CHAPTER-III

RESEARCH METHODOLOGY

3.1 Introduction:

According to PM Cook "Research is an honest intelligent searching for facts and their meaning or implications with reference to given problem. It is the process of arriving at dependable solutions to problems through planned and systematic collection, analysis and interpretation of data". The purpose of research, according to Koul (2009), is to use a scientific approach to find meaningful answers to questions regarding phenomena or events. All research needs to have a solid understanding of methodology.

The research challenge can be addressed methodically using research methodology. Designing the research process using appropriate research methods is one of the many aspects of research methodology (Kothari 2005, p.8). Explaining how the researcher will attempt to get answers to the research questions is an important phase in every research investigation. A researcher formulates the methodology for any study with the objective of constructing and adopting a research method that is based on some logical reasons that are in consonance with the context of research work. It helps the researcher in getting maximum information about the research area with less effort,time and money(Prabhat 2015). Thus research methodology is a technique involving research design and statistical design.

This chapter presents the details of the processes followed in collecting data to achieve the objectives of the present study. It discussed the method and procedure with which the study was conducted. It describes the population and sample, tool used and their administration and statistical measurement to analyze the data procured. A brief description of the methodology and procedure followed in the present study is given in this Chapter. It mainly deals with the following major aspects:

3.2. Research Method:

For the study quantitative method has been adapted through collection of numerical data and execution of statistical techniques. In order to accurately analyse the results and characterise the current situation of the study the researcher used the descriptive

survey approach. The primary goal of a descriptive study is to describe what is common in relation to the subject or problem being investigated (Kumar 2011, p.30). It involves generalisation, categorization, measuring, comparing, interpretation, comparison, and evaluation. The descriptive survey approach focuses on learning about and describing items that are relevant to the current circumstances. Descriptive research is thus a sort of research that is primarily concerned with the nature or conditions and level of detail of the current events, according to Landman (1988).An attempt is made to systematically depict a scenario, problem, phenomena, service, or plan in a descriptive study. It may also provide information on, for example, the life conditions of a community or reflect attitudes towards a problem. The primary goal of a descriptive study is to characterise what is common in relation to the subject or problem being investigated (Kumar 2011, p.30).

3.3 Area of the study:

The present study has been carried out in the state of Assam which is situated in the eastern part of India. Assam is the single largest tea-growing region in the world. The state of Assam has 35 districts, but tea gardens are not found in all the districts. So, the researcher has selected four districts which have highest number of tea gardens producing massive amount of tea, theses districts are namely, Dibrugarh, Jorhat, Sivasagar and Sonitpur. As the study focused only the tea garden labourers, hence, the districts which have more no of tea garden labourers have been selected to represent the entire state.

Dibrugarh: Dibrugarh in Upper Assam is very famous for its sprawling tea gardens. It serves as the headquarters of Dibrugarh district in the state of Assam in India. Dibrugarh is known as the Tea City of North-East. Dibrugarh offers the opportunity to experience a life in tea estates. With its diversity in tea, the plantation produces an impressive amount of tea. In Dibrugarh, there are 144 tea gardens in total. For those working there, the tea estates are an important source of income.

 Jorhat: The hub of the tea industry, Jorhat is renowned for its vast tea estates. The renowned Tocklai Research Centre is located in Jorhat. Research is being done here to discover novel tea varietals and the therapeutic properties of green tea. The area has developed into one of the largest tea-growing belts in the

world, producing more than 400 million kg of tea annually. 2,16,2000 hectares of land are devoted to tea estates in Assam. For this concoction, more than 100 tea farms are used. In the domestic market, Assam tea is fairly well-liked.

Sivasagar: Sivasagar District, which spans an area of 2668 square kilometres in the Indian state of Assam, is renowned for its abundant biodiversity. Sivasagar's population in 2011 was 1,150,253, according to the Indian census. In terms of population, it comes in at position 406 out of 640 in India. Sivasagar has an 81.36% literacy rate with a sex ratio of 951 females to every 1000 males. Out of the 1.2 lakh small tea planters in the state, 10116 are located in Sivasagar alone. Tea is Sivasagar's greatest offering to the world. Some of the world's most expensive and premium teas are produced there. Today, Sivasagar is a significant hub for the oil and tea industries.

Sonitpur: One of Assam's top regions for growing tea is Sonitpur District, where the number of small tea planters is expanding at a highly apparent and rapid rate. Assam's Sonitpur area is home to numerous tea gardens. The Sonitpur area of Assam is home to the largest tea garden in all of Asia. In this district right now, there are more than 73 tea gardens. Sonitpur district likely has one of the highest concentrations of tea labourers in the nation.

Map 3.1: Main Tea garden regions in Assam
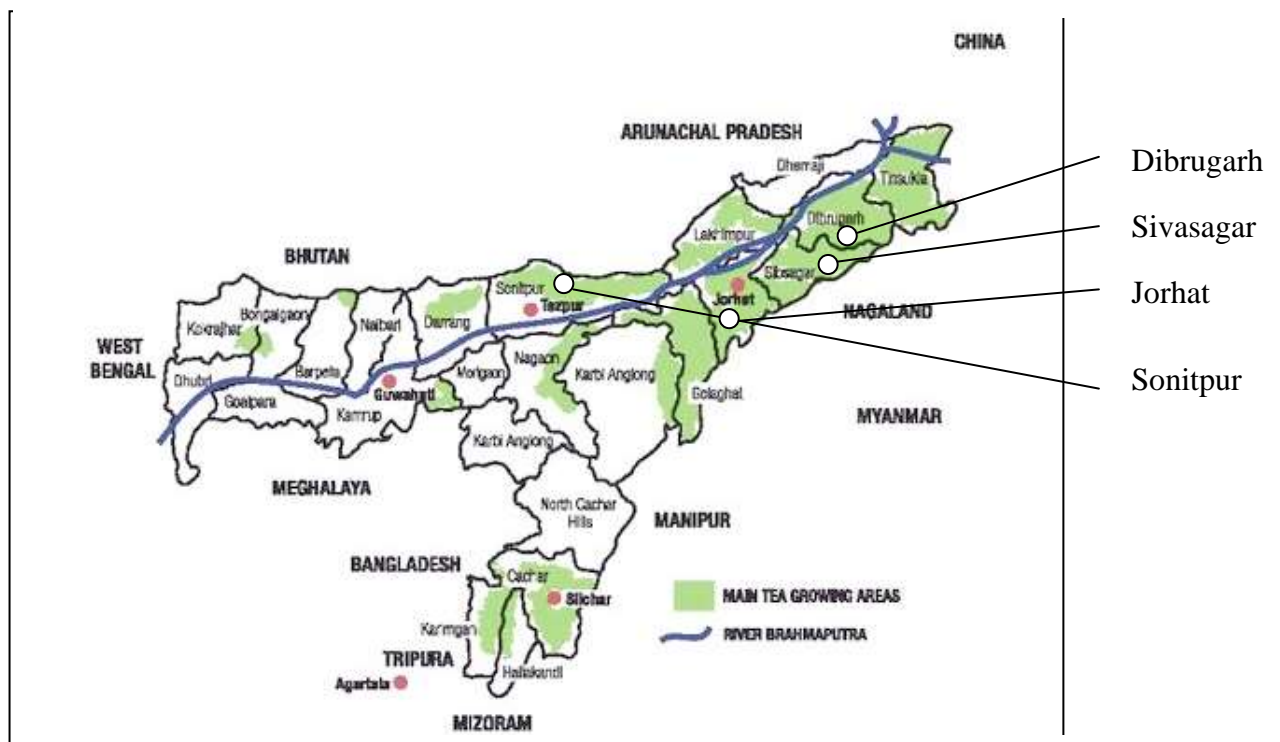
Source: Assam Tea Estates –The daily Tea (Bolton, 2013)
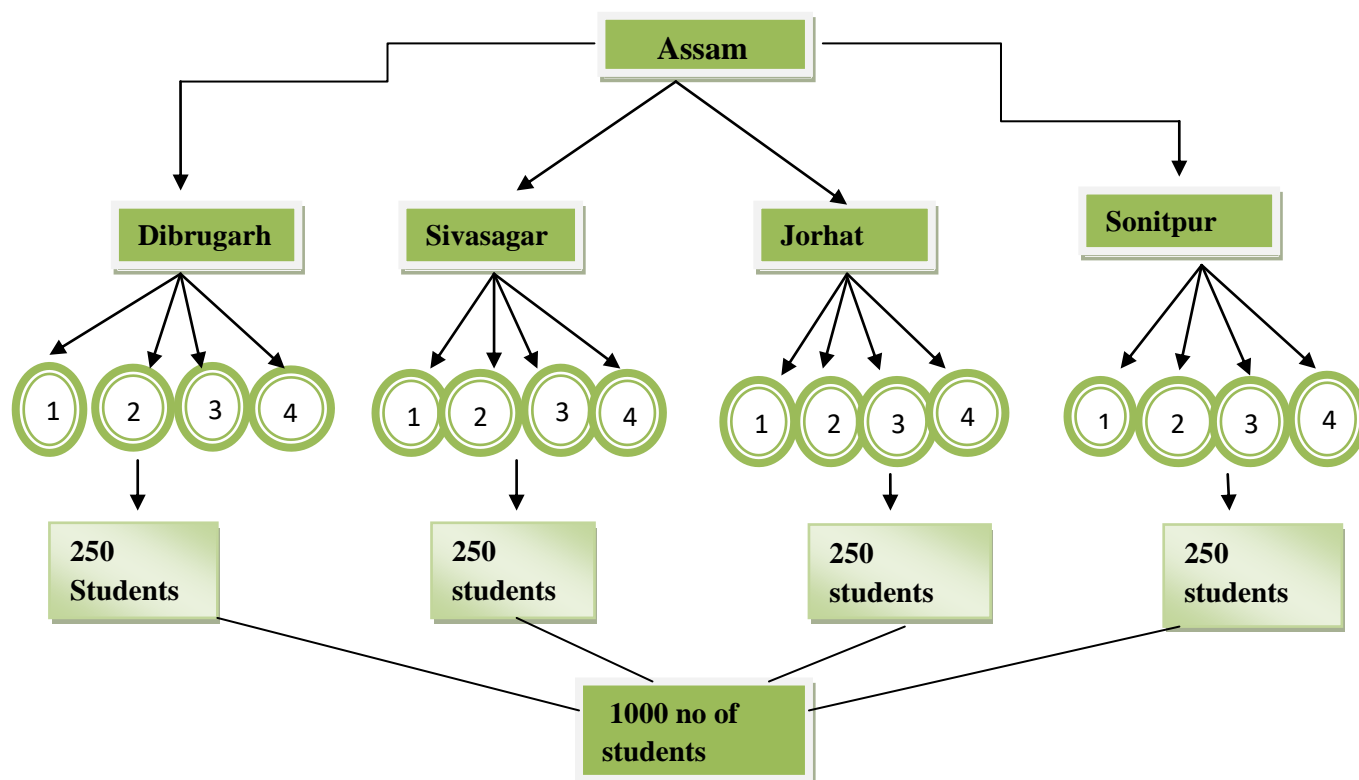
3.4. Population:

Any collection of people with a common trait or traits that are of interest to the researcher constitutes a population. All members of a specific type of person may be involved, or only a small portion of that group (Best, 1977). In the present study the secondary schools of Assam which comprising the children of tea garden labourers at secondary level school of Assam have been considered as the Population.

3.5. Sample and sampling technique:

A sample is a discrete group of people who have been chosen for examination and observation. It is possible to observe certain patterns and draw conclusions about the sample's demographic characteristics. A sample design is an established strategy for selecting a sample from a certain population. It alludes to the method or process the researcher would use while choosing the items for the sample. In the present study the researcher has used multistage random sampling technique to select the sample.

In the present study, children of tea garden labourers at secondary level under SEBA (Board of Secondary Education) have been selected. As the total no of children of tea garden labourers who are at secondary level schools (Class IX & X) in Assam are not known, so the researcher has determine the desired size of sample i.e. 1000 students to represent the community from the sampled districts (i.e. 250 students are selected randomly from four schools of each district). The detail of distribution of sample is shown in table 3.2. In *the first stage*, the researcher has selected 4 districts of the state namely; Dibrugarh, Sivasagar, Jorhat and Sivasagar, having more number of tea gardens; in *the second stage*, 4 numbers of secondary schools have been selected keeping in mind the no of tea tribe students studying in those school, and *in the third stage* the researcher has selected 250 students randomly (Class IX & X) from each district to fulfill the desired sample size. The details of the sample are given below in Table No.3.1.

Figure 2.0 Stages of Sample selection

Assam

Dibrugarh Sivasagar Jorhat Sonitpur

1 2 3 4   1 2 3 4   1 2 3 4   1 2 3 4

250 Students   250 students   250 students   250 students

1000 no of students

Table 3.1: Number of Students Selected for Sample from each school

Districts	Selected Schools	Number of selected students	Total sample of each district
Dibrugarh	1.R.C.Agarwalla H.S. School	63	250
	2.Moran Public High School	62	
	3.Chakalia High school	63	
	4.Bamunbari High school	62	
Sivasagar	1.Athkhel Mazdoor High school	54	250
	2.Galakey High school	64	
	3.Athabari High school	68	
	4.Rajmai High school	64	
Jorhat	Bandorchalia High school	67	250
	Kharikatia High school	60	
	Birinasayek High school	63	

District	School		
	Gatanga High school	60	
Sonitpur	Kadamtal H.E.school	65	250
	Panipota High school	58	
	Borjuli High school	64	
	Sri Sri Shankardev High school	63	
		Total Sample	1000

Schools Source: Office of the Inspector of Schools, Selected Districts, Assam

Table 3.2: Showing Sample's Distribution According to Demographic Information of students.

Gender			
District	Boys	Girls	Total
Dibrugarh	125	125	250
Sivasagar	125	125	250
Jorhat	125	125	250
Sonitpur	125	125	250
Total	500	500	1000

3.6. Tools used for the study:

The purpose of this research was to observe the factors influencing the academic achievement of secondary level school children of tea garden labourers. So to fulfill the objectives and the hypotheses formulated in the research in a quantitative approach the following research tools are used:

3.6.1   Parental Involvement scale:

Parental involvement in a child's education starts at home, where parents provide a good example for their children by providing a safe and healthy environment, suitable learning opportunities, encouragement, and a positive outlook on school. Parent involvement is when parents cooperate to support their children' learning and academic goals. It is increasingly recognised that parents play a crucial role in

creating schools that offer children a nurturing and secure atmosphere. Parents play a variety of complex roles in the growth of their children's general interests, wellbeing, discipline, interpersonal relationships, leisure activities, student achievement, and career goals. Activities that take place at school between parents and their children or between parents and teachers that may help the child develop and flourish academically.

According to Epstein (2001), parents who are interested and educated about their children' education can have a favourable effect on how well their children conduct and performance. The scale is intended to measure how secondary school students view their parents' involvement.

3.6.1.1 Construction and Validation of Scale:

(i)Planning of the scale:

Initially the researcher had gone through many existing literature related to the area of research. For the purpose, the researcher have browsed various websites and analyzed the literatures available on sources like national and international journals, books, reports, etc; critically for developing a theoretical background for the tools to be prepared .So, at first towards the construction of the parental involvement scale, researcher decided to consider five-point likert scale. Likert scale is a technique developed to meet the quantification of traits like ability, perception, qualities and outlooks.

(ii) Item writing: Consulting the previous literatures and journals the next step was item writing that was done by the researcher. Awareness of social and cultural background was taken into consideration while writing the items. Sixty two items were formulated with five-point scaling indicating involvement of parents of secondary level school students. The items were then scrutinized by the investigator and the supervisor to eliminate bias, duplication, complexity and ambiguity in expression or style.

Now remaining fifty items were translated to assamese with the help of language experts. The statements were then finalized with discussion with the supervisor.

(iii)Expert opinion: In the next step, experts from education background were requested to check whether these items were measuring all aspects of perceived parental involvement or not and were also asked to give suggestions about the test

items. After the expert opinions, some modifications were incorporated and 45 items were retained according to the suggestions given. Keeping in mind the suggestions given by the experts, the scale was measured using a 5-point Likert scale type, each item is provided with five options i.e.,Strongly Agree/Agree/ Undecided/ Disagree/Strongly Disagree. The scoring of the scale is Strongly Agree(4)/Agree(3)/ Undecided(2)/ Disagree(1)/Strongly Disagree(0) for the positive items. For the negative items the scoring of the scale is reversed, that is Strongly Agree(0)/Agree(1)/ Undecided(2)/ Disagree(3)/Strongly Disagree(4).

(iv)Try-out: The try-out was done on 50 secondary level students which were selected randomly from four schools. Scales were individually administered on secondary school students. Statements that were challenging and needed clarification were noted in depth during this stage. Also, an average estimate of how long it took each student to finish the scale was discovered. Following the administration of the scale to students for the purpose of piloting, their feedback and comments were addressed with the supervisor, and the following improvements to the scale were made as a result of their suggestions.

(v) Item analysis: Item-analysis is a very important step in standardization of a research tool. Item analysis refers to the process of statistically analysing assessment data to evaluate the quality and performance of your test items. The response of the 100 Secondary Students was scored and the highest scores and lowest scores items (i.e.,27% of the highest scores and 27 % of the lowest scores) was analysed by using t-value. With the level of significance at .05 level, 37 items were found to be significant. The items which are not significant are removed and 37 items are selected for the final draft of the Parental involvement scale.

Table 3.3: Item analysis of the Parental Involvement Scale:

Item No	t value	P value	Remark
1	7.905	<0.001	Selected
2	3.918	<0.001	Selected
3	12.111	<0.001	Selected
4	-1.729	0.094	**Not Selected**
5	10.279	<0.001	Selected
6	9.909	<0.001	Selected

7	8.78	<0.001	Selected
8	7.814	<0.001	Selected
9	10.888	<0.001	Selected
10	11.384	<0.001	Selected
11	6.136	<0.001	Selected
12	11.145	<0.001	Selected
13	7.039	<0.001	Selected
14	8.433	<0.001	Selected
15	17.252	<0.001	Selected
16	9.604	<0.001	Selected
17	-0.877	0.387	Not Selected
18	-3.426	0.002	Selected
19	8.295	<0.001	Selected
20	9.22	<0.001	Selected
21	0.344	0.733	Not Selected
22	3.475	0.002	Selected
23	9.903	<0.001	Selected
24	5.209	<0.001	Selected
25	11.18	<0.001	Selected
26	9.487	<0.001	Selected
27	6.497	<0.001	Selected
28	4.248	<0.001	Selected
29	-1.048	0.303	Not Selected
30	-0.454	0.653	Not Selected
31	-3.796	0.001	Selected
32	9.264	<0.001	Selected
33	-3.25	0.003	Selected
34	4.939	<0.001	Selected
35	-3.565	0.001	Selected
36	9.303	<0.001	Selected
37	1.98	0.057	Not Selected
38	9.002	<0.001	Selected
39	8.572	<0.001	Selected
40	1.9	0.067	Not Selected

41	10.932	<0.001	Selected
42	8.179	<0.001	Selected
43	-3.835	0.001	Selected
44	1.291	0.207	**Not Selected**
45	9.368	<0.001	Selected

From the table it is clear that t value for the item number 1,2,3,5,6,7,8,9,10,11,12,13,14,15,16,18,19,20,22,23,24,25,26,27,28,29,31,32,33,34,35 ,36,38,39,41,42,43,45 are significant at the level of significant. Thus, total of 37 items were kept for the final scale.

3.6.1.2 Scoring of the scale:

The Parental Involvement Scale comprises 37 items with 31 positive items and 6 negative items. Responses to the inquiries can be made by selecting from the following options: Always, Frequently, Occasionally, Rarely, or Never.

Table 3.4: Scoring pattern of Parental Involvement Scale

Type of Statements	Always	Often	Sometimes	Seldom	Never
Positive Statements	4	3	2	1	0
Negative Statements	0	1	2	3	4

3.6.1.3 Reliability of the scale:

Test retest reliability co-efficient of correlations were worked out in order to see the consistency of the scores yielded by Parental Involvement Scale. The tool was worked out on 50 students (both girls and boys) randomly from secondary level schools in the tea garden areas of Sonitpur(Assam). The time gap was about a week for getting the retest scores. The correlation co-efficient between the two administrations of the Parental Involvement was found to be 0.81.

3.6.1.4 Internal consistency:

For finding out the internal consistency of the Parental involvement Scale,the Cronbach Alpha was used and it was found to be 0.78.

3.6.1.5 Establishing Validity of the scale:

Validity refers to what extent a test measure what is purports to measure. Validity may also be term as the truthfulness of a test. For the Parental Involvement scale, the face validity was established on the basis of the criticisms and judgement of the judges who evaluated the items, for the relevance of the item with the objectives of the theoretical rationale built for scale.

3.6.1.6 Establishing Norms of the scale:

For the interpretation of the scores of Parental Involvement Scale norms are presented. Percentile Norms refers to the distribution of scores of a test in a representative sample which provide us the standard frame with which we can compare the individual scores (Chien and Yao, 2014). Norms represent the test performance of the standardization sample In order to establish norms of the scale, the researchers has used Z Score norms. The z-score can be used to determine the probability of being above or below a given data point. Brock referred Z score norms as the transformation of individual raw scores into a standard form where transformation is based on the knowledge about the sample's mean and standard deviation. For the purpose of interpretation of the raw scores received from the scale, the statistical calculations were done to find out the Mean and Standard Deviation so that norms could be prepared. The Mean and Standard Deviation are:

Mean: 89.0   **SD: 15.6**   **N:** 50

On the basis of the above statistics, z-score norms prepared which are given in Table 3.5 and Norms for interpreting the levels of Parental Involvement

Table 3.5: Z-score Norms for level of Parental Involvement Scale

Raw Score	Z Score	Raw Score	Z Score	Raw Score	Z Score	Raw Score	Z Score	Raw Score	Z Score
37	-3.33	50	-2.50	63	-1.66	76	-0.83	89	0.00
38	-3.26	51	-2.43	64	-1.60	77	-0.77	90	0.06

39	-3.20	52	-2.37	65	-1.54	78	-0.71	91	0.13
40	-3.13	53	-2.30	66	-1.47	79	-0.64	92	0.19
41	-3.07	54	-2.24	67	-1.41	80	-0.58	93	0.25
42	-3.01	55	-2.18	68	-1.34	81	-0.51	94	0.32
43	-2.94	56	-2.11	69	-1.28	82	-0.45	95	0.38
44	-2.88	57	-2.05	70	-1.22	83	-0.39	96	0.44
45	-2.81	58	-1.98	71	-1.15	84	-0.32	97	0.51
46	-2.75	59	-1.92	72	-1.09	85	-0.26	98	0.57
47	-2.69	60	-1.86	73	-1.03	86	-0.19	99	0.64
48	-2.62	61	-1.79	74	-0.96	87	-0.13	100	0.70
49	-2.56	62	-1.73	75	-0.90	88	-0.07	101	0.76

111	1.40	140	3.26	170	5.17
112	1.47	141	3.32	171	5.24
113	1.53	142	3.39	172	5.30
114	1.60	143	3.45		
115	1.66	144	3.51		
116	1.72	145	3.58		
117	1.79	146	3.64		
118	1.85	147	3.70		
119	1.91	148	3.77		
120	1.98	149	3.83		
121	2.04	150	3.90		
122	2.11	151	3.96		
123	2.17	152	4.02		
124	2.23	153	4.09		
125	2.30	154	4.15		
126	2.36	155	4.22		
127	2.43	156	4.28		
128	2.49	157	4.34		
129	2.55	158	4.41		

130	2.62	159	4.47		
131	2.68	160	4.54		
132	2.75	161	4.60		
133	2.81	162	4.66		
134	2.87	163	4.73		
135	2.94	164	4.79		
136	3.00	165	4.86		
137	3.07	166	4.92		
138	3.13	167	4.98		
139	3.19	168	5.05		
140	3.26	169	5.11		

Table 3.6: Norms for Interpretation of Z-Score for level of Parental Involvement Scale

Range of Z Scores	Range of Raw Scores	Level of parental involvement
2.01 and above	121 & Above	Extremely High
1.26 To 2.00	109 -120	High
0.51 To 1.25	97-108	Above Average
-0.50 To 0.50	82-96	Average
-1.25 to '-0.51	70-81	Below Average
- 2.00 to '- 1.26	58-69	Low
-2.01 and below	57 and Below	Extremely Low

3.6.2 School Environment Scale:

The physical and psychological characteristics of the school that are more subject to change and that provide the circumstances for effective teaching and learning are represented in the school environment (Hinduja & Patchin,1978). The relationship between teachers and students, the academic and professional backgrounds of the teachers, their teaching experience, the accessibility and use of physical facilities, and

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the availability and use of learning tools are all factors that influence the school environment. The physical surrounds, external causes and consequences, and the socio cultural contexts in which a person is positioned can all be considered components of the environment in which learning takes place. The totality of the environments in which people interact to enrich experiences and so foster learning constitutes the school environment. Many aspects of a student's school environment, including the curricula, teaching techniques, and interpersonal relationships, have an impact on how well they succeed academically. Because students are the backbone of the nation, it is essential to sustain a safe school environment. A warm, friendly, and trustworthy atmosphere can protect schools against a wide range of issues and increase student achievement.

For the present study the school environment scale is intended to measure how students feel about their school environment at school. It has given a measure for the level of social, psychological, and academic support offered to students throughout their time in school.SES has items belonging to four dimensions of the school environment and these dimensions are as follows:

A.Physical environment – The physical surroundings and resources that a student uses while at school make up the school's physical environment. These physical surroundings and facilities vary from school to school because there is no minimum basic criterion for operating a school. The physical school environment encompasses the school building and all of its components, including physical buildings, infrastructure, furniture, and the use and presence of chemicals and biological agents; the school's location; and the surrounding area, which includes the air, water, and things that children potentially come into contact with. Students and staff feel at ease and safe in every aspect of the school when the environment is pleasant.

B. Academic Environment – An academic environment is one that best prepares students for their future professional lives and supports their growth on a personal, psychological and social level. The ideal setting for school education should give students the opportunity to develop the essential theoretical and interpersonal skills and expose them to experiences that are comparable to the setting in which they would likely to pursue. A proper academic environment utilizes teaching methods and practices that are appropriate for the learning requirements of students .To

accommodate various learning styles, schools choose educational strategies such as peer tutoring, cooperative learning, etc.

C. Affective environment: Pupils flourish in a setting where they are accepted, feel that their opinions and personal development matter, and are aware of the support they have from the teachers and staff at their school. The beliefs, emotions, and attitudes of students are important factors in the educational setting's affective environment. Proponents of affective education think that academic teaching should go hand in hand with personal and social education. A learner needs a sound mind and a good surroundings in order to perform properly. Support looks like students feeling welcomed in class, being able to ask the teachers questions, and how encouraged they are to complete their work at a high level. The affective climate of a classroom has the greatest impact on the learner and the learning process. Learning activities and administration support in the classroom have an impact on both the learner and the learning process. Affective environment encourage self-worth and a sense of belonging. Parents, children, and staff all feel welcomed, valued, and appreciated and are motivated to see the school succeed.

D. Social environment – A school infrastructure should lead in creating positive psycho social environment. The social environment of school encompasses attitudes,feelings and values of students and school staff, positive interpersonal relationships and support from learning. Social environment helps students to have the right to express feelings, to uniqueness, and to be autonomous individuals. A social environment promotes cooperation and healthy interaction and it makes students and staff trained to prevent and respond to conflicts.

The scale contains 54 items related to the dimensions. 13 items belongs Physical Environment, 22 items belongs Academic Environment, 12 items belongs to Affective Environment ,7 items belongs Social environment.

3.6.2.1 Construction and Validation of Scale

a) Planning and preparation of the scale :

In planning for the tool construction the investigator consulted various conceptual and related literatures on school environment to get a wider view on the concept. After the reviews of literatures, the investigator found several tools related to School

environment which gave a theoretical framework. Next, in preparation of the items for the scale the following steps were taken into consideration:

b) **Identification of Dimensions:** In order to frame the scale items the investigator has looked into various conceptual and related literatures on school environment and its major aspects. Based on the review of the various literatures the investigator has identified four dimensions of the scale which consisted of (i) Physical environment (ii) Academic environment (iii) Affective environment (iv)Social Environment

c) **Writing of items:** In the first draft of the scale a total of 70 items covering four dimensions was constructed. A thorough examination was made with the supervisor to ensure that there is no overlapping of the items and ambiguity.

d) **Expert Try-out:** The first draft of the tool containing 70 items was sent for 8 experts from the field of education for their valuable suggestion. And based on the feedbacks by the experts the scale was modified and 60 items were found to be relevant for the scale then, the draft was approved by the departmental Research Committee for the pilot study.

e) **Preliminary try-out:** In the next phase, the scale was administered on 50 secondary level school children to detect any further ambiguity or repetition in the items. And this try out indicated no further modifications in the items and assured consistency with the context of the present study.

f) **Try-out:** The school environment scale consisting of 62 items was tried out over the sample of 100 respondents who were the secondary school level children of tea garden labourer's from Sonitpur district.In order to test the significance of the items,t test was calculated between 27% upper and 27% lower group for 62 items. And finally 54 items which are significant either at 0.01 level or 0.05 level were retained for the final try out.

Table 3.7: Item analysis of School Environment Scale

Item No	t value	Sig.	Remark	Item No	T value	Sig.	Remark
1	-7.422	<0.001	Selected	5	-5.908	<0.001	Selected
2	-10.81	<0.001	Selected	6	-13.015	<0.001	Selected
3	-5.27	<0.001	Selected	7	-14.581	<0.001	Selected
4	-10.02	<0.001	Selected	8	-16.231	<0.001	Selected

9	-5.749	<0.001	Selected	38	-6.869	<0.001	Selected
10	-13.906	<0.001	Selected	39	-9.278	<0.001	Selected
11	-0.969	0.341	Not Selected	40	-3.294	0.003	Selected
12	-3.5	0.002	Selected	41	-7.293	<0.001	Selected
13	-8.729	<0.001	Selected	42	-4.423	<0.001	Selected
14	-11.949	<0.001	Selected	43	-10.333	<0.001	Selected
15	-6.271	<0.001	Selected	44	-7.806	<0.001	Selected
16	-7.841	<0.001	Selected	45	-6.378	<0.001	Selected
17	-4.517	<0.001	Selected	46	-7.807	<0.001	Selected
18	-1.933	0.064	Not Selected	47	-1.351	0.188	Not Selected
19	-10.071	<0.001	Selected	48	-11.52	<0.001	Selected
20	-8.453	<0.001	Selected	49	-5.084	<0.001	Selected
21	-7.255	<0.001	Selected	50	-8.566	<0.001	Selected
22	-7.303	<0.001	Selected	51	-5.339	<0.001	Selected
23	-7.752	<0.001	Selected	52	-14.875	<0.001	Selected
24	-9.84	<0.001	Selected	53	-10.212	<0.001	Selected
25	-9.594	<0.001	Selected	54	-10.071	<0.001	Selected
26	-0.714	0.482	Not Selected	55	-7.603	<0.001	Selected
27	-8.712	<0.001	Selected	56	-5.554	<0.001	Selected
28	-6.963	<0.001	Selected	57	-6.776	<0.001	Selected
29	-8.701	<0.001	Selected	58	-8.222	<0.001	Selected
30	-11.339	<0.001	Selected	59	-1.119	0.274	Not Selected
31	-8.559	<0.001	Selected	60	-15.942	<0.001	Selected
32	-8.153	<0.001	Selected				
33	-1.351	0.188	Not Selected				
34	-7.101	<0.001	Selected				
35	-10.392	<0.001	Selected				
36	-8.748	<0.001	Selected				
37	-8.415	<0.001	Selected				

From the table, it is clear that the items numbers that are significant at 0.01 level ($p<0.01$) are selected and a total of 54 items were selected for the final School Environment Scale.

f) Scoring of the scale: The school environment scale comprises 54 items. The scale is 5 point likert scale having 5 responses, Agree, strongly agree, undecided, disagree and strongly disagree respectively.

Table 3.8: Scoring pattern of the scale

Items	Scores				
Positive	**SA**	**A**	**UD**	**D**	**SD**
1,2,3,4,5,6,7,8,9,11,12,13,14 ,15,16,18,19,20,22,24,25,26, 27,29,30,31,32,35,37,38 ,39,40,41,42,43,44,45,46,47, 48,49,50,51,52,54,	5	4	3	2	1
Negative Items 10,17,21,23,33,34,53	1	2	3	4	5

g) Final try out: For the final try out, 100 secondary school students of sonitpur district was taken. Prior permission was taken from the head masters of the schools to get the responses and assurance was given to keep the responses confidential.

h) Reliability of the scale:

To find out the reliability of the test, the scale has been administered on 100 secondary level school children students of IXth and Xth classes. The reliability is established by the test-retest method and the internal consistency of the School environment scale was calculated using Cronbach's Alpha for each dimension and the overall scale.

Table 3.9: Reliability of scale

Reliability of the school environment scale		
Test-Retest		0.86
Cronbach's Alpha		0.83
Dimensions	Physical Environment	.70
	Academic Environment	0.74
	Affective Environment	0.88
	Social Environment	0.80

i)   Validity of the scale:

The validity of the test has been established by taking the opinion of experts in the field of education. The scale was modified accordingly based on the suggestions.

j) Norms: After the final tryout, Z norms of the overall scale of 54 items was developed with seven categories; very highly favourable, highly favourable, moderately favourable, average, moderately low, Unfavourable, Highly Unfavourable. Norms for interpretation of the overall scale has been presented in table 3.2

Table 3.10: Z score norms for the School Environment Scale

Raw Score	Z Score	Raw Score	Z score	Raw Score	Z score	Raw Score	Z Score	Raw Score	Z score	Raw Score	Z score
54	-8.53	64	-7.69	74	-6.86	84	-6.02	94	-5.19	104	-4.35
55	-8.45	65	-7.61	75	-6.77	85	-5.94	95	-5.10	105	-4.27
56	-8.36	66	-7.53	76	-6.69	86	-5.86	96	-5.02	106	-4.18
57	-8.28	67	-7.44	77	-6.61	87	-5.77	97	-4.94	107	-4.10
58	-8.20	68	-7.36	78	-6.52	88	-5.69	98	-4.85	108	-4.02
59	-8.11	69	-7.28	79	-6.44	89	-5.61	99	-4.77	109	-3.93
60	-8.03	70	-7.19	80	-6.36	90	-5.52	100	-4.69	110	-3.85
61	-7.94	71	-7.11	81	-6.27	91	-5.44	101	-4.60	111	-3.77
62	-7.86	72	-7.03	82	-6.19	92	-5.35	102	-4.52	112	-3.68
63	-7.78	73	-6.94	83	-6.11	93	-5.27	103	-4.44	113	-3.60

114	-3.52	142	-1.18	170	1.16	197	3.42	225	5.76	253	8.10
115	-3.43	143	-1.09	171	1.25	198	3.50	226	5.84	254	8.18
116	-3.35	144	-1.01	172	1.33	199	3.59	227	5.93	255	8.27
117	-3.27	145	-0.93	173	1.41	200	3.67	228	6.01	256	8.35
118	-3.18	146	-0.84	174	1.50	201	3.75	229	6.09	257	8.43
119	-3.10	147	-0.76	175	1.58	202	3.84	230	6.18	258	8.52
120	-3.01	148	-0.68	176	1.66	203	3.92	231	6.26	259	8.60
121	-2.93	149	-0.59	177	1.75	204	4.00	232	6.34	260	8.68
122	-2.85	150	-0.51	178	1.83	205	4.09	233	6.43	261	8.77
123	-2.76	151	-0.42	179	1.92	206	4.17	234	6.51	262	8.85
124	-2.68	152	-0.34	180	2.00	207	4.25	235	6.59	263	8.93
125	-2.60	153	-0.26	181	2.08	208	4.34	236	6.68	264	9.02
126	-2.51	154	-0.17	182	2.17	209	4.42	237	6.76	265	9.10
127	-2.43	155	-0.09	183	2.25	210	4.51	238	6.85	266	9.18
128	-2.35	156	-0.01	184	2.33	211	4.59	239	6.93	267	9.27
129	-2.26	157	0.08	185	2.42	212	4.67	240	7.01	268	9.35
130	-2.18	158	0.16	186	2.50	213	4.76	241	7.10	269	9.44
131	-2.10	159	0.24	187	2.58	214	4.84	242	7.18	270	9.52
132	-2.01	160	0.33	188	2.67	215	4.92	243	7.26		
133	-1.93	161	0.41	189	2.75	216	5.01	244	7.35		
134	-1.84	162	0.49	190	2.83	217	5.09	245	7.43		
135	-1.76	163	0.58	191	2.92	218	5.17	246	7.51		
136	-1.68	164	0.66	192	3.00	219	5.26	247	7.60		
137	-1.59	165	0.75	193	3.08	220	5.34	248	7.68		
138	-1.51	166	0.83	194	3.17	221	5.42	249	7.76		
139	-1.43	167	0.91	195	3.25	222	5.51	250	7.85		
140	-1.34	168	1.00	196	3.34	223	5.59	251	7.93		
141	-1.26	169	1.08			224	5.68	252	8.01		

Table 3.11 : Norms for interpretation of Z score for the School Environment Scale.

Z score Norms	Raw Score Range	Levels of School Environment
+2.01 & above	181 & Above	Very highly favourable
+1.26 to +2.00	172-180	High favourable
+0.51 to +1.25	163-172	Moderately favourable
-0.50 to +0.50	151-162	Average
-0.51 to -1.25	142-150	Moderately low favourable
-1.26 to -2.00	133-141	Low favourable
-2.01 & below	132 & Below	very low Favourable

3.6.3   Study Habits Inventory (SHI):

Study Habits Inventory developed by Mukhopadhyay and Sansanwal was used in the present study. The study habits inventory have been considered to be constituted of nine different kinds of study behaviours. These are: i) comprehension, ii) concentration, iii) task orientation, iv)study sets, v) interaction, vi) drilling, vii) supports, viii) recording and ix) language.

3.6.3.1 Reliability of the inventory:

The reliability of the whole inventory was worked out by using split-half method. The reliability coefficient is .91 which is high and indicates that the inventory is reliable.

3.6.3.2 Scoring and Interpretation Procedure:

The inventory comprises 70 items pertaining to nine sub-components namely Comprehension (12 items), Concentration (10 items), Task orientation (9 items), Study Sets (7 items), Interaction (3 items), Drilling (4 items), Supports (22 items), Recording (2 items) and Language (1 item) which categorize the basis of study habits. The items have been drafted in affirmative (52 items) and negative (18 items) forms.

Table 3.12: Scoring pattern of the inventory

Affirmative (+) items +	1,2,3,4,5,6,7,8,9,11,12,13,14,15,22,23,24, 25,27,29,30,31,32,34,38,39,41,43,44,46,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63, 64,65,66,67,68,69,70	52
Negative (-) Items -	10,16,17,18,19,20,21,26,28,33,35,36,37,40, 42,45,47,48	18
		70

Scoring Pattern:

Items	Always	Frequently	Sometimes	Rarely	Never
Positive Items	4	3	2	1	0
Negative Items	0	1	2	3	4

After scoring and finding out the Raw Scores for each Area, they are totaled for getting the Raw Scores for the Total Inventory.

Table 3.13 Norms for interpretation of Study Habit Inventory :

Raw score Range	Z score Range	Grade	Study Habit Status
268 and above	+2.01 and above	A	Excellent Study Habits
247-268	+1.26 to +2.00	B	High Study Habits
225-246	+0.51 to +1.25	C	Above Average Study Habits
196-224	-0.50 to +0.50	D	Moderate Study Habits
174-195	-0.51 to -1.25	E	Below Average Study Habits
152-173	-1.26 to -2.00	F	Poor Study Habits
151 and below	-2.01 and below	G	Very Poor Study Habits

3.7 Data collection procedure:

The researcher visited all the selected districts for the study and collected the data from the secondary level school children of tea garden labourers of schools after getting necessary permission from the Principals/Head Master/Head Mistress of the

schools. Three questionnaires i.e. Parental Involvement Scale, School Environment scale and Study Habit Inventory by M. Mulkhopadhyayand D.N. Sansanwal (2011) were used to collect primary data from the respondents (students). Before administering the questionnaires the investigator had interacted with the respondents, tried to be familiar with them and created a friendly environment. The respondents were explained first about the procedure and assured that it is only for research purpose and what they will score will be confidential. Then the three questionnaires were administered to the respondents and before answering the questionnaires the respondents were encouraged to clear any doubt if they had. Due to shortage of time they were given one period (approximately 45 minutes) for each questionnaire. After almost two periods, the answered questionnaires were collected from the respondents at the school by the investigator herself.The researcher also collected the marks of annual examination in the year 2019-2020 obtained by the sample students of class IX from the concerned authority. Then all the questionnaires were verified and those questionnaires which werenot fully responded by the respondents have been discarded. The scoring of the questionnaires was done by the investigator on the basis of the scoring pattern of the tools. The scores of the respondents have been organized and tabulated by the investigator for data analysis.

3.8 Statistical Techniques Used:

In the present study descriptive, inferential and correlational statistical techniques like percentage, mean,S.D, 't'test, ANOVA correlation Statistics Pearson's Product Moment Method has been used for the study.

The next step after collecting the data is to analyze and interpret it. The data have undergone a quantitative analysis with the study's objectives in mind. A computer software programme named Statistical package for the social sciences is used to examine the data (SPSS).