



A STUDY ON THE ACADEMIC PERFORMANCE OF GIRLS STUDENTS IN SCIENCE STREAM IN DHALAI DISTRICT, TRIPURA

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Abstract: Academic performance is the measurement of student's achievement across various academic subjects, academic success often relies on a particular skill set that helps people study, retain and apply information. The academic performance is the result of learning, promoted by the teaching activity by the teacher and produced by the student. It is the work produced by the pupils, and it is typically demonstrated by their academic performance. This study aimed to investigate the academic performance of H.S. (+2 Stage) girl students of science stream in eight schools of Dhalai district. The objectives of the study were to gather the information and determine about their performance of science stream, to examine the influence of teachers on students academic performance, to explore the problems that girls students faced during their education, to know the differences between urban and rural girls students academic performances, analyze the positive and negative factors effecting education of girls children of rural and urban schools of Dhalai district, Tripura. This Study consists of randomly selected eight schools from rural and urban areas and used secondary data. Data were analysed through tabular and graphical representation. Findings of this study states that The pass rate of the girl students belonging to science branch is quite satisfactory in Dhalai district and it is also found that there is a strong correlation between economic condition and academic output. In most rural schools poor economic situation has significant impact on the academic performance of the girl students as getting tutelage and proper guidance is difficult for them. In this regard the government of India has implemented several schemes to improve the situation of girl child education in India like Beti Bachao Beti Padhao, Balika Samridhi Yojana, various scholarship schemes, National Scheme of Incentives to girls for secondary Education. These schemes must be implemented in schools for betterment of girl child education.

Key Words: Academic performance, achievement, science stream, skill, assessment.

1. INTRODUCTION:

Science is an objective, exacting, systematic undertaking that creates and arranges information in the form of verifiable hypotheses and universe-related predictions. Modern science is typically divided into three main branches: formal sciences (such as logic, mathematics, and theoretical computer science), which study formal systems with axioms and rules; social sciences (such as economics, psychology, and sociology); and natural sciences (such as biology, chemistry, and physics), which study the physical world. Because they do not rely on empirical data, there is controversy about whether the formal sciences are scientific fields. Engineering and medicine are just two examples of practical fields where applied sciences are used. Between 3000 and 1200 BCE, Mesopotamia and Ancient Egypt produced the earliest known written accounts of recognizable ancestors to contemporary science. The Greek natural philosophy of classical antiquity, which made systematic attempts to explain happenings in the physical world based on natural causes, was influenced by their contributions to mathematics, astronomy, and medicine. The knowledge of Greek worldviews declined in Western Europe during the early Middle Ages (400–1000 CE) following the fall of the Western Roman Empire, but it was preserved in the Muslim world during the Islamic Golden Age and later by the efforts of Byzantine Greek scholars who brought Greek manuscripts from the waning Byzantine Empire to Western Europe in the Renaissance. In Mesopotamia and Ancient Egypt, between 3000 and 1200 BCE, the oldest written accounts of recognized antecedents to contemporary science may be found. Their contributions to mathematics, astronomy, and



medicine influenced the Greek natural philosophy of classical antiquity, which made systematic attempts to explain events in the physical universe using causes that were found in nature. In the early Middle Ages (400–1000 CE), following the fall of the Western Roman Empire, knowledge of Greek conceptions of the world declined in Western Europe, but was preserved in the Muslim world during the Islamic Golden Age and later by the efforts of Byzantine Greek scholars who brought Greek manuscripts from the waning Byzantine Empire to Western Europe in the Renaissance.

Teaching and learning science to school children, college students, or people in the broader public is referred to as science education. Work in social science, certain instructional methods, and science process (the scientific method) are all included in the topic of science education. The expectations for the growth of understanding for children throughout their K–12 schooling and beyond are provided by the standards for science education. The physical, life, earth, space, and human sciences are the conventional subjects covered by the standards. Our country is a democratic nation with extraordinary diversity. Education is given utmost importance and we do everything possible to make our children educated and become good citizens who can live their life with contentment facing the challenges of life. But it is very much needed that from time to time we should think about the questions like “What is it that we are doing in our engagement with this task? Is it time for us to update the educational resources we give to our kids? and find answers to them.

In this paper, a study about the methods and techniques used in our secondary schools of Dhalai District, Tripura for teaching science and the strategies used by our learner and also their academic performance is conducted. Today we live in an age of science and technology. It is very much important for everyone to understand and apply science to his day-to-day life. This is possible only through a systematic process of science learning through school education. So, it is science education that primarily affects the overall understanding of everyone about science in general in their lives. Since the 1950s there have been major reforms in science education with a shift away from a focus on content and prescribed practical work, to emphasis on inquiry (thinking and working like scientists) and the social aspects of science and on the nature of science. The conventional notion on science education that transferring accumulated knowledge about the universe has been changed almost four decades ago. If our thinking about science is changed then our way of teaching and learning science should also be changed. But how far this is followed in our schools is an important question to be discussed. In Dhalai Tripura, there resurfaces an immediate need to look into the academic performance of the science students in some of the selected secondary schools. Hence, the report is presented on the basis of science education in the state of Tripura.

2. OBJECTIVES OF THE STUDY:

- To study the academic performance of girls’ students in science stream at secondary level of Dhalai District , Tripura.
- To study the academic performance of girls’ students in science stream at secondary level in urban area schools of Dhalai District ,Tripura.
- To study the academic performance of girls’ students in science stream at secondary level in rural area schools of Dhalai District ,Tripura.
- To study the comparison of performance between the girl students’ in rural and urban area schools in science stream at secondary level of Dhalai District ,Tripura.

3. LITERATURE REVIEW:

Academic performance serves to accomplish learning, an aim of education. Academic achievement is a construct to measure students' achievement, knowledge, and abilities, according to the Center for Research and Development Academic Achievement (CRIRES) 2005 study. The age, prior experience, and capacity of the students are all taken into account while measuring them holistically. Educators employ a variety of evaluation methods to gauge student academic performance. According to Linn and Gronlund (1995), assessment is a continual activity that provides some useful information about the learning process. The purpose of the grading system, according to Hargis (2003), is to inspire students and set them up for success. Grading also provides records of pupils' academic accomplishments (Haladyna, 1999).

Some of the literature which has been reviewed for this topic is presented below:-

- **Showkeen Bilal Ahmd Gul and Atieq UI Rehman, in their research paper entitled “A study of academic performance in science stream in relation to socio-economic status at senior secondary school level”** concluded that there is a significant positive correlation between the socio-economic status and academic



performance in science stream of secondary students which also includes upper class socio-economic girls of science background.

- **Girls' Academic Performance in Science Subjects: Evidence from Industrializing and Least Industrialized Countries, RazaUllah, HazirUllah, and Akhlaq Ahmad, 2021.** This article concludes that girls' academic performance did not improve in STEM subjects like it had improved in other subjects like arts and humanities. Their studies found attributed girls' academic under-performance in science subjects to gendered and patriarchal culture in industrializing and least industrialized countries especially in their rural settings.
- **Lydia NbakiNusau, JoashNigosi and James Natee Nuola (2013)**”, in their research paper entitled “Determinants of girls’ performance in science, mathematics and technology subjects in Public Secondary Schools in Kenya.” The researchers finds that though the professionally trained teachers possessed sufficient pedagogical skills that were suitable for the dissemination of SNT subjects contents but due to lesser...of time to assess students in ... the girl’s academic performance seemed to be low at from four level in Kitui Central district. This study also revealed that the class size does not influenced girl’s academic performance in SNT subjects due to minimized interaction between teachers and students.

4. METHOD: Analytical survey method was used for the present study. In this survey research, data is collected from a large sample and analysed representing a specific population.

POPULATION AND SAMPLE OF THE STUDY:

Girl students of science stream of all the higher secondary schools which are being run by Government of Tripura in Dhalai District (both rural and urban areas) will constitute the population as well as sample of our present study.

TOOLS FOR DATA COLLECTION:

For collection of data from the selected eight schools of Dhalai district, the following tools were used which are given below:

- Interview- An unstructured interview was conducted with principals and teachers requesting them to allow us to collect the required data needed for our study.

5. ANALYSIS & INTERPRETATION OF THE DATA:

Objective-1: To study the academic performance of girls’ students in science stream at secondary level of Dhalai District, Tripura.

Table: 1 Showing the school wise pass rates of the girl students from science background from 2015 to 2022

Sl. No.	SCHOOL NAME	Academic Year							
		2015	2016	2017	2018	2019	2020	2021	2022
1	Kamalpur Govt. English Medium	100%	100%	100%	100%	100%	100%	100%	100%
2	Harachandra class xii School	94%	88%	100%	100%	100%	100%	100%	93%
3	Halhali class xii School	93%	88%	87%	100%	100%	100%	100%	100%
4	Krishnachandra class xii school	100%	100%	100%	100%	93%	100%	100%	92%
5	KamalpurBoys’class xii school	92%	100%	100%	91%	100%	100%	100%	100%



6	Salema class xii School	100%	50%	100%	100%	100%	88%	100%	100%
7	Kulai class xii School	92%	92%	100%	100%	100%	92%	100%	100%
8	Chandraipara class xii school	100%	100%	92%	100%	90%	100%	100%	100%

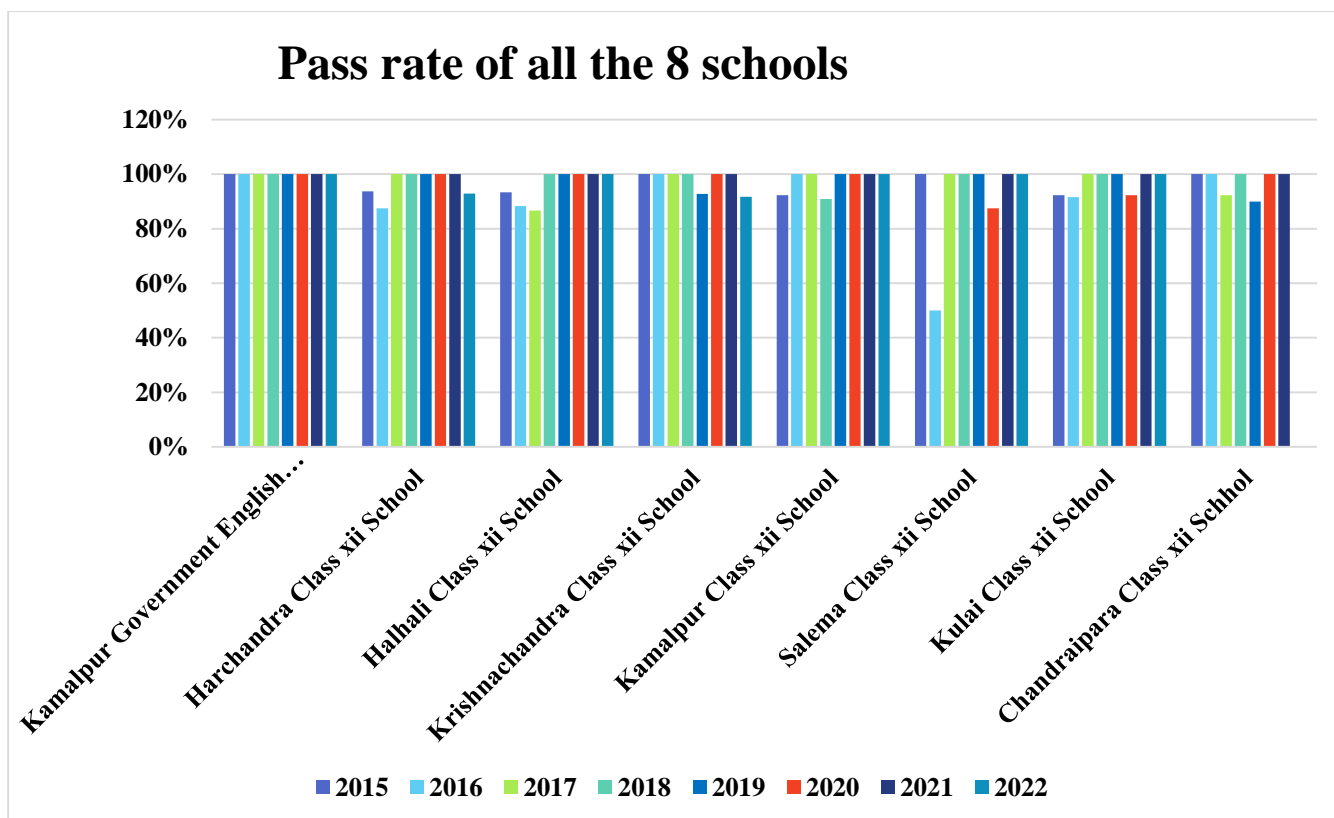


Fig: 1 graph showing school wise pass rates of the girl students from science background from 2015 through to 2022 eight schools are featured.

Interpretation: It can be interpreted that apart from Kamalpur Govt. English Medium H.S School, all school show lesser pass rate. In every year the girls students of Kamalpur Govt. English Medium H.S School record hundred percent pass in science stream in the board exam. More than 80% of the girl students in science stream of other schools also passed the board exam. In the case of Salema School the pass rate downs to 50% in the year 2016. Overall the pass rates of the selected schools are quite satisfactory.

Objective -2: To study the academic performance of girls' students in science stream at secondary level in urban area schools of Dhalai District, Tripura.

Table: 2 Showing the pass rates in the Urban schools girl students belonging to the science branch.

Sl. No.	SCHOOL NAME	Academic Year							
		2015	2016	2017	2018	2019	2020	2021	2022
1	Kamalpur Govt. English Medium	100%	100%	100%	100%	100%	100%	100%	100%
2	Kamalpur Boys' class xii school	92%	100%	100%	91%	100%	100%	100%	100%
3	Krishnachandra class xii school	100%	100%	100%	100%	93%	100%	100%	92%
4	Chandraipara class xii school	100%	100%	92%	100%	90%	100%	100%	100%

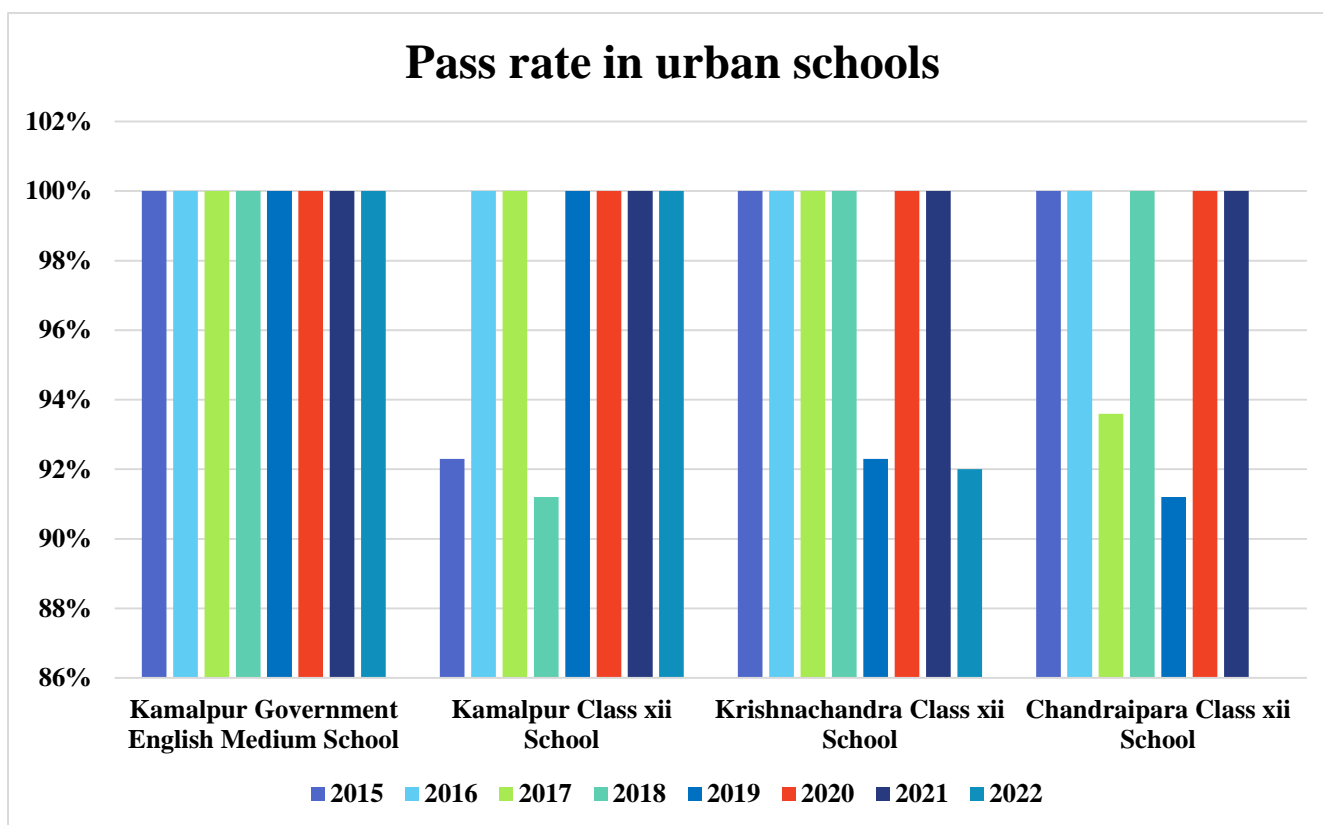


Fig: 2 graph showing pass rates in the urban schools girl students belonging to the science branch.

Interpretation: In Dhalai District four schools are in the urban area in which science stream are available. Among them the girl students in science stream of Kamalpur Govt. English Medium H.S School shows the highest pass rate i.e. 100% in every year in the board exam. The girls students in science stream of Kamalpur class XII School, Krishnachandra class XII school and Chandraipara class XII school also pass in the board exam in high percentage. In the last board exam (2022) all the girls students of urban area schools passed 100%. Therefore it can be interpreted that the urban schools in Dhalai District have comparatively higher pass rates in science stream in the board exam.

Objectives- 3: To study the academic performance of girls' students in science stream at secondary level in rural area schools of Dhalai District, Tripura.

Table: 3 Showing the pass rates in the Rural schools girl students belonging to the science branch.

Sl. No.	SCHOOL NAME	Academic Year							
		2015	2016	2017	2018	2019	2020	2021	2022
1	Kulai class xii School	92%	92%	100%	100%	100%	92%	100%	100%
2	Salema class xii School	100%	50%	100%	100%	100%	88%	100%	100%
3	Halhali class xii School	93%	88%	87%	100%	100%	100%	100%	100%
4	Harachandra class xii School	94%	88%	100%	100%	100%	100%	100%	93%

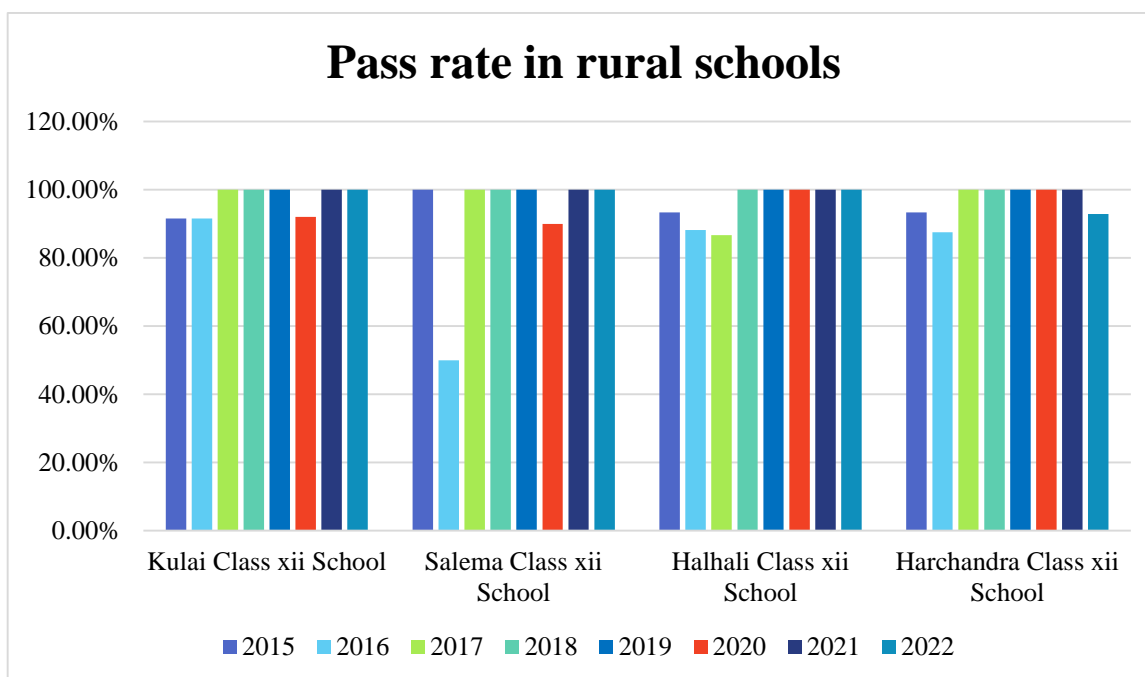


Fig: 3graph showing pass rates in the rural schools girl students belonging to the science branch.

Interpretation: In Dhalai District four schools are in the rural area in which science stream are available. Among them in the last board exam (2022) the girls students of Kulai class XII school, Salema class XII school and Halhali class XII school passed 100%. In the case of Salema School the pass rate downs to 50% in the year 2016 it can be interpreted that the rural schools show comparatively lower pass rates though the pass rates tend to increase through the years.

Objectives- 4: To study the comparison of performance between the girl students’ in rural and urban area schools in science stream at secondary level of Dhalai District, Tripura.

Table: 4 Showing the Average Academic Performance of urban schools from 2015-2022 (in science girls)

Sl. No.	Urban School	Physics, Chemistry, Bio & Math Marks (in average)
1	Kamalpur Govt. English Medium	62
2	KamalpurBoys’class xii school	51
3	Krishnachandra class xii school	57
4	Chandraipara class xii school	48

Table: 5 Showing the Average Academic Performance of rural schools from 2015-2022 (in science girls)

Sl. No.	Rural School	Physics, Chemistry, Bio & Math Marks (in average)
1	Kulai class xii School	57
2	Salema class xii School	58
3	Halhali class xii School	62
4	Harachandra class xii School	51

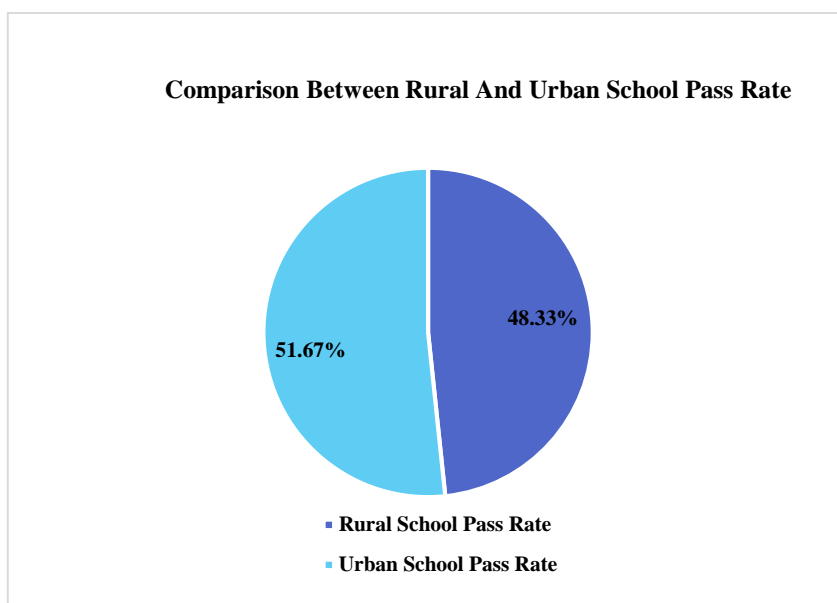


Fig: 4 graph showing the comparison between rural and urban schools' pass rates.

Interpretation: In comparison between the rural and urban schools on an average it can be interpreted that the urban schools show higher pass rate compared to the rural schools. In Dhalai District, urban schools have more number of passed out girl students than those of the rural schools. The urban schools pass rate is 51.67%, whereas the rural schools pass rate is 48.33%.

6. FINDINGS:

The findings are nothing but a conclusion after a detailed study on the concerned topic. The findings of the study are as follows:-

- The pass rate of the girl students belonging to science branch is quite satisfactory in Dhalai district.
- In the rural schools, on the whole, the pass rates are a bit lower. Although it should be noted that Halhali Class XII School, being a rural school shows higher pass rates. Conversely, some urban schools do show lower pass rates as well.
- In general, the urban schools show better pass rates. The school facilities are found to be in better condition in the urban schools.
- In all the eight schools, it is found that a few number of girls study in science. In some cases only 2-3 girl students are found in a school who study science.
- We also found that, most of the girl students showed much interest on life science and least interest on Mathematics
- There is a strong correlation between economic condition and academic output. In most rural schools poor economic situation has significant impact on the academic performance of the girl students as getting tutelage and proper guidance is difficult for them.
- The overall discipline in the selected schools is over and above. No sign of misdemeanor is found in the classrooms.
- Most of the girl students have their own study books. It shows that they are very much keen on learning.
- The teachers and instructors are found to be providing the girl children with proper study materials.
- The fail rate is significantly low as compared to other districts. The general percentage looks promising.
- In addition to the aforementioned findings, it should be pointed out that some school records and data can be hard to extract as some schools follow strict supervision rules.

7. DISCUSSION:

The findings of this study provide valuable insights about both the rural and urban schools of Dhalai district. It was observed that rural schools like Salema Class XII School and Halhali Class XII School were performing quite a good percentage of pass rates over the years from 2015 to 2022. This implies and highlights the discipline of school authorities of both the school which reflects in their good academic performance. But in other rural schools of same



district, it was observed that due to shortage of teachers, commuting hurdles and lack of essential infrastructures often leads to discouragement for studying mindset of children which eventually leads to girl students dropping out of school.

During the survey work, the findings revealed some issues which says majority of rural girls due to poverty or family constraints are finding it difficult to give school fees, buying some reference books, and also could not bear the transport expenses like bus or auto-rickshaw fare. After talking to school authorities like Principal, other teachers we came to know that patriarchal mind-set of elder member (father) of family tend to have a deepest psyche that women are meant only for household chores or taking care of younger siblings and education would pollute their minds, Thus, they are forced to drop out from school and thus are no able to complete their education rather many parents choose to spend on their sons.

The study revealed that students from urban schools like Kamalpur Government English Medium School seem to have comparatively higher pass rate but a small percentage of students are also lacking behind. Most of the girl students seem to be very much keen on learning and carry on their studies further.

8. RECOMMENDATIONS:

This research work was restricted to girl students of science background of Secondary and High secondary Schools under Dhalai District. The researchers would like to suggest some more area and issues for the further studies which are given below:

- Similar studies can be conducted to other standards or classes in different affiliated schools.
- The studies could be conducted with a higher bigger sample.
- The present study faced some complication to school authorities visited are as follows
- School authorities must create awareness about importance of girl child education.
- School management authorities must provide financial aid up to some amount of money to financially constrained family of girl child for education and health expenses till 12th grade.
- Better facilities in schools must be executed to prevent dropout of girl students.
- School management authorities must cater to the upliftment of girls from SC and ST Communities through providing educational incentives.
- The government of India has implemented several schemes to improve the situation of girl child education in India like Beti Bachao Beti Padhao, Balika Samridhi Yojana, various scholarship schemes, National Scheme of Incentives to girls for secondary Education. These schemes must be implemented in schools for betterment of girl child education.

9. CONCLUSION:

It can be concluded that, this study provides a comprehensive understanding and also provides an overview on academic performance of girls students of science background of Dhalai district. The findings of the study highlight the results of HS+2 girl students from the year 2015 to 2022. The study also emphasizes the importance of teacher involvement and guidance to promote interest on studying all the subjects of science and understand the concepts clearly and maximize their score in examinations. It can also be concluded that there exist a significant correlation between the economic status of girls child family with their academic performance at senior secondary level. Due to financial constraints of girl children who belong to such family background seem to struggle a lot from buying books, bearing the expenses of schools fees and many more which seemed to affect their study to carry forward further.

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