

# LEARNING DIFFICULTIES IN GEOGRAPHY MAP POINTING SKILLS AMONG SECONDARY STUDENTS IN WEST BENGAL

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*Abstract* : The present study aims at finding out the causes of difficulties in map pointing skills among the class VIII students of Malda District. Descriptive survey method was used by taking the sample of 120 class VIII students of which 60 from CBSE and 60 from WBBSE managed schools. A self developed standardized questionnaire prepared by the researcher to find out difficulties in map pointing skills and an achievement test on the performance of the students' map pointing abilities were adopted to collect data for the study. Statistical methods like t- test mean, standard deviation with related tables and graphs were used for analysis of the data. Collected data were interpreted on the basis of objectives, hypotheses and research questions. Research findings have revealed that students of CBSE and WBBSE schools showed CBSE students opined more learning difficulties compared to the WBBSE students in relation to geographical map pointing skills. Overall performance of CBSE school students are better with compared to WBBSE students regarding the ability in using signs, symbols and colors used in the map. Among the students of both the groups, CBSE school students have performed better with compared to WBBSE students with regard to geographical map pointing skills according to their syllabi in a given particular outline map.

**Keywords** - Map pointing skills, Learning difficulties.

## INTRODUCTION

Map is an important tool for geographers. It helps in understanding the complications of our large size Earth in an easy way. Obviously single person cannot collect all the information of the world himself or herself only. Information about the unseen and distant parts of the world presented in the form of pictures, appear to mind and help to understand the complicated features. 'Map' is derived from a Latin word 'Mappa' meaning a 'Sheet of cloth' say about the size of a handkerchief. In common parlance, it may be defined as a small scale conventional in representation of the earth as seen from above. According to Singh, et al. (1965) it is a picture of a three dimensional curved surface on a two dimensional flat surface. According to Yadav et al., (1975) there is a need to provide opportunities to students to perceive through more than one sensory mode in concrete and abstract forms. Map being visual in form helps in accommodating learning. There are many kinds of maps; political maps, physical maps, topographical maps, climate maps, economic or resource maps, thematic maps. Specific maps generally attempt to represent specific concepts, like political boundaries, physical features, roads, topography, population, climates, natural resources and economic activities. Maps should always help learners to visualize the geographical content. There are important aspects of new curricula in secondary education. In class VIII secondary curriculum particularly in social sciences, geography acquires a good place in curriculum for its vibrant and varied emerging teaching learning scholastic skills. Geography as a school subject is a way of regarding knowledge in an integrated way. According to Long et al., (1966) this integrating function is vital to Geography. The acquisition of geographical skills like enquiry, analysis and synthesis, observation, interpretation, communication, judgment and decision making etc. have enriched geographical intellectual culture in learning academic field. All the skills are more or less related with map reading in practical sense. As Ahluwalia (1969) puts it, maps bring abstract concepts of size, distance and direction into the region of reality. But to use maps, one should develop map skills, which increase the ability to understand maps. We can assume that map pointing is an important sub skill supplementing geographical competency for the lower secondary level high school students. The ability to read and interpret maps is an essential and fundamental geographical ability in class VIII level students. The teaching - learning constructive and innovative practical approach being the essence for geography map pointing skills bear tremendous responsibility for a teacher to nourish the idea for reading maps with the use of colors, symbols and signs with spatial location of places in maps.

## REVIEWS OF THE RELATED LITERATURE

Parakh's (1969) study revealed that developing of map skills can be achieved if teacher offers numerous stimulating opportunities for the pupils to act or behave in a suitable manner. A study by GCPI (1981) suggested that for the improvement of students skills in maps, the remedial measures should include, a good integration of theoretical and practical knowledge regarding the maps and a thorough information and practice of the different signs to show different objects on the map. According to Gerber et al. (1984), ability to understand maps must be cultivated as it is not an inborn skill. This necessitates the production of some material which helps teachers/students to develop map skills which in turn increases their ability to understand map. Olson and Bruner (1976), suggest that educators must be concerned with acquisition of both knowledge and skills, for without skills children cannot easily acquire knowledge nor can they educate themselves. This view is true even with Geography wherein the students should be equipped with skills related to reading of maps, drawing of maps and marking on the maps which can be clustered into 'Map Skills'. It is observed that the learning of map skills of 'scale' and 'direction' (Young, 1952; Bartz, 1965) as well as 'symbols' (Bartz, 1965) and 'layer shading' (Young, 1952) were found to be difficult by the students. It is also observed that majority of the students were not able to mark the given item on the map correctly (GCPI, 1981). This situation may be because of scarce use of maps in the classroom by a large number of teachers (Raina, 1995). There are a number of map skills identified by authors and experts. While Young (1952) identified direction, scale, distance and layer shading but Bartz (1965) identified scale, directions and symbols as necessary skills to use a map at school level. From the above reviews the researcher got the idea about the importance of using maps in school level. Many studies conducted on studying maps and related skills in high school level which resulted in positive importance of the various colors, symbols and signs used in the map. More emphasis has been given by the researcher to develop map skill among the students which in turn lead to understanding of maps. Some studies agree on the use of atlas, map etc. geographical teaching - learning materials for the development of map skills.

## RATIONALE OF THE STUDY

Many studies have been conducted on studying maps and related skills in high school level. Very little research has been conducted on map pointing skills particularly at primary and secondary level. Here the researcher is interested to conduct study on the map pointing skills particularly in using signs, symbols and colors used in map at secondary level. The students belonging to secondary level generally fall in the preadolescent age. Students of this stage generally acquire various skill of learning. So, the skills of using map pointing i.e. signs, symbols and colors understanding are vital from a students' point of view for studying maps. In this stage students face several difficulties in acquiring various skills basing on some internal and external factors. In the same way a student of class VIII also face various difficulties in geographical map pointing skill. So, considering all the aspects and dimensions of skill development, the researcher takes an attempt to find out the causes of learning difficulties in geographical map pointing skills among secondary school students of West Bengal.

## OBJECTIVES OF THE STUDY

- O<sub>1</sub>. To study the causes of difficulties in locating geographical areas in the map among class VIII students of West Bengal.
- O<sub>2</sub>. To study the students' ability in using signs, symbols and colors used in map among class VIII students of West Bengal.
- O<sub>3</sub>. To study the students' achievement in geographical map pointing skills according to their respective syllabus patterns in given particular map among class VIII students of West Bengal.
- O<sub>4</sub>. To study the opinion on the causes of learning difficulties among the CBSE and WBBSE class VIII school students in locating geographical areas in map.
- O<sub>5</sub>. To study the difference among the CBSE and WBBSE class VIII school students regarding ability in using signs, symbols and colors used in map.
- O<sub>6</sub>. To study the difference among the CBSE and WBBSE class VIII students' achievement in geographical map pointing skills according to their respective syllabus patterns in given particular map.

## HYPOTHESES

- H<sub>01</sub>: There is no significant difference among the class VIII students of CBSE and WBBSE schools in learning difficulties of geographical map pointing.
- H<sub>02</sub>: There is no significant difference among the class VIII students of CBSE and WBBSE schools regarding ability in using signs, symbols and colors used in map.
- H<sub>03</sub>: There is no significant difference in achievement of geographical map pointing skills among the class VIII students of CBSE and WBBSE schools according to their respective syllabus patterns in given particular map.

## VI. RESEARCH METHODOLOGY

This section includes population and sample of the study, data and sources of data, method of data collection.

## Population and Sample

Population of the study is whole students of class VIII of West Bengal. The sample of the study was limited to 120 students i.e., 60 from class VIII of WBBSE managed Latit Mohan Shyam Mohini Mohan School of Malda district and other 60 students from CBSE controlled St. Merry High School of same Malda district.

## Method of data collection

The researcher adopted descriptive survey method for data collection.

## Tools and Techniques used

The researcher has adopted the following three tools for collecting data – (i) Self developed questionnaire for measurement of the causes of difficulties in locating geographical areas in the map (ii) Self developed questionnaire for achievement in map pointing skills (iii) Physiographic map of India for measurement of the students' achievement in geographical map pointing skill according to their syllabus.

## Data and Sources of Data

For this study primary data has been collected from this subject with the help of self developed questionnaires on learning difficulties in geography map pointing skills and achievement test on map pointing skills.

## Statistical Technique

The researcher used the statistical techniques percentage, mean, standard deviation (SD), t-test with appropriate tables for analyzing and interpretation of the data collected for the study.

## ANALYSIS & INTERPRETATION OF DATA

O<sub>1</sub>: To find out the causes of difficulties in locating geographical areas in the map.

A number of factors are there which may be treated as causing factors of locating geographical areas in the map as viewed by the researchers. Each factor may have teacher centered, teaching - learning environment centered or learner centered in origin. Here the researcher has identified 15 factors basing on the above three origin which are represented along with opinion through the following graph.

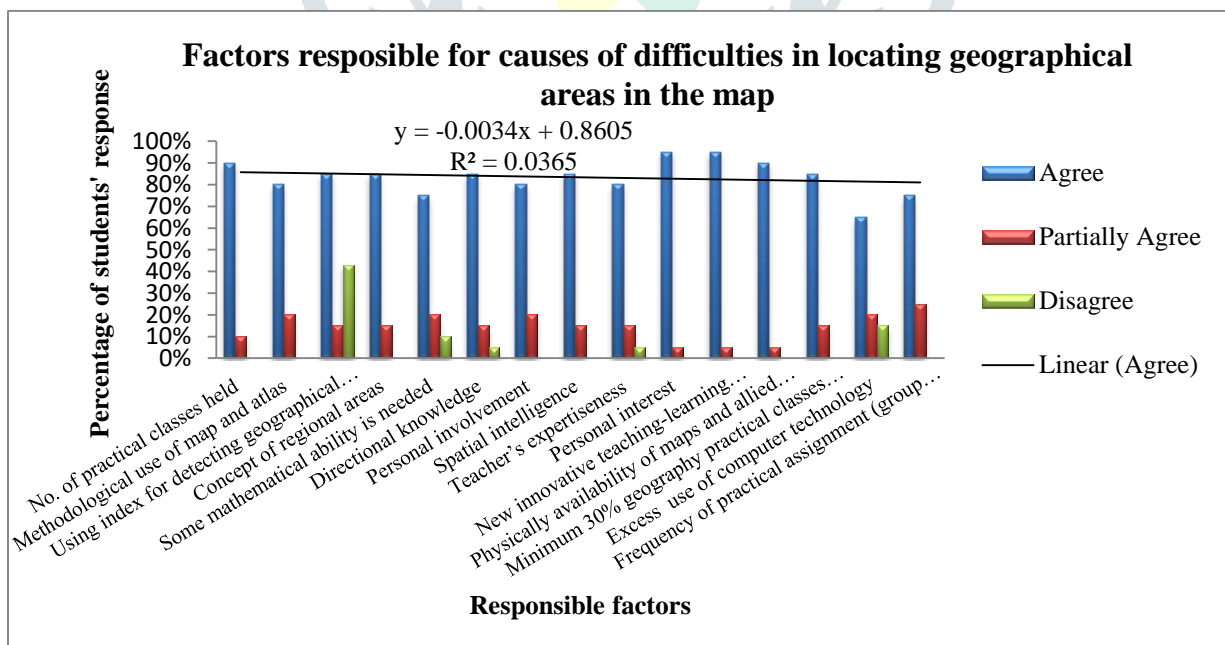


Chart No. 1: Factors responsible for causes of difficulties in locating geographical areas in the map.

For survey regarding the causes of difficulties in locating geographical areas in the map, the researcher has considered 15 factors, such as (i) No. of practical classes held (ii) Methodological use of map and atlas (iii) Using index for detecting geographical features (iv) Concept of regional areas (v) Some mathematical ability (vi) Directional knowledge(vii) Personal involvement of students (viii) Spatial intelligence of students(ix) Teachers' expertiseness (x) Personal interest in geography subject(xi) New innovative teaching - learning technology in geography practical classes(xii) Physical availability of maps and allied learning items(xiii) Minimum 30% geography practical classes on map study(xiv) Excessive use of computer technology(xv) Frequency of practical assignment (group or individual). The researcher has collected data on three degrees of opinions that are agree, partially agree and disagree. More than 90% subjects have agreed on new innovative teaching-learning technology in geography practical classes, physical availability of maps and allied learning items and minimum 30% geography practical classes on map study as the causes of learning difficulties in geographical map pointing skills.

.O<sub>2</sub>: To study the students' ability in using signs, symbols and colors used in map.

The results are based on the achievement test result of the students' ability in using signs, symbols and colors used in map, the students have good knowledge about signs compared to using symbols and colors. The students obtained 52% score in using signs wherever in case of using colors students' performance was signs whereas at symbols it was 30%. In order to use symbols students performance were not so good but they were comparatively good than using colors. The majority of students perform better in case of using signs in map which may be due to easiness in identifying the sign language.

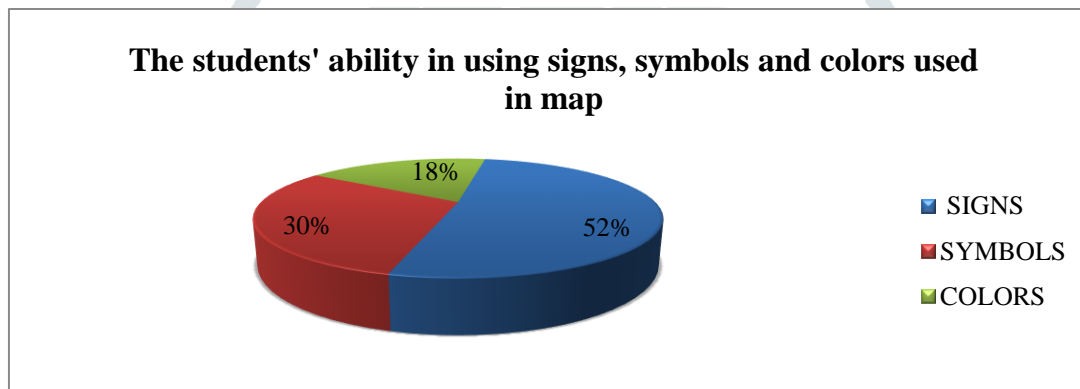


Chart No.2: The students' ability in using signs, symbols and colors used in map.

O<sub>3</sub>: To study the students' achievement in geographical map pointing skills according to their respective syllabus patterns.

The researcher studied this objective with the help of the achievement results through the following graph. From the graph it is clear that students' achievement in geography map pointing skills basically depends on their respective syllabus patterns.

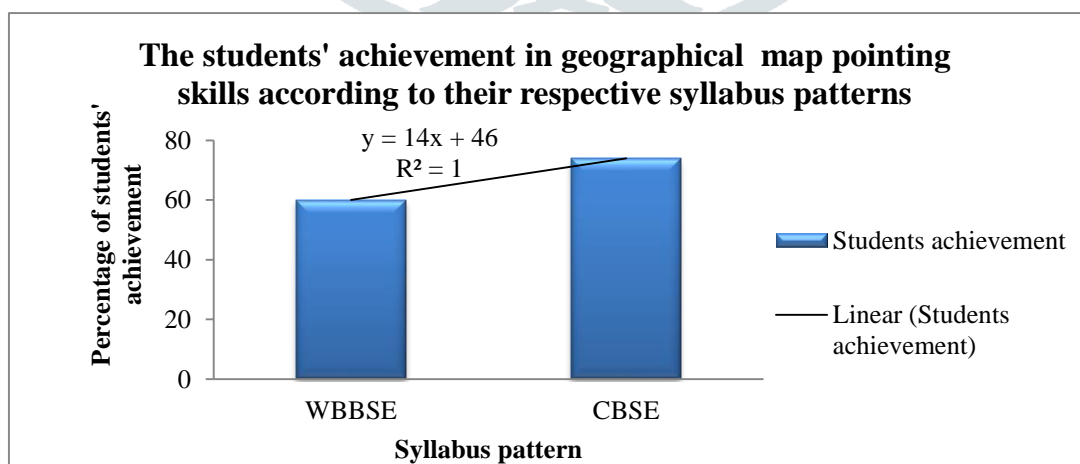


Chart No. 3: The students' achievement in geographical map pointing skills according to their respective syllabus patterns.

So basing on the research data collected using achievement test held on the students of WBBSE and CBSE board. Students of CBSE board have earned high score than the WBBSE board. The main reason lies with their syllabus and importance of geography practical classes. The WBBSE students obtained 60% marks compare to 74% marks of CBSE students.

O4: To study the opinion on the causes of learning difficulties among the CBSE and WBBSE class VIII school students in locating geographical areas in map.

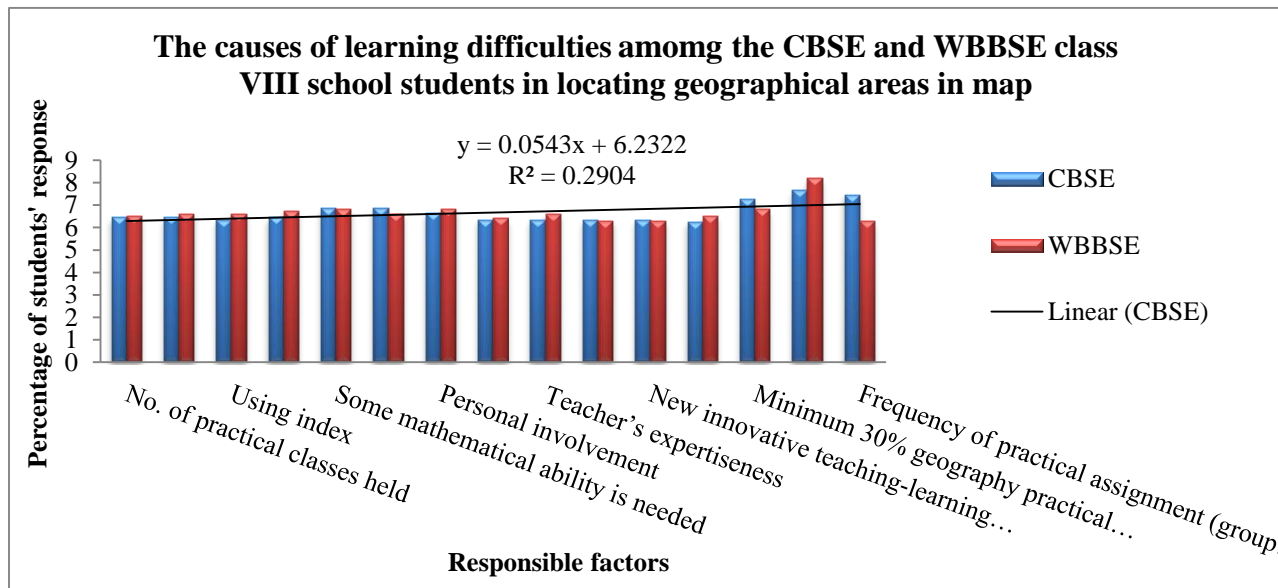


Chart No. 4: The causes of differences among the CBSE and WBBSE class VIII school students in locating geographical areas in map.

From the graph it is clear that the opinions of total 120 students are not deviating to a great extent. Opinion of both CBSE and WBBSE students are equal to some extent particularly on causes (i) No. of practical classes held (ii) Methodological use of map and atlas (iii) Using index for detecting geographical features (iv) Concept of regional areas (v) Some mathematical ability (vi) Directional knowledge (vii) Personal involvement of students in geography subject related activities (viii) Spatial intelligence of student (ix) Teacher's expertisness (x) Personal interest in geography subject (xi) New innovative teaching-learning technology in geography practical classes (xii) Physical availability of maps and allied learning items opinion of both groups are little deviating. In factors like (xiii) Minimum 30% geography practical classes on map study (xiv) Excessive use of computer technology their opinion little more deviated and in factor (xv) Frequency of assignment (group or individual) the opinion is more deviating.

H<sub>01</sub>: There is no significant difference among the class VIII students of CBSE and WBBSE schools in learning difficulties of geographical map pointing.

**Table 1: Difference among the class VIII students of CBSE and WBBSE schools in learning difficulties of geographical map pointing**

Variable	Group 1 (WBBSE)		Group 2 (CBSE)		Levene's Test for Equality of Variances		t-test for Equality of Means			Remarks
	Mean	SD	Mean	SD	F	Sig.	t	df	Sig.(2-tailed)	
Learning Difficulties	43.20	2.711	44.22	1.121	5.588	0.020	-2.684	118	0.008	Significant

(\*Significant at 0.05 level of significance)

To test the equality of variance Levene's F statistics was calculated and it was found that F = 5.588 and P = 0.020 (P < 0.05) for group variance, so equal variance can be assumed for the case. Table 4.2 also shows that in case of comparing mean score of WBBSE and CBSE school students the calculated t<sub>(118)</sub> value is 2.684 and p = 0.008 (p < 0.05). Hence 't' is significant at 0.05 level of significance. So, the null hypothesis is rejected and it can be concluded that there is statistically significant difference among the class VIII students of CBSE and WBBSE schools in learning difficulties in geographical map pointing ability.

O<sub>5</sub>: To study the difference among the CBSE and WBBSE class VIII school students regarding ability in using signs, symbols and colors used in map.

From the graph it is clear that in case of ability in using signs, the difference of the option of both the groups is not so high. The CBSE students' average signs performance is 55 where it is 50 in WBBSE school students.

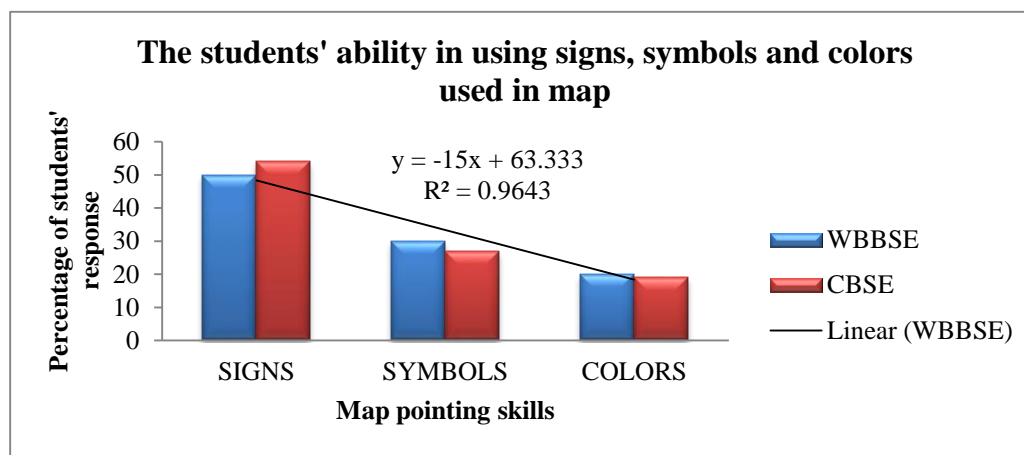


Chart No. 5: The students' ability in using signs, symbols and colors used in map of two different Boards of students.

In case of ability in using symbols, both the groups CBSE and WBBSE have little difference. In case of ability in using colors it is clear that WBBSE students have little better performance compared to that of CBSE students.

H<sub>02</sub>: There is no significant difference among the class VIII students of CBSE and WBBSE school students regarding ability in using signs, symbols and colors used in map.

**Table 2: Difference among the class VIII students of CBSE and WBBSE schools regarding ability in using signs used in map**

Variable	Group 1 (WBBSE)		Group 2 (CBSE)		Levene's Test for Equality of Variances		t-test for Equality of Means			Remarks
	Mean	SD	Mean	SD	F	Sig.	t	df	Sig.(2-tailed)	
Signs	2.917	1.5103	3.900	0.8772	7.129	0.009	-4.361	118	0.000	Significant

(\*Significant at 0.05 level of significance)

To test the equality of variance Levene's F statistics was calculated and it was found that  $F = 7.129$  and  $P = 0.009$  ( $P < 0.05$ ) for group variance, so equal variance can be assumed for the case. Table 4.3 also shows that in case of comparing mean score of WBBSE and CBSE school students the calculated  $t_{(118)}$  value is 4.361 and  $p = 0.000$  ( $p < 0.05$ ). Hence, 't' is significant at 0.05 level of significance. So, the null hypothesis is rejected and it can be concluded that there is statistically significant difference among the class VIII students of CBSE and WBBSE schools regarding ability in using signs used in map.

**Table 3: Difference among the class VIII students of CBSE and WBBSE schools regarding ability in using symbols used in map**

Variable	Group 1 (WBBSE)		Group 2 (CBSE)		Levene's Test for Equality of Variances		t-test for Equality of Means			Remarks
	Mean	SD	Mean	SD	F	Sig.	t	df	Sig.(2- tailed)	
Symbols	1.750	1.0676	2.250	1.3608	0.711	0.401	- 2.239	118	0.027	Significant

(\* Significant at 0.05 level of significance)

To test the equality of variance Levene's F statistics was calculated and it was found that  $F = 7.11$  and  $P = 0.401$  ( $P > 0.05$ ) for group variance, so equal variance cannot be assumed for the case. Table 4.4 also shows that in case of comparing mean score of WBBSE and CBSE school students the calculated  $t_{(118)}$  value is 2.239 and  $p = 0.027$  ( $p < 0.05$ ). Hence, 't' is significant at 0.05 level of significance. So, the null hypothesis is rejected and it can be concluded that there is statistically significant difference among the class VIII students of CBSE and WBBSE schools regarding ability in using symbols used in map.

**Table 4: Difference among the class VIII students of CBSE and WBBSE schools regarding ability in using colors used in map**

Variable	Group 1 (WBBSE)		Group 2 (CBSE)		Levene's Test for Equality of Variances		t-test for Equality of Means			Remarks
	Mean	SD	Mean	SD	F	Sig.	t	df	Sig.(2- tailed)	
Colors	1.167	1.0603	1.267	1.3761	1.835	0.178	- 446	118	0.657	Not significant

(\*Not significant at 0.05 level of significance)

To test the equality of variance Levene's F statistics was calculated and it was found that  $F = 1.835$  and  $P = 0.178$  ( $P > 0.05$ ) for group variance, so equal variance cannot be assumed for the case. Table 4.5 also shows that in case of comparing mean score of WBBSE and CBSE school students the calculated  $t_{(118)}$  value is 0.446 and  $p = 0.657$  ( $p > 0.05$ ). Hence, 't' is not significant at 0.05 level of significance. So, the null hypothesis is not rejected and it can be concluded that there is statistically no significant difference among the class VIII students of CBSE and WBBSE schools regarding ability in using colors used in map.

O<sub>6</sub>: To study the difference among the CBSE and WBBSE class VIII students' achievement in geographical map pointing skills according to their respective syllabus patterns in given particular map.

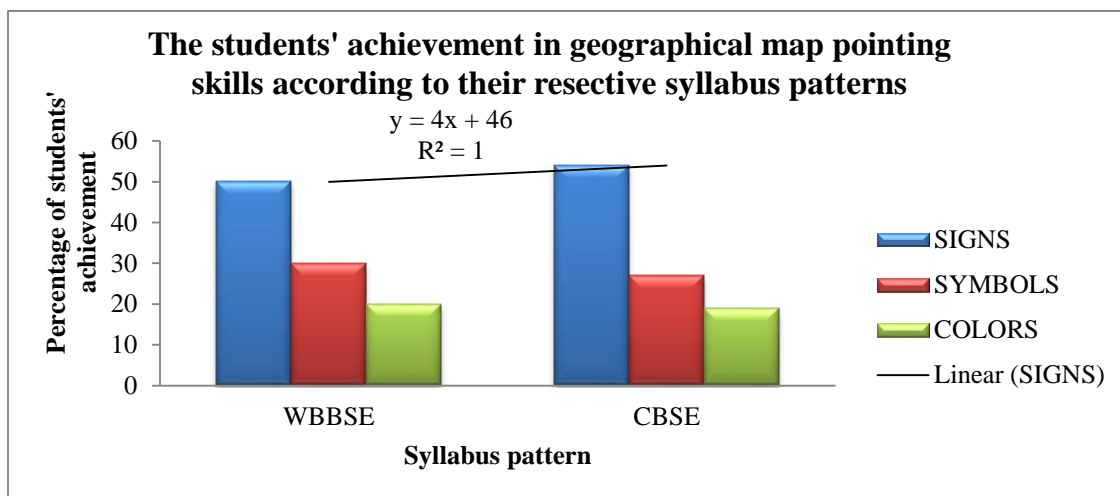


Chart No. 6: The students' achievements in geographical map pointing skills according to their respective syllabus patterns.

From the above graph it is clear that the appropriate use of signs, symbols and colors of WBBSE students are 50%, 30% and 20% where the CBSE students are 54%, 27% and 19%. So, it is clear that both the groups differ significantly in their achievement of map pointing skills. This difference in achievements of both the groups may be due to the students' level of acquiring the skills like appropriate use of signs, symbols and colors used in the map. Generally the use of signs, symbols and colors used in the map are well known to all the students while going through the syllabus. It may be clearly stated that the syllabus of CBSE group contain good emphasis on the practical use of signs, symbols and colors used in the map.

$H_03$ : There is no significant difference in achievement of geographical map pointing skills among the class VIII students of CBSE and WBBSE schools according to their respective syllabus patterns in given particular map.

**Table 5: Difference in achievement of geographical map pointing skills among the class VIII students of CBSE and WBBSE schools according to their respective syllabus patterns in given particular map**

Variable	Group 1 (WBBSE)		Group 2 (CBSE)		Levene's Test for Equality of Variances		t-test for Equality of Means			Remarks
	Mean	SD	Mean	SD	F	Sig.	t	df	Sig.(2-tailed)	
Achievement Score	5.833	2.8887	7.417	2.9475	0.026	0.873	- 2.972	118	0.04	Significant

(\* Significant at 0.05 level of significance)

To test the equality of variance Levene's F statistics was calculated and it was found that  $F = 0.026$  and  $P = 0.873$  ( $P > 0.05$ ) for group variance, so equal variance cannot be assumed for the case. Table 4.6 also shows that in case of comparing mean score of WBBSE and CBSE school students the calculated  $t_{(118)}$  value is 2.972 and  $p = 0.004$  ( $p < 0.05$ ). Hence, 't' is significant at 0.05 level of significance. So, the null hypothesis is rejected and it can be concluded that there is statistically significant difference in achievement of geographical map pointing skills among the class VIII students of CBSE and WBBSE schools according to their respective syllabus patterns in given particular map.

## MAJOR FINDINGS

After going through the systematic data collection and the data analysis, the finding of the study were -

1. The causes of learning difficulties of both CBSE and WBBSE school students of class VIII are found to be same.
2. Among all the students a large number of students responded correctly in using signs, compared to using symbols and colors.
3. In map pointing skills CBSE board students performed a little better compare to WBBSE.



4. In overall performance, the CBSE school students performed better in map pointing skill compared to the WBBSE students as the syllabus of CBSE course bears more importance on map pointing skills.
5. CBSE and WBBSE students differ to a great extent in their opinion as the causes of difficulties in locating geographical areas in the map are causes like physical availability of teaching learning material and sufficient no. of teaching material in class, excessive use of computer technology and frequency of group or individual assignment by the teacher.
6. WBBSE and CBSE school students show a little difference in ability in using signs and symbols in map.
7. Computed results indicate CBSE school students perform better in comparison to that of WBBSE students with respect to the map pointing skills i.e. skills of using signs, symbols and colors.

## CONCLUSION

At the end of research, conclusion was drawn regarding the different aspects of students map pointing skills i.e. signs, symbols and colors, causes of difficulties in map pointing skills, differences in opinion in causes of difficulties in map pointing skills the reasons for the difficulties in map pointing skills in basically fifteen points. These problems are generally varied based on school environment, students' intelligence, parental guidance etc while comparing the causes of difficulties among students of CBSE board and WBBSE board schools. The researcher find out that there is statistically significant difference among the class VIII CBSE and WBBSE run school students in locating geographical areas in map. Another finding was that there is a statistically significant difference between using signs and symbols and no significant difference in using colors among CBSE and WBBSE students. Therefore the conclusion may be drawn that the causes of learning difficulties in map pointing skills may be taken care of strictly by the subject teachers. Adequate teaching learning materials may be provided to the school for improvement in map pointing skills among the students particularly from the upper primary level. The map pointing skills development in WBBSE schools has not been given proper emphasis in course curriculum. So, special emphasis must be given in these aspects. The WBBSE schools teachers are less concerned with the map pointing skills nourishment of the students. So, they should be serious enough for this matter. Apart from the discussion of all causes of difficulties in map pointing skills, there are also invisible causes of learning difficulties which must be pointed out by the teacher and this should be taken into the consideration by the geography teachers.

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