist.	South Goa Dist.	Goa state
1 – 2 times a week	12.0	10.2	11.1
2 – 3 times a month	40.0	42.6	41.3
Never	48.0	47.2	47.6
Total	100	100	100

Note: - Figures indicate percentage of teachers

b) South Goa District

Only one-tenth of the teachers of South Goa district informed that they allowed their teaching to be observed by other teachers 1-2 times a week and 43 percent teachers allowed the same only 2-3 times a month (Figure 8.3.35).

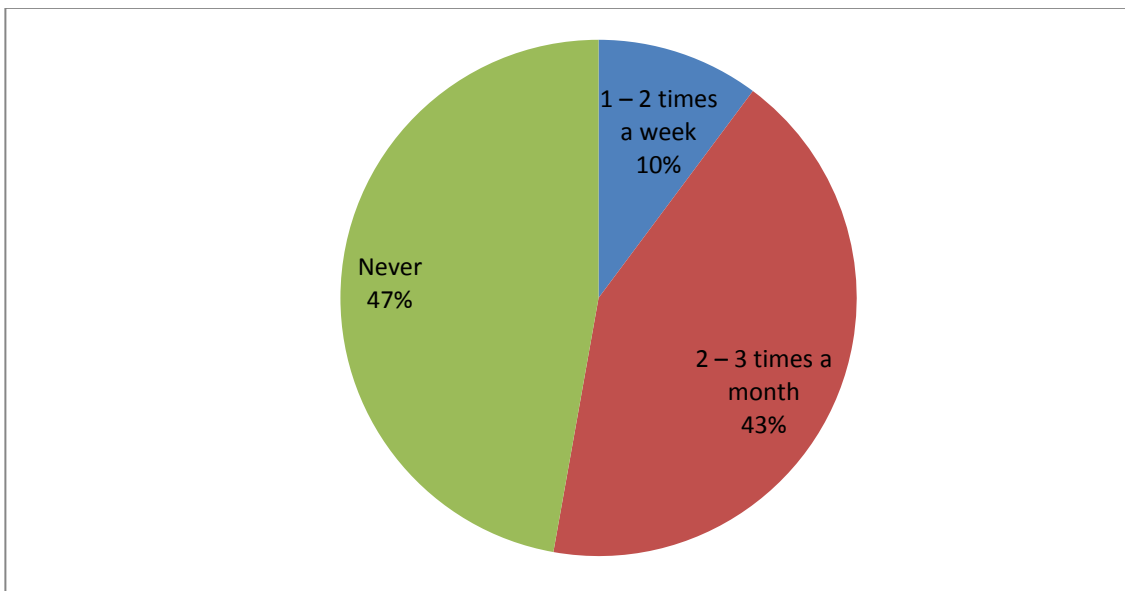


Fig. 8.3.35: Observation of own Classroom Teaching by other Teachers (South Goa District)

c) Comparison between North and South Goa Districts

It was observed (Table 8.3.10 and Figure 8.3.36) that nearly equal percentages of teachers of North Goa and South Goa district allowed other teachers to observe their teaching 1-2 times a week and 2-3 times a month.

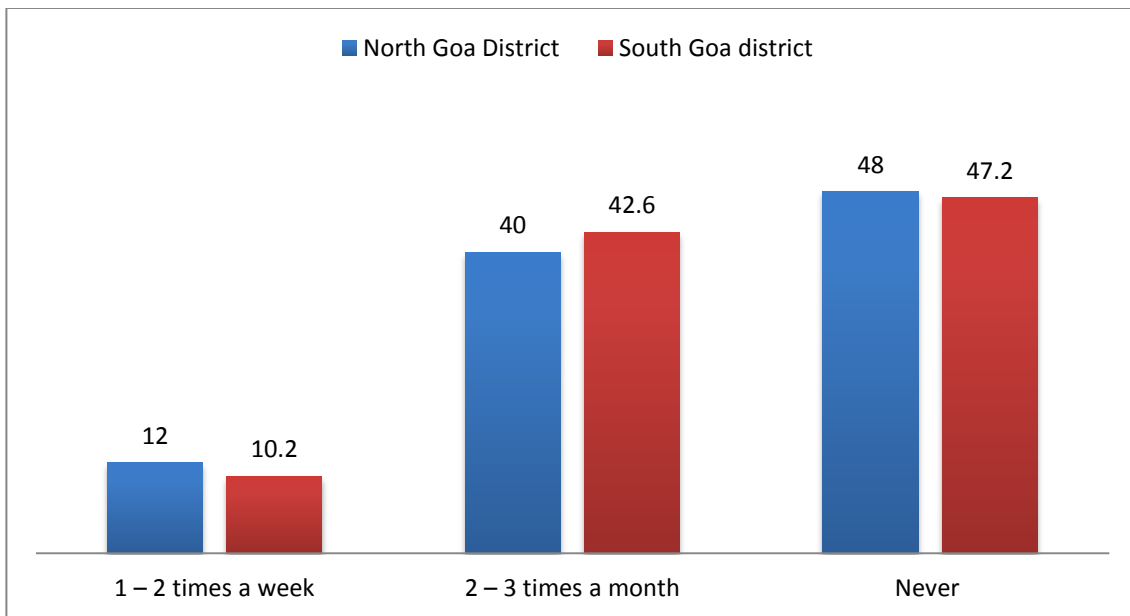


Fig. 8.3.36: Observation of own Classroom Teaching by other Teachers (Comparison between North Goa and South Goa Districts)

d) Goa State

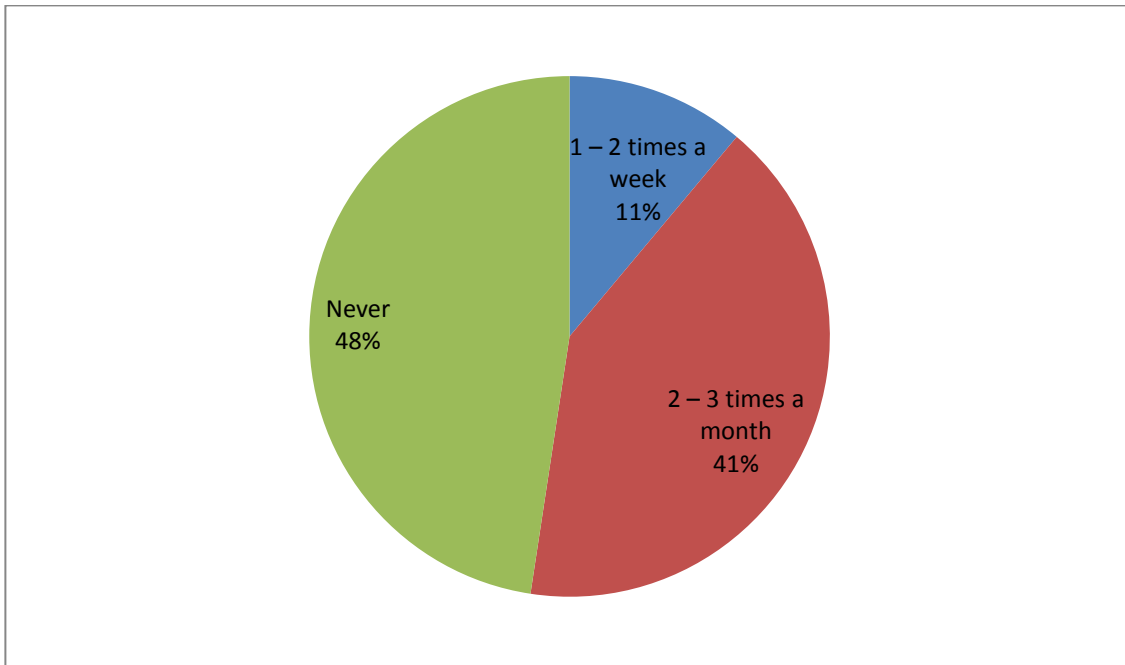


Fig. 8.3.37: Observation of one' Classroom Teaching by other Teachers (Goa State)

Only 11 percent of teachers of Goa stated that they allowed other teachers to observe their classroom teaching 1-2 times a week. Two-fifths of the teachers informed that they allowed others to do so 2-3 times a month but 48 percent (nearly half) of teachers never allowed such observation (Figure 8.3.34).

8.4 School related Problems

8.4.1 Location of the School

a) North Goa

Almost all the teachers of North Goa district agreed that their school is located in a safe neighbourhood (Figure 8.4.1 and Table 8.4.1).

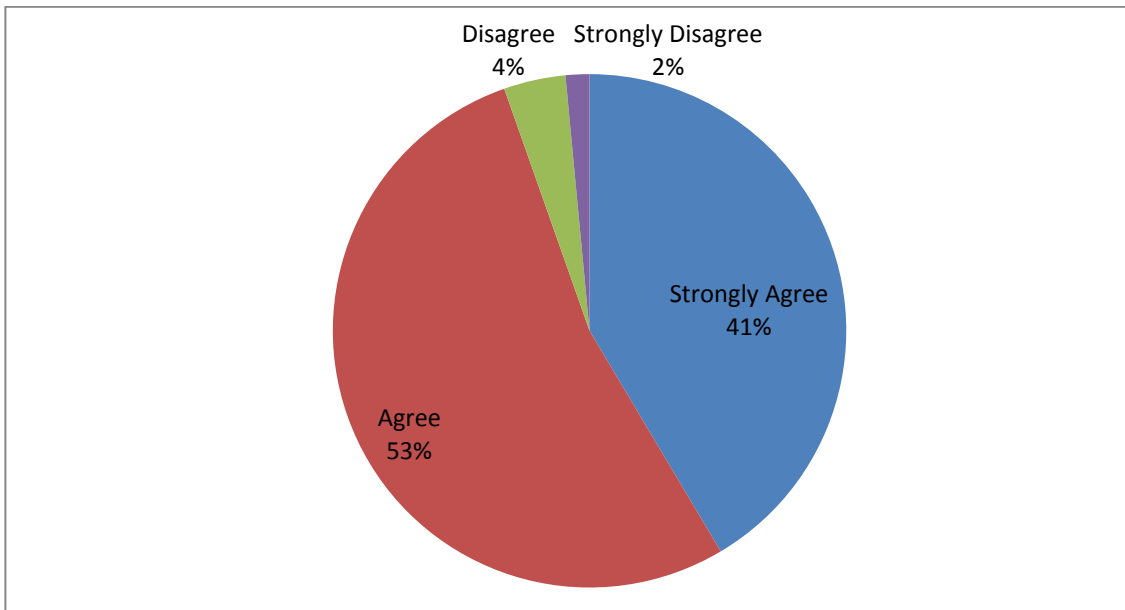


Fig.8.4.1: Opinion of Teachers about Location of the School in a safe neighbourhood (North Goa District)

Table 8.4.1: Teachers opinion on Location of School in a safe Neighbourhood

Response Category	North Goa Dist.	South Goa Dist.	Goa state
Strongly Agree	41.5	46.2	43.4
Agree	53.2	49.2	51.4
Disagree	3.9	4.6	4.4
Strongly Disagree	1.5	0.0	0.7
Total	100	100	100

Note: - Figures indicate percentage of teachers.

b) South Goa

Almost 95 percent of teachers of South Goa district felt that their school is located in a safe neighbourhood (Figure 8.4.2).

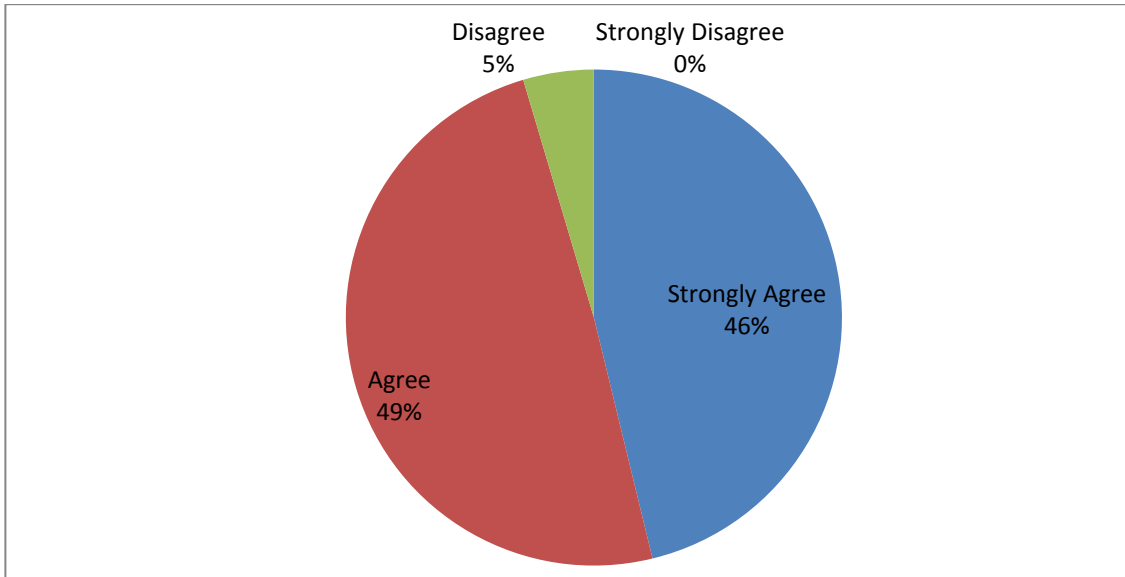


Fig.8.4.2: Location of the School in a safe neighbourhood (South Goa District)

c) Comparison between North and South Goa Districts

Nearly equal percentage of teachers of both the districts expressed that their school is located in a safe neighbourhood (Fig.8.4.3).

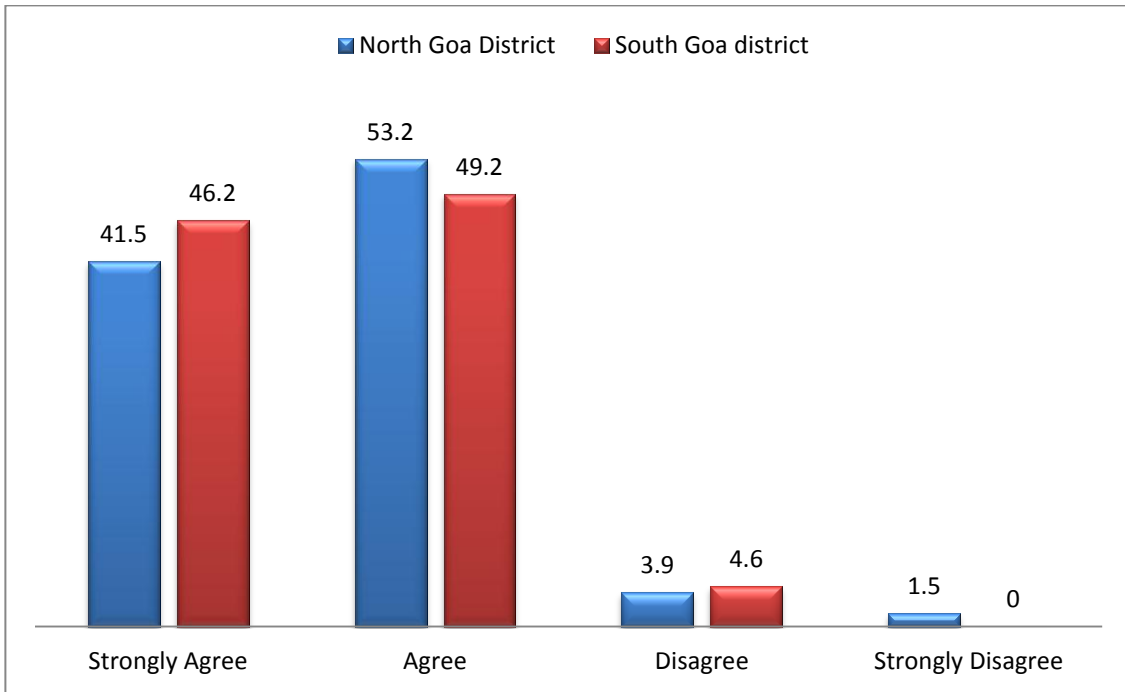


Fig.8.4.3: Location of the School in a safe neighbourhood (Comparison between North Goa and South Goa Districts)

d) Goa State

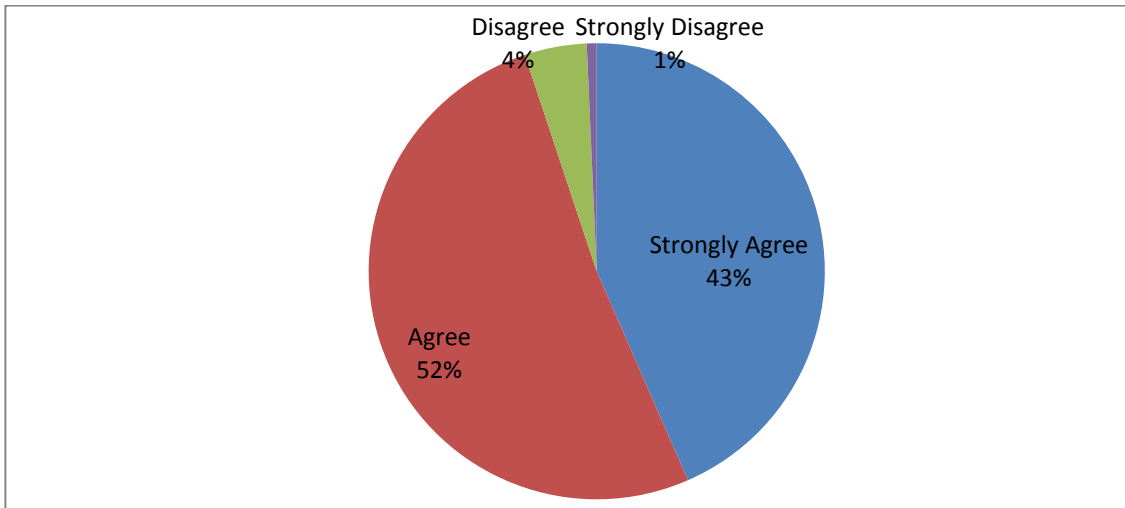


Fig.8.4.4: Location of the School in a safe neighbourhood (Goa State)

More than two-fifths of the teachers of the State strongly agreed that their school is located in a safe neighbourhood and 52 percent agreed with the statement. A mere 5 percent of teachers disagreed with the statement.

8.4.2 Teachers feeling safe in School

a) North Goa District

At most all the teachers of North Goa district (96 percent) agreed that they used to feel safe in the present school (Fig.8.4.5).

Table 8.4.2: Teacher feeling safe in the present School

Response Category	North Goa Dist.	South Goa Dist.	Goa state
Strongly Agree	39.7	47.2	43.7
Agree	55.9	48.0	51.8
Disagree	4.4	3.6	4.0
Strongly Disagree	0.00	1.2	0.4
Total	100	100	100

Note: - Figures indicate percentage of teachers

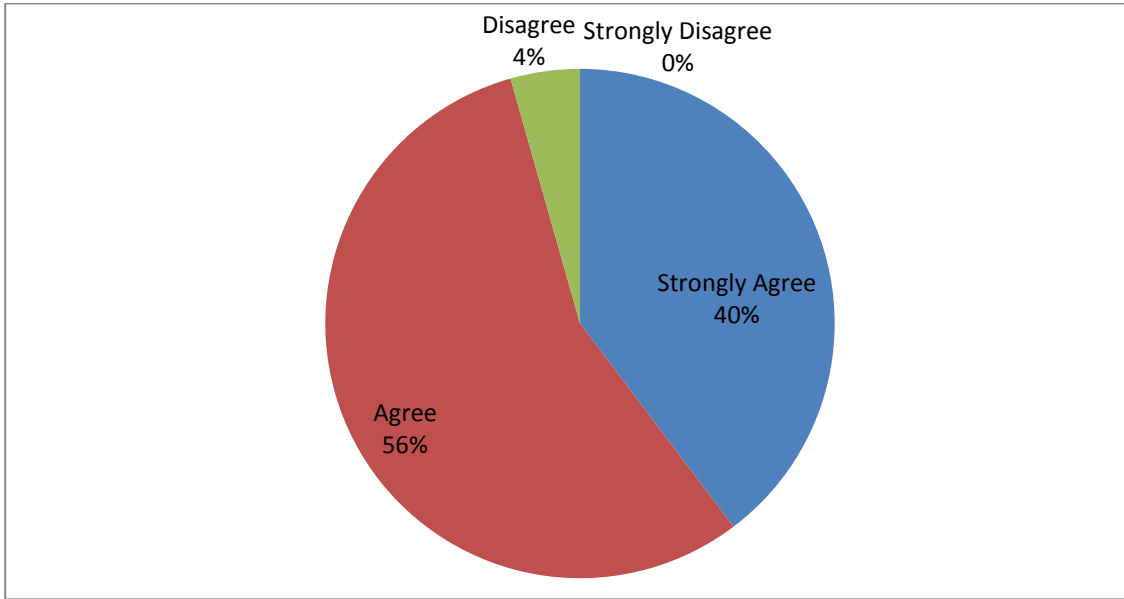


Fig.8.4.5: Opinion of Teachers of North Goa District about feeling safe in the Present School

b) South Goa District

Ninety-five percent of teachers of South Goa district agreed to the statement that they feel safe in the present school (Fig.8.4.6).

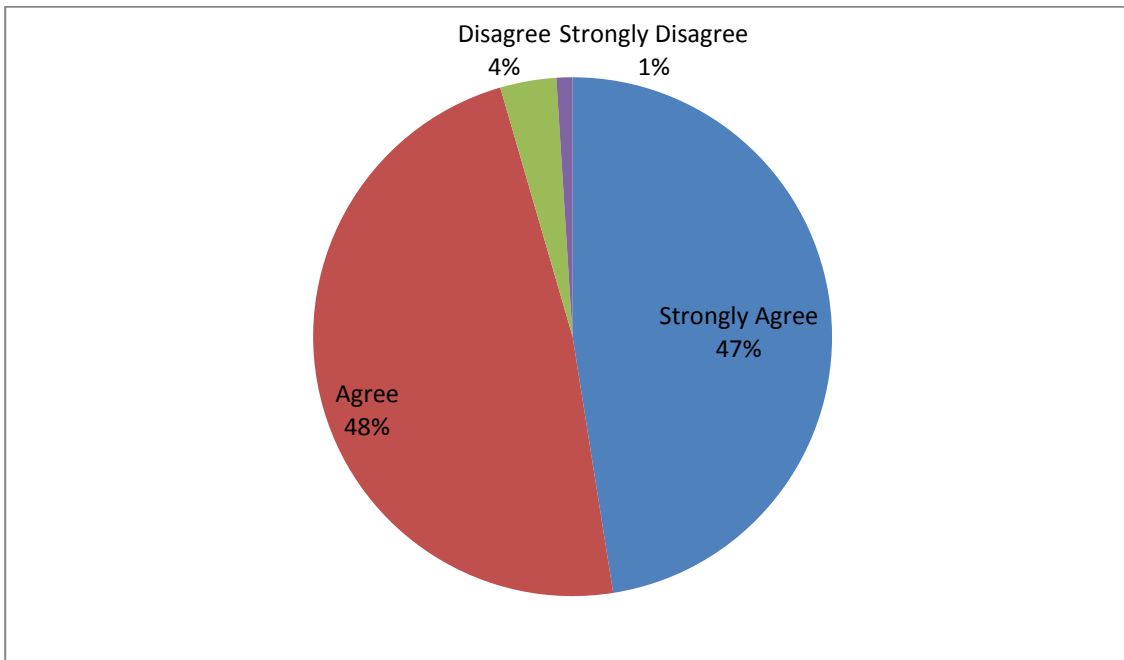


Fig.8.4.6: Opinion of Teachers of South Goa District about feeling safe in the Present School

c) Comparison between North Goa and South Goa Districts

Higher percentage of teachers of South Goa than North Goa district strongly agreed and higher percentage of teachers of North Goa than South Goa district agreed with the statement that they feel safe in the present school (Figure 8.4.7)

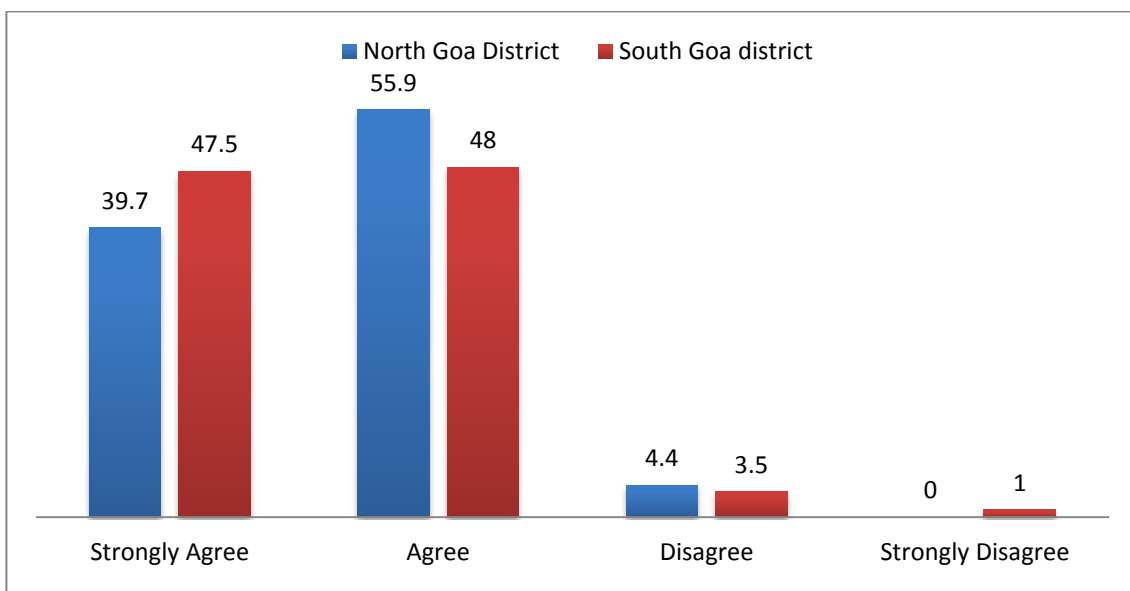


Fig.8.4.7: Opinion of Teachers of North and South Goa District about feeling safe in the Present School

d) Goa State

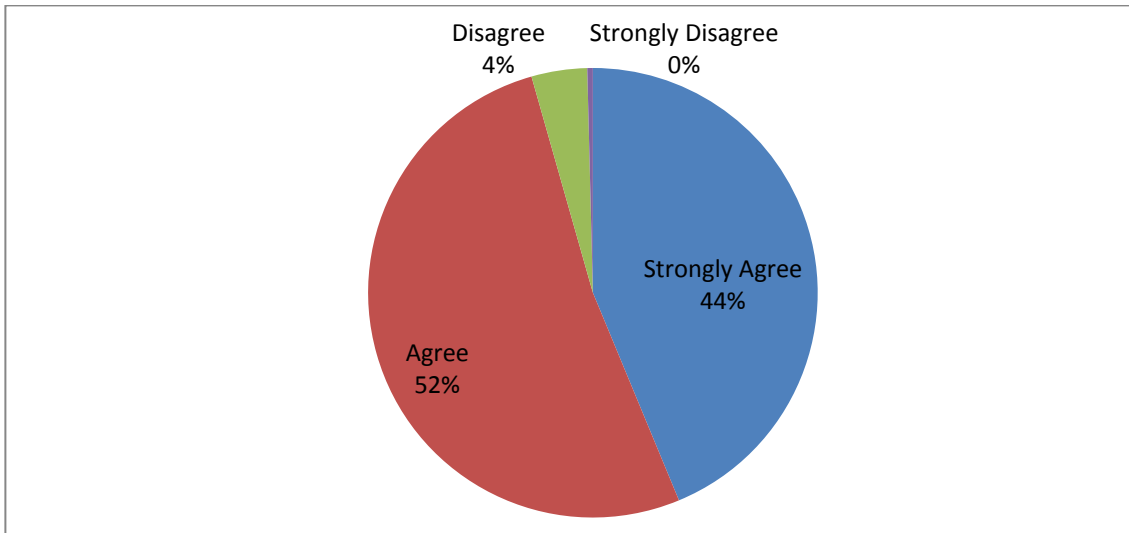


Fig.8.4.8: Opinion of Teachers of Goa State about feeling safe in the Present School
Figure 8.4.8 shows that 96 percent of teachers of the State agreed that they feel safe in the present school (Figure 8.4.8). Only 4 percent disagreed with the statement.

8.4.3 Opinion of Teachers about Sufficiency of Security Policies and Practices of the present School

a) North Goa District

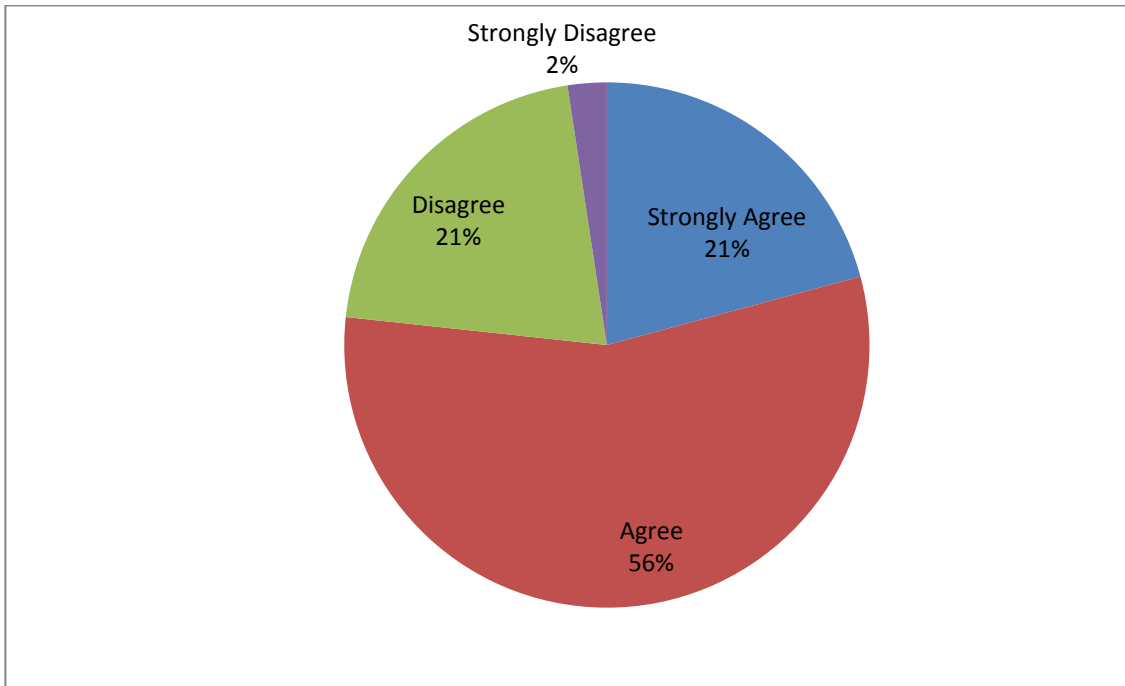


Fig. 8.4.9: Opinion of Teachers of North Goa District Schools about Sufficiency of Security Policies and Practices of the present School

Table 8.4.3: Opinion of Teachers about Sufficiency of Security Policies and Practices of the present School

Response Category	North Goa Dist.	South Goa Dist.	Goa state
Strongly Agree	20.8	27.2	24.0
Agree	55.9	50.0	52.9
Disagree	20.9	20.4	20.6
Strongly Disagree	2.4	2.4	2.4
Total	100	100	100

Note: - Figures indicate percentage of teachers

Though three-fourths of the teachers of North Goa agreed that the security policies and practices of the schools were sufficient, a substantial percentage of teachers (23 percent) did not agree that the security policies and practices of their schools were sufficient (Figure 8.4.9 and Table 8.4.3).

b) South Goa District

Seventy-seven percent of teachers of South Goa district agreed with the statement that the security policies and practices of the schools were sufficient while 23 percent did not agree with the statement (Figure 8.4.10 and Table 8.4.3).

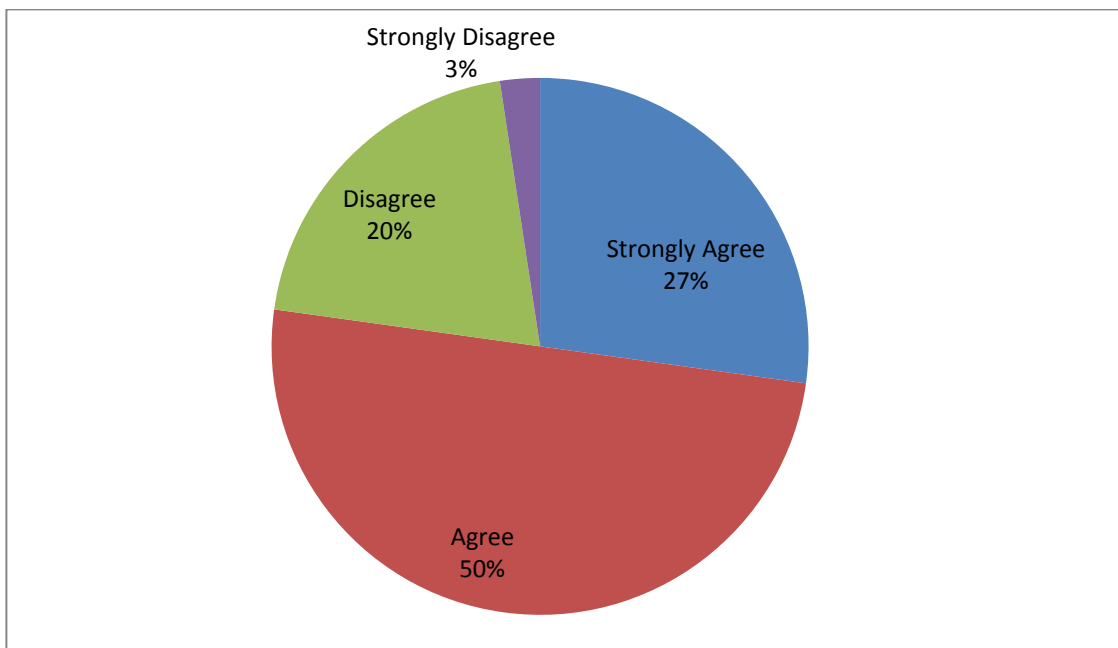


Fig. 8.4.10: Opinion of Teachers of South Goa Dist. Schools about Sufficiency of Security Policies and Practices of the present School

c) Comparison between North and South Goa Districts

Higher percentage of teachers of South Goa than North Goa district strongly agreed while higher percentage of teachers of North Goa than South Goa district agreed with the statement that the security policies and practices of the schools were sufficient (Figure 8.4.11). Equal percentages of teachers of both the districts disagreed with the said statement.

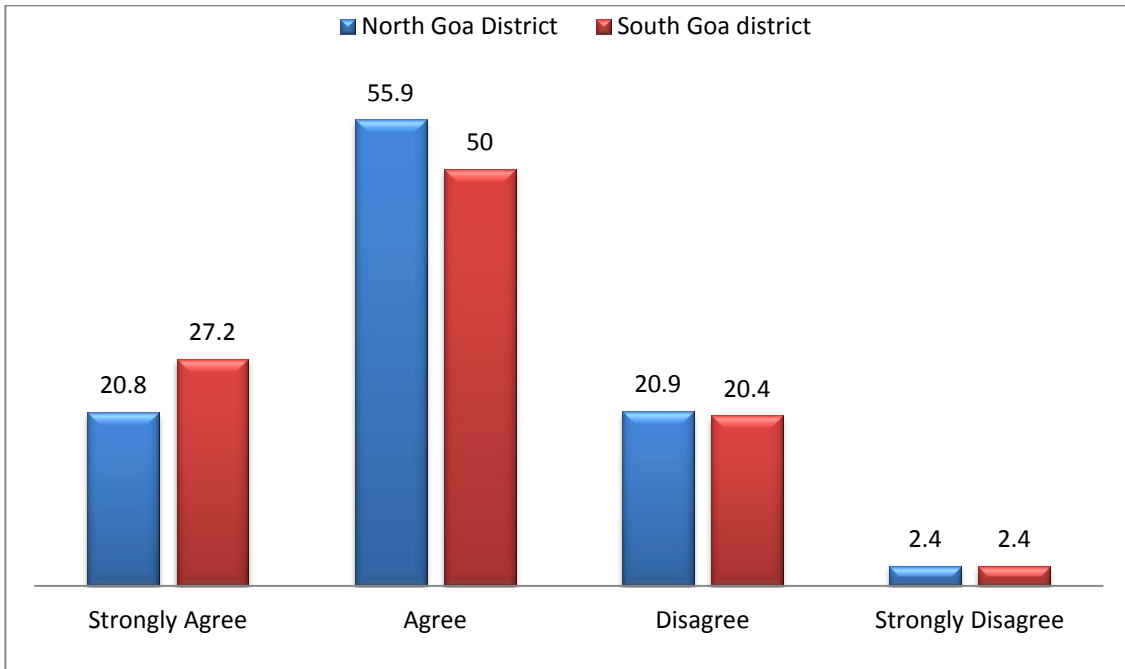


Fig.8.4.11: Opinion of Teachers of North Goa and South Goa Districts Schools about Sufficiency of Security Policies and Practices of the present School

d) Goa State

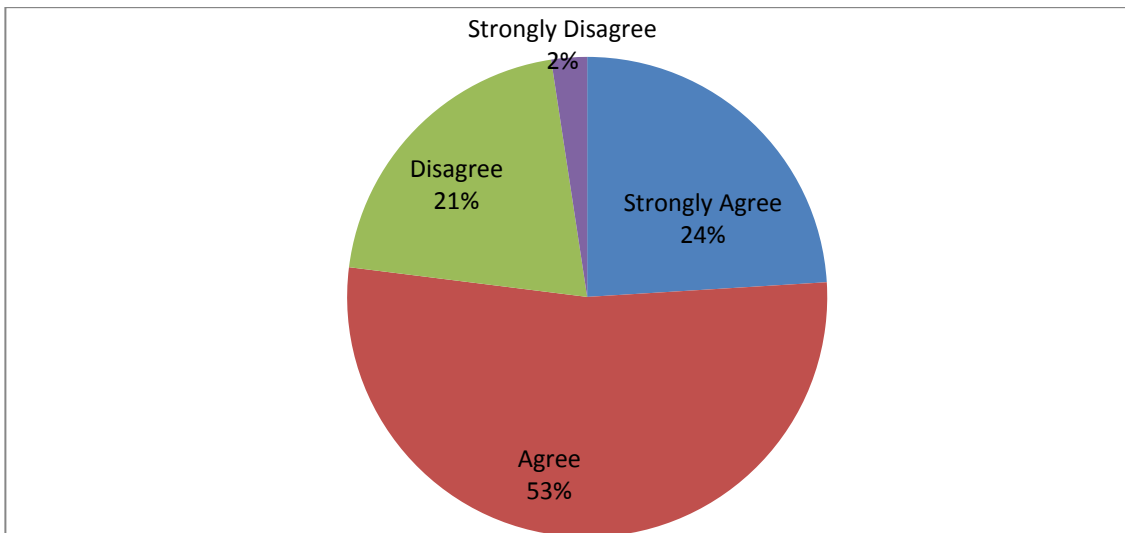


Fig. 8.4.12: Opinion of Teachers of North Goa Dist. Schools about Sufficiency of Security Policies and Practices of the present School

Twenty-four percent of teachers of the State strongly agreed and 53 percent of teachers agreed with the statement that the security policies and practices of the

schools were sufficient (Figure 8.4.12). Twenty –three percent disagreed with the statement.

8.4.4 Need to repair the School Building

a) North Goa District

According to 45 percent of teachers of North Goa district repairing of school building was not a problem. But for the remaining 55 percent of teachers it is a problem, whether minor or serious (Table 8.4.4 and Figure 8.4.13).

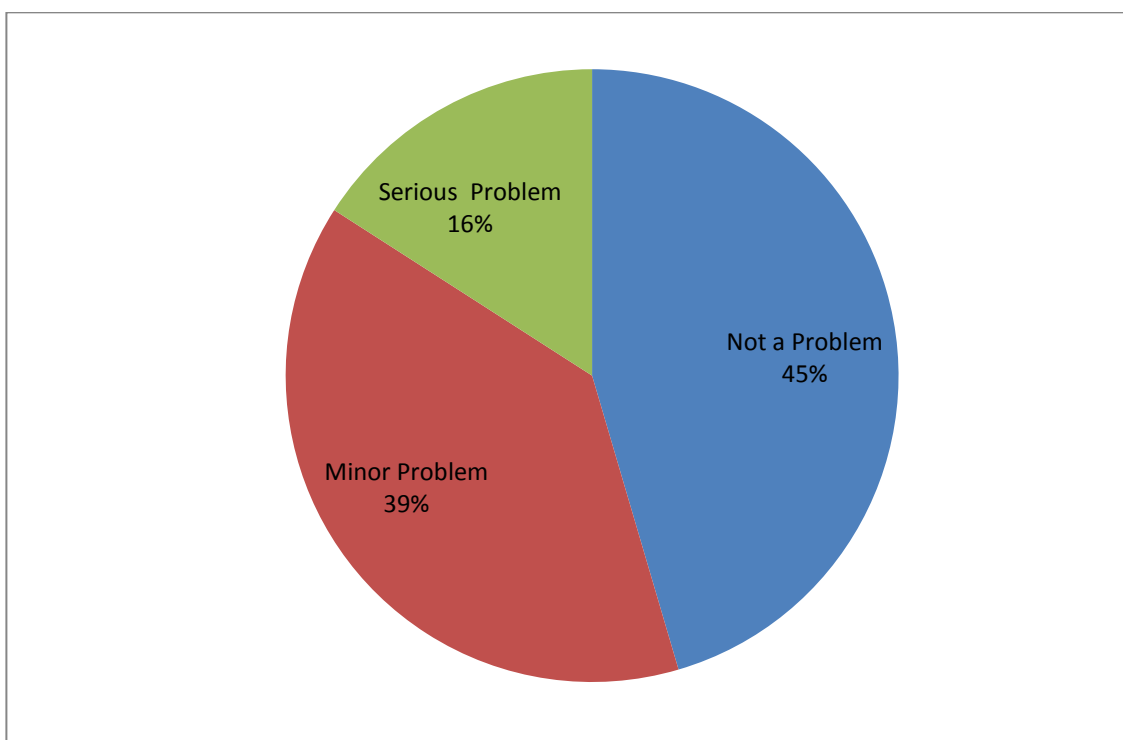


Fig. 8.4.13: Opinion of teachers of North Goa District Schools about Repairing of School Building

Table 8.4.4: Opinion of Teachers about the need to repair the School Building

Response Category	North Goa District	South Goa District	Goa state
Not a Problem	45.4	45.8	45.6

Minor Problem	38.6	40.4	39.5
Serious Problem	15.9	13.8	14.9
Total	100	100	100

Note: - Figures indicate percentage of teachers

b) South Goa district

Forty-six percent of teachers of South Goa schools did not think that repairing of school building is a problem at all. However, according to 40 percent of teachers it was a minor problem and for 14 percent it was a serious problem (Figure 8.4.14).

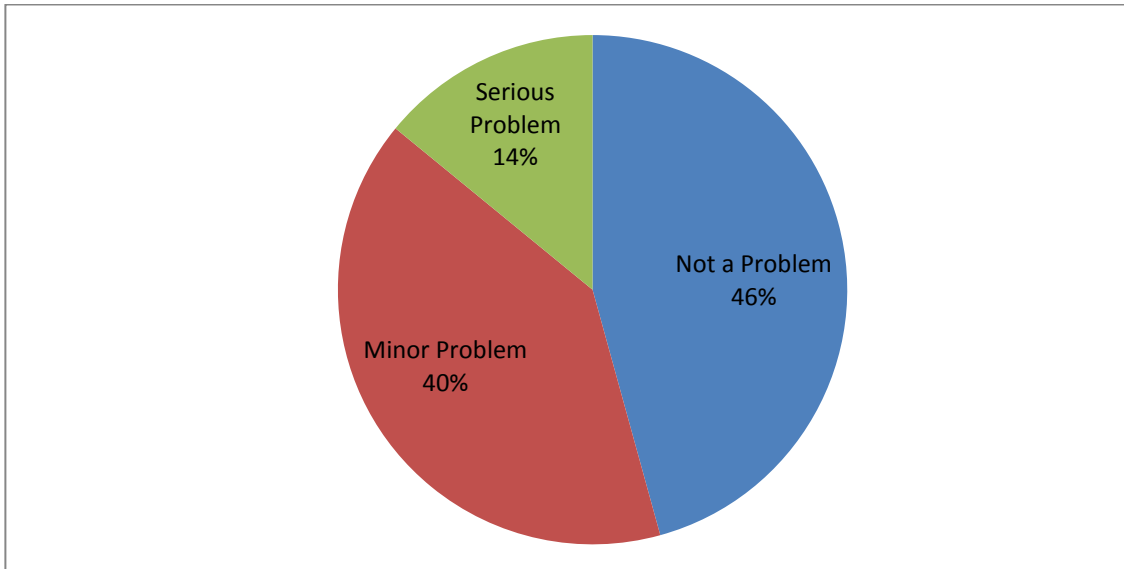


Fig. 8.4.14: Opinion of teachers of South Goa District Schools about Repairing of School Building

c) Comparison between North and South Goa Districts

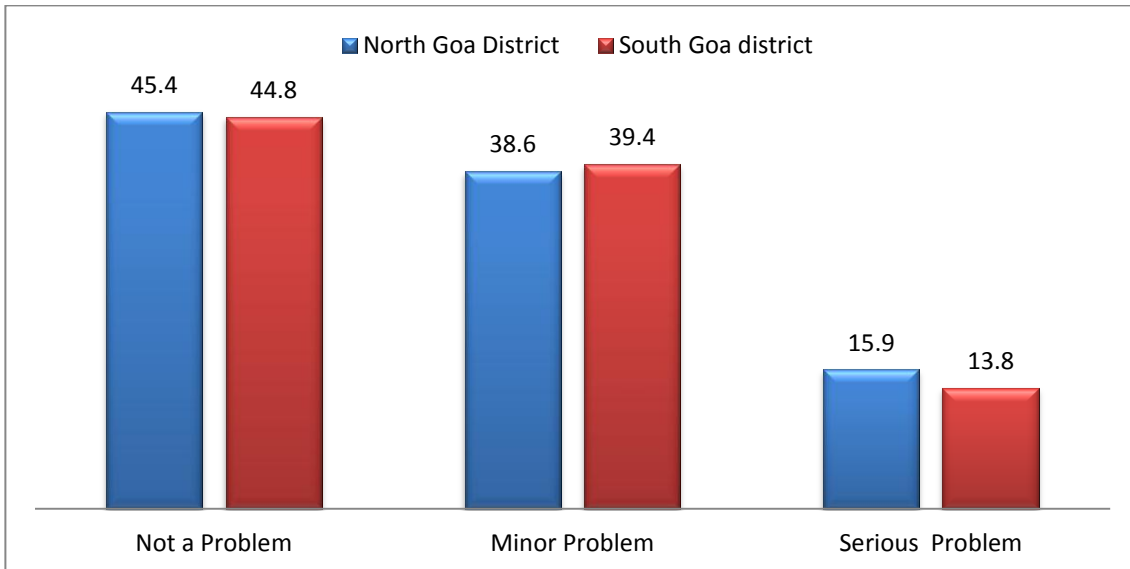


Fig. 8.4.15: Opinion of teachers of North Goa and South Goa Districts Schools about Repairing of School Building
 Figure 8.4.15 shows no difference between the teachers of North Goa and South Goa schools in their opinion about the need for repairing the school building.

d) Goa State

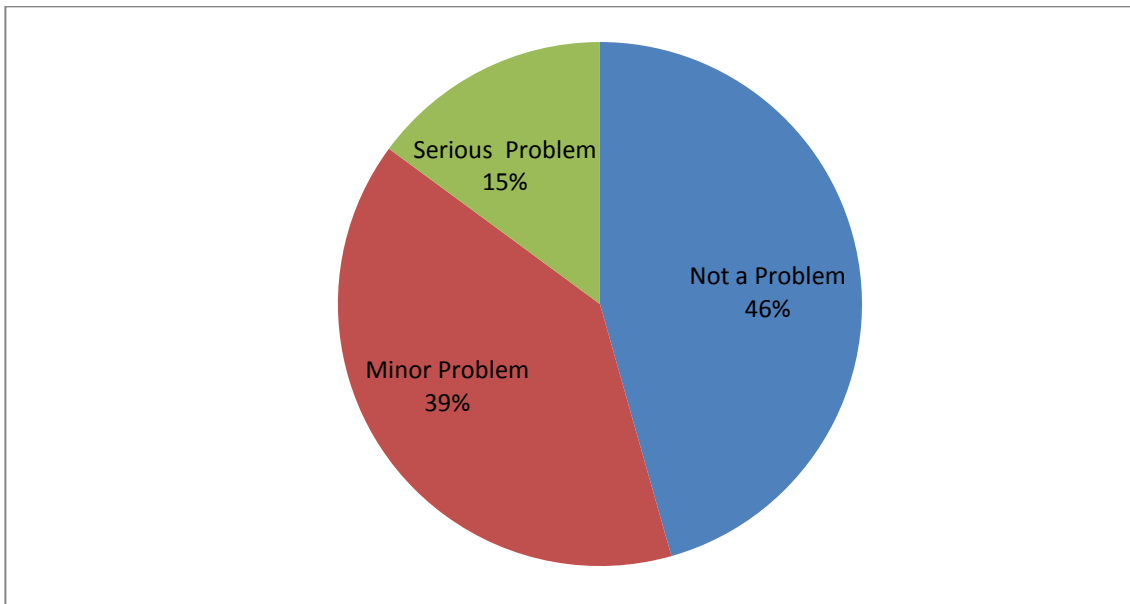


Fig. 8.4.16: Opinion of teachers of Goa State about Repairing of School Building

Figure 8.4.16 shows that according to 46 percent of teachers of the State repairing of school building is not a problem, for 39 percent of teachers it is a minor problem and according to 15 percent of teachers it is a serious problem.

8.4.5 Overcrowded Classrooms

a) North Goa District

Two-third of the teachers of North Goa district did not consider overcrowded classroom as problem (Figure 8.4.17 and Table 8.4.5). According to 21 percent of teachers it is a minor problem and for 11 percent teachers it is a serious problem.

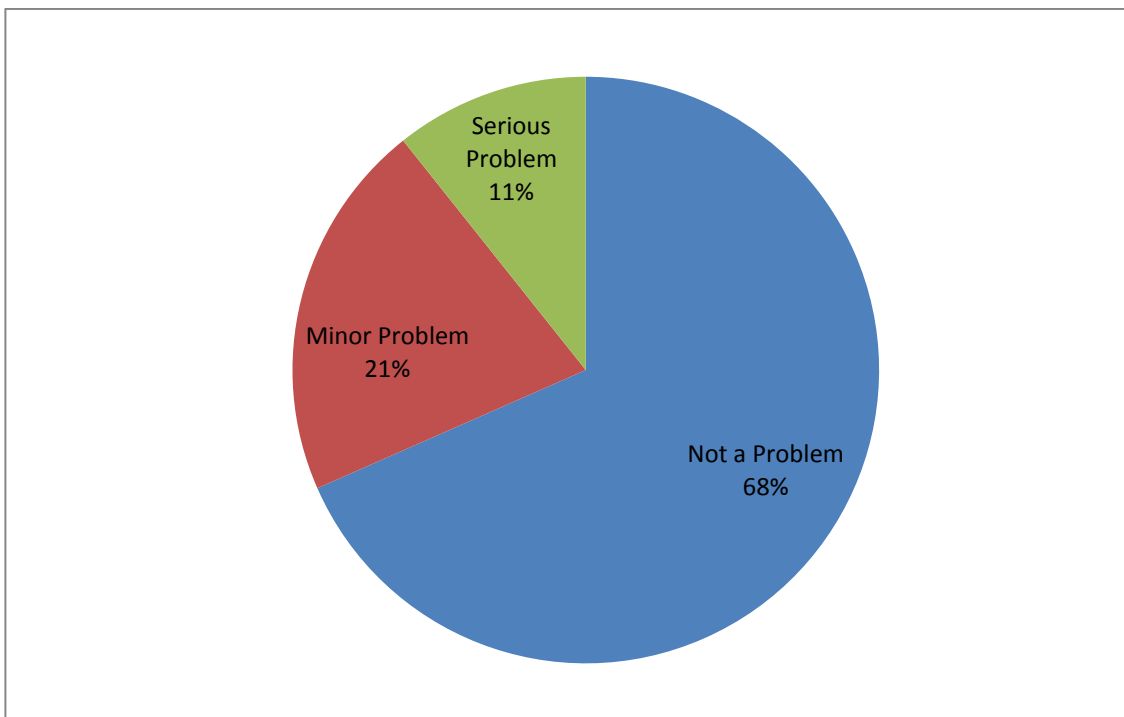


Fig. 8.4.17: Opinion of Teachers of North Goa District Schools about over crowded Classroom

Table 8.4.5: Opinion of Teachers about over crowded Classroom

Response Category	North Goa Dist.	South Goa Dist.	Goa state
Not a Problem	68.4	69.2	68.8
Minor Problem	20.9	25.2	23.0
Serious Problem	10.7	5.6	8.2
Total	100	100	100

Note: - Figures indicate percentage of teachers.

b) South Goa District

According to 69 percent teachers of South Goa district over crowded class room is not a problem. It is a minor problem for 25 percent of teachers and according to 6 percent teachers it is a serious problem (Figure 8.4.18 and Table 8.4.5).

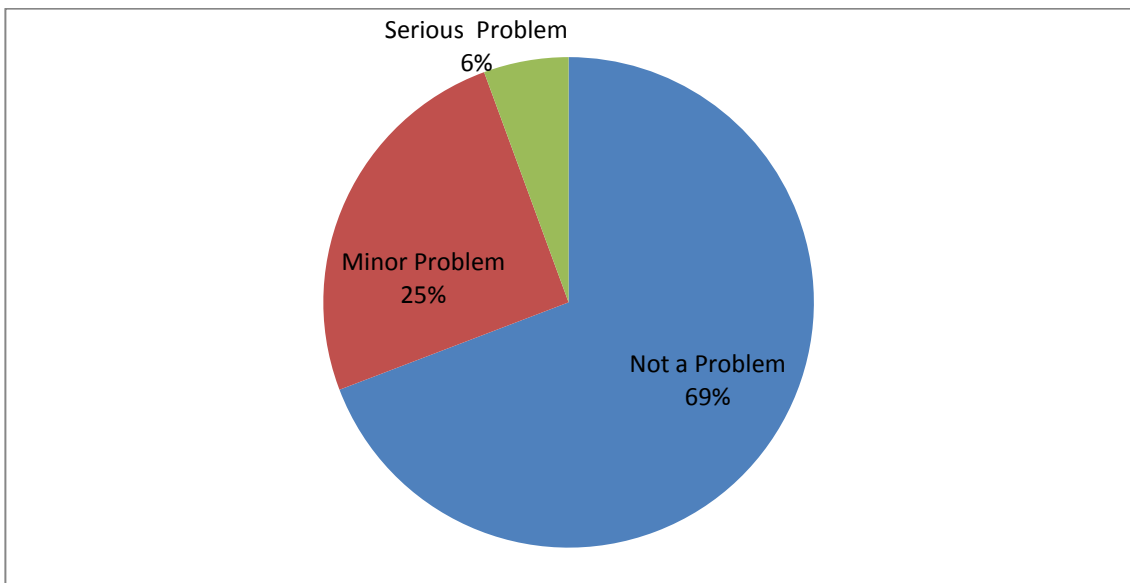


Fig. 8.4.18: Opinion of Teachers of South Goa Schools about over crowded Classroom

c) Comparison between North and South Goa Districts

Comparative data about opinion of teachers of both the districts of the State on overcrowded class room is given in Figure 8.4.19.

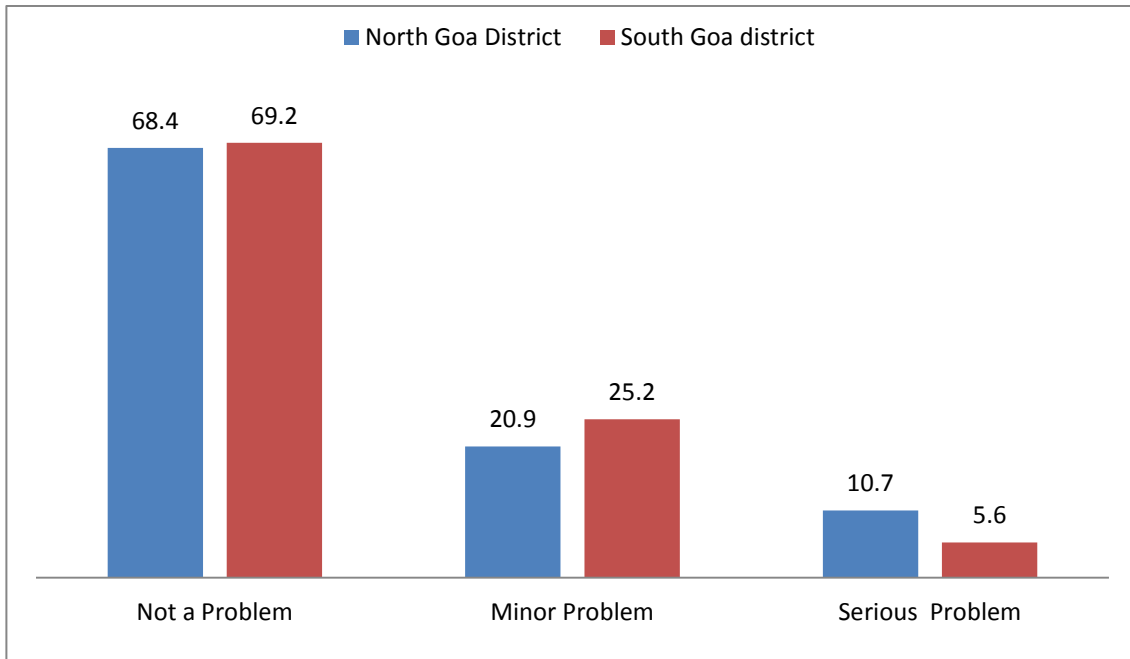


Fig. 8.4.19: Opinion of Teachers of North Goa and South Goa Districts Schools about over crowded Classroom

d) Goa State

According to 69 percent teachers of the State overcrowded class room is not a problem. It is a minor problem for 23 percent of teachers and according to 8 percent teachers of Goa it is a serious problem (Figure 8.4.20 and Table 8.4.5).

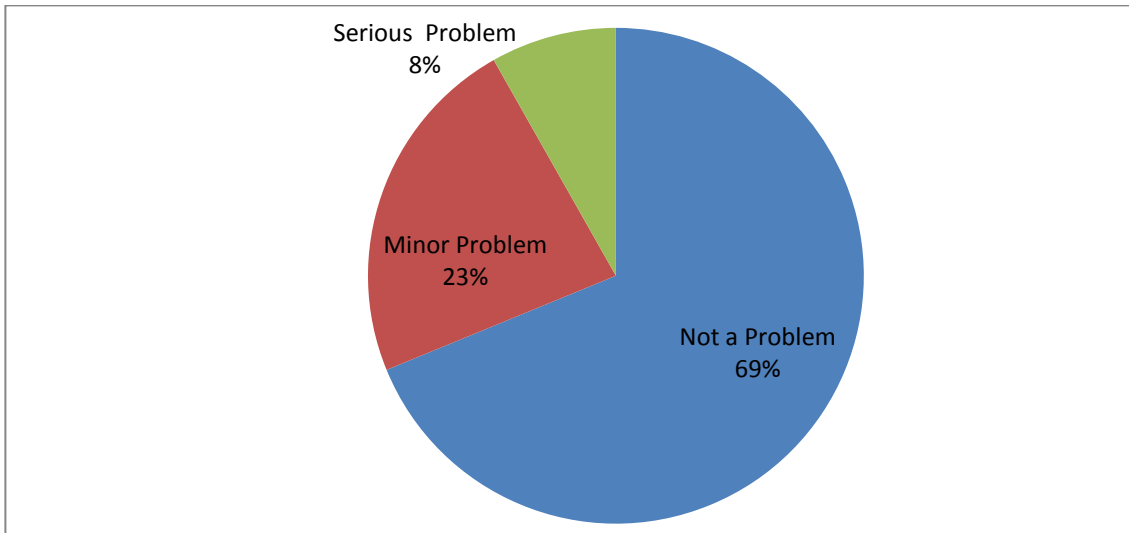


Fig. 8.4.20: Opinion of Teachers of Goa State about over crowded Classroom

8.4.6 Working space for Teachers outside the Classroom

a) North Goa District

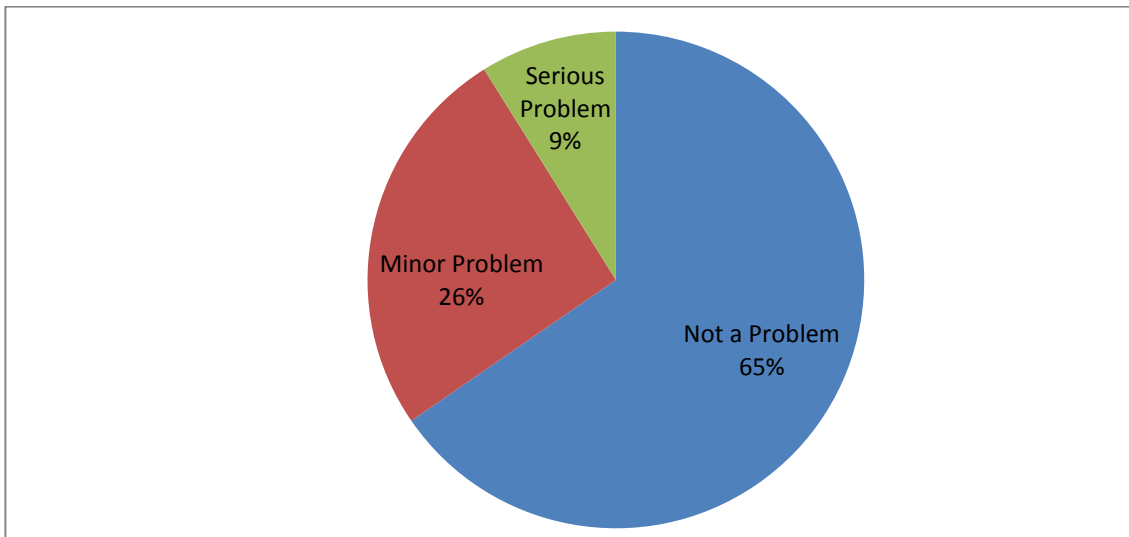


Fig.8.4.21: Opinion of Teachers of North Goa District Schools about Adequacy of working space for Teachers outside Classroom

Inadequacy of working space outside the class room was not a problem for 65 percent of teachers. But for 26 percent of teachers it was a minor problem and

according to 9 percent of teachers it was a serious problem (Figure 8.4.21 and Table 8.4.6).

Table 8.4.6: Opinion of Teachers about Adequacy of Working space outside Classroom

Response Category	North Goa Dist.	South Goa Dist.	Goa state
Not a Problem	65.4	60.3	63.0
Minor Problem	25.7	30.6	28.0
Serious Problem	8.9	9.1	9.0
Total	100	100	100

Note: - Figures indicate percentage of teachers

b) South Goa district

Three-fifths of the teachers of South Goa district did not think that inadequate working space outside the classroom was a problem. But according to 31 percent of teachers it was a minor problem and for 9 percent teachers it was a serious problem (Figure 8.4.22).

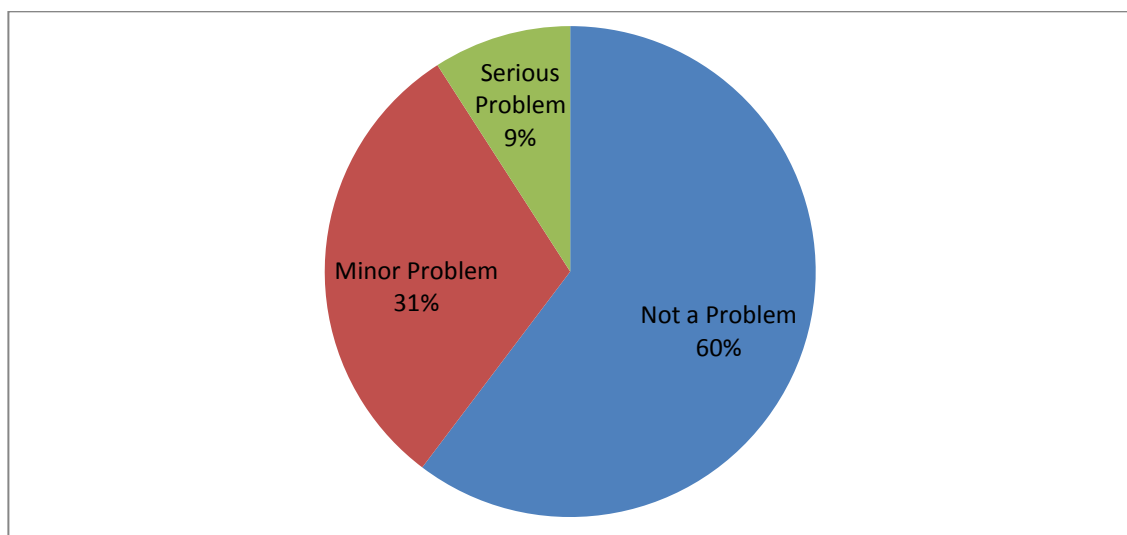


Fig.8.4.22: Opinion of Teachers of South Goa District Schools about Adequacy of Working space for teachers outside Classroom

c) Comparison between North and South Goa Districts

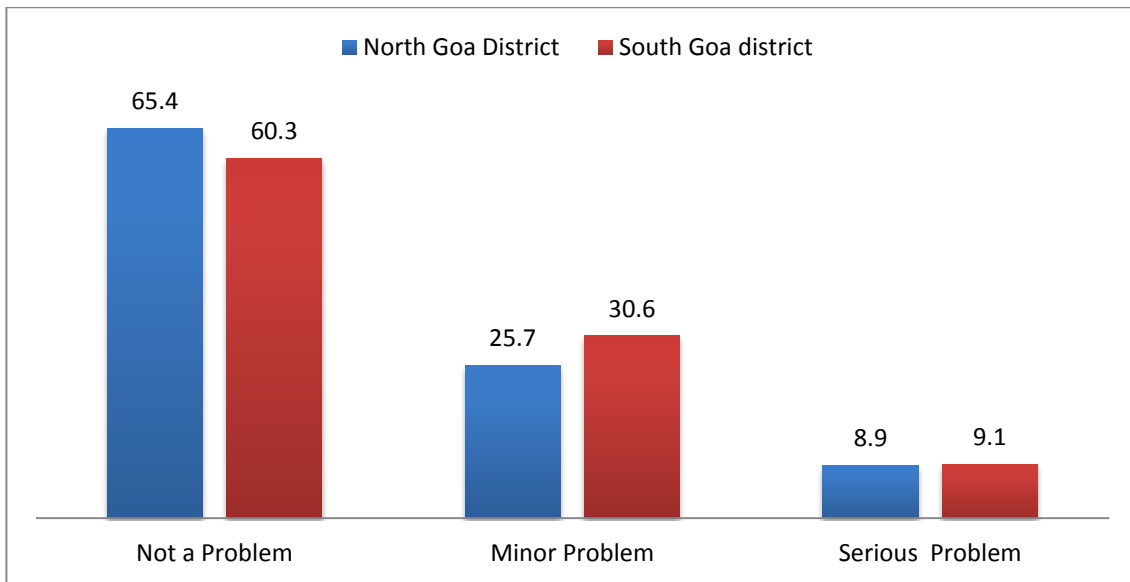


Fig.8.4.23: Opinion of Teachers of North Goa and South Goa Districts Schools about Adequacy of Working space for teachers outside Classroom

Higher percentage of teachers of South Goa than North Goa district stated that inadequate working space for them outside the classroom was a minor problem (Figure 8.4.23).

d) Goa State

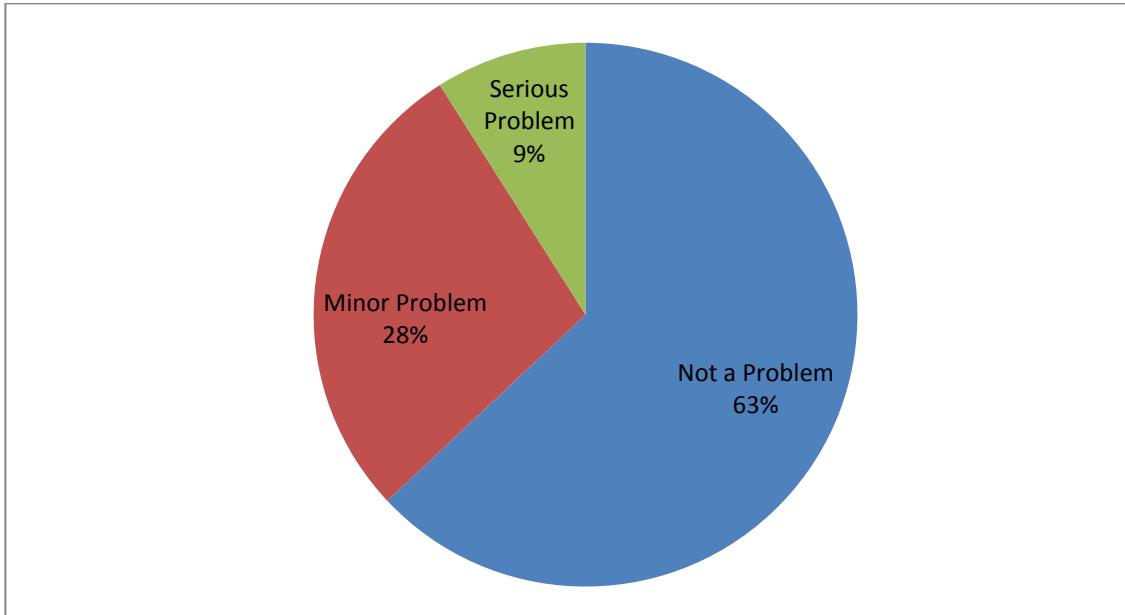


Fig.8.4.24: Opinion of Teachers of Goa about Adequacy of Working space for teachers outside Classroom

Out of all the teachers of the State of Goa participated in the study, for 63 percent of them inadequacy of working space is not a problem, for 28 percent it is a minor problem and for 9 percent it is a serious problem (Figure 8.4.24).

8.4.7 Availability of Materials to conduct Experiments/Investigation

a) North Goa District

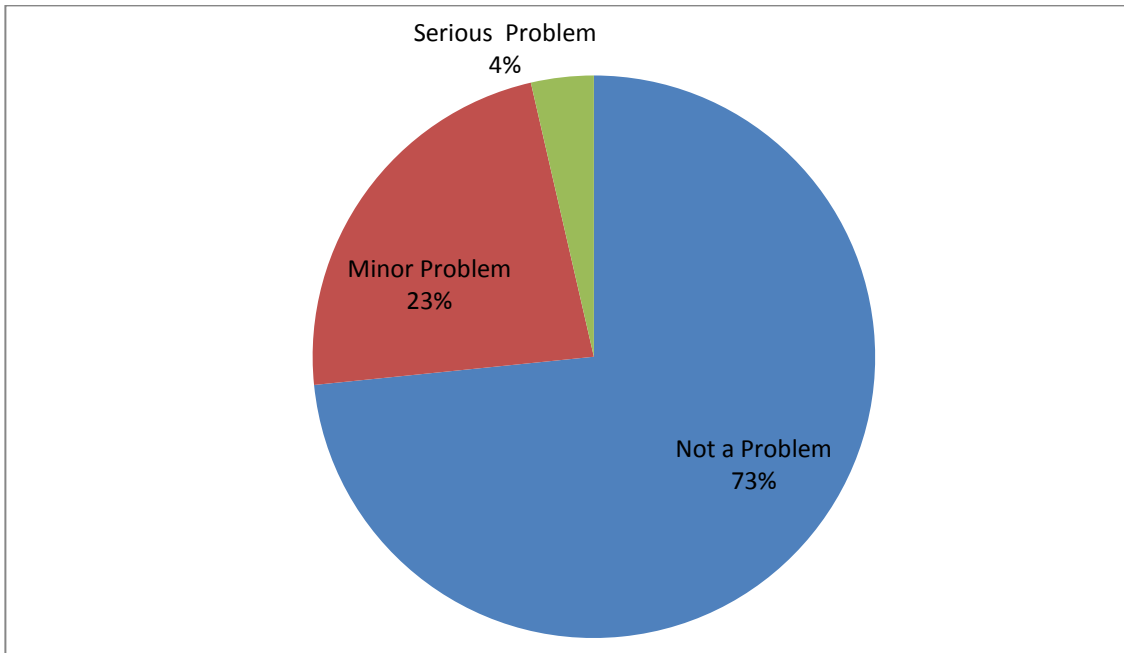


Fig.8.4.25: Opinion of Teachers of North Goa District Schools about Availability of Material for Experiments/Investigation

Table 8.4.7: Opinion of Teachers about Availability of Material for Experiments/Investigation

Response Category	North Goa Dist.	South Goa Dist.	Goa state
Not a Problem	73.4	72.8	73.2
Minor Problem	23.0	24.1	23.6
Serious Problem	3.6	3.1	3.2
Total	100	100	100

Note: - Figures indicate percentage of teachers

Seventy-three percent of teachers of North Goa district stated that availability of materials to conduct experiments/investigation was not a problem. For 23 percent of teachers it was minor problem and for 4 percent it was a serious problem.

b) South Goa District

Figure 8.4.26 shows that according to 73 percent of teachers of North Goa district availability of materials to conduct experiments/investigation was not a problem. It was minor problem for 24 percent of teachers and for 3 percent teachers it was a serious problem.

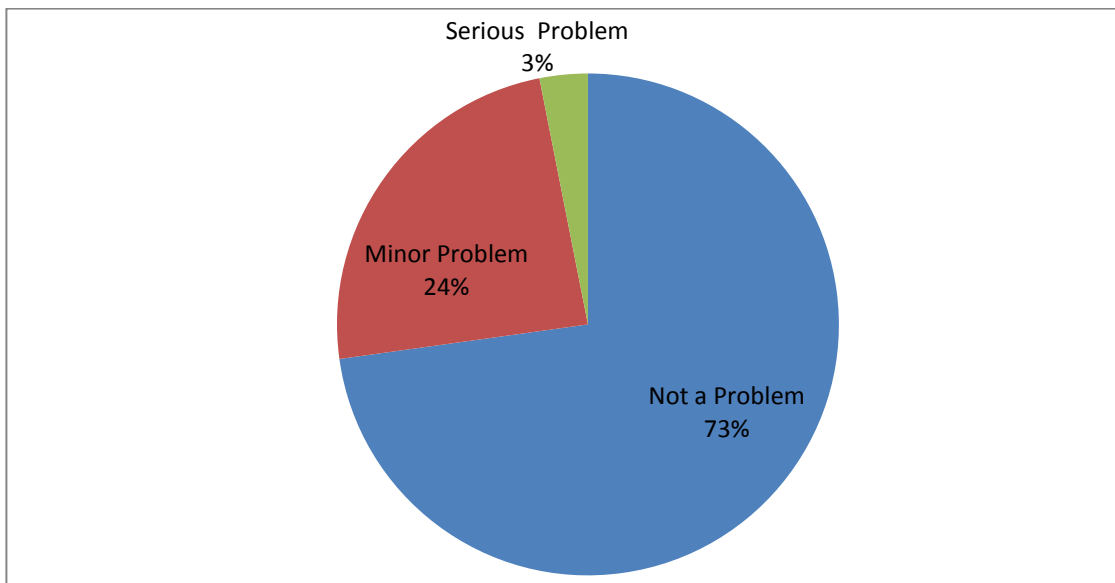


Fig.8.4.26: Opinion of Teachers of South Goa District Schools about Availability of Material for Experiments/Investigation

c) Comparison between North Goa and South Goa Districts

Nearly equal percentages of teachers of both the districts stated that they had No difference was observed between north Goa and South Goa districts as far as views of teachers about problem associated with availability of material for conducting experiment/investigation was concerned (Figure 8.4.27).

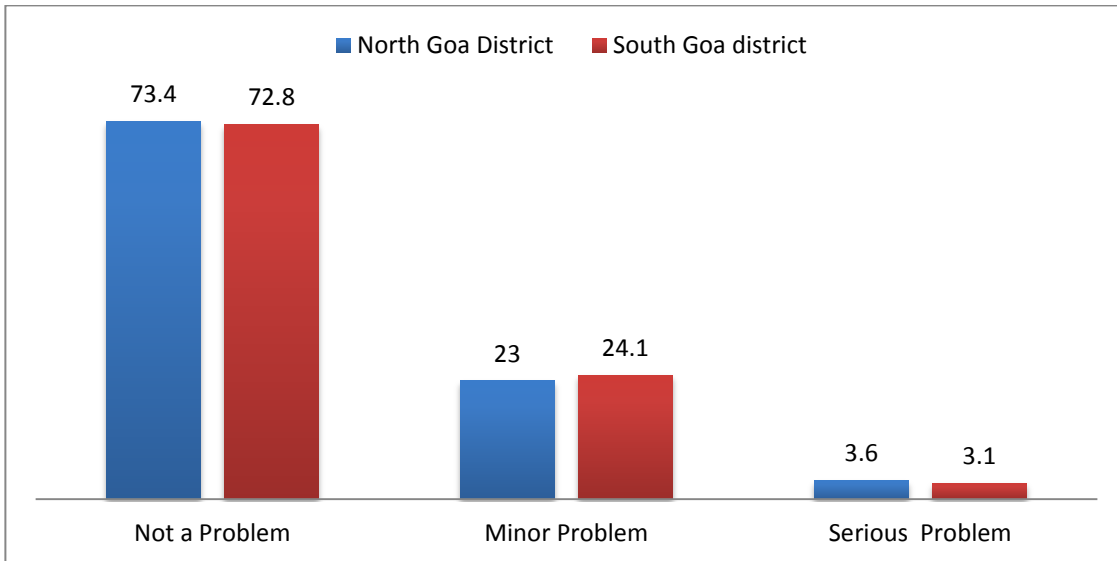


Fig.8.4.27: Opinion of Teachers of North Goa and South Goa Districts Schools about Availability of Material for Experiments/Investigation

d) Goa State

Figure 8.4.28 shows that according to 73 percent of teachers of the State availability of materials to conduct experiments/investigation was not a problem. It was minor problem for 24 percent of teachers and for 3 percent of teachers it was a serious problem.

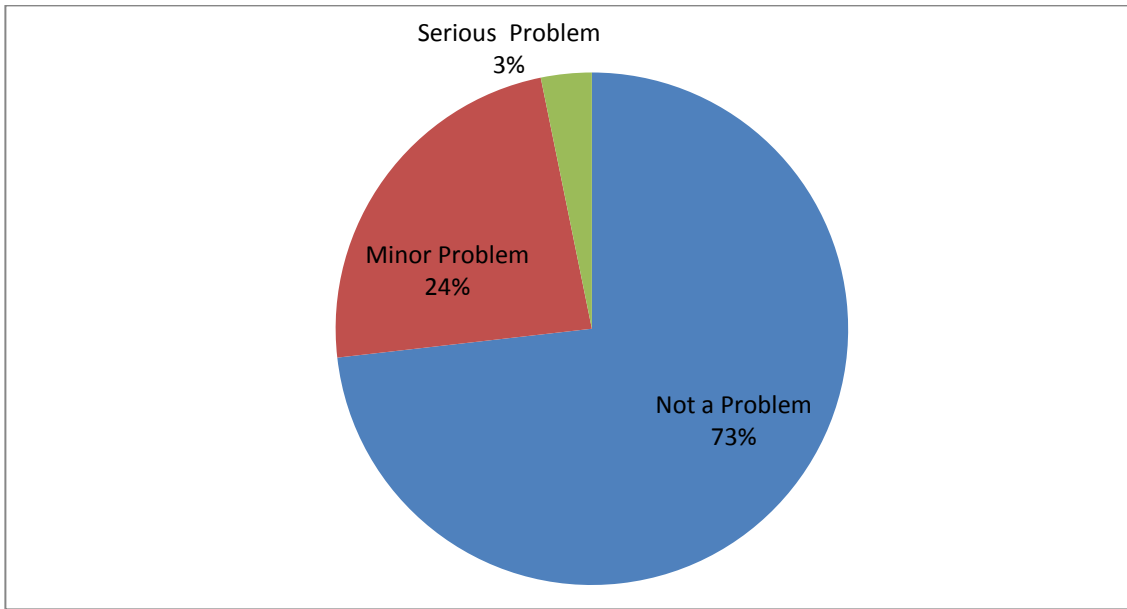


Fig.8.4.28: Opinion of Teachers of Goa State about Availability of Material for Experiments/Investigation

8.5 Views of Teachers about different Issues related to Job Satisfaction, Parents and Students

a) North Goa District

Table 8.5.1 indicates that about 60 percent of teachers of North Goa district had high/very high job satisfaction. More than 75 percent of teachers had high/very high understanding of curricular goal. Similarly 78 percent of teachers had high and very high expectation of students' achievement. About 70 percent of teachers were of the view that they were successful in implementing the curriculum. Only around one-fourth of the teachers considered parental support for students' achievement and parental involvement in school activities. Only about two-fifths of the teachers of North Goa district rated students' regard for school property and students' desire to do well in school as high and very high.

Table 8.5.1: Views of Teachers on Job Satisfaction, Parental involvement and Students' Desire (North Goa District)

	V. Low	Low	Medium	High	V. High
Teachers' Job Satisfaction	1.9	3.4	34.1	43.9	16.7
Teachers' understanding of curricular goal	0.0	0.5	24.4	58.0	17.1
Teachers' success in implementing curriculum	0.5	1.5	29.2	49.5	19.3
Teachers' expectation of student achievement	0.0	3.0	18.6	52.7	25.7
Parental support for student achievement	10.9	23.3	41.6	18.3	5.9
Parental involvement in school activities	10.9	24.7	34.1	23.9	6.4
Students' regard for school property	3.0	10.6	48.2	31.7	6.5
Students' desire to do well in school	0.5	11.6	47.5	32.8	7.6

Note: - Figures indicate percentage of teachers

b) South Goa District

Table 8.5.2 shows that only 46 percent of teachers of South Goa district had high and very high level job satisfaction. Nearly 70 percent of teachers stated that they had high/very high understanding of curricular goal and a similar percentage expressed that they had high/very high expectation of student achievement. Only about one-fifth of the teachers rated parental support for student achievement and parental involvement in school activities as high/very high. Just around one-third of the teachers had considered students' regard for school property students' desire to do well in school as high/very high.

Table 8.5.2: Views of Teachers on Job Satisfaction, Parental involvement and Students' Desire (South Goa District)

	V. Low	Low	Medium	High	V. High
Teachers' Job Satisfaction	0.0	4.1	48.5	40.8	6.6
Teachers' understanding of curricular goal	0.0	1.5	28.4	61.3	8.8
Teachers' success in implementing curriculum	0.0	1.0	41.6	49.2	8.2
Teachers' expectation of student achievement	0.0	4.0	27.3	51.5	17.2
Parental support for student achievement	14.7	32.0	33.5	13.2	6.6
Parental involvement in school activities	18.0	21.1	40.8	16.0	4.1
Students' regard for school property	5.6	12.4	53.7	21.1	7.2
Students' desire to do well in school	4.2	13.1	50.3	23.0	9.4

Note: - Figures indicate percentage of teachers.

c) Comparison between North Goa and South Goa Districts

It was observed that about 60 percent of teachers of North Goa district had high/very high job satisfaction where as only 46 percent of teachers of South Goa district had high and very high level job satisfaction. About 75 percent of teachers of North Goa district had high/very high understanding of curricular goal but in the case of South Goa teachers it was 70 percent. Seventy-eight percent of teachers of North Goa district had high / very high expectation of students' achievement where as only 67 of teachers of South Goa had such expectation. In all the other components also the North Goa district was found better than the South Goa district.

d) Goa State

Table 8.5.3: Views of Teachers on Job Satisfaction, Parental involvement and Students' Desire (Goa State)

	V. Low	Low	Medium	High	V. High
Teachers' Job Satisfaction	1.0	3.7	41.1	42.4	11.8
Teachers' understanding of curricular goal	0.0	1.0	26.3	59.7	13.0
Teachers' success in implementing curriculum	0.2	1.3	35.3	49.4	13.8
Teachers' expectation of student achievement	0.0	3.5	22.9	52.1	21.5
Parental support for student achievement	12.8	27.6	37.6	15.8	6.3
Parental involvement in school activities	14.4	23.0	37.4	19.9	5.3
Students' regard for school property	4.3	11.5	50.9	26.5	6.9
Students' desire to do well in school	2.3	12.3	48.8	28.0	8.6

Note: - Figures indicate percentage of teachers

Around 54 percent of elementary school teachers of the State of Goa had high and very high levels of job satisfaction. Seventy-three percent teachers had stated that they have understood the curricular goal to a high/very high extent. Similarly, 73 percent of teachers had high/very high expectation of students' achievement. Less than one-fourth of teachers rated parental support for student achievement and parental involvement in school activities as high/very high. Similarly, only about one-third of the teachers had rated students' regard for school property and students' desire to do well in school as high or very high.

8.6 Teachers' participation in different Professional Development Activities during the last two years

i) Teachers teaching Languages

a) North Goa District

Table 8.6.1 shows that more than four-fifths of the teachers of the schools located in North Goa district teaching English language had taken part in all the four professional development activities included in the study.

b) South Goa District

It was found that nearly two-third of the English teachers of the South Goa schools had participated in two of the professional development activities (Table 8.6.1). About four-fifths of the teachers had taken part in two activities i.e. understanding the process of reading/writing and instructional strategies for teaching language skills.

c) Comparison between North Goa and South Goa Districts

It was observed (Fig. 8.6.1) that compared to the teachers of the South Goa district higher percentage of teachers of the North Goa district had participated in each of the four professional development activities during the last two years. It shows that the teachers of the North Goa schools were better than their counterparts in South Goa schools as far as participation in professional development activities was concerned.

Table 8.6.1: Participation of Language Teachers in different Professional Development Activities

Activities	North Goa Dist.	South Goa Dist.	Goa State
Use a language across the curriculum	84.8	65.8	76.2
Interpreting and analyzing literary text	84.1	68.3	72.1
Understanding the process of reading/writing	93.9	77.8	86.2
Instructional strategies for teaching language skills	91.8	80.0	86.2

Note: Figures indicate percentage of Teachers

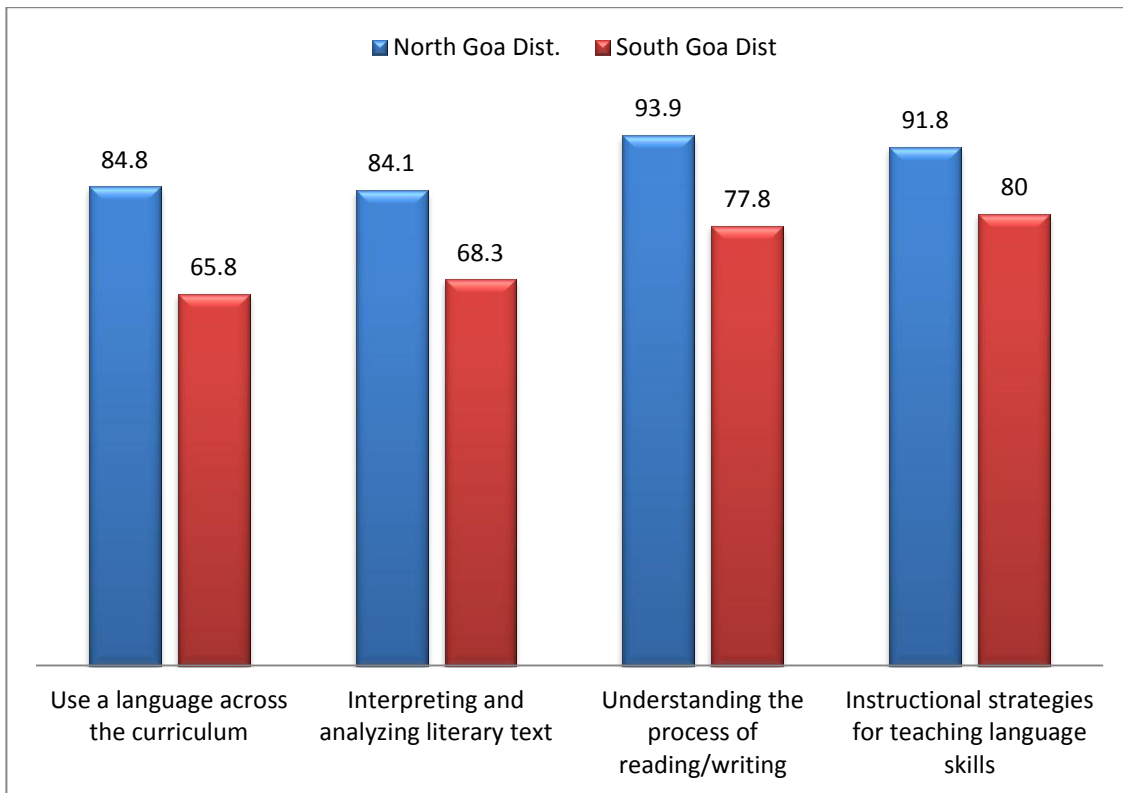


Fig.8.6.1: Participation of Language Teachers of North Goa and South Goa Districts in different Professional Development Activities
d) Goa State

About three-fourths of the teachers of the state of Goa teaching English at the Middle school level had participated in professional development activities like use of a

language across the curriculum and interpreting and analyzing literary text (Table 8.6.1). Eighty- six percent of the teachers of the State had taken part in professional development activities such as understanding the process of reading/writing and instructional strategies for teaching language skills. The findings indicated that a substantial percentage of the teachers had not taken part in these professional development activities during the last two years.

ii) Teachers teaching Mathematics

a) North Goa District

About three-fifths of the Mathematics teachers of North Goa district had participated in programmes on Mathematics content and only 45 percent had taken part in programmes conducted on Mathematics pedagogy (Table 8.6.2). Only about one-half had attended programmes on Mathematics curriculum. Nearly 73 percent and 69 percent of teachers took part in activities on improving students' critical thinking/problem solving and Mathematics assessment.

b) South Goa District

Table 8.6.2 shows that nearly three-fourths of the teachers of the South Goa district teaching Mathematics had taken part in three of the five professional development activities in Mathematics during the last two years. Programme on improving students' critical thinking/problem solving was attended by about 92 percent of the teachers and nearly 80 percent of the teachers had taken part in programmes on Mathematics assessment.

c) Comparison between North and South Goa Districts

Fig.8.6.2 shows that higher percentages of teacher of the South Goa district than the North Goa district had taken part in each of the five professional development

activities in Mathematics during the last two years. It shows that participation of the teachers of the South Goa district was better than the North Goa district.

Table 8.6.2: Participation of Mathematics Teachers in different Professional Development Activities

Activities	North Goa Dist.	South Goa Dist.	Goa State
Mathematics content	62.8	73.3	68.2
Mathematics pedagogy	45.5	74.4	61.2
Mathematics curriculum	52.4	74.4	64.7
Improving Students' critical thinking/problem solving	72.7	91.5	82.4
Mathematics assessment	68.9	79.5	74.1

Note: Figures indicate percentage of teachers

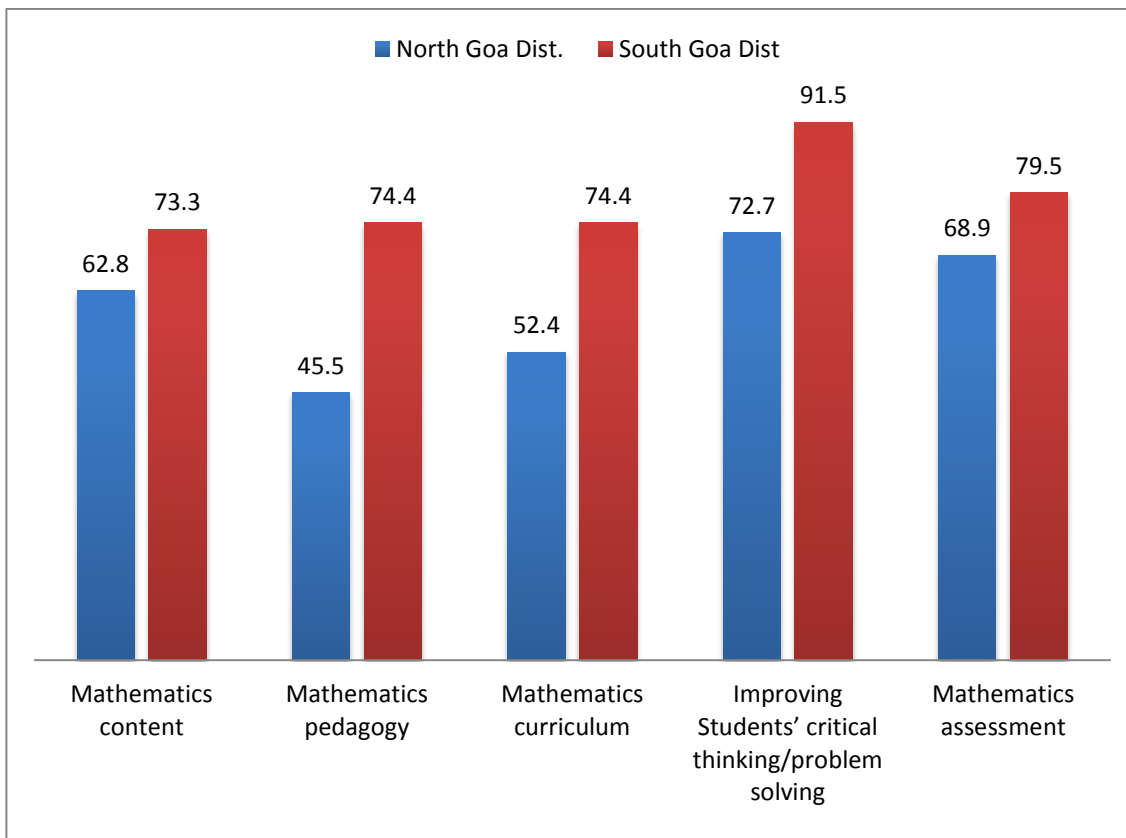


Fig.8.6.2: Participation of Mathematics Teachers of North Goa and South Goa Districts in different Professional Development Activities

d) Goa State

As far the participation of teachers of the State of Goa is concerned, it was observed that only 68 percent, 61 percent and 65percent of the teachers had taken part in programmes on Mathematics content, Mathematics pedagogy and Mathematics curriculum respectively (Table 8.6.2). In professional development activities like improving students' critical thinking/problem solving and Mathematics assessment about four-fifths and three – fourths of the teachers respectively had participated. The findings showed that a substantial percentage of teachers of the State had not taken part in professional development activities in Mathematics during the last two years.

iii) Teachers teaching Science

a) North Goa District

More than four-fifths of the Science teachers of the North Goa district stated that they had participated in programmes involving Science content, improving students' critical thinking/problem solving and Science assessment (Table 8.6.3). About three-fourths of the teachers each had participated in programmes conducted on Science pedagogy/instruction and Science curriculum.

b) South Goa District

It was found (Table 8.6.3) that more than three-fourths of the teachers of the South Goa districts had taken part in all the five areas of professional development activities in Science during the last two years.

c) Comparison between North and South Goa Districts

Fig.8.6.3 shows that in two of the professional development activities in Science i.e. Science content and Science assessment higher percentage of teachers of North Goa than South Goa district had taken part. But it was observed that in the other three activities nearly equal percentage of teachers of both the district participated.

Table 8.6.3: Participation of Science Teachers in different Professional Development Activities

Activities	North Goa Dist.	South Goa Dist.	Goa State
Science content	86.0	80.1	83.5
Science pedagogy/instruction	73.7	74.3	74.0
Science curriculum	75.0	76.9	76.0
Improving Students' critical thinking/problem solving	81.4	83.7	82.6
Science assessment	87.5	83.3	85.4

Note: Figures indicate percentage of teachers

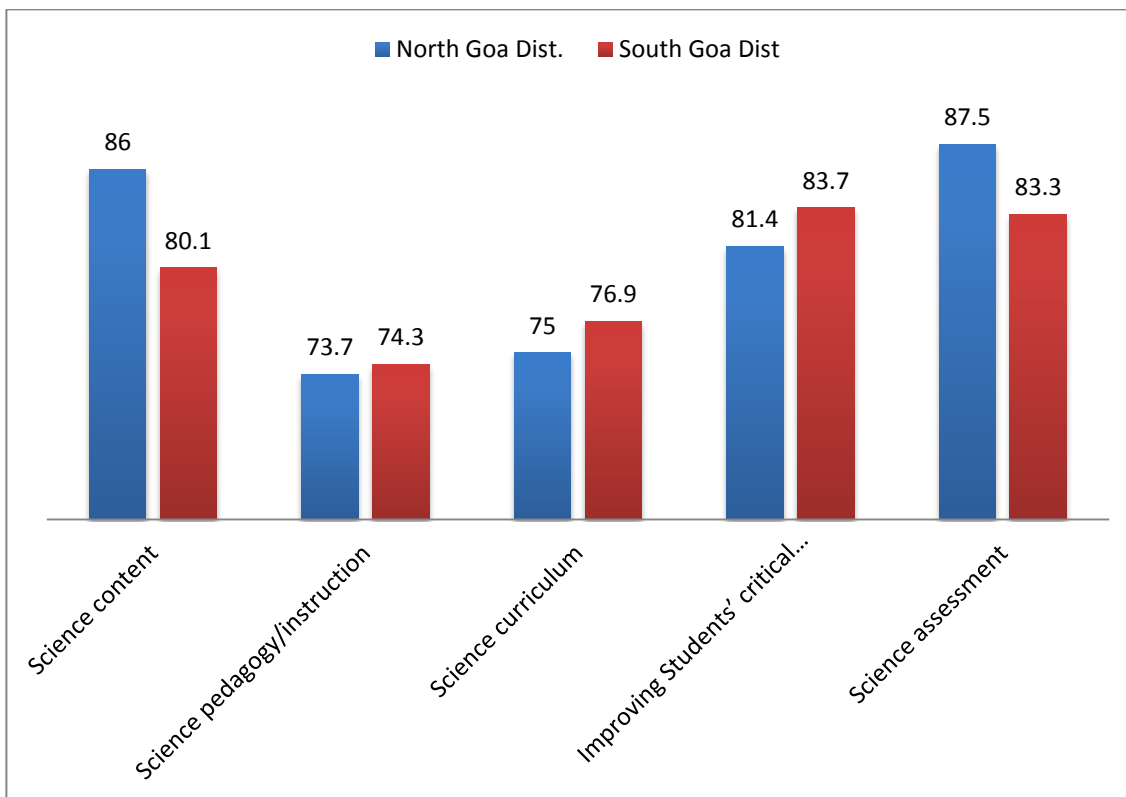


Fig.8.6.3: Participation of Science Teachers of North Goa and South Goa Districts in different Professional Development Activities

d) Goa State

More than 80 percent of the teachers of the State of Goa had participated in three of the five professional development activities in Science. In the remaining two activities about three-fourths of the teachers had taken part which means nearly one-fourths of the teachers of the State had not participated in these activities.

iv) Teachers teaching Social Science

a) North Goa District

About three-fourths of the Social Science teachers of North Goa district had participated in three out of five of the activities for professional development. In programme involving Social Science pedagogy only 62 percent of the teachers had

taken part (Table 8.6.4). Highest percentage teachers (87.5) had participated in activities concerning Social Science assessment.

b) South Goa District

About 86 percent and 90 percent of the teachers of South Goa district had participated in programmes on Social science content and Social science assessment respectively (Table 8.6.4). Nearly 73 percent of the teachers stated that they had taken part in professional development activities on Social Science pedagogy/instruction and Social Science curriculum.

c) Comparison between North and South Goa Districts

It is clear in Fig.8.6.4 that nearly equal percentage of teachers of North and South Goa districts had participated in three out of five professional development activities. In two of the activities on professional development higher percentage of South Goa than North Goa district teachers had participated.

Table 8.6.4: Participation of Social Science Teachers in different Professional Development Activities

Activities	North Goa Dist.	South Goa Dist.	Goa State
Social Science content	75.6	86.0	80.9
Social Science pedagogy/instruction	61.8	72.7	67.1
Social Science curriculum	72.2	72.7	72.5
Improving Students' critical thinking/problem solving	75.0	82.6	79.1
Social Science assessment	87.5	90.9	89.3

Note: Figures indicate percentage of teachers

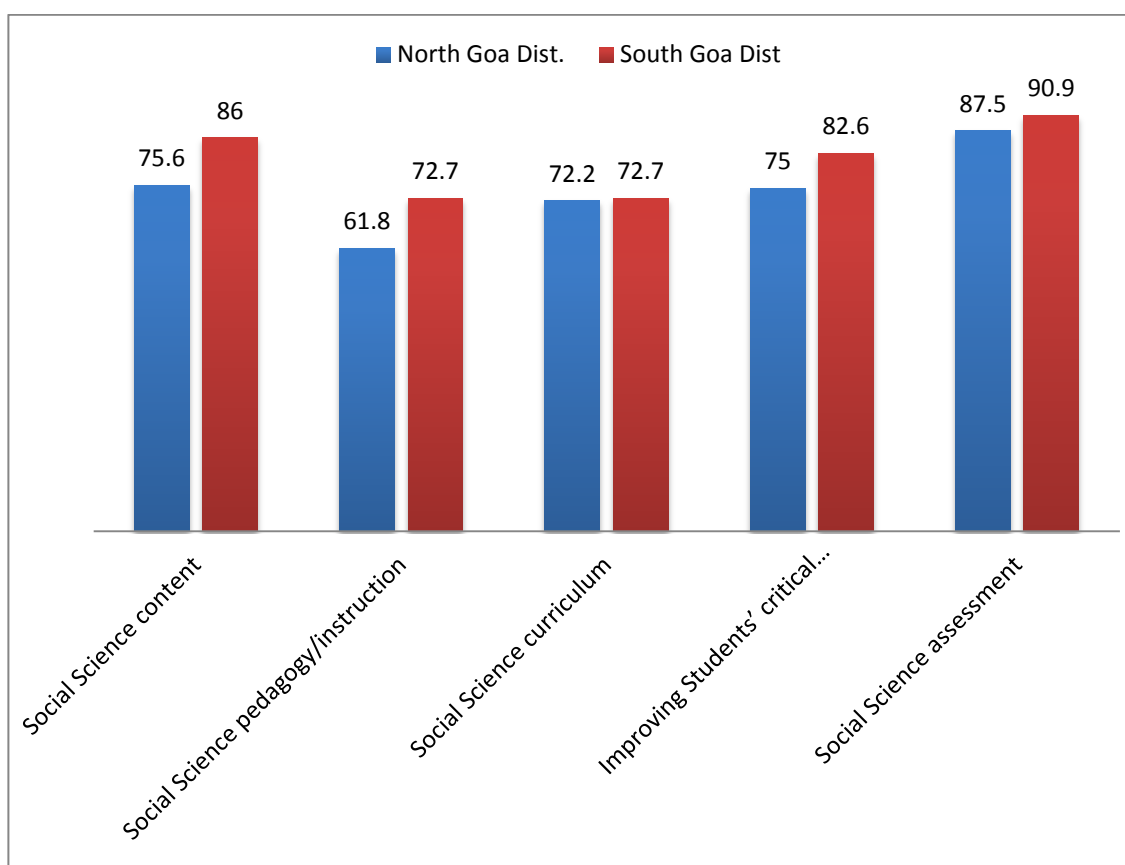


Fig.8.6.4: Participation of Social Science Teachers of North Goa and South Goa Districts in different Professional Development Activities

d) Goa State

Around 81 percent and 79 percent of the Social Science teachers of the State had participated in professional development activities involving Social Science content and improving students' critical thinking. About 90 percent of the teachers had taken part in programmes on social science assessment. Only 67 percent and 72 percent teachers stated that they had participated in programmes conducted on Social Science pedagogy and Social Science curriculum.

Section - II: *Regression Results*

Considering the nature of the teacher related variables under study it may not be exclusively possible to establish cause-effect relationship between the variables. But using regression analysis one could find out whether the teacher related variables had any influence on academic performance of students in different subjects. Or at least we could determine the relationship between the teacher factors and academic attainment of students.

In this section the regression results are presented in tabular form district-wise and findings are discussed.

8.7 Teacher Factors and Academic Attainment of Students

8.7.1 Age of Teachers

a) North Goa District

The negative coefficient values in Table 8.7.1 show that age of the teachers had negative influence on academic performance of students of North Goa district. But none of the coefficient was statistically significant.

Table 8.7.1: Regression Results: Teachers' Age (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	- 0.62	- 0.52	- 0.53	- 0.43
SE	0.50	0.41	0.53	0.46

t-value	1.24	1.25	1.00	0.93
Level of Significance	N.S.	N.S.	N.S.	N.S.

N.S. : Not significant

(b) South Goa District

Though all four coefficient values were negative only for social science it was significant (Table 8.7.2) indicating that age of teachers negatively influenced academic performance of students.

Table 8.7.2: Regression Results: Teachers' Age (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	- 0.26	- 0.15	- 0.28	- 0.68
SE	0.76	0.65	0.72	0.54
t-value	0.34	0.23	0.39	1.25
Level of Significance	N.S.	N.S.	N.S.	0.05

N.S. : Not significant

8.7.2 Educational Qualifications

a) North Goa District

Coefficient values in Table 8.3.3 showed that though educational and professional qualifications of teachers of North Goa district positively influenced academic performance of students, the corresponding t-values indicated that the said influence was not significant.

Table 8.7.3: Regression Results: Educational and Professional Qualifications (North Goa District)

Qualification		English	Maths.	Science	Soc. Sci.
Educational	Coefficient	0.18	0.89	1.50	0.67
	SE	0.68	0.69	1.11	0.87
	t-value	0.27	1.29	1.35	0.77
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Professional	Coefficient	0.08	0.51	1.83	1.21
	SE	1.1	1.05	1.14	1.08
	t-value	0.07	0.48	1.61	1.11
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

b) South Goa District

Table 8.7.4: Regression Results: Educational and Professional Qualifications (South Goa District)

Qualification		English	Maths.	Science	Soc. Sci.
Educational	Coefficient	2.16	0.18	1.69	2.13
	SE	1.15	1.04	1.31	0.95
	t-value	1.88	0.17	1.29	2.24
	Level of Sig.	N.S.	N.S.	N.S.	0.05
Professional	Coefficient	0.43	0.14	0.24	2.15
	SE	1.91	1.16	1.18	1.05
	t-value	0.23	0.12	0.20	2.05
	Level of Sig.	N.S.	N.S.	N.S.	0.05

Table 8.7.4 shows that all the coefficient values were positive indicating positive effect of educational and professional qualifications of teachers on academic performance of students. But except Social Science, in no other subject the influence of teachers' qualifications on performance of students was statistically significant.

8.7.3 Employment Status

a) North Goa District

Though all the coefficient values in Table 8.7.5 are positive none found statistically significant. It revealed that employment status of teachers of North Goa district had no significant effect on academic performance of their students in any of the subjects.

Table 8.7.5: Regression Results: Employment Status (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.31	2.27	0.52	0.84
SE	1.29	1.36	1.19	1.34
t-value	0.24	1.66	0.43	0.62
Level of Significance	N.S.	N.S.	N.S.	N.S.

b) South Goa District

All the coefficient values in Table 8.7.5 are positive. But none found statistically significant indicating that employment status of teachers of South Goa district had no significant influence on academic performance of their students in any of the subjects.

Table 8.7.6: Regression Results: Employment Status (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	1.15	1.33	3.35	0.18
SE	2.38	2.10	2.19	1.18
t-value	0.48	0.63	1.52	0.15
Level of Significance	N.S.	N.S.	N.S.	N.S.

8.7.4 Number of In-service Training by Teachers**a) North Goa District**

No statistically significant relationship of number of in-service training programmes attended by teachers with academic attainment of students was found, except in Social Science (Table 8.7.7).

Table 8.7.7: Regression Results: In-service Training of Teachers (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.14	0.11	0.11	0.16
SE	0.12	0.08	0.14	0.08
t-value	1.17	1.37	0.76	2.00
Level of Significance	N.S.	N.S.	N.S.	0.05

b) South Goa District

Table 8.7.8 indicated that number of in-service training programmes attended by teachers of South Goa district had no significant influence on academic attainment of students in any of the subject.

Table 8.7.8: Regression Results: In-service Training of Teachers (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.19	0.16	0.04	0.12
SE	0.12	0.11	0.12	0.08
t-value	1.57	1.52	0.33	1.50
Level of Significance	N.S.	N.S.	N.S.	N.S.

8.7.5 Homework assigned by Teachers

a) North Goa District

Table 8.7.9 shows that all the coefficients were positive indicating positive impact of frequency of homework assigned to students by teachers on academic attainment of students. But none of the coefficients were found significant indicating no statistically significant influence of home work on academic achievement of students.

Table 8.7.9: Regression Results: Homework (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	1.83	0.64	2.10	2.77
SE	1.65	1.15	1.28	2.12

t-value	1.10	0.56	1.64	1.30
Level of Significance	N.S.	N.S.	N.S.	N.S.

b) South Goa District

Though all the coefficient values in the case of South Goa district were positive (Table 8.7.10), none found statistically significant indicating that homework assigned to students by teachers had no significant effect on performance of students in different subjects.

Table 8.7.10: Regression Results: Homework (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	1.55	0.62	0.84	0.36
SE	2.25	1.64	1.96	1.19
t-value	0.68	0.37	0.43	0.30
Level of Significance	N.S.	N.S.	N.S.	N.S.

8.7.6 Teachers' Dairy

a) North Goa District

Maintenance of teachers' diary showed positive influence on academic attainment of students of North Goa district in Mathematics and Science (Table 8.7.11).

Table 8.7.11: Regression Results: Teachers' Dairy (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	1.82	3.68	4.48	2.50
SE	1.66	1.22	1.58	1.87
t-value	1.10	3.01	2.83	1.33
Level of Significance	N.S.	0.01	0.01	N.S

b) South Goa District

Maintenance of teachers' diary showed no significant relation with academic attainment of students of South Goa district in any of the subjects (Table 8.7.12).

Table 8.7.12: Regression Results: Teachers' Dairy (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.15	0.72	2.31	3.90
SE	2.13	1.32	2.03	2.67
t-value	0.07	0.54	1.13	1.46
Level of Significance	N.S.	N.S.	N.S.	N.S.

8.7.7 Instructional Aids for Teachers

a) North Goa District

Table 8.7.13: Regression Results: Instructional Aids for Teachers (North Goa District)

Qualification		English	Maths.	Science	Soc. Sci.
	Coefficient	0.33	1.00	0.77	0.75

Teacher's Handbook	SE	1.16	0.86	1.06	1.01
	t-value	0.28	1.16	0.73	0.74
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
TLM	Coefficient	2.77	3.40	4.89	0.36
	SE	1.16	1.43	2.24	2.18
	t-value	2.38	2.36	2.17	0.16
	Level of Sig.	0.05	0.05	0.05.	N.S.
A-V Facilities	Coefficient	1.32	0.43	0.71	0.82
	SE	1.39	0.95	1.27	1.06
	t-value	0.95	0.45	0.55	0.77
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

Availability of instructional aids for teachers such as Teachers' handbook and A. V. facilities did not have significant impact on academic attainment of students of North Goa District. But availability of TLM had significant positive influence on academic attainment of students in school subjects (Table 8.7.13).

b) South Goa District

Availability of teacher' hand books had no significant influence on academic attainment of students of South Goa district in any of the subjects except Mathematics. Availability of TLM significantly (positively) influenced academic attainment in English and adequate A. V. facilities in schools had significant positive influence on performance in English and Science (Table 8.7.14).

Table 8.7.14: Regression Results: Instructional Aids for Teachers (South Goa District)

Qualification		English	Maths.	Science	Soc. Sci.
	Coefficient	0.90	2.29	0.47	1.22

Teacher's Handbook	SE	1.72	1.11	1.44	1.34
	t-value	0.52	1.81	0.32	0.91
	Level of Sig.	N.S.	2.06	N.S.	N.S.
TLM	Coefficient	2.54	1.86	2.92	1.88
	SE	1.26	2.36	2.70	2.21
	t-value	2.01	0.79	1.08	0.85
	Level of Sig.	0.05	N.S.	N.S.	N.S.
A-V Facilities	Coefficient	5.58	1.46	3.58	0.21
	SE	2.43	1.42	1.69	1.50
	t-value	2.29	1.03	2.11	0.14
	Level of Sig.	0.05	N.S.	0.05	N.S.

8.7.8 Academic Support from Resource Persons/ Officials

a) North Goa District

Teachers receiving academic support from resource persons/ officials showed significant positive relationship with attainment of students of North Goa district in Mathematics and Social Science (Table 8.7.15).

Table 8.7.15: Regression Results: Academic Support from Resource Persons (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.10	0.25	0.04	0.61
SE	0.22	0.12	0.04	0.25
t-value	0.42	2.05	1.00	2.44

Level of Significance	N.S.	0.05	N.S.	0.05
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b) South Goa District

Table 8.7.16 indicated that teachers receiving academic support from resource persons/ officials showed no significant relationship with attainment of students of South Goa district in any of the subjects.

Table 8.7.16: Regression Results: Academic Support from Resource Persons (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.09	0.06	0.49	0.07
SE	0.14	0.14	2.65	0.12
t-value	0.64	0.43	0.18	0.58
Level of Significance	N.S.	N.S.	N.S.	N.S.

8.7.9 Problems perceived by Teachers

a) North Goa District

Perception of different problems by teachers like condition of school building, overcrowded classroom, and inadequate work space for teachers and non availability materials for experiments had no association with academic performance of students of North Goa district (Table 8.7.17).

Table 8.7.17: Regression Results: Problems according to Teachers (North Goa District)

Problem		English	Maths.	Science	Soc. Sci.
School building requiring significant repair	Coefficient	- 0.49	- 0.54	- 1.17	- 0.77
	SE	0.80	0.59	0.73	0.69
	t-value	0.61	0.91	1.61	1.11
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Overcrowded class rooms	Coefficient	- 0.22	- 0.27	- 0.69	- 0.30
	SE	0.82	0.67	0.77	0.78
	t-value	0.27	0.41	0.89	0.39
	Level of Sig.	N.S	N.S.	N.S	N.S.
Inadequate work space for teachers	Coefficient	- 0.69	- 0.53	- 0.60	- 1.11
	SE	0.92	0.74	0.77	0.77
	t-value	0.74	0.72	0.76	1.44
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Non availability materials for experiments	Coefficient	- 0.61	- 0.30	- 1.38	- 1.28
	SE	1.25	0.82	1.07	0.90
	t-value	0.48	0.36	1.29	1.42
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

b) South Goa District

Table 8.7.18 indicates that perception of different problems by teachers of South Goa district such as condition of the school building, overcrowded classroom, and inadequate work space for teachers and non availability materials for experiments had no association with academic performance of students of North Goa district (Table 8.7.17).

Table 8.7.18: Regression Results: Problems according to Teachers (South Goa District)

Problem		English	Maths.	Science	Soc. Sci.
School building requiring significant repair.	Coefficient	- 0.09	- 1.43	- 0.30	- 1.11
	SE	0.14	0.81	1.01	0.85
	t-value	0.61	1.76	0.29	1.30
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Overcrowded class rooms	Coefficient	- 0.72	- 1.74	- 0.81	- 0.64
	SE	1.24	1.06	1.34	1.04
	t-value	0.58	1.64	0.60	0.61
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Inadequate work space for teachers	Coefficient	- 1.74	- 1.65	- 0.10	- 0.67
	SE	1.20	0.90	1.19	0.98
	t-value	1.45	1.84	0.08	0.68
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Non availability materials for experiments	Coefficient	- 1.06	- 0.55	- 0.30	- 1.18
	SE	1.42	1.32	1.97	1.12
	t-value	0.75	0.42	0.15	1.05
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

8.7.10 Perception of Teachers

(a) North Goa District

Table 8.7.19: Regression Results: Perception of Teachers (North Goa District)

		English	Maths.	Science	Soc. Sci.
Teacher's Job satisfaction	Coefficient	0.25	0.52	0.32	0.47
	SE	0.59	0.48	0.75	0.51
	t-value	0.42	1.08	0.42	0.92
	Level of Sig.	N.S.	N.S	N.S.	N.S.
Teacher' understanding of curricular goal	Coefficient	0.07	0.37	0.36	0.11
	SE	0.70	0.53	0.85	0.78
	t-value	0.10	0.70	0.42	0.14
	Level of Sig.	N.S.	N.S	N.S.	N.S.
Teacher's success in implementing curriculum	Coefficient	0.11	0.79	0.33	0.14
	SE	0.65	0.40	0.78	0.61
	t-value	0.17	1.98	0.42	0.22
	Level of Sig.	N.S.	0.05	N.S.	N.S.
Teacher's expectation for student achievement	Coefficient	1.08	0.57	0.32	0.36
	SE	0.61	0.44	0.57	0.52
	t-value	1.77	1.30	0.55	0.70
	Level of Sig.	N.S.	N.S	N.S.	N.S.
Parental support for student achievement	Coefficient	1.18	0.15	0.13	0.82
	SE	0.47	0.40	0.56	0.41
	t-value	2.51	0.38	0.22	2.00
	Level of Sig.	0.05	N.S	N.S.	0.05
Parents' involvement in school activities	Coefficient	1.00	0.40	0.36	0.33
	SE	0.47	0.37	0.52	0.44
	t-value	2.13	1.08	0.70	0.75
	Level of Sig.	0.05	N.S	N.S.	N.S.
Students' regard for school properties	Coefficient	1.54	0.69	0.14	0.11
	SE	0.56	0.42	0.55	0.57
	t-value	2.75	1.64	0.26	0.19
	Level of Sig.	0.01	N.S	N.S.	N.S.
Students' desire to do well in school	Coefficient	0.39	0.09	0.14	0.53
	SE	0.64	0.41	0.60	0.57
	t-value	0.61	0.23	0.24	0.93
	Level of Sig.	N.S.	N.S	N.S.	N.S.

Table 8.7.19 indicates that job satisfaction of teachers, teacher' understanding of curricular goal, teacher's expectation for student achievement, students' desire to do

well in school had no significant impact on academic performance of students of North Goa district in any of the subjects. Teacher's success in implementing curriculum influenced performance only in Mathematics, parental support for student achievement had positive relation with students' achievement in English and Social science, parents' involvement in school activities and students' regard for school properties had significant positive influence on performance in English.

(b) South Goa District

In the case of South Goa district it was found that teachers' job satisfaction had positive influence on students' achievement in Mathematics and Science. Teachers' understanding of curricular goal and teacher's success in implementing curriculum positively influenced students' performance in Science. Teacher's expectation for student achievement, parental support for student achievement, parents' involvement in school activities and students' regard for school properties positively affected students' performance only in Mathematics. Students' desire to do well in school had positive influence on performance of students in Mathematics and Social Science.

Table 8.7.20: Regression Results: Perception of Teachers (South Goa District)

	English	Maths.	Science	Soc. Sci.
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Teacher's Job satisfaction	Coefficient	0.94	1.37	2.00	0.01
	SE	0.99	0.59	0.87	1.00
	t-value	0.95	2.32	2.28	0.01
	Level of Sig.	N.S.	0.05	0.05	N.S.
Teacher' understanding of curricular goal	Coefficient	1.55	0.74	1.43	0.36
	SE	1.25	0.84	0.72	0.92
	t-value	1.24	0.88	1.99	0.40
	Level of Sig.	N.S.	N.S	0.05	N.S.
Teacher's success in implementing curriculum	Coefficient	0.92	0.87	1.77	0.23
	SE	1.03	0.87	0.82	1.00
	t-value	0.90	1.00	2.16	0.23
	Level of Sig.	N.S.	N.S	0.05	N.S.
Teacher's expectation for student achievement	Coefficient	0.67	1.95	1.03	0.10
	SE	1.03	0.74	0.96	0.85
	t-value	0.65	2.63	1.06	0.11
	Level of Sig.	N.S.	0.01	N.S.	N.S.
Parental support for student achievement	Coefficient	0.68	1.21	0.40	0.79
	SE	0.67	0.61	0.71	0.58
	t-value	1.01	1.98	0.57	1.36
	Level of Sig.	N.S.	0.05	N.S.	N.S.
Parents' involvement in school activities	Coefficient	0.81	1.45	0.06	0.63
	SE	0.70	0.52	0.69	0.58
	t-value	1.15	2.77	0.08	1.10
	Level of Sig.	N.S.	0.01	N.S.	N.S.
Students' regard for school properties	Coefficient	0.86	1.18	0.40	0.43
	SE	0.82	0.57	0.84	0.74
	t-value	1.04	2.06	0.48	0.67
	Level of Sig.	N.S.	0.05	N.S.	N.S.
Students' desire to do well in	Coefficient	1.00	1.12	0.63	1.43
	SE	0.80	0.55	0.77	0.63

school	t-value	1.24	2.04	0.82	2.27
	Level of Sig.	N.S.	0.05	N.S.	0.05

8.8 Conclusions

1. More than two-third of the teachers teaching in Class VII in Goa are female and the remaining are male. The percentage of female teachers is higher in South Goa compared to North Goa district.
2. Nearly half of the teachers teaching Class-VII in the State are below 40 years of age.
3. Age of the teachers has no significant relation with the academic attainment of their students.
4. The percentage of SC, ST and OBC teachers at the elementary stage is very less compared to their share in the population of the State.
5. Almost all the teachers teaching Class-VII are Bachelor's or Master's degree holders.
6. All the teachers of the State teaching at the elementary stage are trained and more than four-fifths hold Bachelor's degree in Education.
7. Educational and professional qualifications of teachers influence academic attainment of students positively.
8. Most of the teachers teaching in Class-VII are regular and full time. But a substantial percentage of teachers of the State are holding the posts on temporary basis.
9. Employment status of teachers, i.e. Whether temporary or permanent has no significant relation the academic performance of students.
10. Most of the teachers have participated in in-service training programme during the last two years. The teachers teaching in South Goa district schools are better than their counterparts in North Goa district as far as their participation in in-service programmes is concerned.
11. Participation of teachers in in-service training programme helps in improving academic performance of students in some of the subjects.

12. Most of the teachers of both the districts used to assign homework to students regularly.
13. Frequency of assignment of homework to students by teachers has no association with academic performance of students.
14. Almost all the teachers of both the districts used to maintain teachers diary.
15. Maintenance of teachers' diary has positive effect on academic attainment of students in some subjects.
16. Majority of the teachers have 31 and above periods per week. Teachers of North Goa district have more workload than the teachers of South Goa district.
17. Almost all the schools have TLM and majority of the schools have teacher's handbooks and A.V. facilities.
18. Availability of instructional aids for teachers like teacher's handbooks, TLM and A.V. facilities has positive influence on academic attainment of students.
19. Very few teachers received TLM grants in 2013-14.
20. Majority of the teachers of both the districts do not receive any academic support from resource persons/officials. Out of those who receive such support, most of them receive support up to 5 times a year.
21. Receiving of academic support by teachers from resource persons contribute for better academic performance among students in some subjects.
22. Most of the teachers of both the districts used to discuss with other teachers about how to teach a particular concept and prepare instructional materials with other teachers. But most of the teachers do not observe teaching of other teachers. Only about half of the teachers used to allow other teachers to observe their own teaching.
23. Almost all the teachers of both the districts agree that their schools are located in safe neighbourhood and they feel safe in the school. Most of the

teachers of both the districts agree that security policies and practices of their schools are sufficient.

24. A substantial number of teachers think that repairing of their school building is a problem (minor/major). Most of the teachers do not think that overcrowded classroom, inadequacy of working space for teachers and non-availability of materials for conducting investigation are problems in their respective schools.
25. Though statistically not significant, overcrowded classroom, inadequacy of working space for teachers and non-availability of materials for conducting investigation have somewhat negative influence on academic performance of students.
26. Teachers' job satisfaction, teachers' understanding of curricular goal, teacher's success in implementing curriculum, teacher's expectation for student achievement, parental support for student achievement, parents' involvement in school activities, students' regard for school properties and students desire to do well in school are the factors which positively affect students' performance in one or the other school subjects.
27. Most of the teachers of both the districts take part in different professional development activities in their respective subjects.

CHAPTER IX

SCHOOL RELATED VARIABLES

9.0 Introduction

This chapter presents the findings relating to the school variables. A questionnaire was used to collect information about the schools from the Head of the institutions. Presentations of the findings are made separately for each district, followed by comparison between the two districts and finally the State of Goa as a whole. There are two parts of this chapter. The first Section is concerning the details of the school related variables and the second section is about school factors in relation to students' academic attainment, which include the regression results. At the end, conclusions drawn based on the findings are presented.

Section- I: - *School Factors*

Data collected about different school related factors/variables were analysed by calculating percentages and the same are presented in tabular form as well as graphically.

9.1 School Background

9.1.1 School Management

a) North Goa District

In North Goa district 42.3 percent, 5.8 percent and 51.9 percent of the schools are respectively managed by State Government, local bodies and private bodies receiving grants from the State Government (Table 9.1.1 and Figure 9.1.1).

Table 9.1.1: Distribution of Schools on the basis of Management

Management	North Goa Dist.	South Goa Dist.	Goa state
State Government	42.3	48.0	45.0
Local Body	5.6	6.0	5.9
Tribal Social Dept	0.0	0.0	0.0
Private Aided.	51.9	46.0	49.1
Total	100	100	100

Note: - Figures indicate percentage of Schools

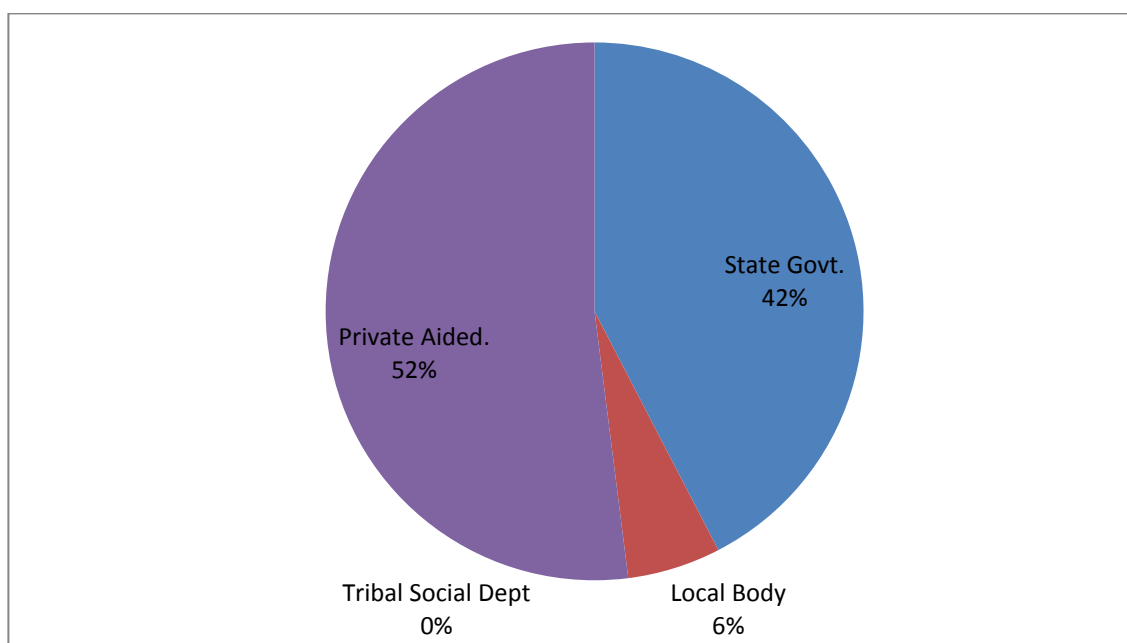


Fig. 9.1.1: Distribution of Schools in North Goa District on the Basis of Management

b) South Goa District

Table 9.1.1 and Figure 9.1.2 shows the data regarding the percentage of elementary schools in South Goa district managed by different types of management.

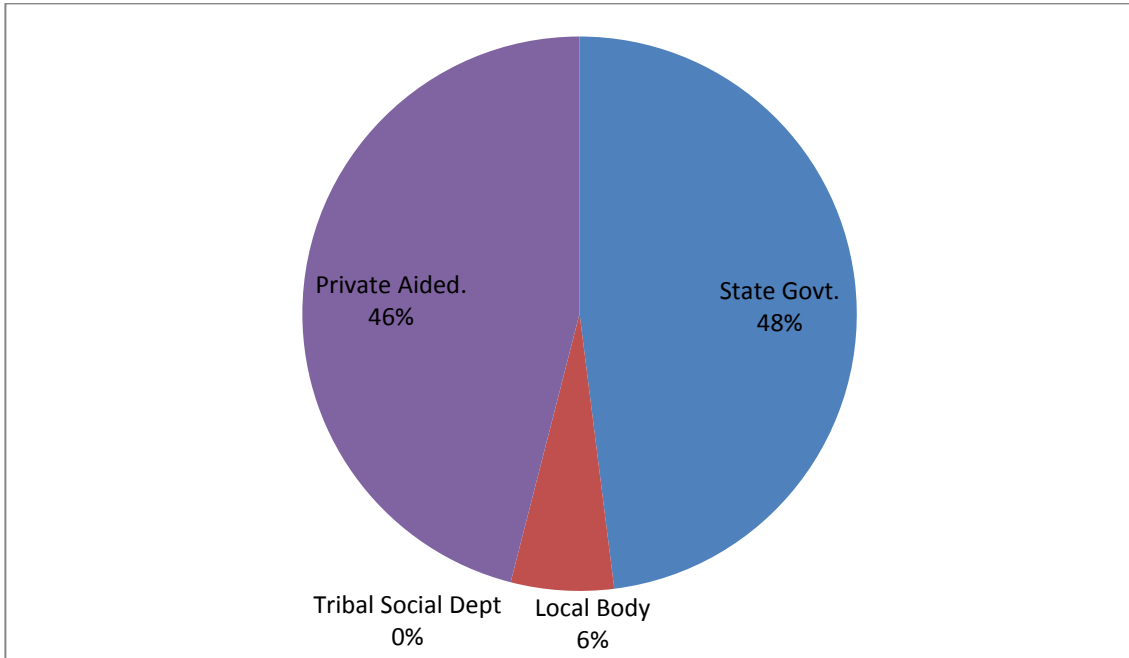


Fig. 9.1.2: Distribution of Schools in South Goa District on the Basis of Management
c) Comparison between North and South Goa Districts

Compared to North Goa, in South Goa district higher percentage of schools were managed by the State Government. But the percentage of private aided schools was more in North Goa than in South Goa district (Table 9.1.1 and Figure 9.1.3).

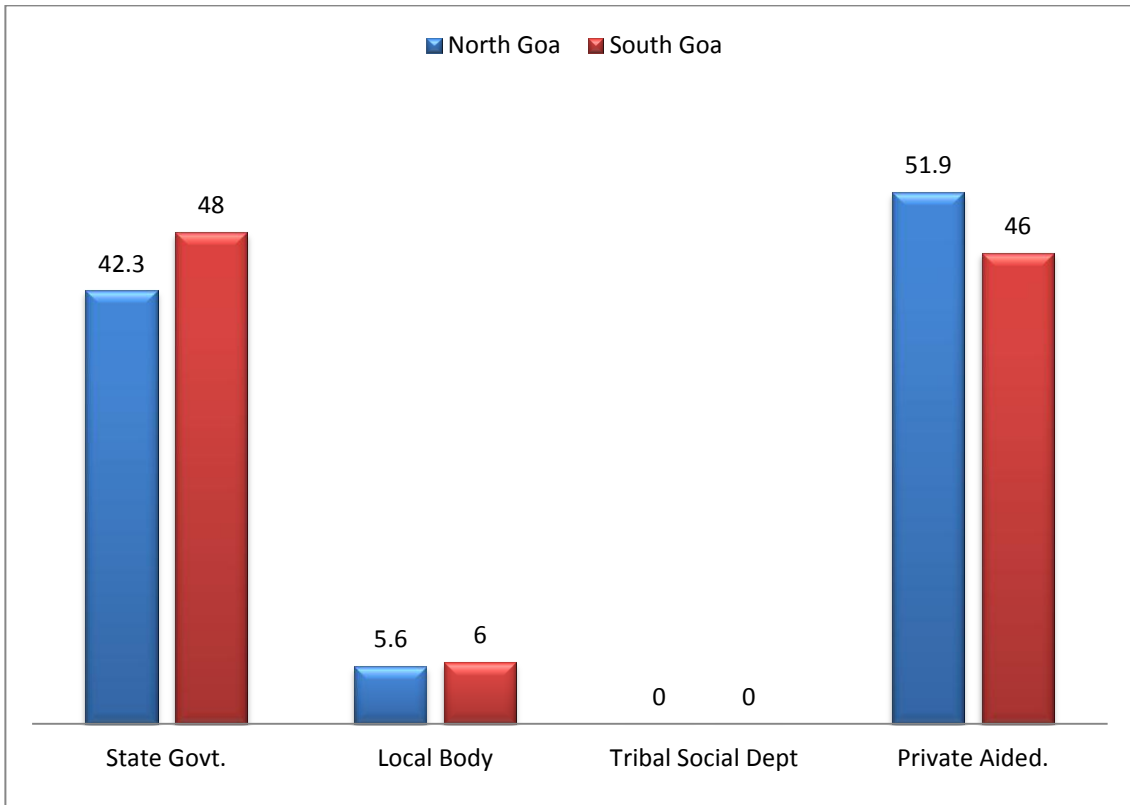


Fig. 9.1.3: Distribution of Schools in North Goa and South Goa Districts on the basis of Management.

d) Goa State

Figure 9.1.4 shows that in Goa, 45 percent of the school are managed by the State Government and 49 percent are managed by private trusts but receive grants-in-aid from the State Government. The remaining 6 percent are managed by local bodies.

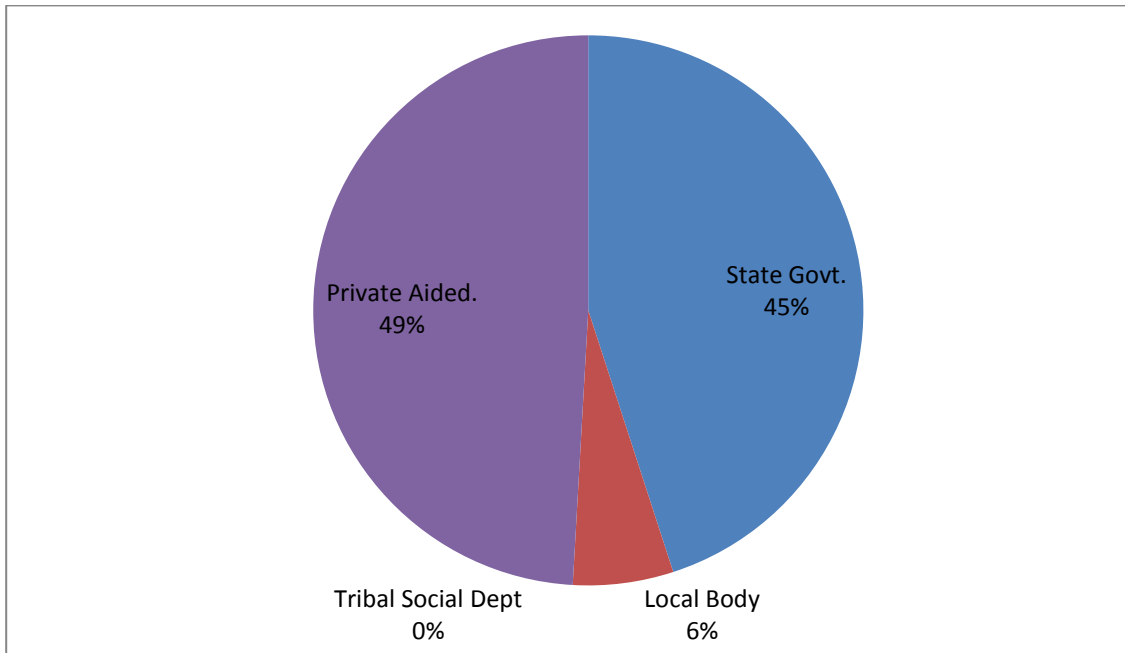


Fig. 9.1.4: Distribution of Schools in Goa State on the Basis of Management.

9.1.2 Attachment of Pre-School with the Elementary School

a) North Goa District

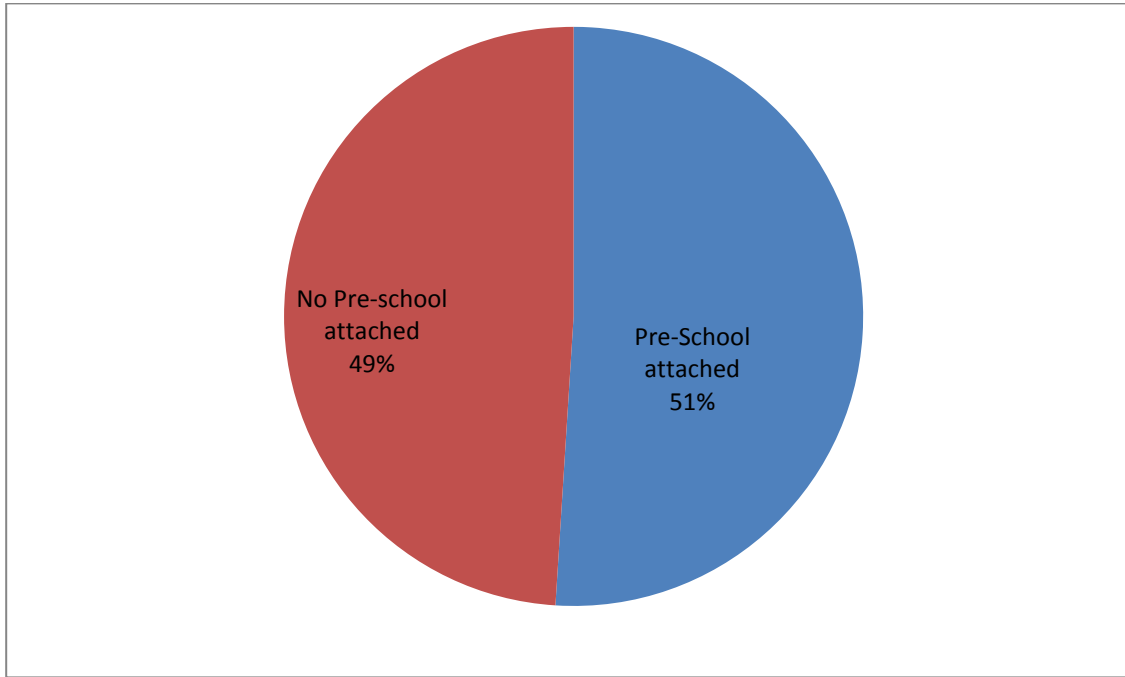


Fig 9.1.5: Attachment of Pre-School with the Elementary School (North Goa District)
 About 51 percent of the elementary schools located in North Goa district had pre-schools attached to it while the remaining 49 percent did not have such facilities (Table 9.1.2 and Figure 9.1.5).

Table 9.1.2: Attachment of Pre - Schools

Category	North Goa Dist.	South Goa Dist.	Goa state
Pre-School attached	51.0	38.8	45.0
No Pre-school attached	49.0	61.2	55.0
Total	100	100	100

Note: - Figures indicate percentage of Schools.

b) South Goa District

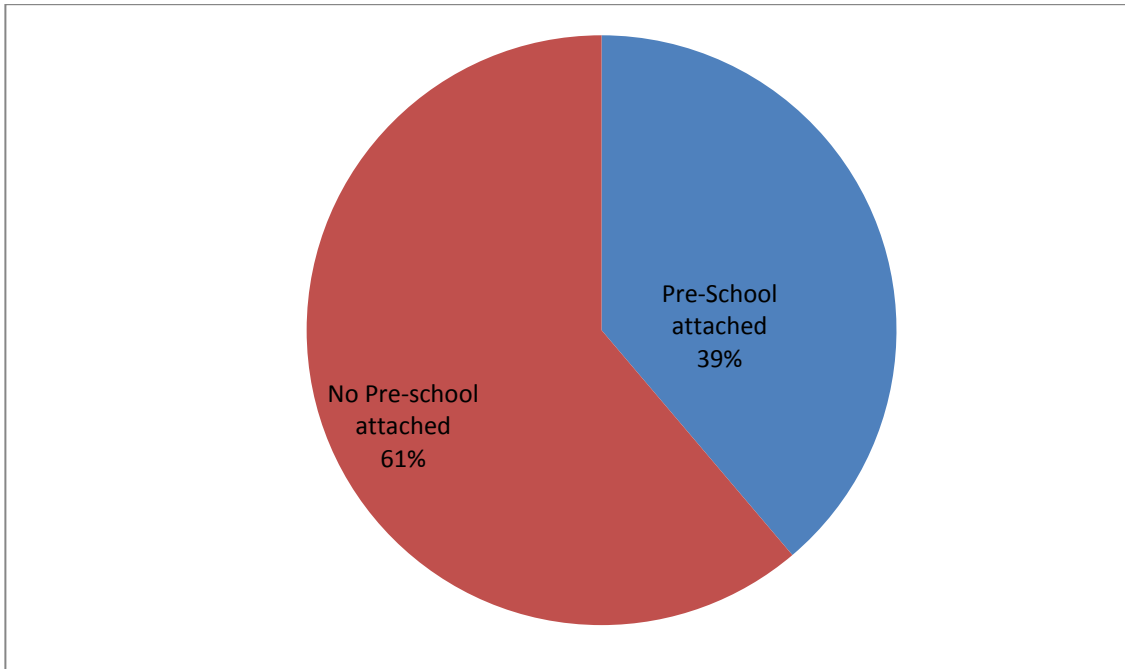


Fig 9.1.6: Attachment of Pre-School with the Elementary School (South Goa District)

c) Comparison between North and South Goa Districts

Higher percentage of elementary schools in South Goa district compared to North Goa district had facilities for pre-primary education (Figure 9.1.7).

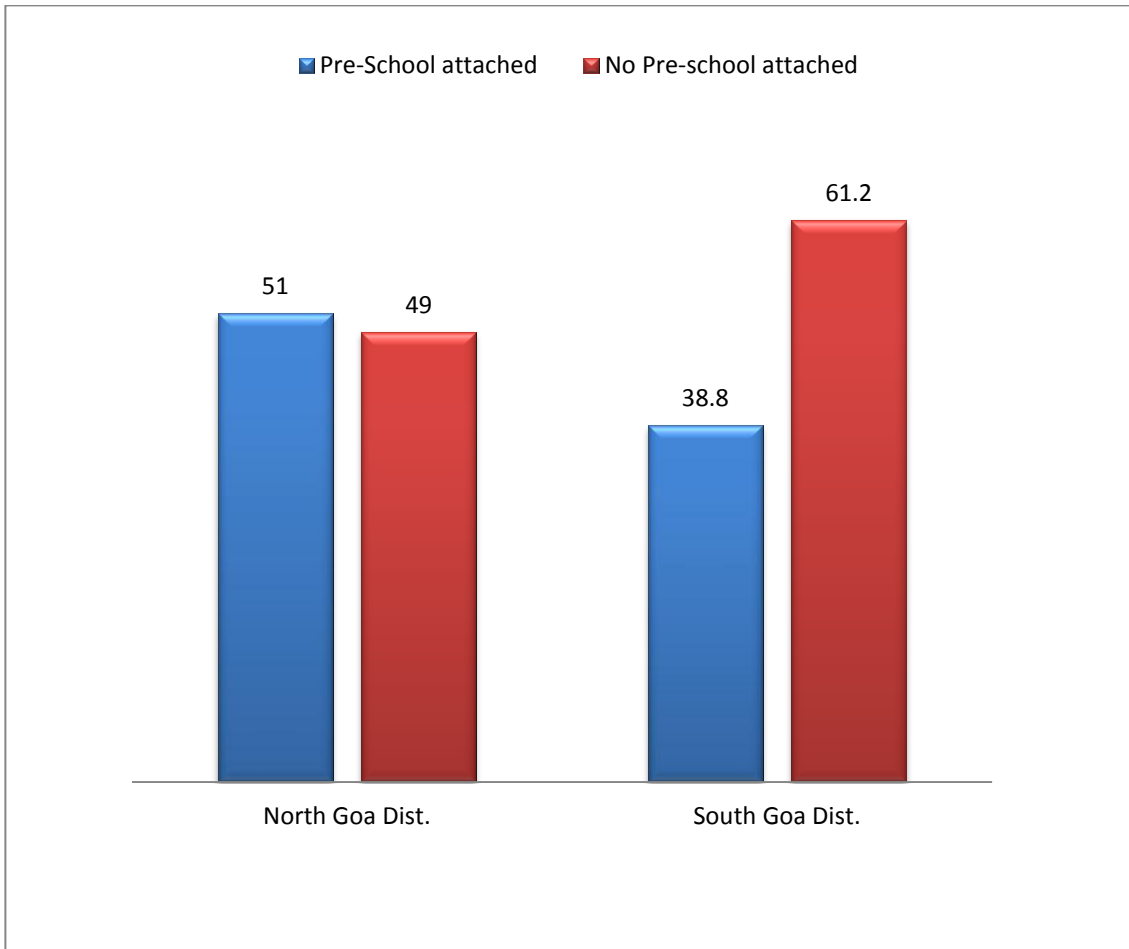


Fig 9.1.7: Attachment of Pre-School with the Elementary School (Comparison between North Goa and South Goa Districts)

d) Goa State

Figure 9.1.8 shows that 45 percent of the elementary schools had pre-schools attached with them while in 55 percent of the schools no such facilities existed.

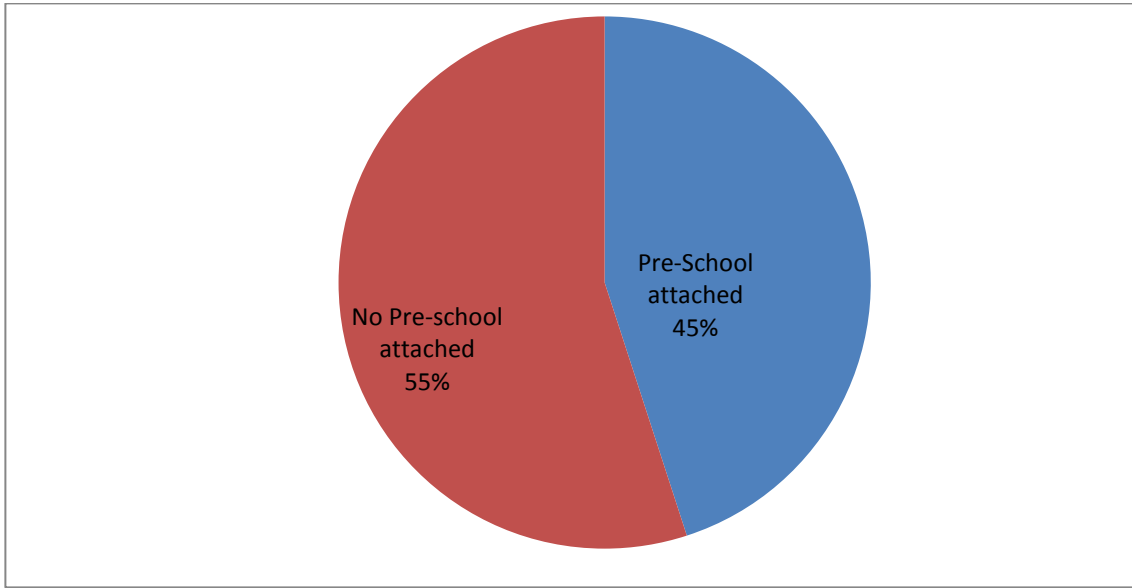


Fig 9.1.8: Attachment of Pre-School with the Elementary School (Goa State).

9.1.3 Gender of Teachers

a) North Goa District

Nearly three-fifths of the teachers teaching in elementary school of North Goa district were female and the remaining were male Table 9.1.3 and Figure 9.1.9).

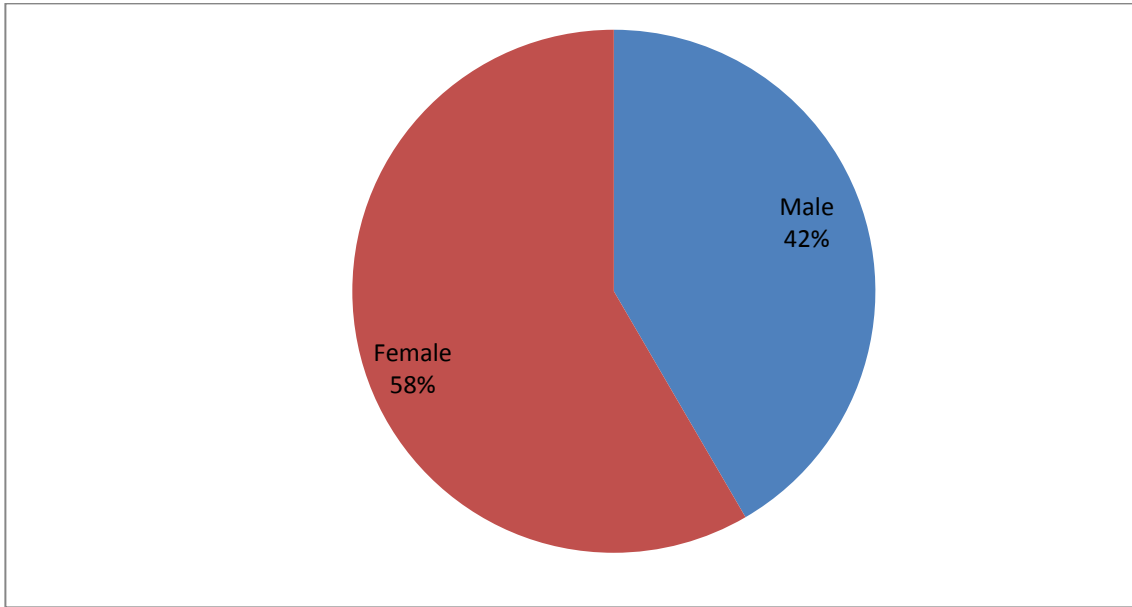


Fig. 9.1.9: Distribution of Male and Female Teachers (North Goa District).

Table 9.1.3: Gender of Teachers

Gender	North Goa Dist.	South Goa Dist.	Goa state
Male	41.6	30.6	36.2
Female	58.4	69.4	63.8
Total	100	100	100

Note: - Figures indicate percentage of Schools

b) South Goa District

Only 31 percent of the teachers teaching in elementary schools in South Goa district were male and the remaining were female.

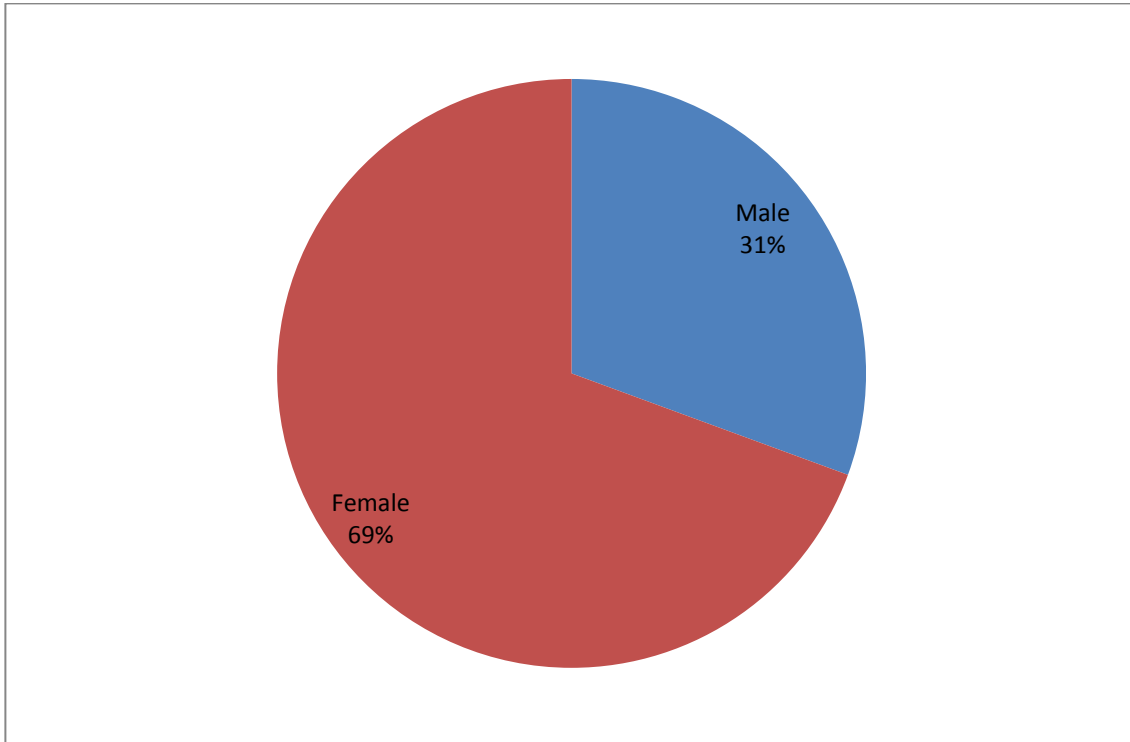


Fig. 9.1.10: Distribution of Male and Female Teachers (South Goa District)

c) Comparison between North and South Goa Districts

Figure 9.1.11 shows that the difference between male and female teachers in South Goa district was more compared to North Goa district.

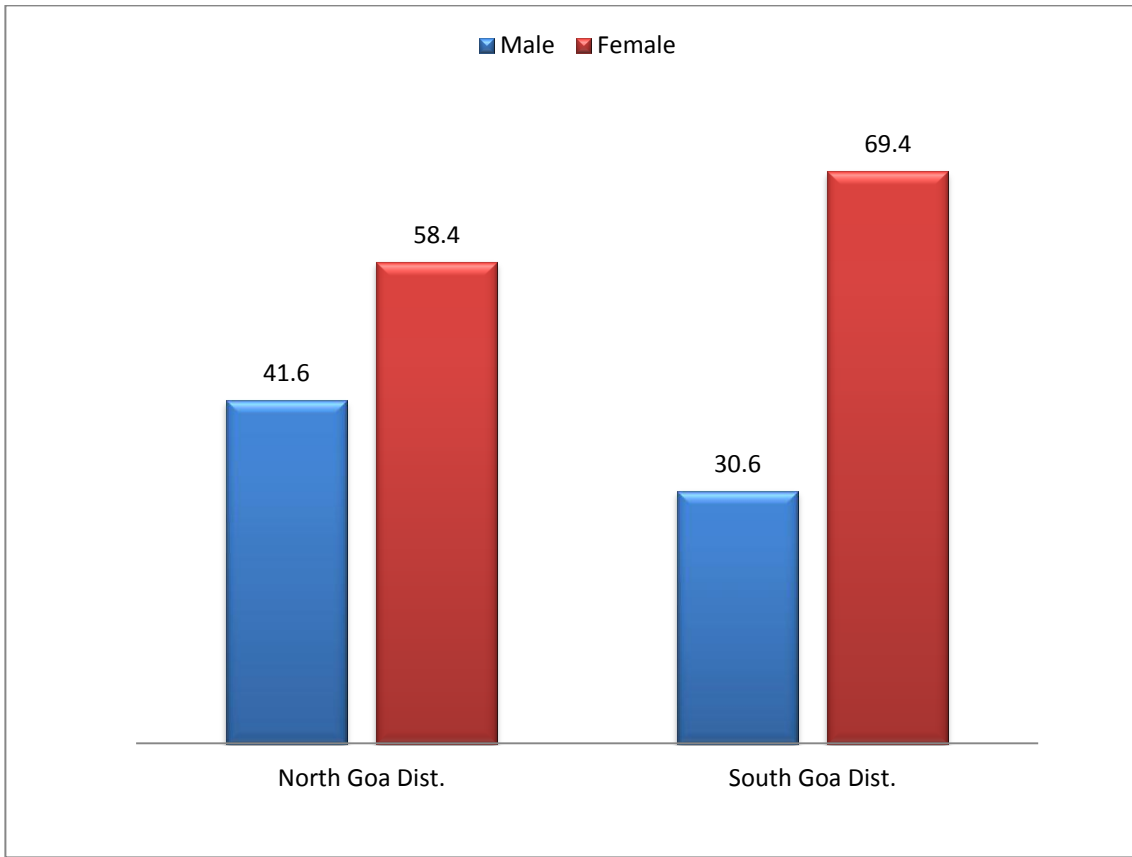


Fig. 9.1.11: Comparative Male and Female Teachers in Schools of North Goa and South Goa Districts

d) Goa State

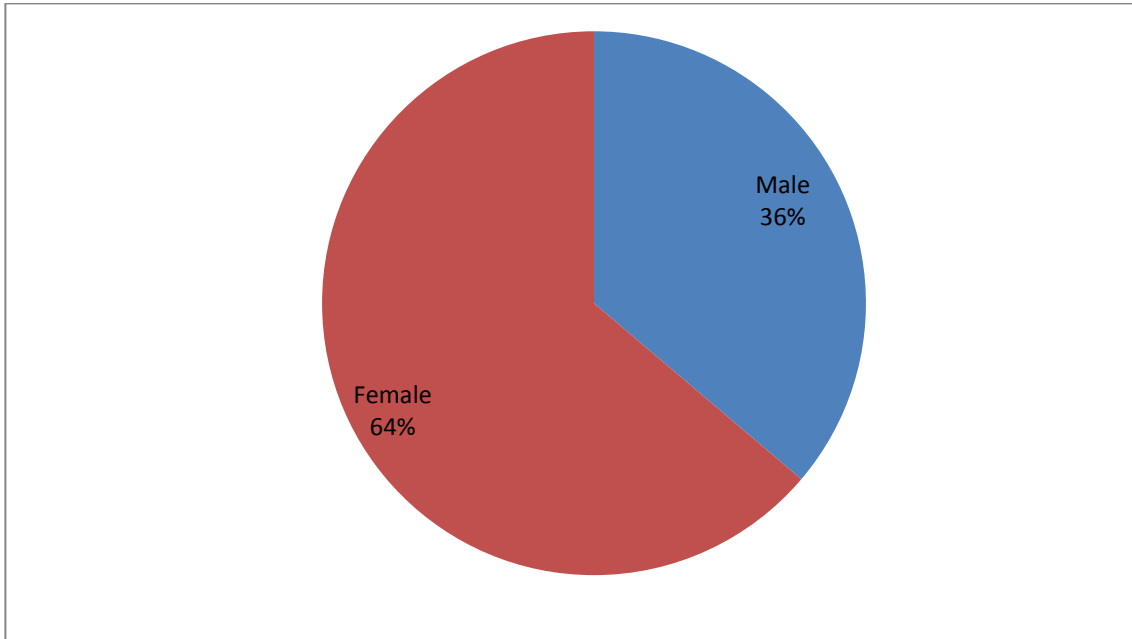


Fig. 9.1.12: Distribution of Male and Female Teachers (Goa State)

In Goa 36 percent of teachers teaching in elementary schools were male and the remaining 64 percent were female.

9.1.4 Economic Background of Students

i) Students from Economically Disadvantaged Homes

a) North Goa District

In 45 percent of the schools of North Goa district more than 50 percent of students were from economically disadvantaged homes (Table 9.1.4 and Figure 9.1.13). In about 25 percent of the schools around 26-50 percent of the students were from economically disadvantaged homes.

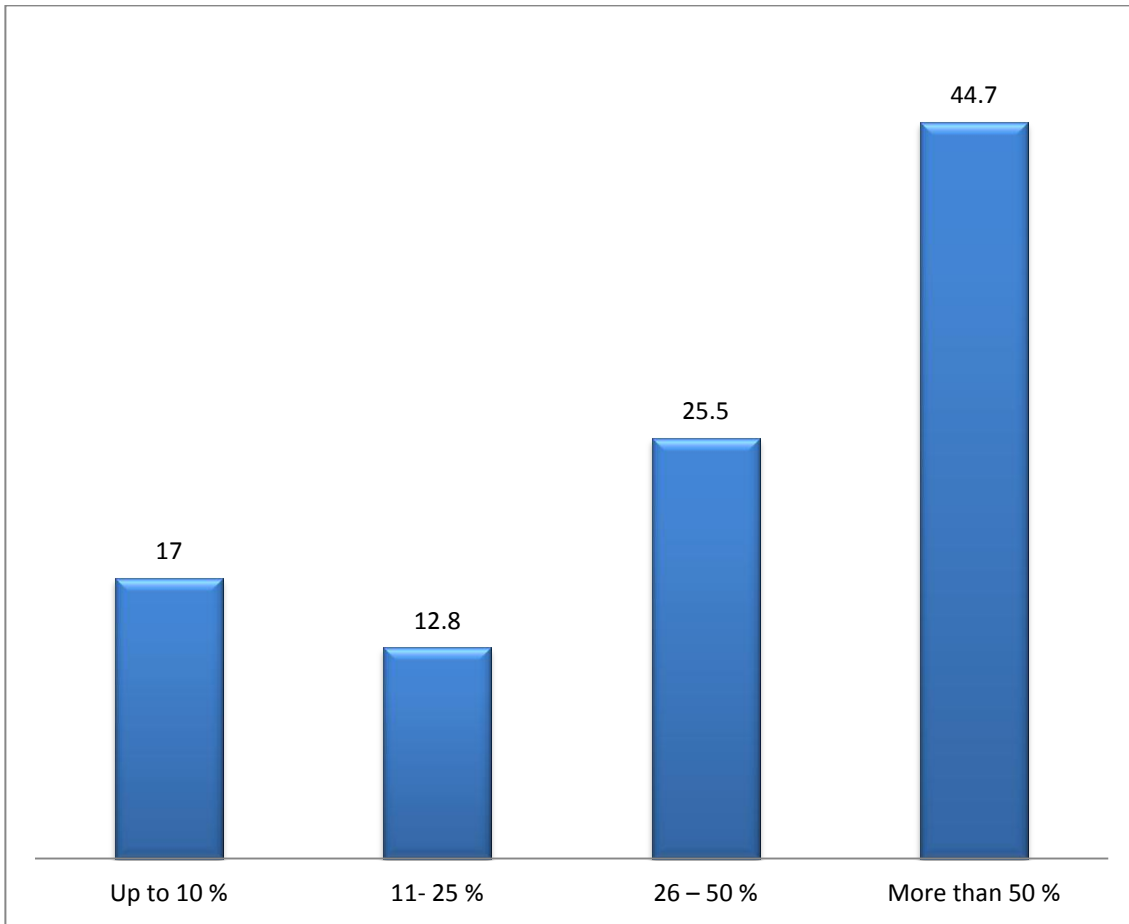


Fig. 9.1.13: Students from Economically Disadvantage Homes (North Goa Dist.)

Table 9.1.4: Students from Economically Disadvantage Homes

Students	North Goa District	South Goa District	Goa state
Up to 10 %	17.0	9.3	13.3
11- 25 %	12.8	7.0	10.0
26 – 50 %	25.5	18.6	22.2
More than 50 %	44.7	65.1	54.4
Total	100	100	100

Note- Figures indicate percentage of Schools

b) South Goa District

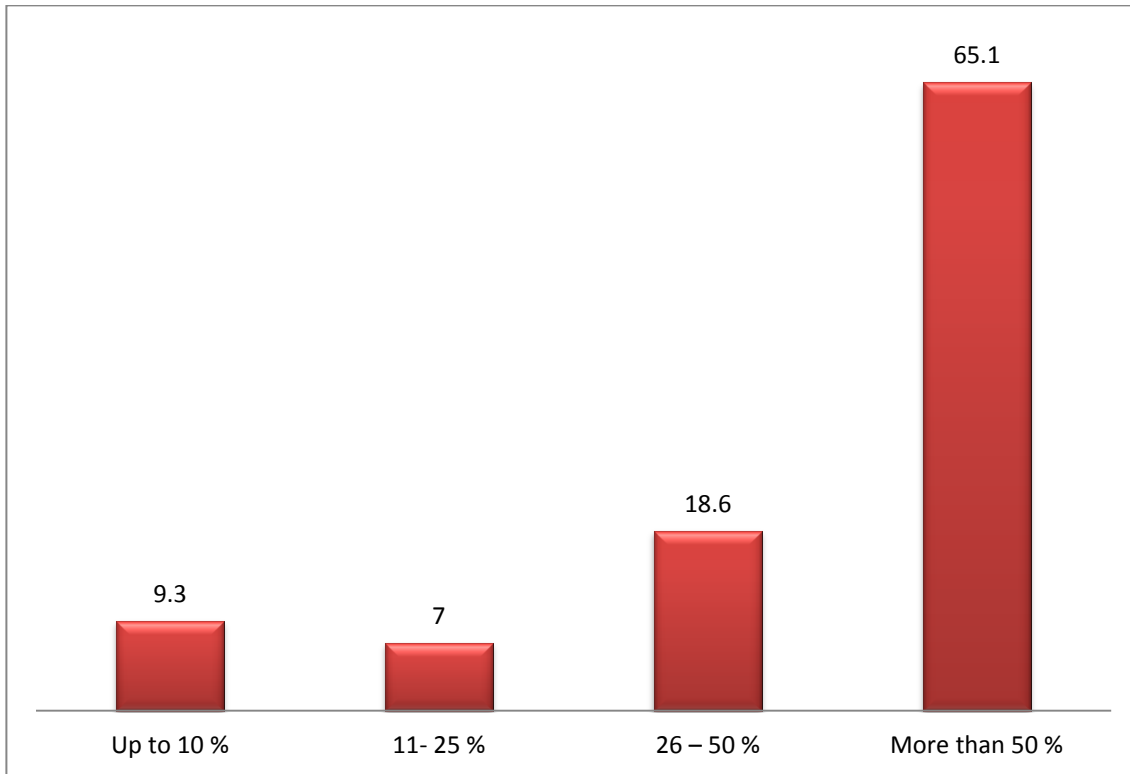


Fig. 9.1.14:Students from Economically Disadvantage Homes (South Goa Dist.)

Table 9.1.4 (also Figure 9.1.14) indicated that 65 percent of students studying in schools located in South Goa district were from economically disadvantaged homes. The students of about one-fifth of the schools were from economically disadvantaged homes.

c) Comparison between North and South Goa Districts

Figure 9.1.15 shows that in higher percentage of schools of South Goa district than North Goa district more than 50 percent of students were from economically

disadvantaged homes. It indicated that the family economic condition of the students of North Goa district was better than those of the South Goa district.

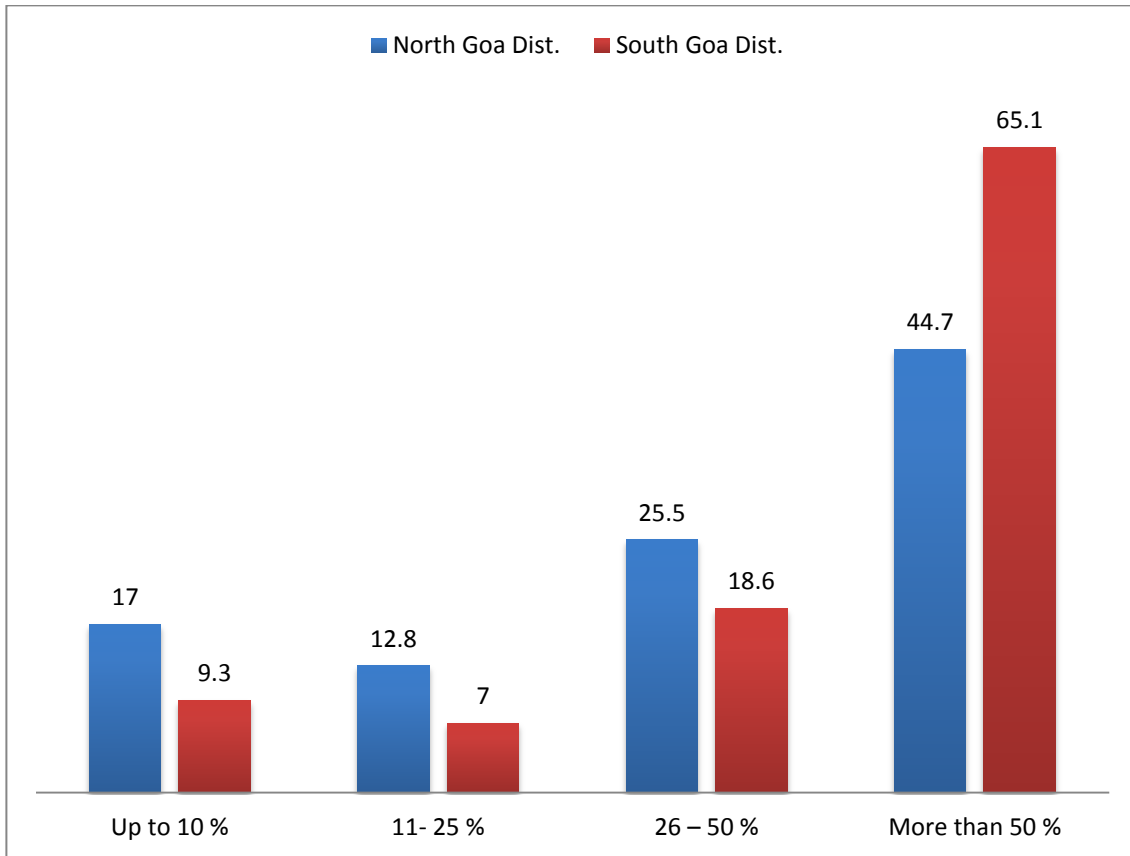


Fig. 9.1.15: Students from Economically Disadvantage Homes (Comparison between North Goa and South Goa Districts)

d) Goa State

In about 13 percent of schools in the State of Goa less than 10 percent of students were from economically disadvantaged homes. In 10 percent and 22 percent of schools 11 – 25 percent and 26 – 50 percent of students respectively from

economically disadvantaged homes. But in 54 percent of schools more than 50 percent of students were from such homes.

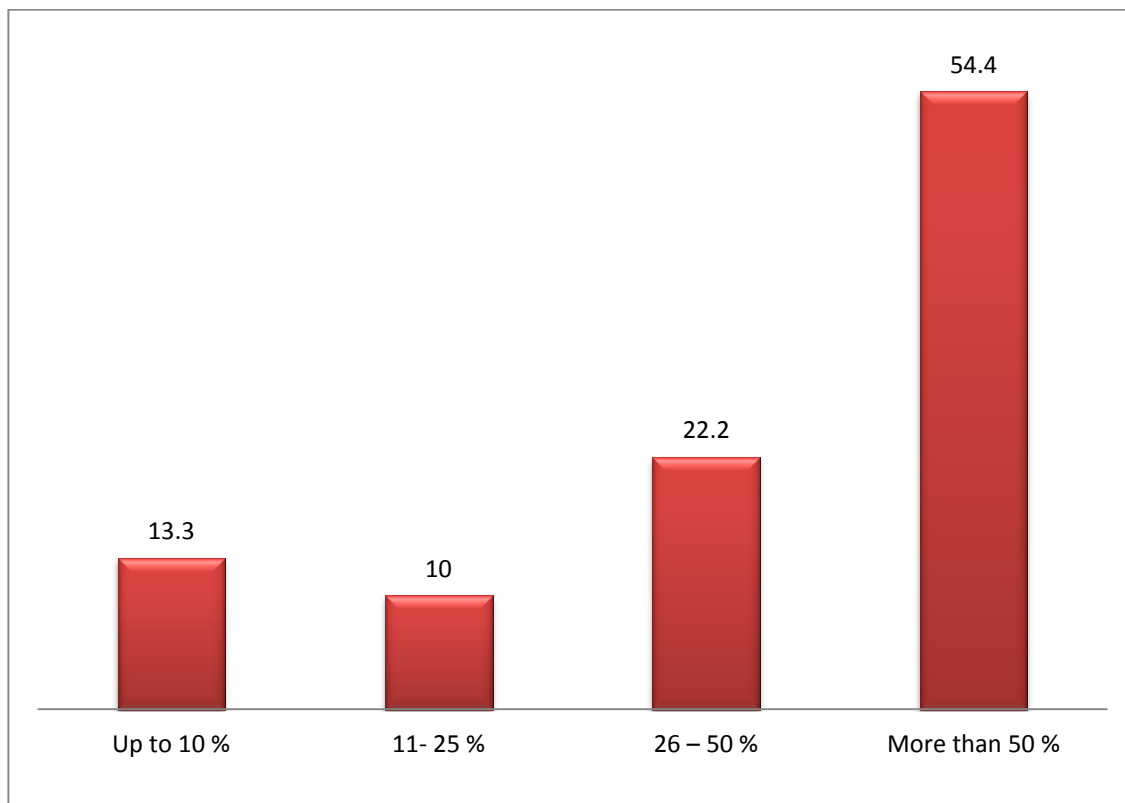


Fig. 9.1.16: Students from Economically Disadvantage Homes (Goa State)

ii) Students from Economically affluent Homes

a) North Goa District

In 64 percent of the schools of North Goa district less than 10 percent of students were from economically affluent homes (Table 9.1.5 and Fig.9.1.17). In about one-fourth of the schools of the district 11 – 25 percent of students were from such homes. In few schools more than 50 percent of students were from economically affluent families.

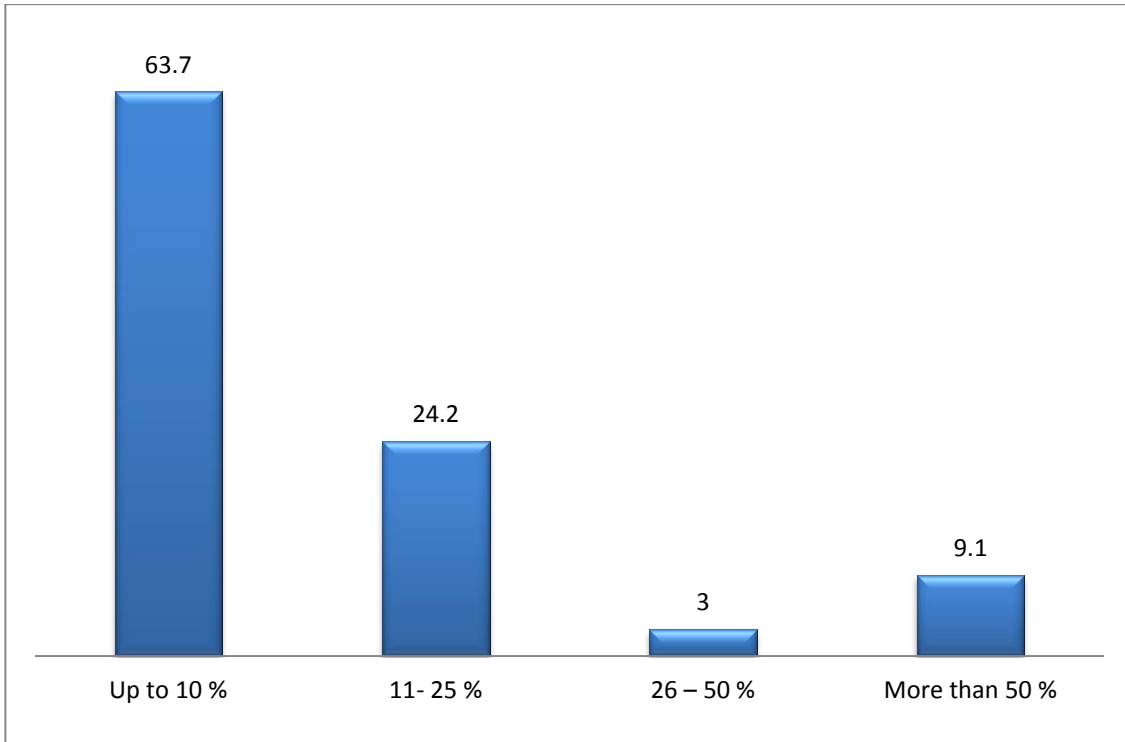


Fig.9.1.17: Students from Economically affluent Homes (North Goa District)

Table 9.1.5: Students from Economically affluent Homes

Students	North Goa District	South Goa District	Goa state
Up to 10 %	63.7	72.7	68.2
11- 25 %	24.2	15.1	19.7
26 – 50 %	3.0	6.1	4.5
More than 50 %	9.1	6.1	7.6
Total	100	100	100

Note- Figures indicate percentage of Schools.

b) South Goa District

In 73 percent of schools of South Goa district only up to 10 percent of students were from economically advanced homes. In about 15 percent of schools 11 – 25 percent of students were from high economic background. In a very few schools more than 50 percent of students were from economically affluent families.

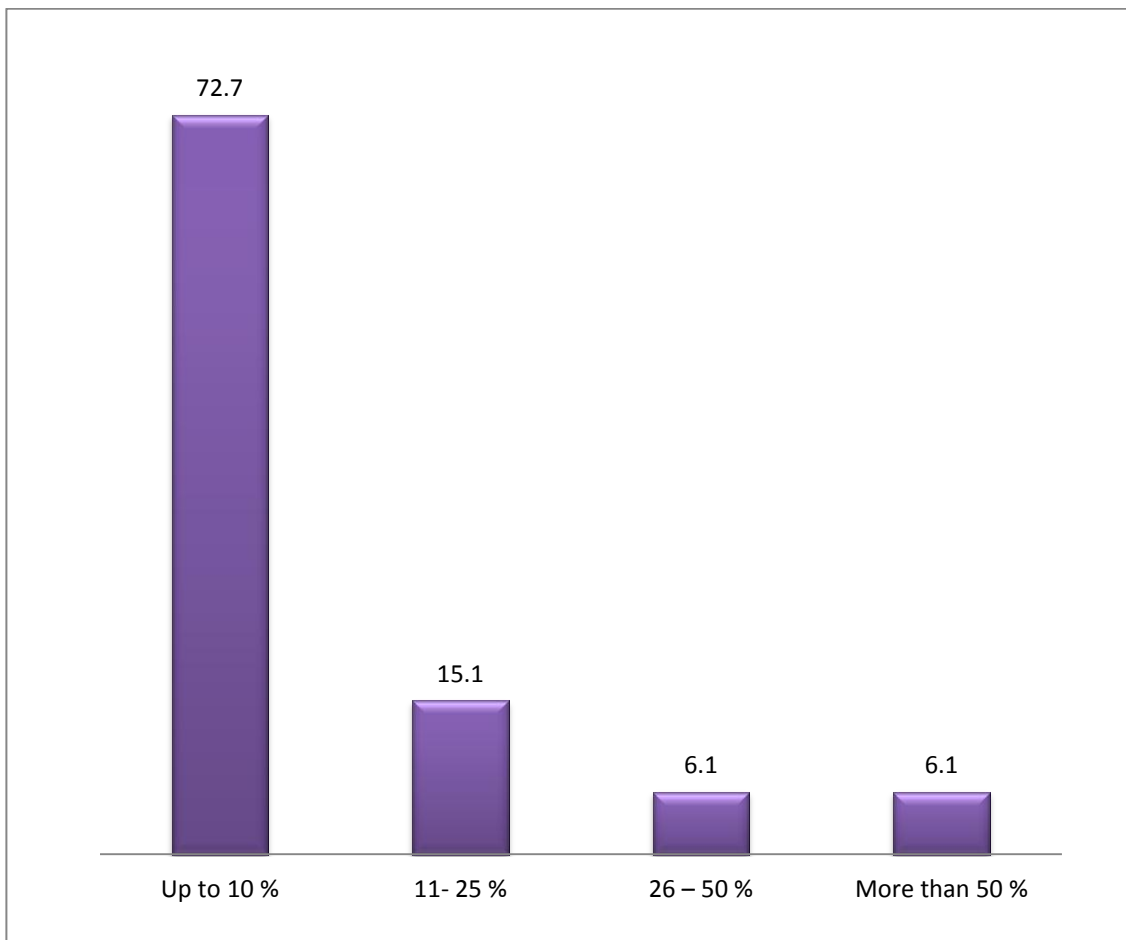


Fig.9.1.18: Students from Economically affluent Homes (South Goa District).

c) Comparison between North and South Goa Districts

Figure 9.1.19 indicates that compared to students of the schools located in South Goa district, the economic condition of the students studying in schools of North Goa district was better. Compared to South Goa, more students of the North Goa district were from economically affluent homes.

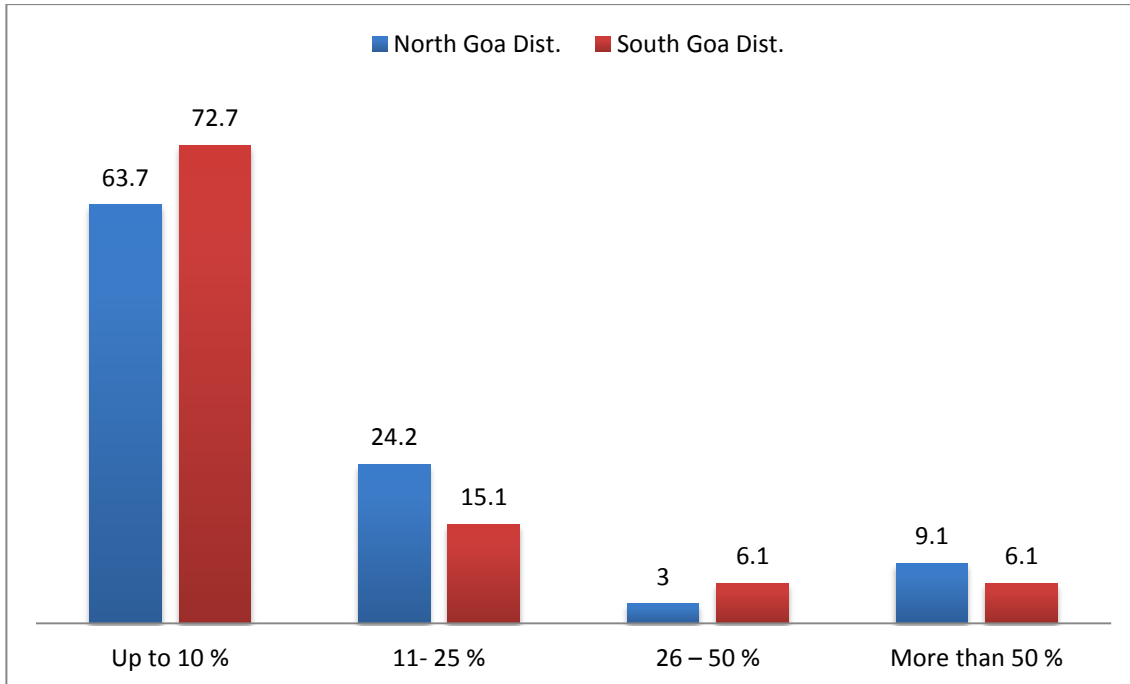


Fig.9.1.19: Students from Economically affluent Homes (North Goa and South Goa Districts)

d) Goa State

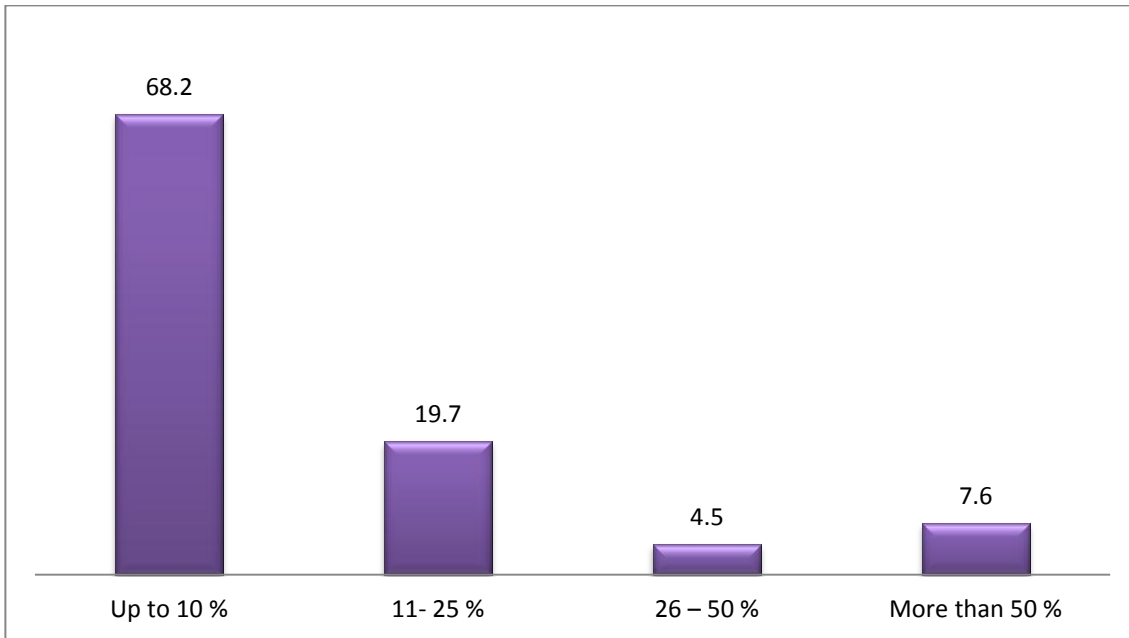


Fig.9.1.20: Students from Economically affluent Homes (Goa State)

In as many as 68 percent of schools of the State only up to 10 percent of students were from economically affluent homes. In less than 8 percent of the schools more than 50 percent of were from such families (Figure 9.1.20).

9.1.5 Physical Facilities in School

a) North Goa District

About two-fifths of the schools in North Goa district did not have play ground and one-tenth of the schools were without separate toilet facility for girls (Table 9.1.6 and Fig.9.1.21). Two percent of schools did not have toilet facility at all. No safe drinking water facility and dust-bin facility was available in four percent of schools.

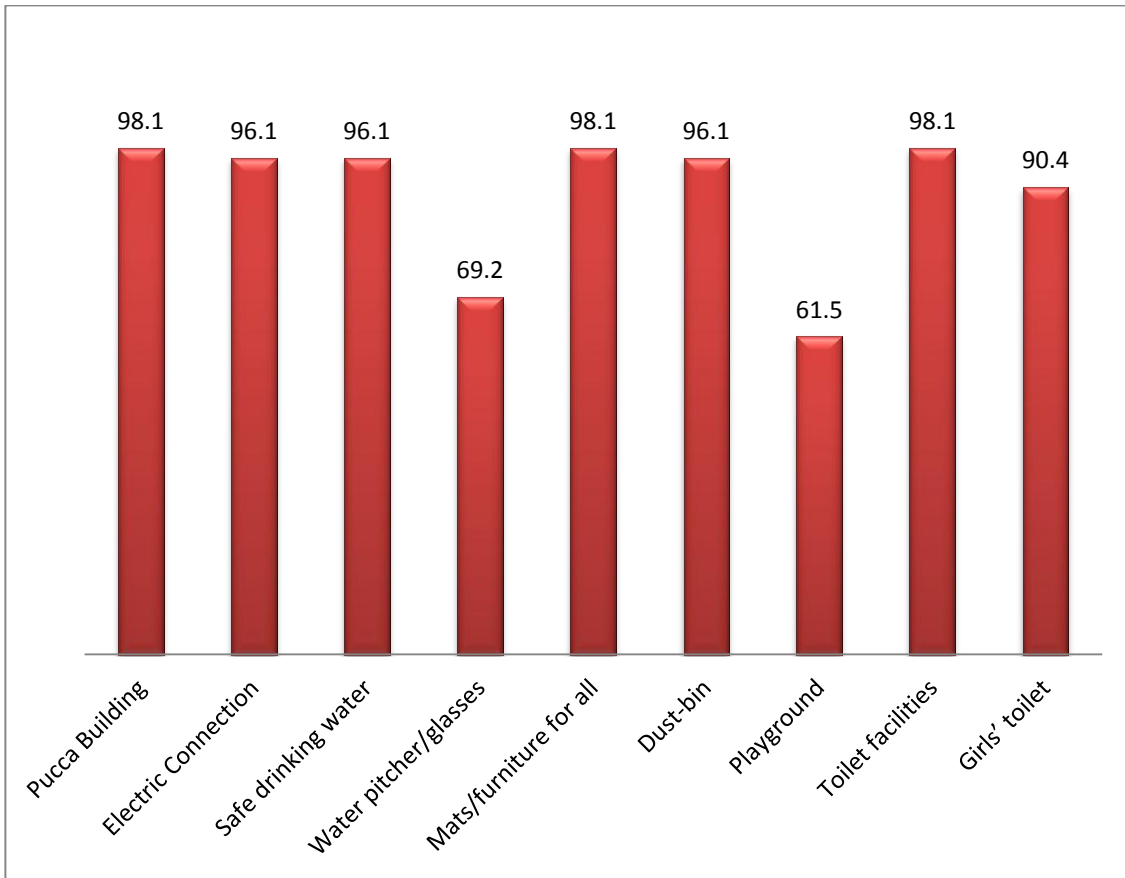


Fig.9.1.21: Physical Facilities in School of North Goa District

Table 9.1.6: Physical facilities in Schools

Physical facilities	North Goa Dist.	South Goa Dist.	Goa state
Pucca Building	98.1	98.0	98.0
Electric Connection	96.1	98.0	97.0
Safe drinking water	96.1	96.0	96.1
Water pitcher/glasses	69.2	74.0	71.6
Mats/furniture for all	98.1	88.0	93.1
Dust-bin	96.1	100.0	98.0
Playground	61.5	80.0	70.6
Toilet facilities	98.1	100.0	99.0
Girls' toilet	90.4	98.0	94.1

Note- Figures indicate percentage of Schools

b) South Goa District

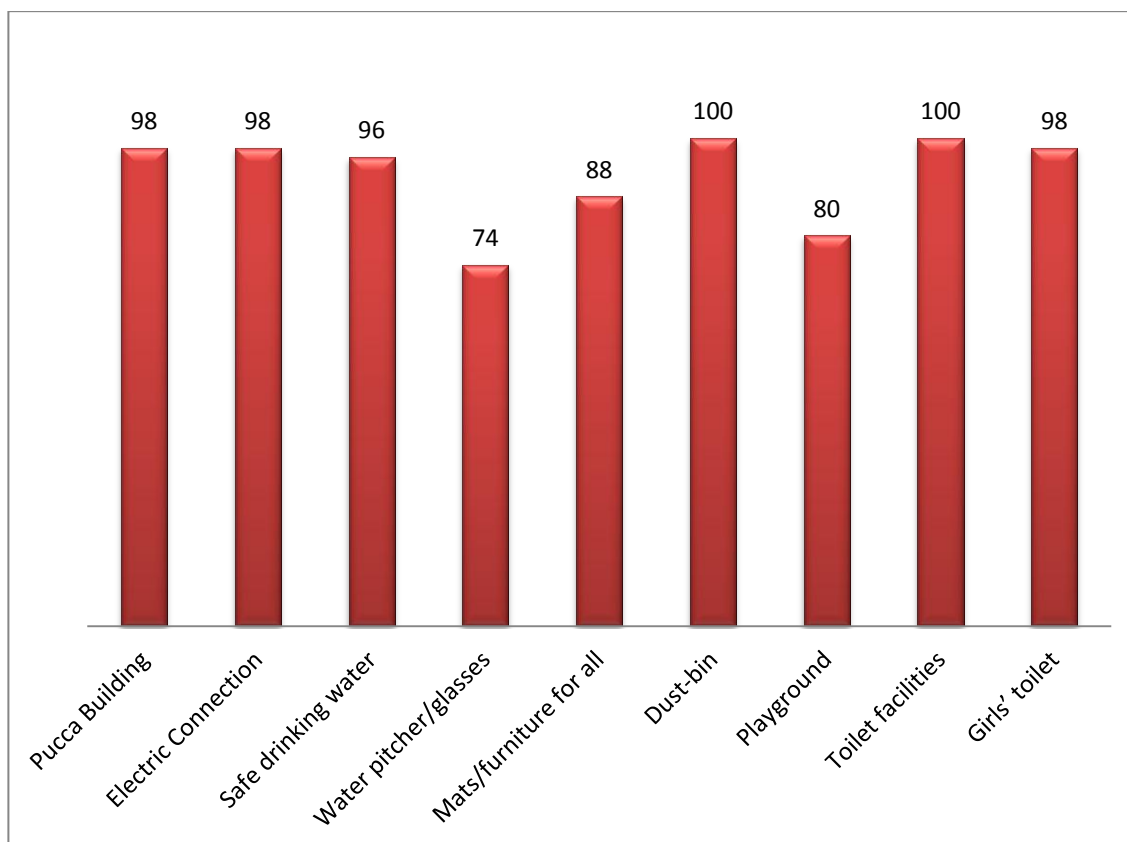


Fig.9.1.22: Physical Facilities in School of South Goa District

Table 9.1.6 shows that only 88 percent of schools of South Goa district had mats/furniture for all students and the remaining 12 percent of schools did not have the same. Similarly, 80 percent of schools had playground and 20 percent were without such facilities. Around 4 percent of schools had no safe drinking water facilities.

c) Comparison between North and South Goa Districts

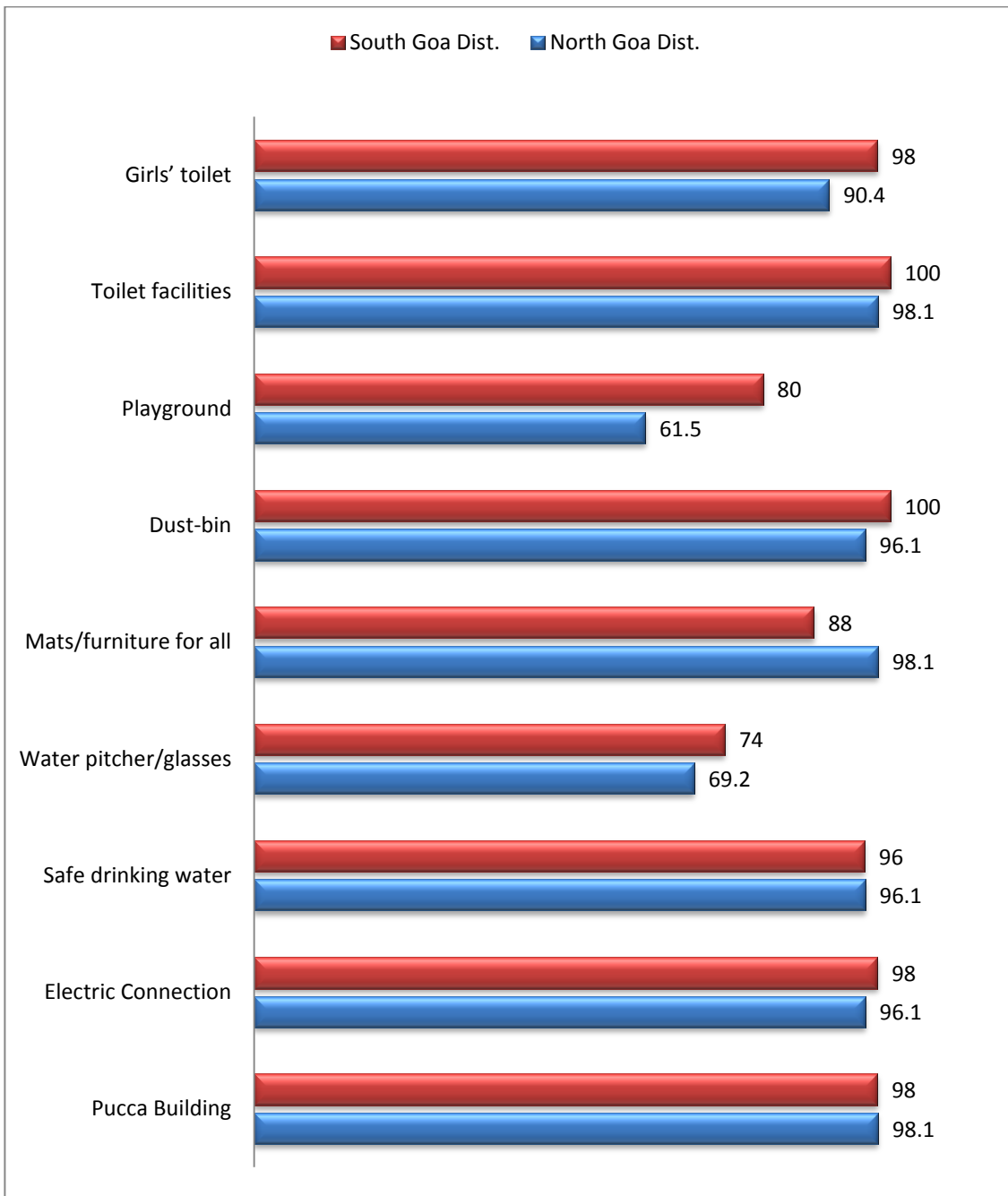


Fig.9.1.23: Physical Facilities in Schools of North Goa and South Goa Districts
 Comparison between North Goa and South Goa districts indicated that in some of the facilities Dust-bin, playground, toilets and separate toilets for girls, South Goa district was better than North Goa district (Figure 9.1.23).

d) Goa State

Four percent and seven percent of schools in Goa did have safe drinking water facility for students and mats/furniture for all the students. Almost 30 percent schools in the State were without playground and 6 percent schools have no separate toilet facilities for girls (Table 9.1.6 and Fig. 9.1.24).

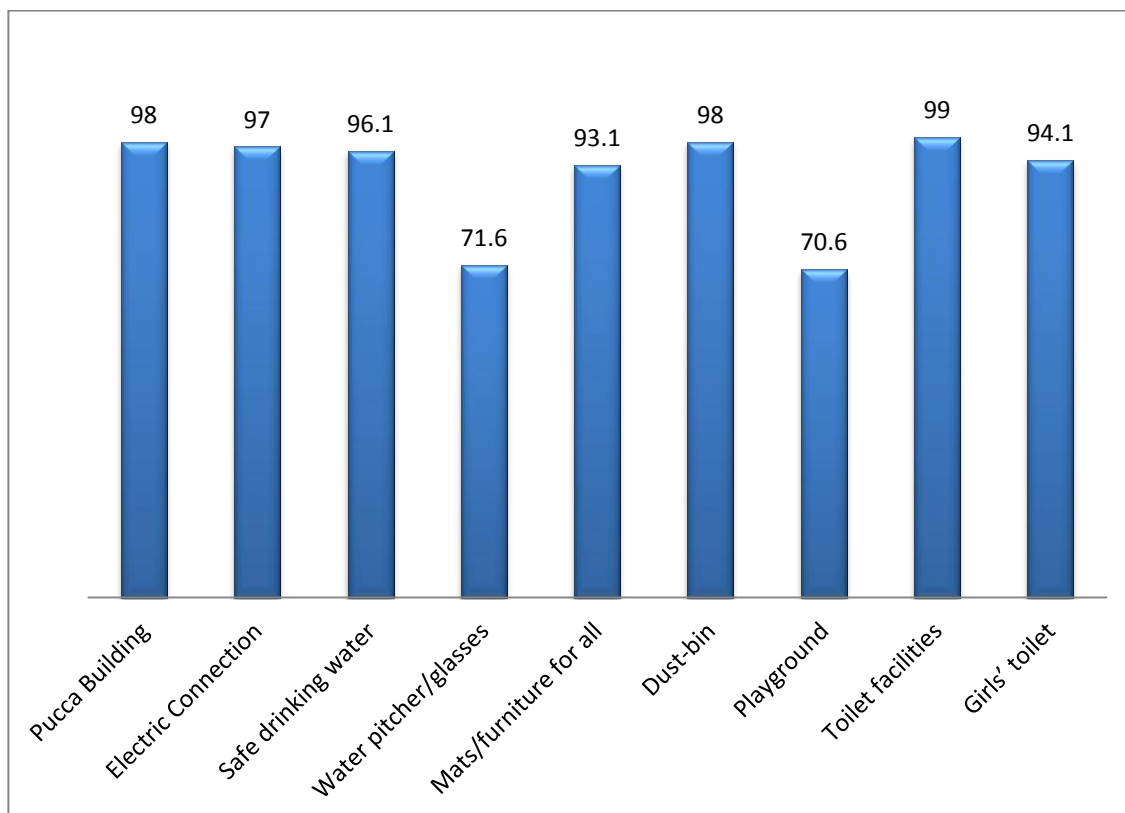


Fig.9.1.24: Physical Facilities in Schools (Goa State)

9.1.6 Availability of Teaching – Learning Materials

a) North Goa District

Table 9.1.7 revealed that a very high percentage of schools of north Goa district did not have Television, Science Kit and Mini tool kit. The other teaching-learning materials were available in almost all the schools. The data are represented in Figure 9.1.25.

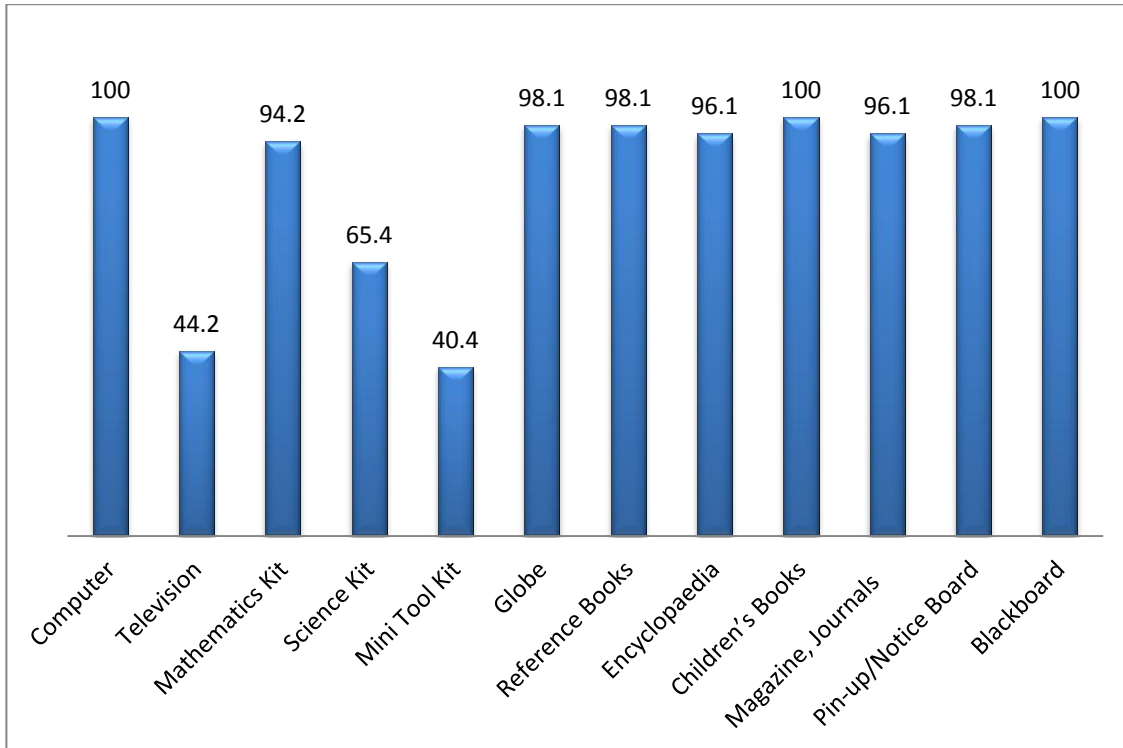


Fig.9.1.25: Teaching – Learning Materials in Schools (North Goa District)

Table 9.1.7: Teaching – Learning Materials in Schools

Items	North Goa Dist.	South Goa Dist.	Goa state
Computer	100.0	100.0	100.0
Television	44.2	38.0	41.2
Mathematics Kit	94.2	82.0	88.2
Science Kit	65.4	66.0	65.7
Mini Tool Kit	40.4	42.0	41.2
Globe	98.1	96.0	97.0
Reference Books	98.1	98.0	98.0
Encyclopaedia	96.1	100.0	98.0
Children's Books	100.0	100.0	100.0
Magazine, Journals	96.1	98.0	97.0
Pin-up/Notice Board	98.1	98.0	98.0

Blackboard	100.0	100.0	100.0
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Note- Figures indicate percentage of Schools

b) South Goa District

Table 9.1.7 shows that only in 38 percent, 66 percent and 42 percent of the schools of South Goa district respectively had television, science kit and Mini tool kits. The other facilities were available in almost all schools of the district.

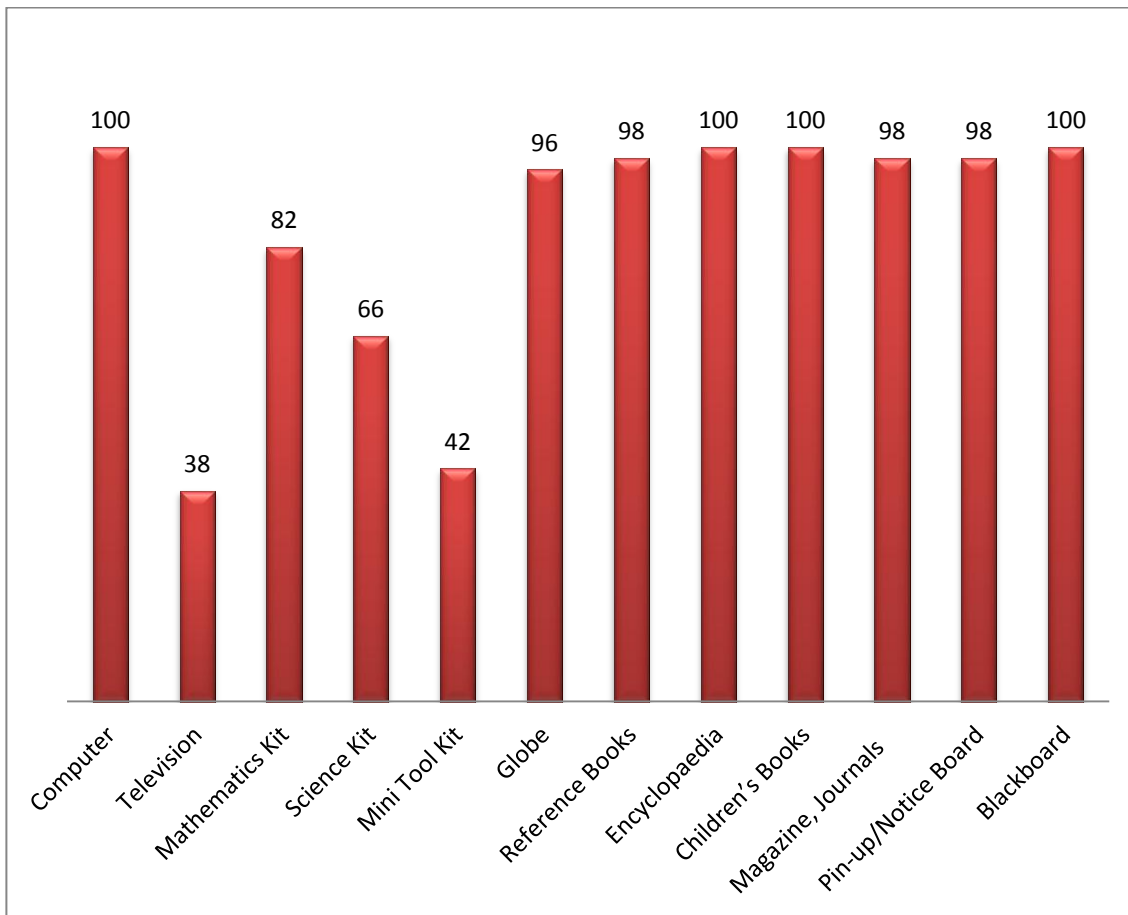


Fig.9.1.26: Teaching – Learning Materials in Schools (South Goa District)

c) Comparison between North Goa and South Goa Districts

Figure 9.1.27 shows that higher percentage of schools of North Goa than South Goa district had television and Mathematics kit. The other materials were available in nearly equal percentages of schools of both North and South Goa district.

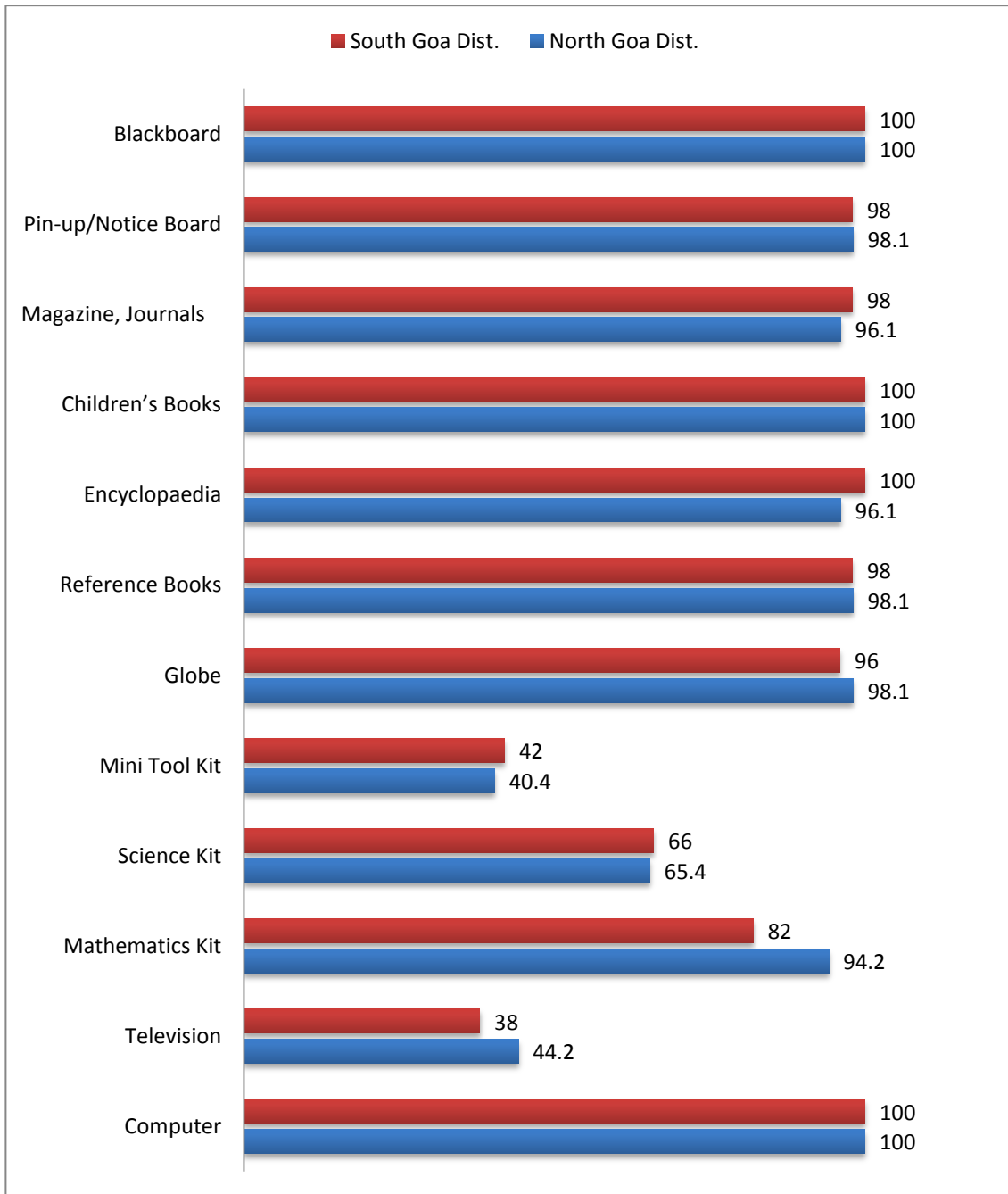


Fig.9.1.27: Teaching – Learning Materials in Schools (North Goa and South Goa Districts)

d) Goa State

Only in 41 percent, 66 percent and 41 percent of the schools of the State of Goa had television, science kit and Mini tool kits respectively. The other facilities were available in almost all schools of the State.

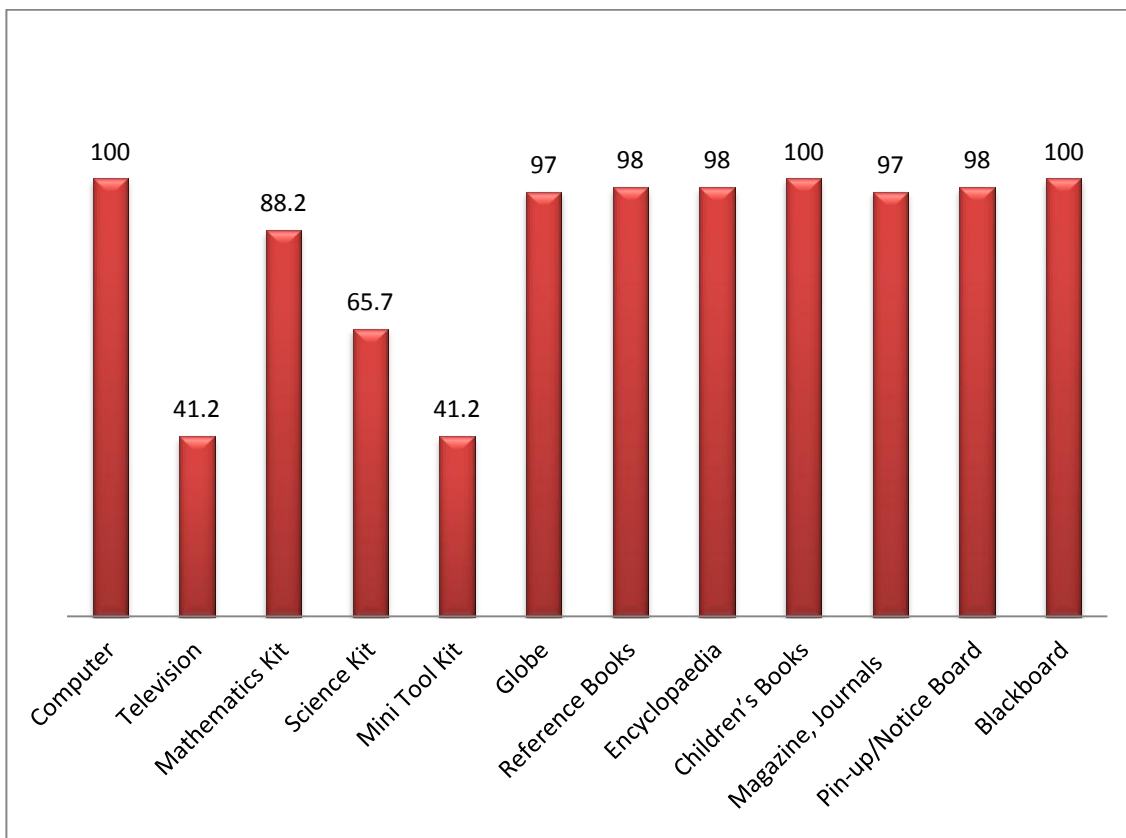


Fig.9.1.28: Teaching – Learning Materials in Schools (Goa State)

9.1.7 Analysis Facilities

a) North Goa District

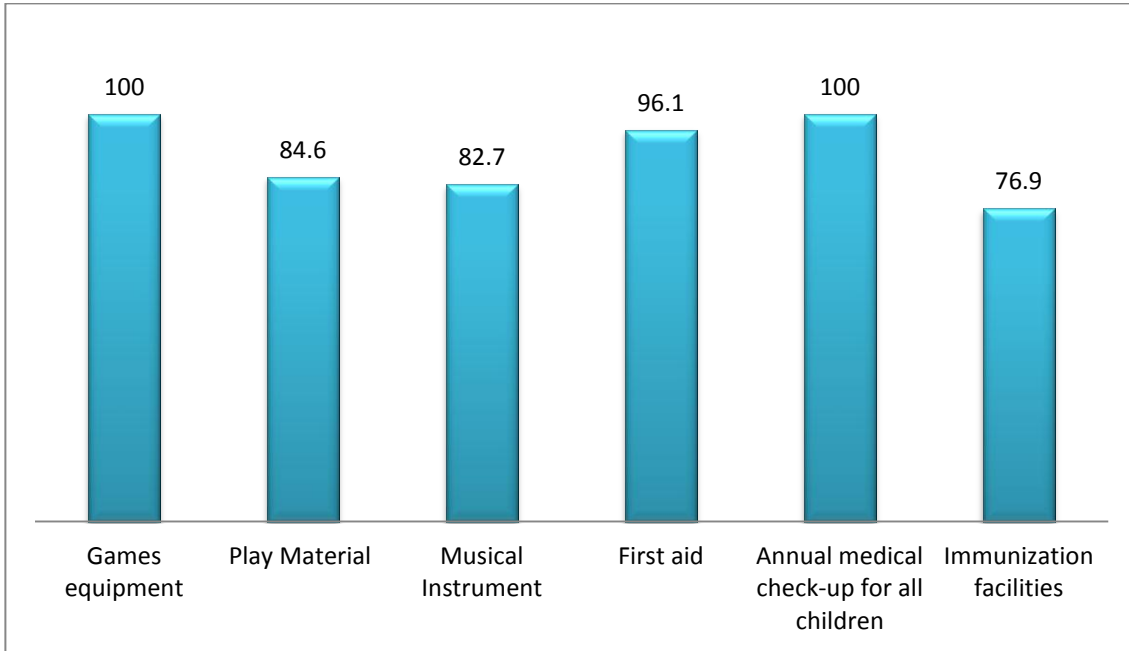


Fig.9.1.29: Analysis facilities in Schools (North Goa District)

A substantial percentage of schools in North Goa district did not have play material, musical instrument and immunization facilities (Table 9.1.8 and Fig. 9.1.29).

Table 9.1.8: Analysis Facilities

Items	North Goa Dist	South Goa Dist	Goa State
Games equipment	100.0	100.0	100.0
Play Material	84.6	76.0	80.4
Musical Instrument	82.7	64.0	73.5
First aid	96.1	100.0	98.0
Annual medical check-up for all children	100.0	98.0	99.0
Immunization facilities	76.9	80.0	78.4

Note- Figures indicate percentage of Schools

b) South Goa District

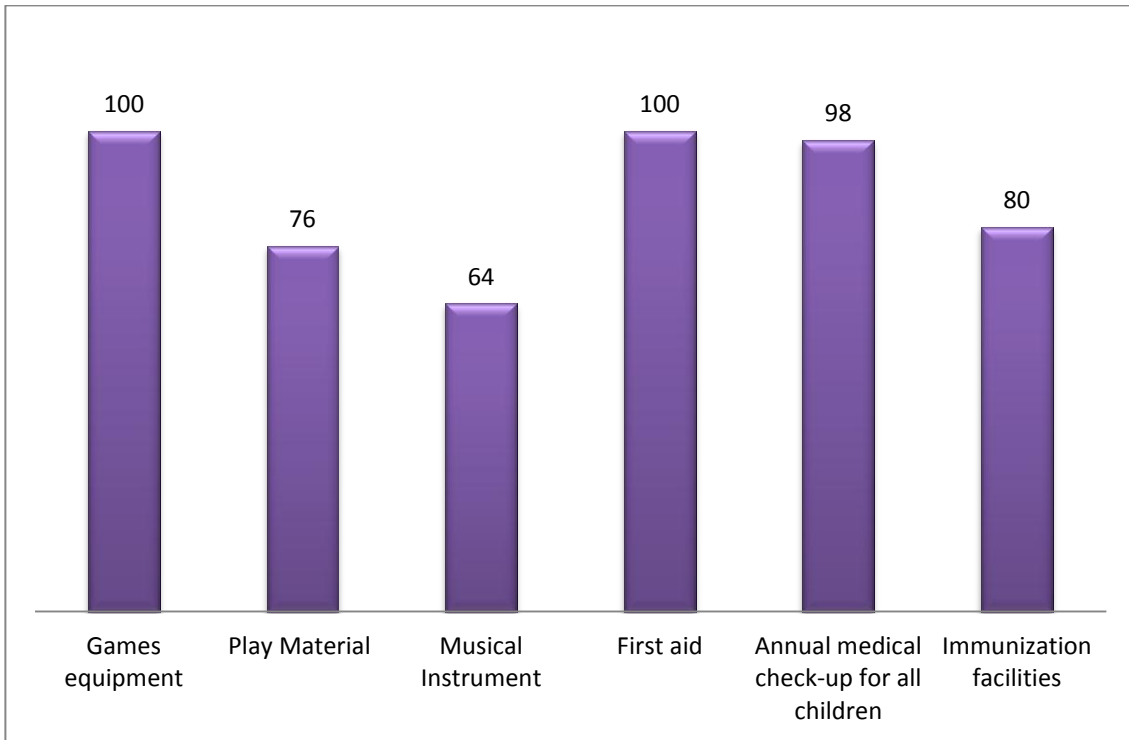


Fig.9.1.30: Analysis facilities in Schools (South Goa District)

Table 9.1.10 indicated that 76 percent, 64 percent and 80 percent of school of South Goa district had play material, musical instrument and immunization facilities. The remaining 24 percent, 36 percent and 20 percent respectively had no such facilities. The other facilities were available in almost all the schools (Fig. 9.1.30).

c) Comparison between North Goa and South Goa Districts

Figure 9.1.31 shows that higher percentage of schools located in North than South Goa district had play materials and musical instruments. Other facilities were available in almost equal percentage of schools of both the districts.

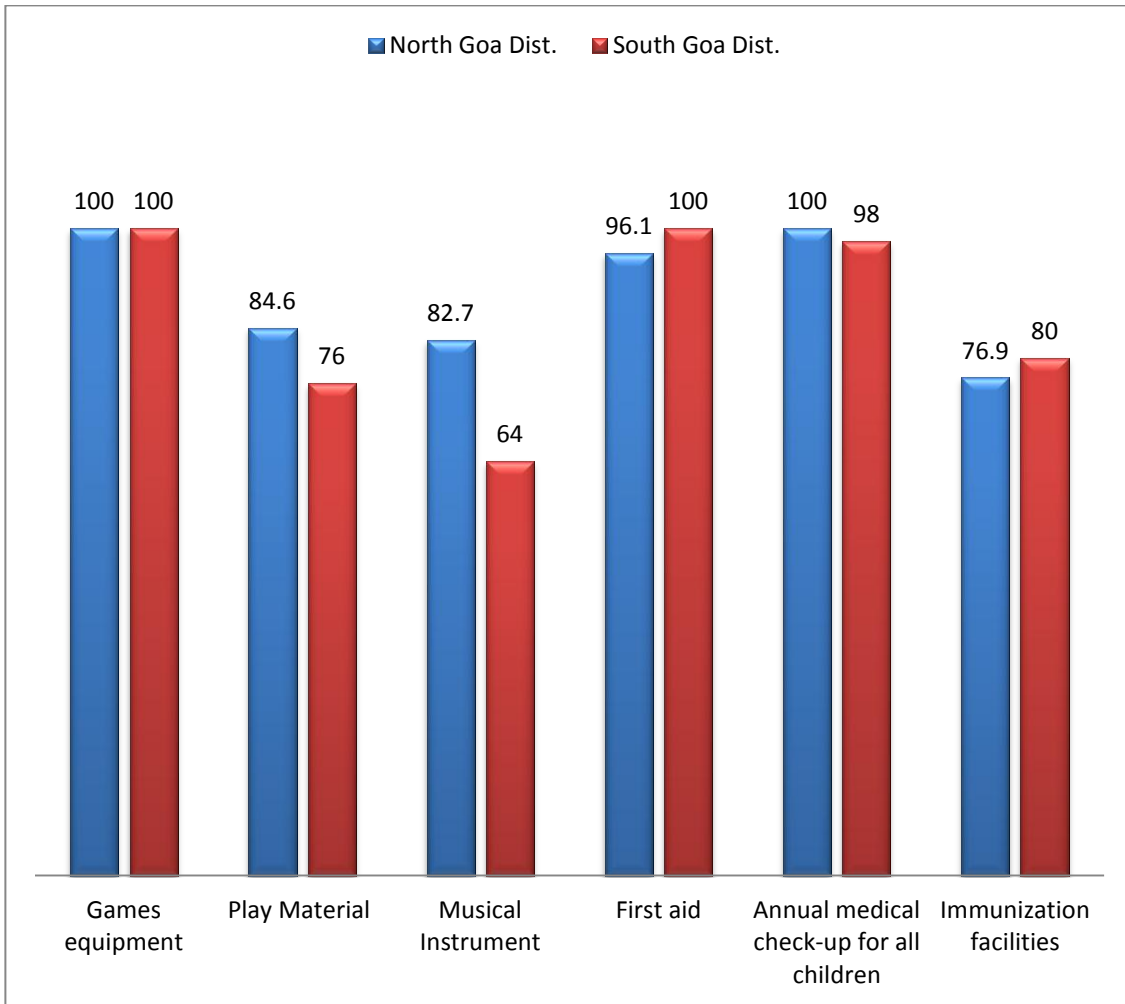


Fig.9.1.31: Analysis facilities in Schools (North Goa and South Goa Districts)
d) Goa State

In about 80 percent, 74 percent and 78 percent of schools of the State had play material, musical instrument and immunization facilities respectively. The other facilities were found in almost all the schools of Goa (Fig.9.1.32).

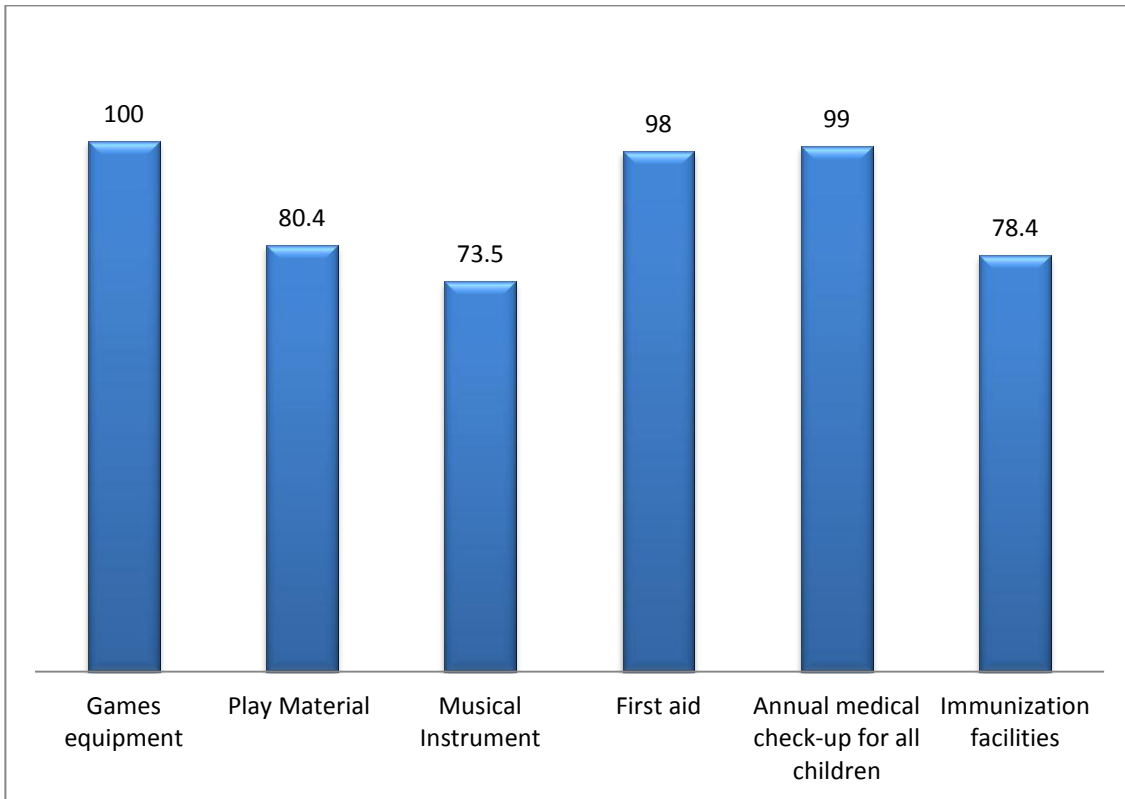


Fig.9.1.32: Analysis facilities in Schools (Goa State)

9.2 Homes - School Interaction

9.2.1 Asking Parents to perform different Tasks

a) North Goa District

Almost all the schools of North Goa district used to ask parents to attend special functions ensure completion of their children's homework and serve on school committees (Table 9.2.1). Only one-fourth of the schools located in this district mentioned that they used to ask parents to raise funds for the school.

Table 9.2.1: School asking Parents to perform different Tasks

Task	North Goa Dist.	South Goa Dist.	Goa state
Attend special functions	98.1	100.0	99.0
Raise funds for school	25.0	40.0	32.3
Ensuring completion child's homework	98.1	100.0	99.0
Serving on school committee	98.1	100.0	99.0

Note- Figures indicate percentage of Schools

b) South Goa District

Table 9.2.1 reveals that all the schools of South Goa district used to ask parents to attend special functions organised in school, ensure completion of homework by their children and serve on school committees. Only two-fifths of the schools of the district mentioned that they used to ask parents to raise funds for the school.

c) Comparison between North and South Goa Districts

Data in Figure 9.2.1 shows that comparatively the schools of South Goa district were better than the north Goa district in asking parents to contribute/participate in different ways.

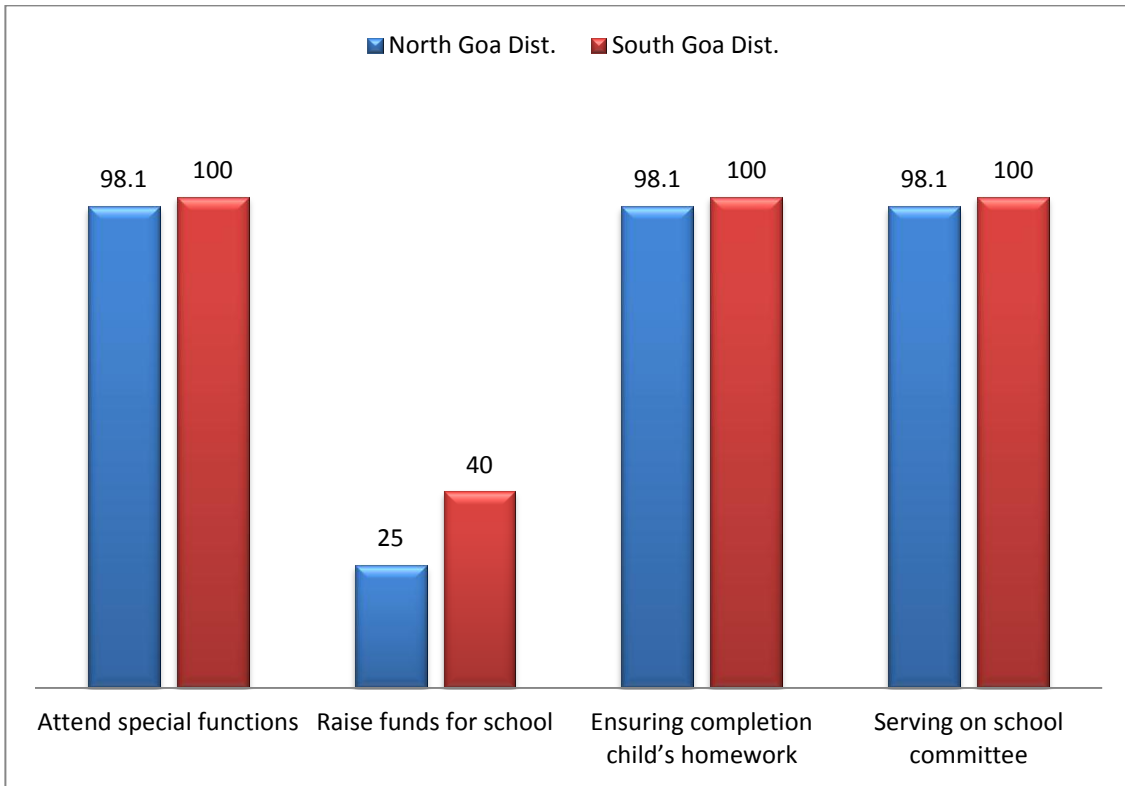


Fig.9.2.1: Schools of North Goa and South Goa Districts asking Parents to contribute in Different Ways

d) Goa State

Table 9.2.1 indicates that 99 percent of schools of the State of Goa used to ask parents to attend special functions in school ensure that their children complete homework and serve on school committees. Only 32 percent of schools of the State mentioned that they used to ask parents to raise funds for the school.

9.2.2 Factors relating to Attitudes of Teachers, Students and Parents towards the School

a) North Goa District

Table 9.2.2 shows that in four-fifths of the schools located in North Goa district teachers' job satisfaction was low and in none of the schools it was high. In about three-fourths, three-fifths and nine-tenths of the schools teachers' understanding of curricular goal, teachers' success in implementing the curriculum and teachers expectation for student achievement respectively was low (Table 9.2.2). But in about 80 percent of schools of this district parental support for students' achievement and involvement of parent in school activities was medium and high. In majority of the schools students' regard for school property and students' desire to do well in school was medium and high. However, it is a matter of concern that in about two-fifths of the schools students' regard for school property and students' desire to do well in school was low.

Table 9.2.2: Opinion of Heads of Institutions about Teachers, Parents and Students (North Goa District)

Aspects	Low	Medium	High
Teacher's Job satisfaction	80.3	19.7	0.0
Teacher's understanding of curricular goal	76.4	23.6	0.0
Teachers' success in implementing the curriculum	58.8	41.2	0.0
Teachers expectation for student achievement	90.3	3.9	5.8
Parental support for student achievement	19.6	51.0	29.4
Parental involvement in school activities	19.6	51.0	29.4
Students' regard for school property	41.3	52.9	5.9
Students' desire to do well in school	37.2	51.0	11.8

Note- Figures indicate percentage of Schools.

b) South Goa District

In 77 percent, 73 percent and 55 percent and 83 percent of the schools respectively teachers' job satisfaction, teachers' understanding of curricular goal, teachers' success in implementing the curriculum and teachers expectation for student achievement was low (Table 9.2.3). In majority of the schools parental support for students' achievement, involvement of parent in school activities, students' regard for school property and students' desire to do well in school was medium and high. But in a substantial number of schools students' regard for school property and students' desire to do well in school was low.

Table 9.2.3: Opinion of Heads of Institutions about Teachers, Parents and Students (South Goa District)

Aspects	Low	Medium	High
Teacher's Job satisfaction	76.6	23.4	0.0
Teacher's understanding of curricular goal	73.4	26.6	0.0
Teachers' success in implementing the curriculum	55.1	42.9	2.0
Teachers expectation for student achievement	83.0	17.0	0.0
Parental support for student achievement	22.0	44.0	34.0
Parental involvement in school activities	20.4	57.2	22.4
Students' regard for school property	28.0	54.0	18.0
Students' desire to do well in school	42.9	46.9	10.2

Note- Figures indicate percentage of Schools.

c) Comparison between North Goa and South Goa Districts

Data in Table 9.2.2 and 9.2.3 indicate that the schools located in South Goa were relatively better compared to the schools of the North Goa district in all these aspects.

d) Goa State

Table 9.2.4 shows that in more than three-fourths of the elementary school of the State teachers' job satisfaction, teachers' understanding of curricular goal and teacher's expectation for student achievement were low. Except in about one-fifth of the schools, parental support for student achievement and parental involvement in school activities were medium and high. Though in majority of the schools students' regard for school property and students' desire to do well in school was medium and high, in a substantial number of schools the same was low.

Table 9.2.4: Opinion of Heads of Institutions about Teachers, Parents and Students
(Goa State)

Aspects	Low	Medium	High
Teacher's Job satisfaction	78.6	21.4	0.0
Teacher's understanding of curricular goal	75.5	24.5	0.0
Teachers' success in implementing the curriculum	57.0	42.0	1.0
Teachers expectation for student achievement	86.7	10.2	3.1
Parental support for student achievement	20.8	47.5	31.7
Parental involvement in school activities	20.0	54.0	26.0
Students' regard for school property	34.7	53.5	11.8
Students' desire to do well in school	40.0	49.0	11.0

Note- Figures indicate percentage of Schools.

9.3 Teaching - Learning Process

9.3.1 Availability of Instructional Materials

a) North Goa District

With regard to availability of instructional materials for Class-VII it was found that all the schools of North Goa district had textbooks, nearly 87 percent had TLM, about two-third had workbooks and teachers' handbooks in all the four subjects included in this study (Table 9.3.1). Data are represented in Fig.9.3.1.

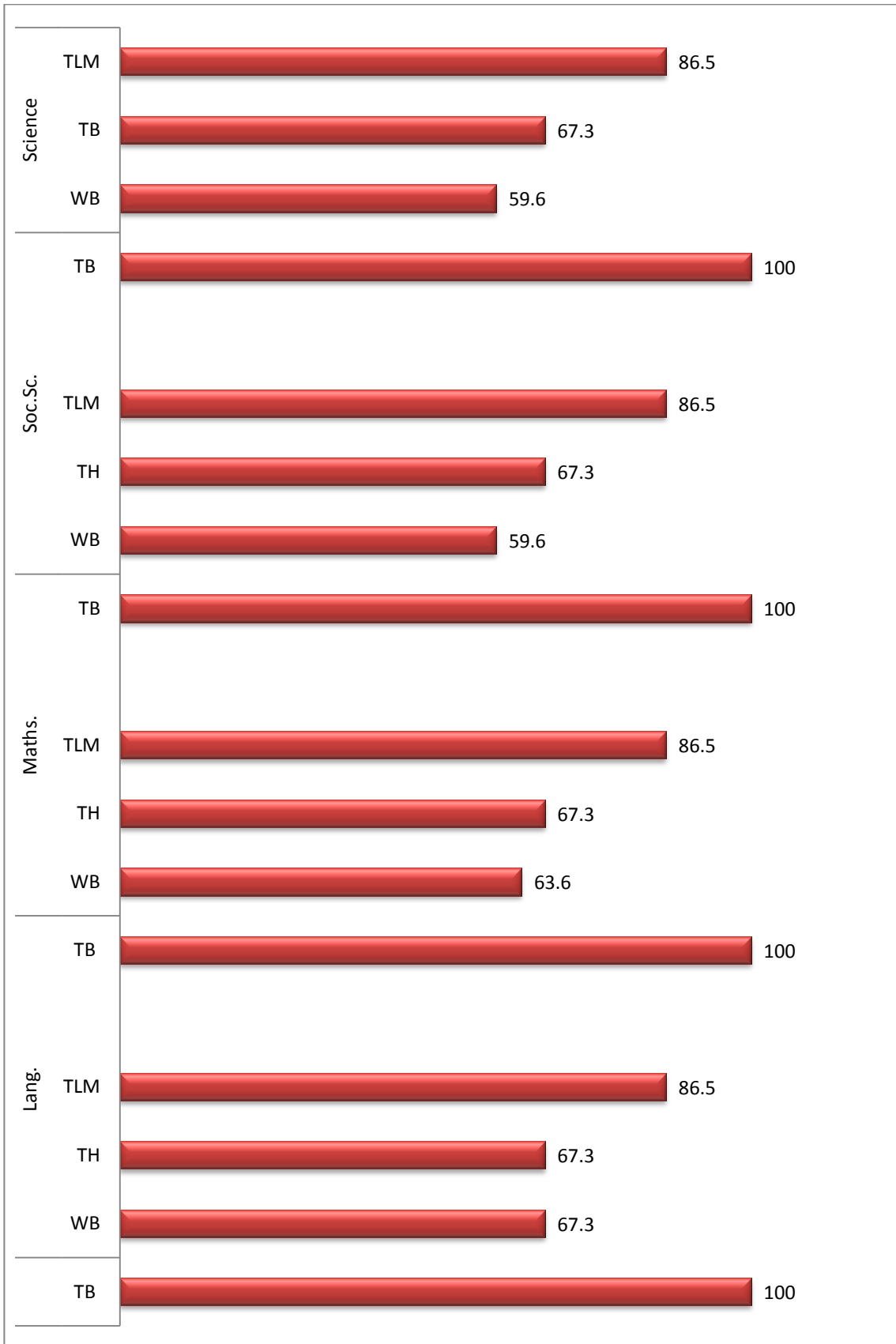


Fig.9.3.1: Availability of Instructional Materials in Different Subjects (North Goa District)

Table 9.3.1: Availability of Instructional Materials for Class VII

Subject	Material	North Goa Dist.	South Goa Dist.	Goa State
Languages	Textbooks (TB)	100.0	98.0	99.0
	Workbooks (WB)	67.3	40.0	53.9
	Teachers' Handbook (TH)	67.3	48.0	57.8
	TLM	86.5	70.0	78.4
Mathematics	Textbooks (TB)	100.0	98.0	99.0
	Workbooks (WB)	63.6	38.0	49.0
	Teachers' Handbook (TH)	67.3	50.0	58.8
	TLM	86.5	72.0	79.4
Social Sc.	Textbooks (TB)	100.0	98.0	99.0
	Workbooks (WB)	59.6	38.0	49.0
	Teachers' Handbook (TH)	67.3	46.0	56.9
	TLM	86.5	78.0	82.3
Science	Textbooks (TB)	100.0	98.0	99.0
	Workbooks (WB)	59.6	42.0	51.0
	Teachers' Handbook (TH)	67.3	46.0	56.9
	TLM	86.5	78.0	82.3

Note- Figures indicate percentage of Schools

b) South Goa District

It was found that textbooks in all subjects were available in 98 percent of schools of South Goa district. In less than 40 percent of the schools workbooks were available. Teachers' handbooks in all four subjects were accessible only in about one- half of the schools. TLM in languages and Mathematics was available in about 70 percent of school. But in Science and Social Science the same was available in 78 percent of schools of this district. The data are represented in Figure 9.3.2.

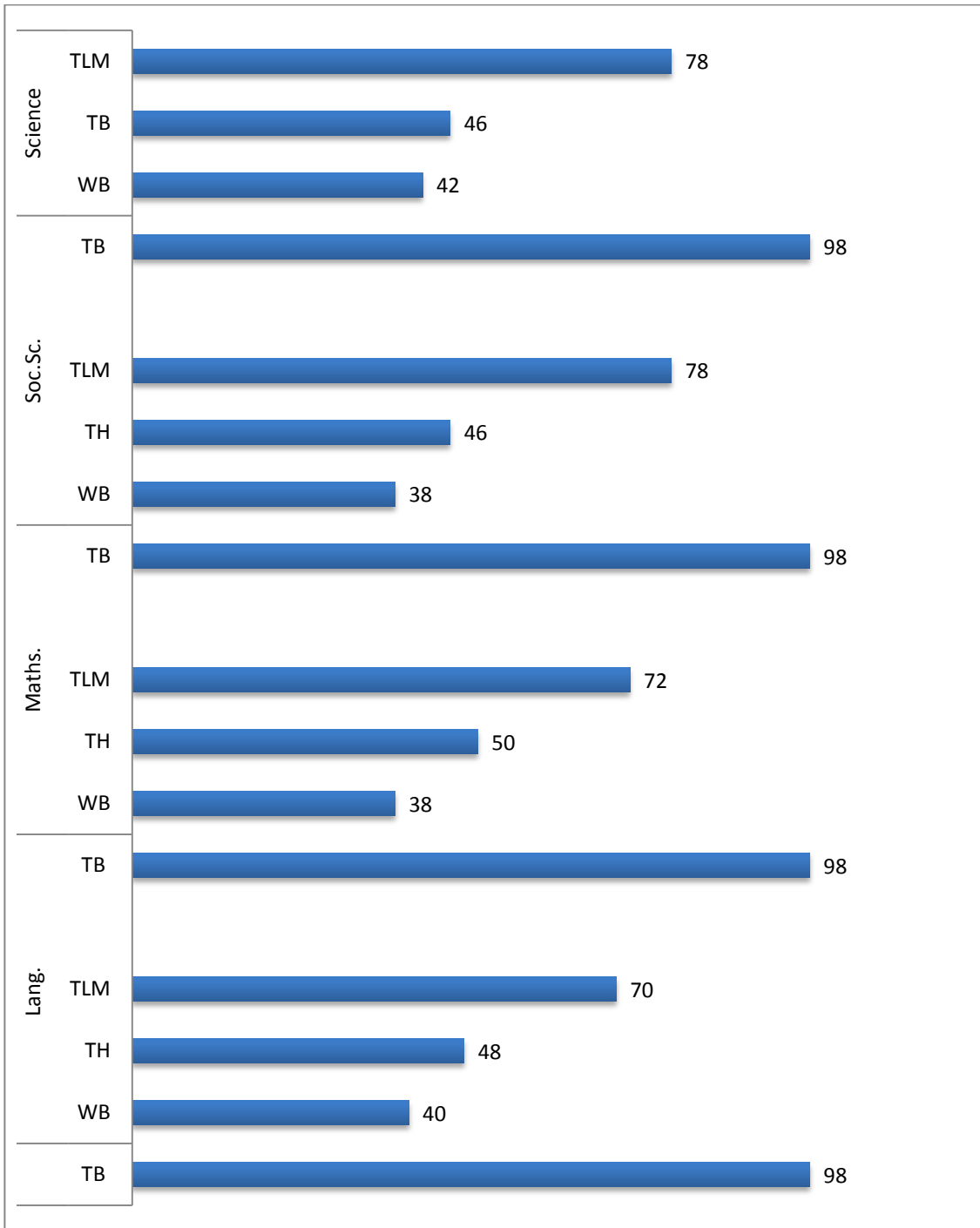


Fig.9.3.2: Availability of Instructional Materials in Different Subjects (South Goa District)

c) Comparison between North Goa and South Goa Districts

Figure 9.3.3 indicates that in higher percentages of schools located in North Goa district than South Goa had different instructional materials in all the four subjects.

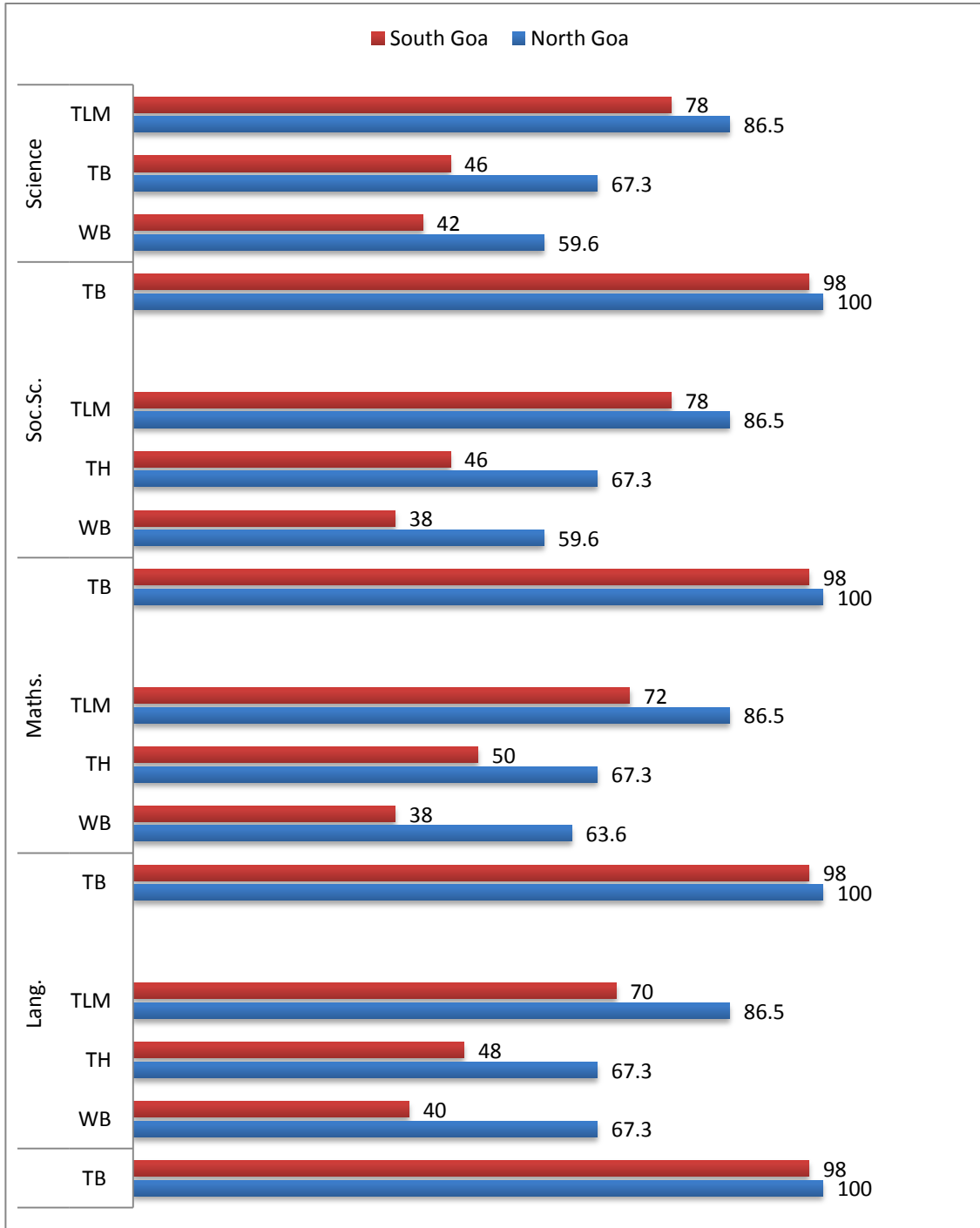


Fig.9.3.3: Availability of Instructional Materials for Class VII in Schools of North Goa and South Goa Districts

d) Goa State

Table 9.2.1 revealed that 99 percent of schools of the State had textbooks in all the subjects. About 80 percent of schools had the required TLM in all the subjects. Only around one-half of the schools had workbooks and about three-fifths of schools had teacher's handbooks in the subjects. A substantial number of schools of the State are required make available workbooks, teacher's handbooks and .TLM. Figure 9.3.4 represents these data.

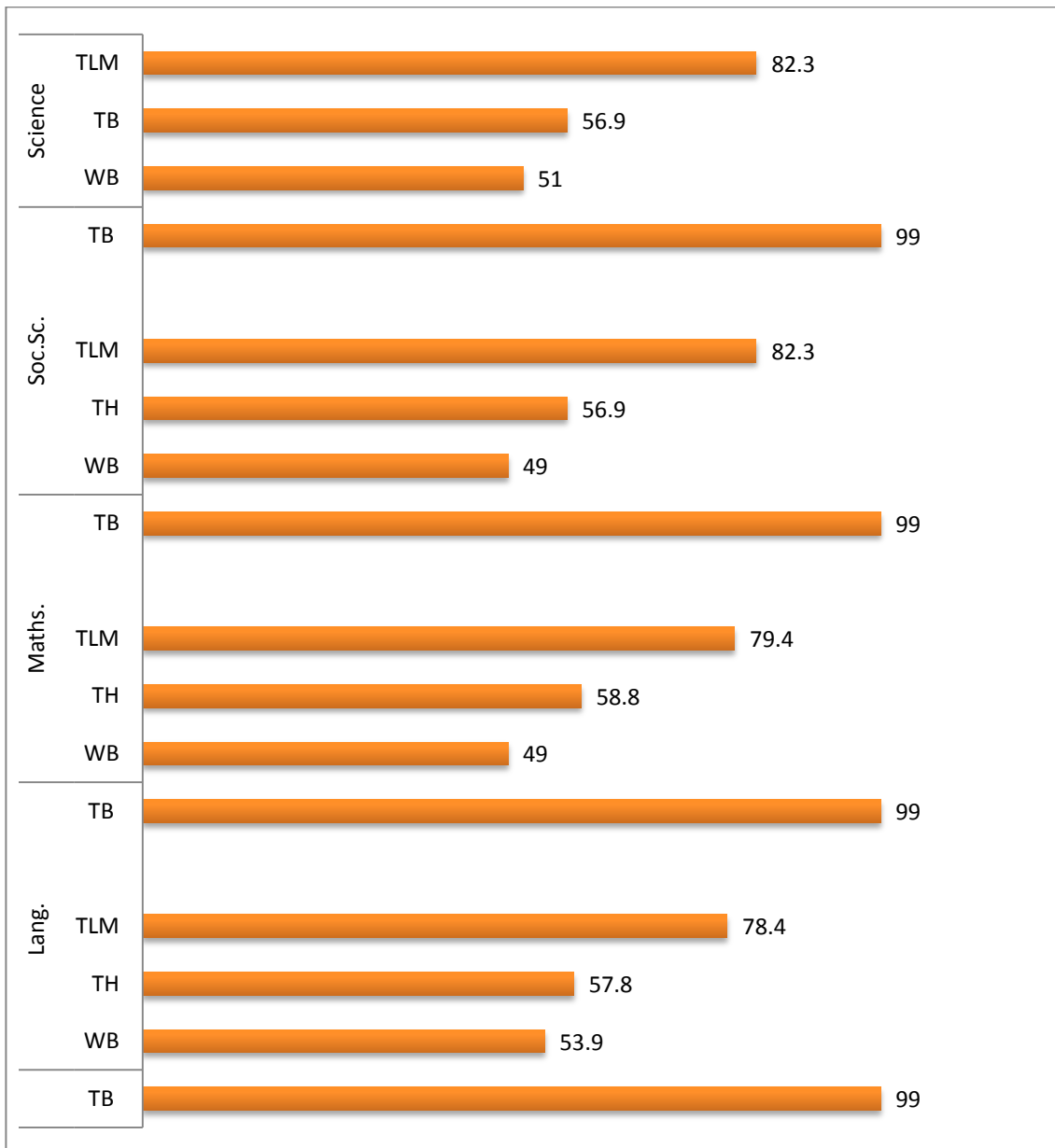


Fig.9.3.4: Availability of Instructional Materials for Class VII in Schools of Goa State

9.3.2 Science Laboratory

Table 9.3.2 revealed that 96 percent and 98 percent of schools located in North Goa and South Goa district respectively had science laboratory. In 92 percent of schools of both the districts assistance was available to students during experiment.

Table 9.3.2: Science Laboratory and Assistance to Students in Experiment

Availability	North Goa Dist.	South Goa Dist.	Goa state
Science Laboratory	96.1	98.0	99.1
Assistance available to students during experiment	92.3	92.0	92.1

Note- Figures indicate percentage of Schools.

9.3.3 Internet facilities and assistance to Teachers in using ICT

a) North Goa District

Table 9.3.3: Computer and Internet Facilities

Internet Facility in Computers	North Goa Dist.	South Goa Dist.	Goa state
All Computers	13.7	20.0	16.8
Most Computers	11.8	8.0	9.9
Some Computers	51.0	58.0	54.5
None	23.5	14.0	18.8

Note- Figures indicate percentage of Schools

Internet facility in all the computers was available only in about 14 percent of the schools of North Goa district (Table 9.3.3). In 12 percent of schools such facility was given in most of the computers. In one-half of the schools only in some computers there was internet connection. There was no internet connection in about one-fourth of the schools. In 86 percent of schools (Table 9.3.4) assistance was provided to teachers in using ICT.

Table 9.3.4: Assistance to Teachers in using ICT

Availability	North Goa Dist.	South Goa Dist.	Goa state
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Assistance Available	86.5	84.0	85.3
Assistance not Available	13.5	16.0	14.7

Note- Figures indicate percentage of Schools.

b) South Goa District

In one-fifth of the schools of South Goa district internet facility was provided in all the computers (Table 9.3.3). Only in 8 percent of schools internet connection was given in most of the computers. In 14 percent of schools there was no internet facility. Assistance to teachers in using ICT was available in 84 percent of schools.

c) Comparison between North Goa and South Goa Districts

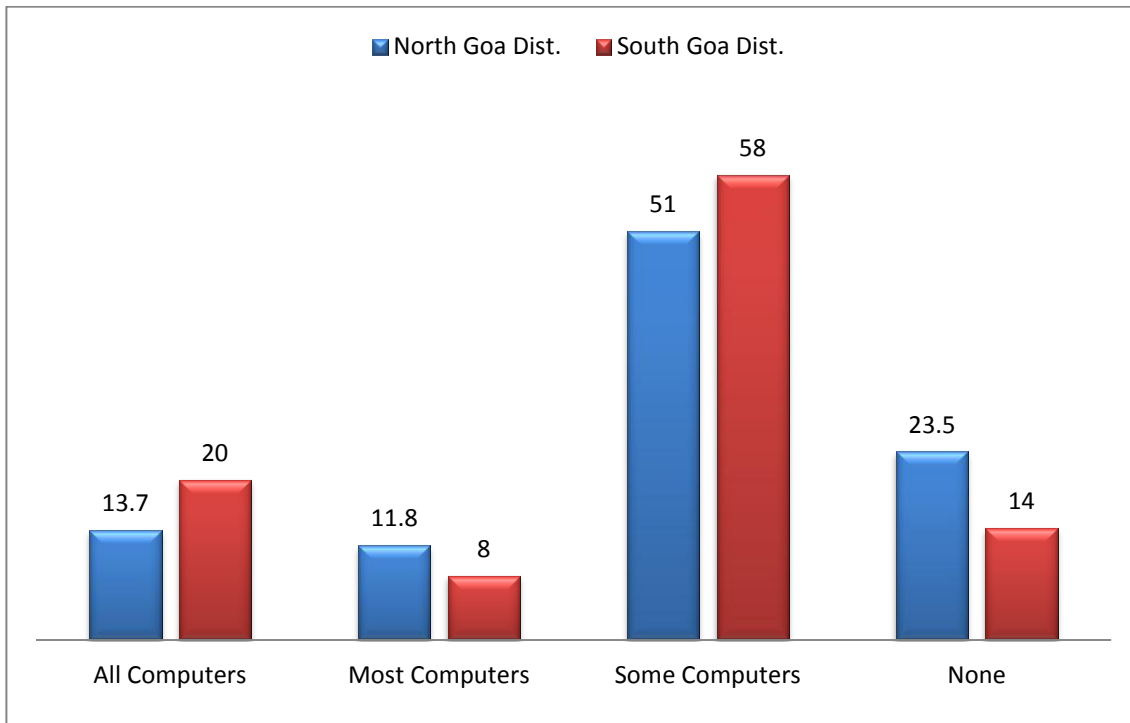


Fig. 9.3.5: Internet Facility in Schools of North Goa and South Goa Districts

Figure 9.3.5 shows that schools located in South Goa district were better than those in North Goa district as far as internet connection is concerned.

d) Goa State

In about 17 percent and 10 percent of schools of the State, internet connection was available in all computers and most of the computer respectively. In more than one-half of the schools of the State only in some computers internet facility was provided and in about one-fifth of the schools no internet connection was available. Assistance to Teachers in using ICT was available in 85 percent of schools.

9.3.4 Grouping of Students by Ability, Enrichment and Remedial Programme

a) North Goa District

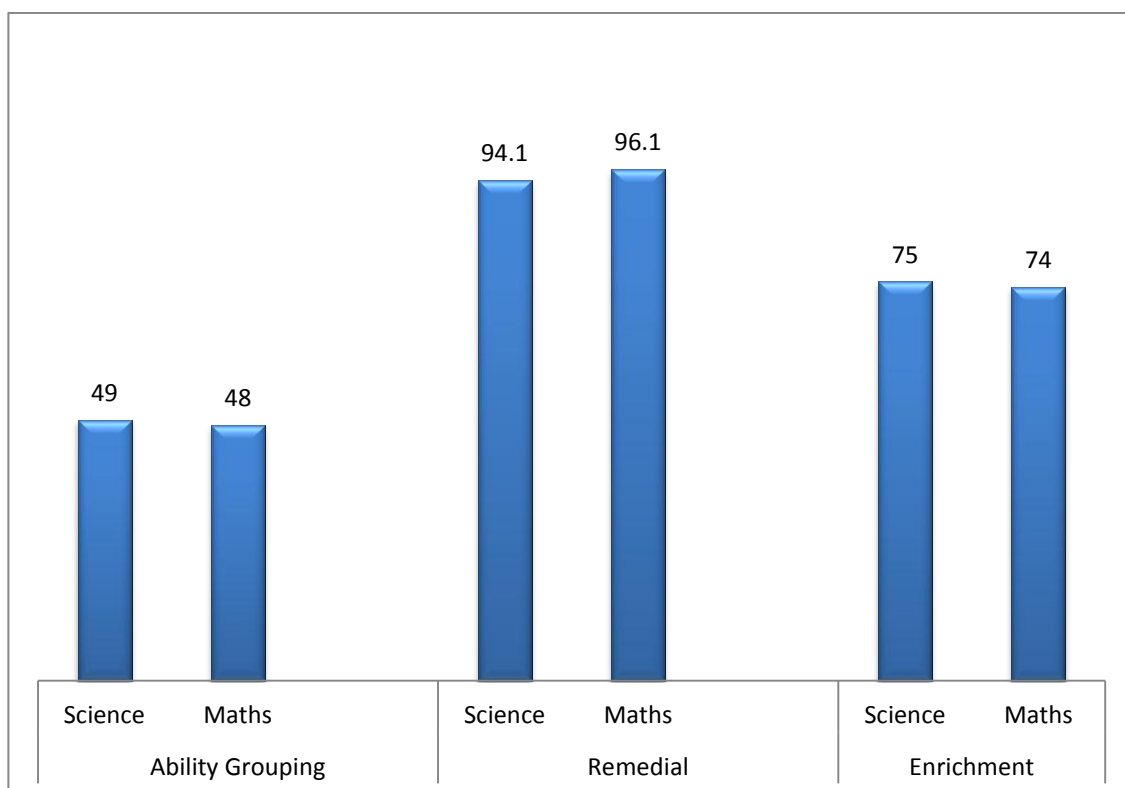


Fig.9.3.6: Grouping of Students by Ability, Enrichment and Remedial Programme (North Goa District)

Nearly one-half of the schools of North Goa district used to group their students by ability in the subjects of Science and Mathematics (Table 9.3.5). About 94 percent and 96 percent of schools of North Goa district used to conduct remedial programmes in Science and Mathematics respectively (Table 9.3.6 and Figure 9.3.6).

Table 9.3.5: Grouping of Students by Ability in Mathematics and Science

Subject	North Goa Dist.	South Goa Dist.	Goa state
Science	49.0	37.5	43.4
Mathematics	48.0	40.8	44.4

Note- Figures indicate percentage of Schools.

Table 9.3.6: Enrichment and Remedial programme in Mathematics and Science

Subject		North Goa Dist.	South Goa Dist.	Goa state
Science	Remedial	94.1	98.0	96.0
	Enrichment	75.0	85.1	80.0
Mathematics	Remedial	96.1	98.0	97.1
	Enrichment	74.0	72.4	73.2

Note- Figures indicate percentage of Schools.

b) South Goa District

Table 9.3.5, Table 9.3.6 and Figure 9.3.7 revealed that around 38 percent and 41 percent of the schools of South Goa district used to do ability grouping of students in Science and Mathematics respectively. Almost all the schools of the district were

conducting remedial programmes in both the subjects. Around three-fourths of schools used to conduct enrichment programmes in the two subjects.

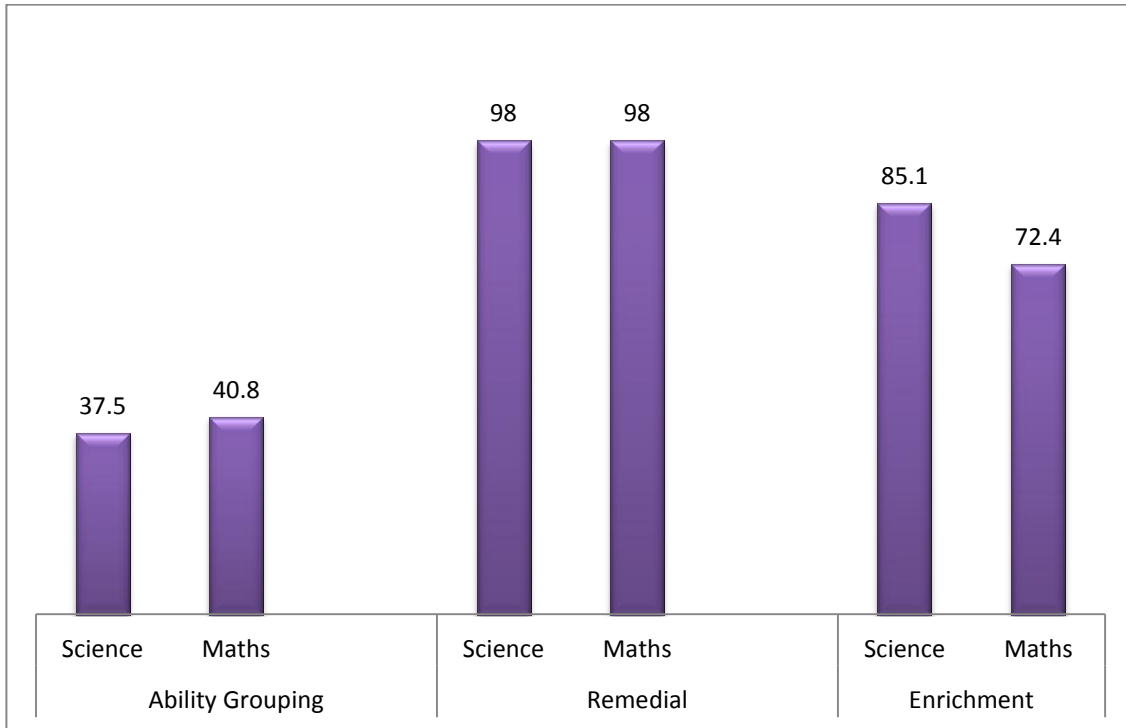


Fig.9.3.7: Grouping of Students by Ability, Enrichment and Remedial Programme (South Goa District)

c) Comparison between North Goa and South Goa Districts

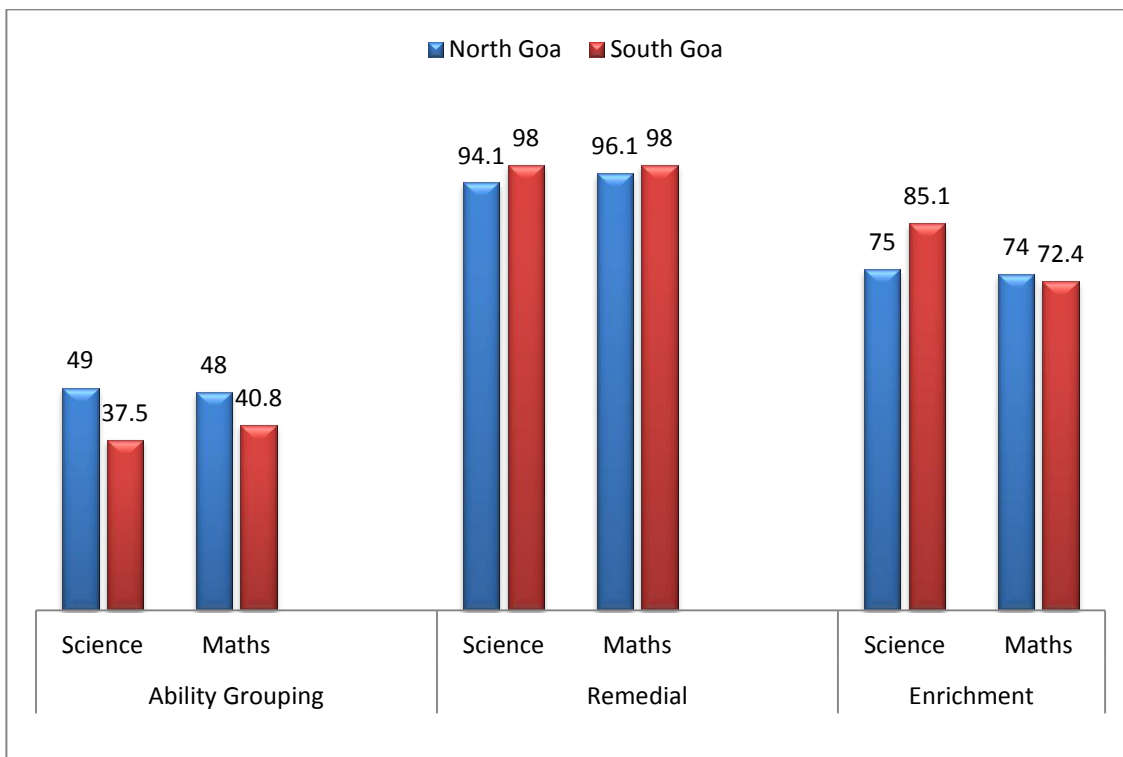


Fig.9.3.8: Grouping of Students by Ability, Enrichment and Remedial Programme (Comparison between North Goa and South Goa Dist.)

Comparative data indicated that higher percentage of schools of North Goa district than South Goa district used to do ability grouping of students in Science and Mathematics (Table 9.3.5 and Fig. 9.3.8). But in conducting remedial and enrichment programmes in Science, the South Goa schools were better than the Schools of North Goa district (Table 9.3.6).

d) Goa State

Table 9.3.5 revealed that slightly more than two-fifths of the schools of the State used to make ability grouping of students in Science and Mathematics. Almost all schools of the State used to conduct remedial classes in both the subjects (Table 9.3.6 and

Fig.9.3.9). Eighty percent and 73 percent of schools respectively used to conduct enrichment programmes in Science and Mathematics respectively.

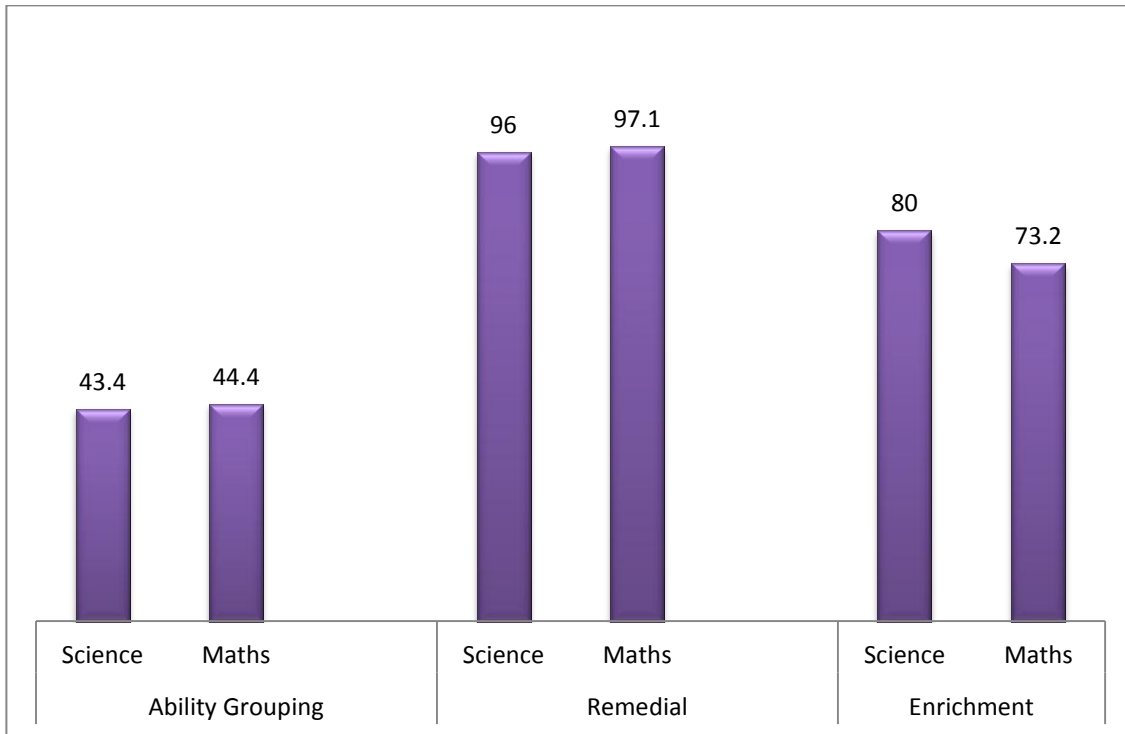


Fig.9.3.9: Grouping of Students by Ability, Enrichment and Remedial Programme (Goa State)

9.3.5 Methods of Teacher Evaluation

a) North Goa District

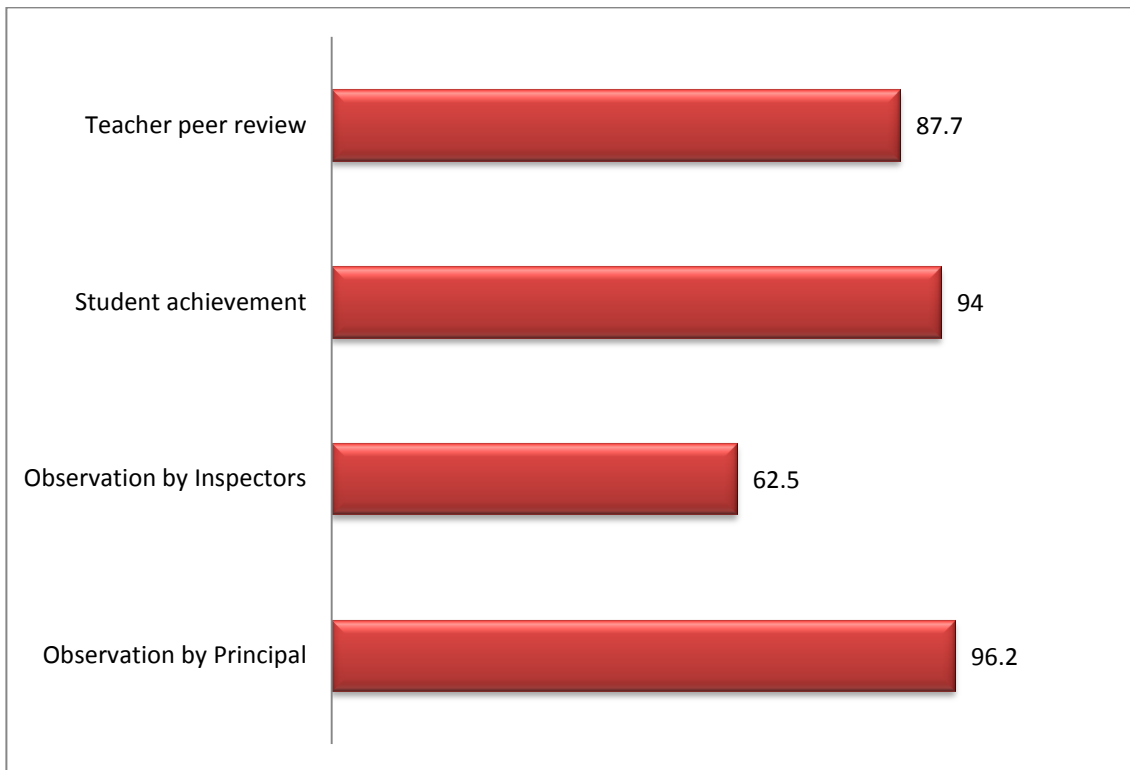


Fig.9.3.10: Methods of Teacher Evaluation (North Goa District)

Table 9.3.7: Methods of Evaluation of Teachers

Method	North Goa Dist.	South Goa Dist.	Goa state
Observation by Principal	96.2	96.0	96.1
Observation by Inspectors	62.5	73.5	68.0
Student achievement	94.0	93.9	93.9
Teacher peer review	87.7	77.1	82.5

Note- Figures indicate percentage of Schools.

Table 9.3.7 indicated that all the four methods of teacher evaluation were used by most of the schools of the district. Observation by Principal was used by almost all

the schools, observation by inspectors in 62.5 percent, students' achievement in 94 percent and teacher peer review in 88 percent of the schools.

b) South Goa District

The schools of South Goa district reported that almost all used observation by Principal, 73.5 percent observation by inspectors, 94 percent students' achievement and 77 percent teacher peer review (Table 9.3.7).

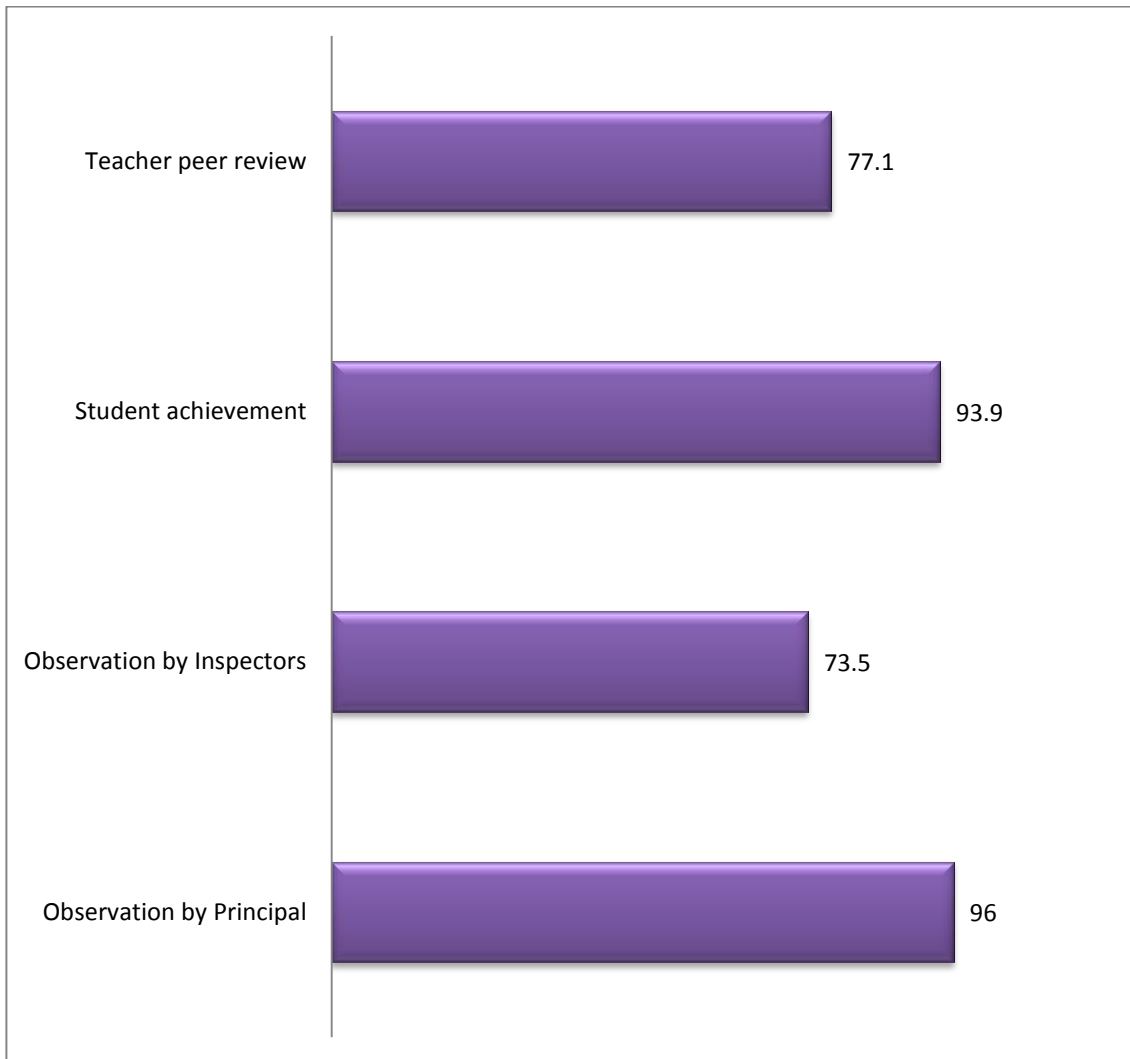


Fig.9.3.11: Methods of Teacher Evaluation (South Goa District)

c) Comparison between North Goa and South Goa Districts

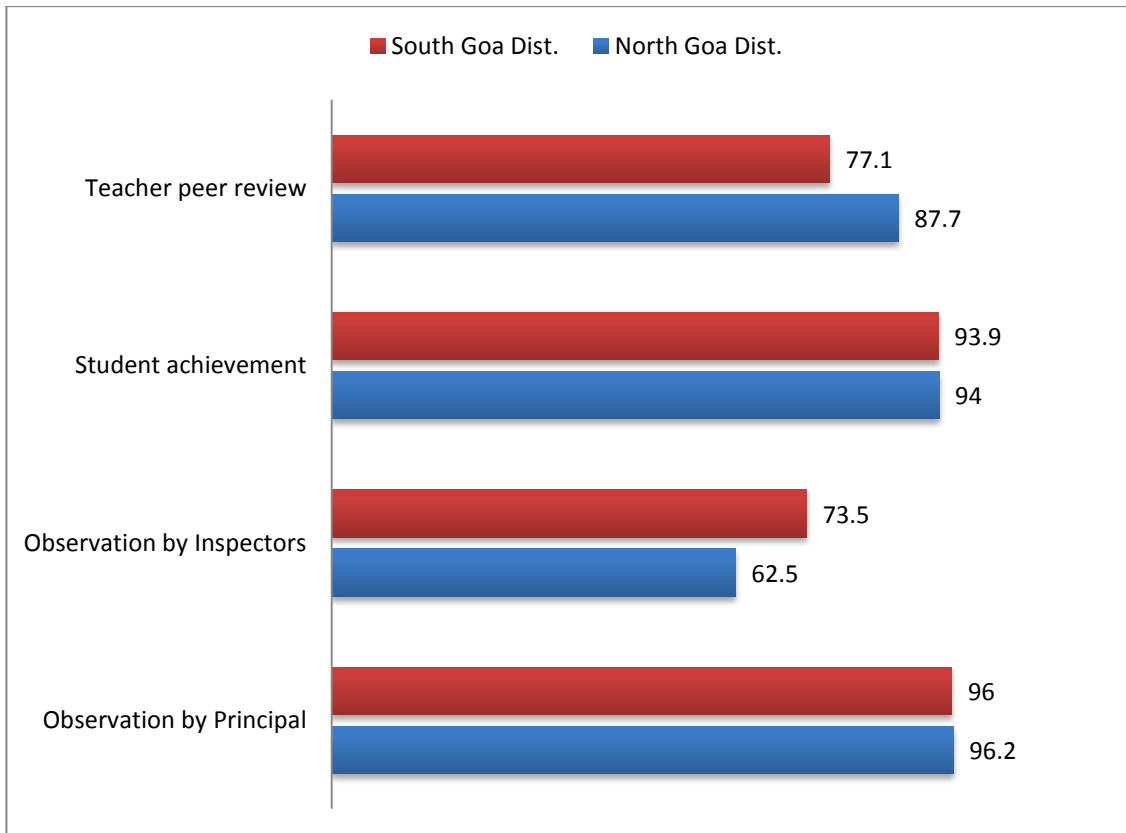


Fig.9.3.12: Methods of Teacher Evaluation (North Goa and South Goa Districts)

Figure 9.3.12 indicated that observation by Principal and students' achievement was used in equal percentages of schools of both the districts. Difference was observed between the two districts in observation by inspectors and teacher peer review.

d) Goa State

Observation by Principal was used by 96 percent of the schools, observation by inspectors in 68 percent, students' achievement in 94 percent and teacher peer

review in 82.5 percent of the schools of the State. Figure 9.3.13 represents data regarding methods of teacher evaluation in the State of Goa.

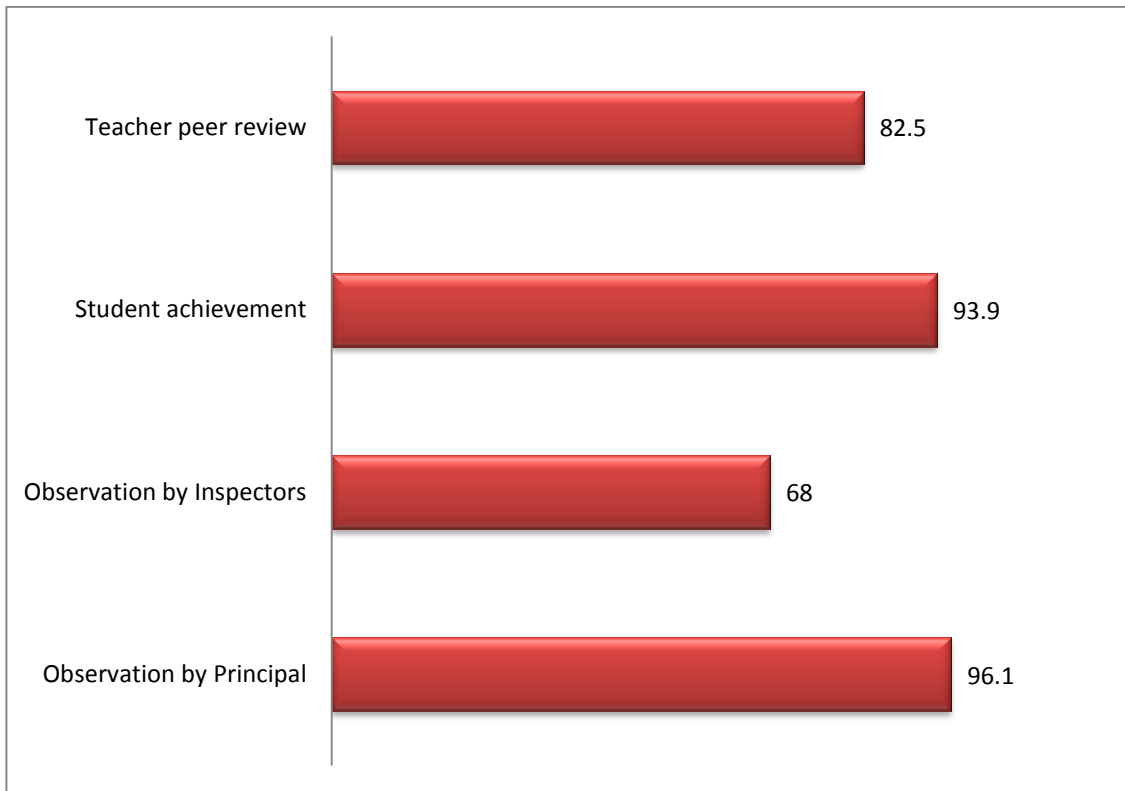


Fig.9.3.13: Methods of Teacher Evaluation (Goa State)

9.4 Inadequacies/Shortage in School affecting Teaching Capacity

Altogether 17 items were included in the questionnaire and the extent to which schools felt that shortage or inadequacies in school affected their instructional performance was rated on a four point scale, viz: none, a little, some and a lot.

a) North Goa District

Table 9.4.1 revealed that teaching capacity was affected a lot in more than one-fifth of the school of North Goa district due to shortage of instructional material, inadequacies of school building and grounds, inadequate instructional space,

shortage of computers and computer software for Mathematics teaching and shortage of Science Lab. equipment and materials. Shortage/inadequacies of other things also affected teaching a lot in substantial percentage of schools.

Table 9.4.1: Shortage/Inadequacies affecting School's Teaching Capacity (North Goa District)

Aspects	None	Little	Some	A Lot
Instructional material	44.0	24.0	8.0	24.0
Budget for Supplies	59.2	10.2	16.3	14.3
School building and grounds	34.7	18.4	26.5	20.4
Heating/cooling and lightening system	32.6	32.6	18.4	16.4
Instructional space	42.0	20.0	14.0	24.0
Special equipment for special children	69.0	7.1	14.3	9.5
Computers for Mathematics teaching	36.7	20.4	18.4	24.5
Computer software for Maths. teaching	34.7	20.4	24.5	20.4
Library material for Maths. teaching	38.0	26.0	30.0	6.0
A-V resources for Maths. teaching	32.6	22.4	28.6	16.3
Science Lab. equipment and materials	44.0	12.0	24.0	20.0
Computer for Social Science instruction	30.6	20.4	38.8	10.2
Computer software for Soc. Sc. instruction	26.5	26.5	34.7	12.2
Library material for Soc. Sc. instruction	40.0	16.0	38.0	6.0
A-V resources for Soc. Sc. instruction	30.0	24.0	38.0	8.0
Teachers	52.0	12.0	18.0	18.0
Computer support staff	56.0	10.0	16.0	18.0

Note- Figures indicate percentage of Schools.

b) South Goa District

Table 9.4.2 shows the extent to which shortage or inadequacies of different things had affected teaching capacity of the schools located in South Goa district. Data in the Tables are self explanatory.

Table 9.4.2: Shortage/Inadequacies affecting School's Teaching Capacity (South Goa District)

Aspects	None	Little	Some	A Lot
Instructional material	59.2	20.4	14.3	6.1
Budget for Supplies	61.2	12.2	18.4	8.2
School building and grounds	54.0	16.0	14.0	16.0
Heating/cooling and lightening system	39.7	43.7	8.3	8.3
Instructional space	56.2	16.7	10.4	16.7
Special equipment for special children	69.6	13.0	8.7	8.7
Computers for Mathematics teaching	42.8	26.5	18.4	12.2
Computer software for Maths. teaching	43.7	24.5	24.5	16.3
Library material for Maths. teaching	38.0	26.0	16.0	10.0
A-V resources for Maths. teaching	38.0	28.0	24.0	10.0
Science Lab. equipment and materials	60.0	12.0	14.0	14.0
Computer for Social Science instruction	36.7	32.6	22.4	8.2
Computer software for Soc. Sc. instruction	35.4	31.2	23.0	10.4
Library material for Soc. Sc. instruction	44.9	18.4	24.5	12.2
A-V resources for Soc. Sc. instruction	36.7	30.6	18.4	14.3

Teachers	54.0	14.0	16.0	16.0
Computer support staff	60.0	12.0	20.0	8.0

Note- Figures indicate percentage of Schools

c) Comparison between North Goa and South Goa Districts

Data in Table 9.4.1 and 9.4.2 indicated that shortage/ inadequacies of different things affected teaching learning process more in schools of North Goa than South Goa district.

d) Goa State

Table 9.4.3 indicated that shortage/inadequacies of many of the things listed there in affected teaching capacity a lot in a substantial percentage of schools of the State. Also shortage/inadequacies of some of the things affected teaching capacity to some extent in a sizeable percentage of schools of Goa.

Table 9.4.3: Shortage/Inadequacies affecting School's Teaching Capacity (Goa State)

Aspects	None	Little	Some	A Lot
Instructional material	51.5	22.2	11.1	15.2
Budget for Supplies	60.2	11.2	17.3	11.2
School building and grounds	44.4	17.2	20.2	18.2
Heating/cooling and lightening system	36.1	38.1	13.4	12.4
Instructional space	49.0	18.4	12.2	20.4
Special equipment for special children	69.3	10.2	11.4	9.1
Computers for Mathematics teaching	39.8	23.5	18.4	18.4
Computer software for Maths. teaching	43.7	22.4	24.5	18.4

Library material for Maths. teaching	38.0	26.0	28.0	8.0
A-V resources for Maths. teaching	35.4	25.2	26.3	13.1
Science Lab. equipment and materials	52.0	12.0	19.0	17.0
Computer for Social Science instruction	33.7	26.5	30.6	9.2
Computer software for Soc. Sc. instruction	30.9	28.9	28.9	11.3
Library material for Soc. Sc. instruction	42.4	17.2	31.0	9.1
A-V resources for Soc. Sc. instruction	33.3	27.3	28.3	11.1
Teachers	53.0	13.0	17.0	17.0
Computer support staff	58.0	11.0	18.0	13.0

Note- Figures indicate percentage of Schools

9.5 School Social Climate

In the present study, the school social climate consisted of problem behaviours amongst students. The each of the 13 behavioural problem areas of students was qualified into five categories of frequencies of occurrences of such behaviour, viz: never, rarely, monthly, weekly and daily.

a) North Goa District

It was found that 9 aberrant behaviour out of 13 was never or rarely seen in more than 95 percent of schools of North Goa district (Table 9.5.1). The remaining 4 behavioural problems were never or rarely occurred in about 90 percent of schools of the district.

Table 9.5.1: Problem Behaviour among Students (North Goa District)

Problem	Never	Rarely	Monthly	Weekly	Daily
Arriving late at school	13.5	76.9	3.8	1.9	3.8
Absenteeism	11.8	78.4	3.9	2.0	3.9

Skipping Class	53.8	46.2	0.0	0.0	0.0
Violating dress code	53.8	44.2	0.0	1.9	0.0
Classroom disturbance	15.4	73.1	1.9	3.8	5.8
Cheating	57.7	40.4	0.0	1.9	0.0
Profanity	52.9	43.1	3.9	0.0	0.0
Vandalism	64.7	35.3	0.0	0.0	0.0
Theft	76.9	23.1	0.0	0.0	0.0
Intimidation/verbal abuse of other students	28.8	65.4	1.9	3.8	0.0
Physical injury to other students	52.9	43.1	2.0	2.0	0.0
Intimidation/verbal abuse of teachers/staff	78.4	19.6	2.0	0.0	0.0
Physical injury to teachers/staff	98.1	1.9	0.0	0.0	0.0

Note- Figures indicate percentage of Schools

b) South Goa District

Ten out of 13 behavioural problems were rarely or never seen in more than 95 percent of schools of South Goa district and the remaining 3 were never/rarely found in more than 90 percent of schools (Table 9.5.2).

Table 9.5.2: Problem Behaviour among Students (South Goa District)

Problem	Never	Rarely	Monthly	Weekly	Daily
Arriving late at school	16.0	74.0	6.0	0.0	4.0
Absenteeism	17.0	78.0	5.0	0.0	0.0
Skipping Class	72.0	26.0	2.0	0.0	0.0
Violating dress code	52.0	44.0	0.00	2.0	2.0

Classroom disturbance	24.0	58.0	6.0	6.0	6.0
Cheating	42.0	56.0	0.0	0.0	2.0
Profanity	49.0	42.9	4.1	4.1	0.0
Vandalism	64.0	36.0	0.0	0.0	0.0
Theft	70.0	30.0	0.0	0.0	0.0
Intimidation/verbal abuse of other students	42.0	50.0	4.0	2.0	2.0
Physical injury to other students	62.0	34.0	2.0	0.0	2.0
Intimidation/verbal abuse of teachers/staff	98.8	10.2	0.0	0.0	0.0
Physical injury to teachers/staff	100.0	0.0	0.0	0.0	0.0

Note- Figures indicate percentage of Schools

c) Comparison between North Goa and South Goa Districts

Comparison between the data in Table 9.5.1 and Table 9.5.2 indicated that there was not much difference between the schools of North Goa and South Goa districts as far as occurrence of behavioural problems amongst student is concerned. Schools of both the districts equally did not have much problem in this regard.

d) Goa State

Table 9.5.3: Problem Behaviour among Students (Goa State)

Problem	Never	Rarely	Monthly	Weekly	Daily
Arriving late at school	14.7	75.5	4.9	1.0	3.9
Absenteeism	13.9	78.2	5.0	1.0	2.0
Skipping Class	62.7	36.3	1.0	0.0	0.0
Violating dress code	52.9	44.1	0.0	2.0	1.0
Classroom disturbance	19.6	65.7	3.9	4.9	5.9
Cheating	50.0	48.0	0.0	1.0	1.0
Profanity	51.0	43.0	4.0	2.0	0.0
Vandalism	64.4	35.6	0.0	0.0	0.0
Theft	73.5	26.5	0.0	0.0	0.0
Intimidation/verbal abuse of other students	35.3	57.8	2.9	2.9	1.0
Physical injury to other students	57.4	38.6	2.0	1.0	1.0
Intimidation/verbal abuse of teachers/staff	84.0	15.0	1.0	0.0	0.0
Physical injury to teachers/staff	99.0	1.0	0.0	0.0	0.0

Note- Figures indicate percentage of Schools

Table 9.5.3 revealed that more than 95 percent of schools of in Goa had never/rarely faced 9 out of 13 behavioural problems amongst students. Late arrival of students at school, absenteeism, classroom disturbance and intimidation/verbal abuse of other students were the problems faced by more than 6 percent of the schools of the State. Over all, the findings revealed that the schools of the State did not face much behavioural problems amongst students.

Section – II: *Regression Results*

Considering the nature of the school related variables under study it may not be exclusively possible to establish cause-effect relationship between the variables. But using regression analysis one could find out whether the schools related variables had any influence/effect on academic performance of students in different subjects. Or at least one could determine the relationship between the school factors and academic attainment of students.

In this section the regression results are presented in tabular form district-wise and findings are discussed.

9.6 School Factors and Academic Achievement of Students

9.6.1 School Management

(a) North Goa District

The coefficient values in Table 9.6.1 revealed that the students of private aided schools of North Goa district performed better than the Government school students in all the subjects but difference was significant only in Science and Social Science. The students studying in schools managed by local bodies scored higher than the government school students but none of the coefficient values were significant (Table 9.6.1).

Table 9.6.1: Regression Results: School Management and Academic Performance (North Goa District)

Management		English	Maths.	Science	Soc. Sci.
Private Aided	Coefficient	1.91	0.49	3.47	2.47
	SE	1.19	0.88	1.05	0.99
	t-value	1.60	0.56	3.30	2.49

	Level of Sig.	N.S.	N.S.	0.01	0.05
Local Body	Coefficient	0.96	0.98	3.30	3.59
	SE	2.66	2.21	2.26	2.14
	t-value	0.36	0.44	1.46	1.68
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

(b) South Goa District

Table 9.6.2: Regression Results: School Management and Academic Performance (South Goa District)

Management		English	Maths.	Science	Soc. Sci.
Govt. Aided	Coefficient	1.32	1.55	1.91	2.75
	SE	1.74	1.27	1.45	1.25
	t-value	0.76	1.21	1.31	2.19
	Level of Sig.	N.S.	N.S.	N.S.	0.05
Local Body	Coefficient	- 1.61	- 2.59	- 2.90	- 1.96
	SE	3.94	2.92	2.99	2.73
	t-value	0.41	0.89	0.97	0.72
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

Students of private aided schools of South Goa district scored higher than the students studying in government schools in all the four subjects but the difference was significant only Social Science (Table 9.6.2). The students studying in schools

managed by local bodies scored less in all the subjects compared to the students of government schools but none of the difference was found significant.

9.6.2 Attachment of Pre-School

The coefficient values in Table 9.6.3 (North Goa) and Table 9.6.4 (South Goa) showed that students studying in schools attached with Pre- School scored more compared to the students studying in schools without having pre-primary section but none of the Coefficient values were found significant indicating the fact that having a pre-school attached to a school did not significantly contribute towards better academic performance of students.

a) North Goa District

Table 9.6.3: Regression Results: Attachment of Pre-schools (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	1.87	0.99	1.25	2.01
SE	1.17	0.89	1.15	1.03
t-value	1.59	1.11	1.08	1.95
Level of Significance	N.S.	N.S.	N.S.	N.S.

b) South Goa District

Table 9.6.4: Regression Results: Attachment of Pre-schools (South Goa Dist.)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.69	1.35	1.46	1.28
SE	1.72	1.26	1.48	1.31
t-value	0.40	1.07	0.98	0.98
Level of Significance	N.S.	N.S.	N.S.	N.S.

9.6.3 School Inspection

Table 9.6.5 and Table 9.6.6 indicated that inspection of school in the academic year 2013-14 did not have any significant impact on academic performance of students of Class-VII of both North Goa and South Goa districts. None of the coefficient were statistically significant.

a) North Goa District

Table 9.6.5: Regression Results: School Inspected in 2013-14(North Goa Dist.)

	English	Maths.	Science	Soc. Sci.
Coefficient	-0.24	-0.69	-0.38	-0.13
SE	1.15	0.86	1.11	1.02
t-value	0.21	0.81	0.34	0.12
Level of Significance	N.S.	N.S.	N.S.	N.S.

b) South Goa District

Table 9.6.6: Regression Results: School Inspected in 2013-14(South Goa Dist.)

	English	Maths.	Science	Soc. Sci.
Coefficient	-0.46	0.43	-0.99	0.54
SE	1.65	1.22	1.43	1.27
t-value	0.28	0.35	0.69	0.43
Level of Significance	N.S.	N.S.	N.S.	N.S.

9.6.4 Economic Background of Students

(a) North Goa District

Table 9.6.7: Regression Results: Students' Economic Background (North Goa District)

Eco. Standard		English	Maths.	Science	Soc. Sci.
Economically Disadvantaged	Coefficient	-0.23	-0.26	-0.40	-0.61
	SE	0.47	0.35	0.45	0.41
	t-value	0.49	0.73	0.89	1.48
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Economically	Coefficient	0.74	0.60	0.93	0.79
	SE	0.55	0.41	0.59	0.56

Affluent	t-value	1.34	1.46	1.57	1.41
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

Table 9.6.7 revealed that economic background of students of North Goa district had no significant relation with achievement of students in any of the school subjects. But the coefficient values indicated that economically disadvantaged students scored less compared to the students who were economically affluent and the economically affluent scored more than the economically disadvantaged students in different school subjects.

(b) South Goa District

Data in Table 9.6.8 indicated that children from economically disadvantaged families scored less than those from economically affluent families though the coefficient values were statistically not significant. The children from economically affluent families scored significantly higher in all the subjects compared to the children from economically disadvantaged families.

Table 9.6.8: Regression Results: Students' Economic Background (South Goa District)

Eco. Standard		English	Maths.	Science	Soc. Sci.
Economically Disadvantaged	Coefficient	-1.27	-0.92	-0.99	-0.98
	SE	0.76	0.58	0.68	0.59
	t-value	1.67	1.59	1.45	1.66
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
	Coefficient	2.21	1.51	1.73	1.92

Economically Affluent	SE	0.80	0.60	0.71	0.60
	t-value	2.76	2.52	2.45	3.02
	Level of Sig.	0.01	0.05	0.05	0.01

9.6.5 Facilities in School (Physical, Instructional and Analysis)

No relationship was found between various facilities (Physical, Instructional and Analysis) in schools of both North Goa and South Goa districts and performance of students of each district in different subjects. It indicated that performance of students was independent of the facilities available in schools (Table 9.6.9 and Table 9.6.10).

a) North Goa District

Table 9.6.9: Regression Results: Facilities in School (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.43	0.29	0.23	0.50
SE	0.26	0.20	0.22	0.27
t-value	1.65	1.45	1.04	1.85
Level of Significance	N.S.	N.S.	N.S.	N.S.

N.S. : Not significant

b) South Goa District

Table 9.6.10: Regression Results: Facilities in School (South Goa District)

	English	Maths.	Science	Soc. Sci.
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Coefficient	0.60	0.30	0.17	0.10
SE	0.48	0.35	0.42	0.36
t-value	1.25	0.85	0.40	0.27
Level of Significance	N.S.	N.S.	N.S.	N.S.

N.S. : Not significant

9.6.6 Availability of Instructional Materials

(a) North Goa District

Table 9.6.11 revealed that availability of instructional materials in schools for Class-VII like text books, workbooks, teachers' handbooks and TLM in the subject concerned had no significant influence on academic performance of students of North Goa district in the concerned subject.

Table 9.6.11: Regression Results: Availability of Instructional Materials (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.50	0.41	0.50	0.80
SE	0.61	0.43	0.56	0.52
t-value	0.81	0.95	0.90	1.53
Level of Significance	N.S.	N.S.	N.S.	N.S.

N.S. : Not significant

(b) South Goa District

Table 9.6.12 revealed that availability of instructional materials in schools for Class-VII like text books, workbooks, teachers' handbooks and TLM in the subjects concerned had no significant influence on academic performance of students of South Goa district in the concerned subject. It indicated that availability of instructional materials in schools in different subjects and performance of students are independent of each other.

Table 9.6.12: Regression Results: Availability of Instructional Materials (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.28	0.48	0.82	0.38
SE	0.78	0.61	0.70	0.64
t-value	0.34	0.78	1.15	0.58
Level of Significance	N.S.	N.S.	N.S.	N.S.

N.S. : Not significant

9.6.7 Asking Parents for Participation in Different Ways

Asking parents to attend special events, raise fund for the School, ensure completion of homework by the child and serve on school committees did not have significant effect on achievement of students of both North Goa and South Goa districts (Table 9.6.12 and Table 9.6.13).

a) North Goa District

Table 9.6.13: Regression Results: Asking Parents for Participation/Contribution
(North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.12	0.32	0.60	0.07
SE	1.04	0.77	1.00	0.92
t-value	0.11	0.41	0.60	0.08
Level of Significance	N.S.	N.S.	N.S.	N.S.

N.S. : Not significant

b) South Goa District

Table 9.6.14: Regression Results: Asking Parents for Participation/ Contribution
(South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	1.45	0.31	1.42	1.01
SE	1.68	1.25	1.45	1.28
t-value	0.88	0.25	0.98	0.79
Level of Significance	N.S.	N.S.	N.S.	N.S.

N.S. : Not significant

9.6.8 School Perception

(a) North Goa District

Table 9.6.15 indicates that teachers' job satisfaction, teachers' understanding of curricular goals, teacher's degree of success in implementing curriculum, teacher's expectation for students' achievement, parental support for student achievement, parental involvement in school activities, students' regard for school property and students' desire to do well in school had no significant relation with performance of students in different subjects.

Table 9.6.15: Regression Results: School Perception (North Goa District)

		English	Maths.	Science	Soc. Sci.
Teachers' job satisfaction	Coefficient	1.46	0.93	1.27	0.76
	SE	0.76	0.58	0.74	0.69
	t-value	1.91	1.61	1.71	1.09
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Teachers' understanding of curricular goals	Coefficient	1.34	0.53	1.21	0.94
	SE	0.74	0.57	0.72	0.67
	t-value	1.81	0.93	1.68	1.41
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Teacher's degree of success in implementing	Coefficient	1.29	0.67	1.42	1.21
	SE	0.79	0.60	0.76	0.70
	t-value	1.63	1.11	1.87	1.73

curriculum	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Teacher's expectation for students' achievement	Coefficient	0.45	0.45	0.15	0.28
	SE	0.63	0.47	0.62	0.56
	t-value	0.71	0.95	0.24	0.50
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Parental support for student achievement	Coefficient	0.50	0.49	0.10	0.30
	SE	0.61	0.45	0.59	0.54
	t-value	0.82	1.08	0.17	0.55
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Parental involvement in school activities.	Coefficient	0.08	0.25	0.03	0.14
	SE	0.66	0.50	0.64	0.59
	t-value	0.13	0.50	0.04	0.24
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Students' regard for school property	Coefficient	1.21	0.47	0.74	1.14
	SE	0.68	0.52	0.67	0.60
	t-value	1.79	0.91	1.10	1.90
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Students' desire to do well in school	Coefficient	1.15	0.45	0.71	0.57
	SE	0.73	0.55	0.71	0.66
	t-value	1.58	0.81	1.00	0.87
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

(b) South Goa District

Table 9.6.16: Regression Results: School Perception (South Goa District)

		English	Maths.	Science	Soc. Sci.
Teachers' job satisfaction	Coefficient	0.62	0.90	0.31	0.40
	SE	0.77	0.58	0.67	0.59
	t-value	0.80	1.55	0.46	0.68
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Teachers' understanding of	Coefficient	2.21	0.99	1.15	2.21
	SE	1.06	0.83	0.97	0.81
	t-value	2.08	1.19	1.18	2.73

curricular goals	Level of Sig.	0.05	N.S.	N.S.	0.01
Teacher's degree of success in implementing curriculum	Coefficient	1.04	0.63	0.64	1.03
	SE	1.05	0.79	0.92	0.80
	t-value	0.98	0.81	0.69	1.29
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Teacher's expectation for students' achievement	Coefficient	0.94	0.70	0.58	1.14
	SE	0.75	0.56	0.66	0.56
	t-value	1.24	1.25	0.87	2.04
	Level of Sig.	N.S.	N.S.	N.S.	0.05
Parental support for student achievement	Coefficient	0.70	0.51	0.60	0.76
	SE	1.07	0.79	0.93	0.82
	t-value	0.65	0.64	0.64	0.93
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Parental involvement in school activities.	Coefficient	0.53	0.04	0.19	0.15
	SE	0.93	0.73	0.86	0.76
	t-value	0.54	0.05	0.22	0.20
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Students' regard for school property	Coefficient	2.28	1.05	0.70	2.09
	SE	1.14	0.90	1.06	0.89
	t-value	2.00	1.17	0.66	2.34
	Level of Sig.	0.05	N.S.	N.S.	0.05
Students' desire to do well in school	Coefficient	1.17	0.41	0.22	1.38
	SE	0.96	0.72	0.84	0.62
	t-value	1.22	0.57	0.26	2.22
	Level of Sig.	N.S.	N.S.	N.S.	0.05

Table 9.6.16 shows that teachers' job satisfaction, teacher's degree of success in implementing curriculum, parental support for student achievement and parental involvement in school activities had no significant relation with academic attainment of students of South Goa district. Teachers' understanding of curricular goals and students' regard for school property were significantly related to performance of

students in English and Social Science. Teacher's expectation for students' achievement and students' desire to do well in school had significant influence on academic attainment of students in Social Science.

9.6.9 Ability Grouping

Ability grouping of students in Mathematics and Science in both North Goa and South Goa districts schools had negative influence on academic attainment of students in these two subjects though the coefficient values were statistically not significant Table 9.6.17 and Table 9.6.18).

a) North Goa District

Table 9.6.17: Regression Results: Ability Grouping (North Goa District)

	Mathematics	Science
Coefficient	-1.42	-1.89
SE	0.84	1.08
t-value	1.70	1.75
Level of Significance	N.S.	N.S.

N.S. : Not significant

b) South Goa District

Table 9.6.18: Regression Results: Ability Grouping (South Goa District)

	Mathematics	Science
Coefficient	-0.27	0.13
SE	1.29	1.61
t-value	0.21	0.08
Level of Significance	N.S.	N.S.

N.S. : Not significant

9.6.10 Remedial and Enrichment Programme

(a) North Goa District

Table 9.6.19: Regression Results: Remedial and Enrichment Programme (North Goa District)

Programme		Mathematics	Science
Remedial	Coefficient	2.28	2.29
	SE	2.23	2.06
	t-value	1.02	1.11
	Level of Sig.	N.S.	N.S.
Enrichment	Coefficient	-1.06	-0.45
	SE	0.94	1.20
	t-value	1.13	0.37
	Level of Sig.	N.S.	N.S.

(b) South Goa District

Remedial for weak students and enrichment programmes for academically bright students did not contribute significantly for improvement of performance of students in these two subjects (Table 9.6.19 and Table 9.6.20).

Table 9.6.20: Regression Results: Remedial and Enrichment Programme (South Goa District)

Programme		Mathematics	Science
Remedial	Coefficient	0.22	3.68
	SE	4.04	4.12
	t-value	0.05	0.89
	Level of Sig.	N.S.	N.S.
Enrichment	Coefficient	1.29	1.55
	SE	1.38	1.78
	t-value	0.93	0.87
	Level of Sig.	N.S.	N.S.

9.6.11 Involvement of Mathematics and Science Teachers in Professional Development

a) North Goa District

Table 9.6.21 revealed that involvement of teachers (of North Goa district) in professional development opportunities for Mathematics and Science significantly (positively) contributed towards academic improvement of students in Mathematics.

Table 9.6.21: Regression Results: Professional Development of Teachers (North Goa District)

	Mathematics	Science
Coefficient	0.14	0.17
SE	0.07	0.11
t-value	2.00	1.54

Level of Significance	0.05	N.S.
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b) South Goa District

Table 9.6.22: Regression Results: Professional Development of Teachers (South Goa District)

	Mathematics	Science
Coefficient	0.28	0.33
SE	0.13	0.16
t-value	2.14	2.06
Level of Significance	0.05.	0.05

Involvement of teachers (of South Goa) district in professional development opportunities for Mathematics and Science significantly (positively) contributed towards academic improvement of students in these two subjects (Table 9.6.22).

9.6.12 Problem Behaviour amongst Students

Occurrence of different problem behaviours among students did not affect their performance significantly in any of the subjects. Similar findings were reported in both North Goa and South Goa district schools (Table 9.6.23 and Table 9.6.24).

a) North Goa District

Table 9.6.23: Regression Results: Behaviour Problems (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	- 0.19	- 0.07	- 0.23	- 0.08
SE	0.11	0.09	0..11	0.11
t-value	1.72	0.77	2.09	0.72

Level of Significance	N.S.	N.S.	0.05	N.S.
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b) South Goa District

Table 9.6.24: Regression Results: Behaviour Problems (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	0.03	- 0.07	- 0.08	- 0.08
SE	0.15	0.11	0.13	0.11
t-value	0.20	0.64	0.62	0.73
Level of Significance	N.S.	N.S.	N.S.	N.S.

9.6.13 Inadequacy/ Shortage of Facilities

a) North Goa District

Inadequate or shortage of infrastructural and instructional facilities in school negatively (significantly) affected academic attainment of students of North Goa district in English, Mathematics and Science (Table 9.6.25).

Table 9.6.25: Regression Results: School Facilities (North Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	-0.08	-0.06	-0.25	-0.03
SE	0.04	0.03	0.12	0.03
t-value	2.00	2.00	2.08	1.00
Level of	0.05	0.05.	0.05	N.S.

Significance				
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b) South Goa District

Table 9.6.26 indicated that inadequate or shortage of infrastructural and instructional facilities in school negatively (significantly) affected academic attainment of students of South Goa district in Mathematics and Social Science.

Table 9.6.26: Regression Results: School Facilities (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	-0.08	-0.08	-0.04	-0.09
SE	-0.07	0.04	0.03	0.04
t-value	1.14	2.00	1.33	2.25
Level of Significance	N.S.	0.05	N.S.	0.05

9.6.14 Access to Internet

(a) North Goa District

Access to internet facility in school positively (significantly) influenced academic performance of North Goa school students in English, Mathematics and Science (Table 9.6.27).

Table 9.6.27: Regression Results: Access to Internet (North Goa District).

	English	Maths.	Science	Soc. Sci.

Coefficient	0.55	0.02	0.76	0.62
SE	0.55	0.42	0.34	0.50
t-value	1.00	0.05	2.24	1.24
Level of Significance	0.05	0.05.	0.05	N.S.

(b) South Goa District

It was found (Table 9.6.28) that access to internet facility in school positively (significantly) influenced academic performance of North Goa school students in English, Mathematics and Social Science.

Table 9.6.28: Regression Results: Access to Internet (South Goa District)

	English	Maths.	Science	Soc. Sci.
Coefficient	1.69	1.09	0.88	1.38
SE	0.82	0.53	0.70	0.65
t-value	2.06	2.06	1.25	2.12
Level of Significance	0.05	0.05	N.S.	0.05

9.6.15 Evaluation of Teachers' Practices

(a) North Goa District

Table 9.6.29: Regression Results: Evaluation of Classroom Practices (North Goa District)

	English	Math.	Science	Soc. Sci.
Coefficient	1.05	0.98	1.25	0.45

Observation by Principal	SE	0.97	0.79	0.89	0.56
	t-value	1.08	1.24	1.40	0.80
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Observation by Inspectors	Coefficient	0.56	0.29	0.31	0.20
	SE	1.19	0.89	1.15	1.06
	t-value	0.47	0.32	0.27	0.19
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Student Achievement	Coefficient	1.85	0.30	1.86	0.05
	SE	1.93	1.46	1.86	1.70
	t-value	0.95	0.20	1.00	0.03
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Teacher Peer review	Coefficient	1.41	0.93	1.27	1.17
	SE	1.51	1.33	1.46	1.34
	t-value	0.93	0.82	0.87	0.87
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

Table 9.6.29 indicates that different methods of assessing practices of teachers were not significantly associated with higher attainment of students of North Goa district in any of the four subjects.

(b) South Goa District

Table 9.6.30: Regression Results: Evaluation of Classroom Practices (South Goa District)

		English	Maths.	Science	Soc. Sci.
Observation by Principal	Coefficient	2.03	1.89	0.99	1.43
	SE	2.11	1.76	1.02	1.24
	t-value	0.96	1.07	0.97	1.15
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

Observation by Inspectors	Coefficient	0.63	0.26	1.00	0.79
	SE	1.84	1.36	1.59	1.40
	t-value	0.34	0.19	0.63	0.56
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Student Achievement	Coefficient	2.40	2.25	3.24	1.19
	SE	2.06	1.25	2.34	1.08
	t-value	1.16	1.80	1.38	1.10
	Level of Sig.	N.S.	N.S.	N.S.	N.S.
Teacher Peer review	Coefficient	1.17	0.97	0.26	0.11
	SE	1.24	1.00	1.16	0.89
	t-value	0.94	0.97	0.22	0.12
	Level of Sig.	N.S.	N.S.	N.S.	N.S.

The coefficient values in Table 9.6.30 show that use of each of the methods of assessing practices of teachers was associated with higher academic attainment of students of South Goa district. But none of the observed values were statistically significant indicating that the influence of each of the methods on attainment of students was not significant.

9.7 Conclusions

1. The students of private aided schools exhibit higher performance in school subjects than the Government schools students.

2. No pre-primary schools/sections are attached to majority of the elementary schools of the State. Higher percentages of schools located in North Goa district are attached with pre-primary schools/sections compared to South Goa district. Attachment of pre-primary schools/sections does not have significant effect on academic performance of student.
3. Majority of the teachers teaching at the elementary stage in both North Goa and South Goa districts are female.
4. In majority of the schools of the State, majority of the students are from economically disadvantaged families. In higher percentage of schools of South Goa than North Goa district, majority of students are from poor families. In very few schools more than half of the students are from economically affluent homes.
5. Family economic condition of children has significant positive influence of their academic attainment.
6. Most of the schools of the State have adequate physical facilities. Except T.V, Mini Tool kit and Science kit, all other teaching learning resources are available in most of the schools of both the districts.
7. There exists no significant relationship of availability of physical, instructional and analysis facilities with academic attainment of students.
8. School inspection has no significant impact on academic attainment of students.
9. Almost all the schools of both the district used to ask parents to attend special functions in schools, ensure completion of their child's home work and serving on school committees.
10. Asking parents to participate in different activities/ contribute in various ways has no effect on academic performance of students.
11. Teachers' understanding of curricular goals, teacher's expectation of students' achievement, students' regard for school property and students' desire to do well in school significantly (positively) influence academic performance of students.

12. Almost all the schools of the State have textbooks and TLM in all the subjects. But most of the schools of the State do not have workbooks and teachers' handbooks. The schools located in North Goa district are better than South Goa district as far as availability of instructional materials is concerned.
13. Availability of instructional materials such as textbooks, TLM, workbooks and teachers' handbooks in different subjects in school does not significantly influence academic performance of students.
14. All schools of both the districts have computers but no internet connection is available in all schools and in all computers of the schools having such facility.
15. Access to computer and internet facility in school has significant positive effect on academic attainment of students in all subjects.
16. Nearly half of the schools have the provision for ability grouping of students in Mathematics and Science. All most all the schools conduct remedial and enrichment programmes in these two subjects.
17. Ability grouping of students in Mathematics and Science has no association with academic performance of students in these subjects.
18. Remedial and enrichment programmes in Science and Mathematics do not contribute for significant improvement of academic performance of students of Goa in these subjects.
19. In all most all the schools of the State, Principals used to observe the practices of teachers. The other methods of teacher evaluation include teacher peer review (83 Percent), Student achievement (94 percent) and observation by inspectors (68 percent). Different methods of assessing practices of teachers are not significantly associated with higher academic attainment of students.
20. Inadequacy/shortage of different facilities/resources/materials affects teaching capacity to some extent and a lot in a substantial number of schools of the State. Shortage/inadequacy of different things affect

teaching – learning process more in schools of North Goa district than in South Goa district.

21. Inadequacy/shortage of different facilities/resources/materials in schools not only adversely affects teaching capacity of the school but also it has significantly negatively affects academic performance of students in all the four subjects under study.
22. Behavioural problems among students never/rarely occur in most of the schools of the State
23. Occurrence of different problem behaviours among students negatively influenced their performance in Science, not in other subjects.
24. Involvement of Science and Mathematics teachers in different professional activities contributes towards improvement of performance of students in these two subjects.

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APPENDIX- A

Composition of the State Level Steering Committee

Sr. No.	Name of the Member	Details of the Member	Designated Role
1	Shri. Minanath T. Upadhye	State Project Director, GSSA	Chairperson
2	Shri. Narendra J. Kamat	State Pedagogy Co-ordinator, GSSA	Member Secretary
3	Smt. Sylvia D.Souza	Asstt. Director of Education, GSSA	Member
4	Smt. Wilma Henriques	Teacher of Mathematics/Headmistress of Mae dos Pobres, High School, Nuvem, Salcete	Member
5	Smt. Genesis D'Silva	Teacher of English /Headmistress of Adarsha V.V. High School, Margao Salcete	Member
6	Smt. Antonette Noronha	Teacher of Science /Headmistress of St. Thomas High School, Cansaulim.	Member
7	Shri/Smt.Sanjiv Dharwadkar	Teacher of Social Science(History)/Headmaster of Saraswat Vidyalay High School Mapusa.	Member
8	Shri Naresh Borkar	Teacher of Social Science (Geography)/Headmaster of Sharada English High School, Marcel Ponda.	Member

9	Shri Nagaraj Honnekeri	Director, SCERT (Academic Authority Representative)	Member
10	Dr. G. C. Pradhan	SCERT (Expert on Research & Evaluation)	Member
11	Nominee of RIE	(Representative of RIE, Bhopal)	Member
12	Dr. Louis Vernal	Ex-Principal of GVM College of Education, Ponda.	Member
13	Shri. J.R. Rebello	Chairman, Goa Board of Secondary and Higher Secondary Education (Representative of State Board of Education)	Member
14	Directorate Of Education	Director of Education, Government Goa, Porvorim.	Member