CHAPTER-I
INTRODUCTION

CHAPTER-I

INTRODUCTION

1.0.0 INTRODUCTION

Mathematics plays a very important role in the life of human beings. Without the knowledge of mathematics, it is difficult to learn other school subjects, more specifically science subjects. In the modern scientific world, mathematics occupies important place in the school curriculum. Every student's success in mathematics is very important for their education. It is believed that students will do better if teachers teach in a well-planned and organized way. The aim of learning mathematics should not only be solving problems but also improving students' overall problem-solving skills. Knowledge becomes truly useful when it is applied properly. To apply knowledge, students need to think clearly. So, they should solve problems with a logical and curious mindset, like a person making a new discovery.

The growth of human civilization is closely linked with the progress of mathematics and science. To keep students interested in mathematics, qualities like curiosity, motivation, imagination, creativity, and usefulness are very important. "Interest" helps students stay focused and put in effort. It is the teacher's role to help create this interest in their students. Success in school, especially academic achievement, is an important part of a student's overall development. Many factors affect academic success. Researchers have found that things like family income, gender, and education level play a big role. Other studies have looked at how intelligence, stress, anxiety, and similar factors are connected to academic performance.

In recent years, society has paid more attention to how well students do in school. Academic success has become more important among teenagers, especially in India. Academic success depends on many complex factors and cannot be explained by just one thing. Right now, the term "academic achievement" can mean different things. It could mean the knowledge a student gains after completing a course, simply passing a class, or doing well on a test. All these are seen as signs of academic success.

Our world is becoming more and more dependent on technology, which is mainly based on progress in science and mathematics. Mathematics is the base of science and technology, which have made our lives faster, easier, and more comfortable. Math is used in many areas because it helps explain complex things clearly and solve difficult problems. That's why the Kothari Commission (1966) recommended that studying mathematics should be made compulsory for the first ten years of school.

1.1.0 WHAT IS MATHEMATICS?

The Second International Congress of Mathematical Education, held on commemoration of Einstein's Birth Centenary (1933-34), has come out with the statement that

> "These fortunate beings who find Mathematics a joy and fascination will probably get on, whatever be the standard of teaching. It requires real genius of light a flicker of understanding in the minds of those, to whom Mathematics is a clouded mystery. The subject is so vitally important for everyone in this technological age, that any advance in the techniques of teaching is to be welcomed."
>
> **~Bhimasankaran, C.V**., 1981, P.1

Mathematics has its roots deep in the soil of everyday life and is basic in our highest technological achievements. Even though almost everything of a concrete character is Mathematics, it is reputed to be and actually is the most abstract and the most hypothetical of sciences.

In fact, Mathematics is a man-made science. It is the numerical and calculation part of man's life and knowledge. It helps the man to give exact interpretation to his ideas and conclusions. It deals with quantitative facts and relationships as well as with problems involving space and form. It also deals with relationships between magnitudes.

Mathematics has always held a key position in the school curriculum. because it has been considered knowledge indispensable to the educated man.

According to **Stone** (1961),

> "A whole New World of thought and understanding opens out before us to which Mathematics alone is the key."
>
> **~ Courant, Richard etc.**, 1941, P.720

Counting, notation, addition, substraction, multiplication, division, weighing, measuring, selling, buying and many more are simple and fundamental processes of Mathematics which have got an immense practical value in life.

1.2.0 MEANING AND DEFINITION OF ACHIEVEMENT

1.2.1 MEANING OF ACHIEVEMENT

Achievement means reaching a goal or completing something successfully through effort, skill, or hard work. It shows the result of what someone has done after putting in time, energy, and dedication. Achievements can be big or small, and they can happen in different parts of life, such as education, sports, work, or personal growth. In education, achievement usually refers to how well a student performs in their studies. This can be measured through exams, grades, project work, or other

school activities. For example, passing a class, scoring high marks, winning a prize, or improving in a subject are all educational achievements. Academic achievement is important because it reflects a student's understanding, learning progress, and abilities.

Achievement is not just about getting high scores. It also includes personal progress and effort. For example, a student who struggled in math but improved over time has achieved something meaningful. Similarly, completing a difficult task, learning a new skill, or overcoming a challenge are also achievements. Outside of school, achievements can be in sports, where winning a match or learning a new technique is a success. In work life, getting a job, completing a project, or earning a promotion are considered achievements. Achievement builds confidence and motivation. When people achieve something, they feel proud and are encouraged to keep trying and improving. It also helps in setting new goals and aiming higher in life.

In short, achievement is the positive result of effort and hard work. It shows growth, success, and progress in any area of life, whether big or small. Everyone has the potential to achieve, and every step forward counts as an achievement.

1.2.2 DEFINITION OF ACHIEVEMENT

Achievement in education refers to the extent to which a learner has acquired knowledge, skills, or competencies as a result of instruction and study. Several scholars have defined the concept of achievement from different perspectives:

According to **Crow and Crow (1973)**,

> ***"Achievement means the extent to which a learner is profiting from instruction in a given area of learning. Achievement is reflected by the extent to which skill or knowledge has been imparted to him"*** (p. 240).
> This highlights the learner's academic gain as a measure of effective instruction.

Bloom (1956) describes achievement as

> ***"The attainment of objectives of instruction or a set of intended learning outcomes"*** (p. 12).
> This aligns achievement closely with instructional goals and cognitive development.

Good (1973) defines achievement as

> ***"The accomplishment or proficiency of performance in a given skill or body of knowledge"*** (p. 6).
> This definition emphasizes the outcome of learning processes and the demonstration of competence.

Tuckman (1975) explains that

"Achievement refers to a student's success in meeting short- or long-term educational goals" (p. 85),
Indicating the goal-oriented nature of academic success.

Garrett (1965) considers achievement as
"The competence of a person in a given domain of knowledge or skill, as determined by standardized tests" (p. 327).
This definition underscores the role of objective testing in evaluating performance.

Popham (1975) states,
"Achievement is the degree to which a student has attained educational objectives, often measured through test scores" (p. 101).
This ties achievement to measurable outcomes of learning.

Ebel and Frisbie (1991) define achievement tests as tools

"Designed to measure the extent to which a person has learned a specific body of knowledge or acquired a specific skill" (p. 51),

Reinforcing the use of assessments in determining academic achievement.

1.3.0 TRIBAL EDUCATION IN INDIA

India being the second largest populated country in the world is a vast, multicultural, multiracial country and it occupying seventh place in terms of area. India has occupied second place next to South Africa in tribal population. Keeping in view its largeness and population, the Indian Constitution has special considerations for certain ethnic minority groups, referring traditionally tribes as Scheduled Tribes (STs) who constitute around 8.14% of the total population of the country numbering 84.51 million (2001 Census). There are 697 STs living in different parts of the country as notified by Central Government under Article 342 of the Indian Constitution. Most of the tribal communities have their own languages different from the regional languages of the state where they are located in. There are more than 270 such languages. The tribal languages in India belong to different major language families among which Austric, Dravidian, Tibeto-Chinese, and Indo-European families are the most prominent ones.

One of the distinguishing features of STs is that, the majority of them live in scattered habitations located in interior, remote, and inaccessible hilly and forest areas of the country. Nearly 22% of tribal habitations have population with less than 100 people. More than 40% have 100 to 300 people, while others have less than 500 people. Even though tribal population constitutes only 8.14% of the Indian population,

they constitute a majority in several states and union territories and sizeable population in others. In particular, they constitute an overwhelming 2 majority in Mizoram (94.75%), Lakshadweep (93.15%), Nagaland (87.70%), and Meghalaya (85.53%). However, the states of Chattisgarh, Orissa, Bihar, Maharashtra, Gujarat, Rajasthan, Andhra Pradesh, and West Bengal account for 83% of the total tribal population, even though non-tribes constitute the majority in these states. A tribe means,

"A group comprising families, alone or generation having its own customs, occupying a specific territory and being independent of or having little contact with the dominant national society of the country in which they live".

The word 'tribe' though well understood generally, but it is much complex to define precisely. There has been a difference of opinion between Anthropologists and Sociologists and also differ from one set of anthropologists to another set of anthropologists.

The tribes are defined by Indian constitution Article 366 (25) as **"Tribes or tribal communities or parts of or groups with in such tribes or tribal communities".** Due to isolation, unawareness and exploitation, tribes in India are facing economic and social problems. They live generally in forest areas along with the hill streams. Tribes in India reside in hills, deserts, forest, islands, mountains, 5 seacoasts etc. Tribes have to face a number of problems due to their isolated residences situated in remote areas. But they are emotionally attached to their lands and forest. They accept all outsiders into their territory and that creates more problems than benefits to their communities. Due to exploitation from various stakeholders tribals are now facing a lot of problems.

For promoting the welfare of scheduled tribes and for rising the level of administration of schedules and tribal areas to the state level, Article 275 of the constitution provides grants in aid from 'consolidated fund of India' to States for implementation of developmental programmes. Majority of the tribal population does not still enjoy the basic standards of good life. Preservation of tribal culture and fostering their traditional knowledge have to be ensured hand in hand with their empowerment and all-round socio-economic development.

1.4.0 KORAPUT DISTRICT – AN OVERVIEW

Koraput district is situated in the southern part of the state, Odisha. The district is a gift of nature and well known for its scenic beauty. It is famous for its lofty mountains, spreading green valleys, picturesque landscapes, swift fountains, beautiful and springing waterfalls, dense forests with varieties of birds and animals, a number of historically famous places and temples, etc. Along with all these things, the rich cultural heritage of different tribal people attracts many tourists. Further, the pleasant climate of the district is an asset for its inhabitants.

The district headquarter, Koraput town, is situated at a distance of around 500 kilometers from the state capital, Bhubaneswar. It is located between 17.4 degree and

20.7 degree North Latitude and 81.24 degree and 84.2 degree East Longitude. The district has altitude ranging between 300 meters to 1000 meters above mean sea level. Odisha's biggest Mountain peak Deomali is situated here at a height of 5486 feet above the sea level. It is the third biggest district in Odisha and covers 5.66% of the total geographical area of the State. Koraput district is surrounded by three other districts Nabarangapur, Rayagada and Malkangiri and two states, Andhra Pradesh and Chhattisgarh. The political map of Koraput district has been displayed in figure 1.1.

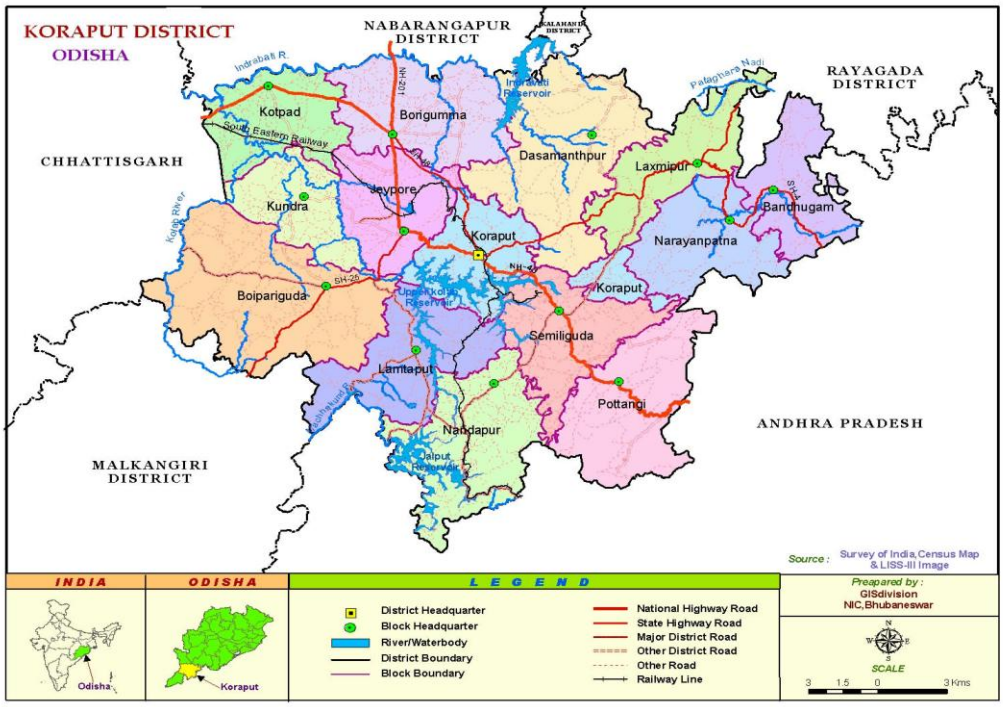

Figure-1.1: Political Map of Koraput District. (Source: NIC, Bhubaneswar)

. As per Census-2011 Koraput district has 3,36,200 numbers of households with a total population of 13,79,647 out of which male are 6,78,809 and female are 7,00,838. It ranks 15th position in Odisha in terms of population and consists 3.29% of the total population of the State. As far as the caste wise population of the district is concerned, the population of Scheduled Tribe is 50.56%, Scheduled Caste is 14.25% and population of other castes is 35.19%. The population density in the district is around 156 people per square kilometer and it is 24th densely populated districts in Odisha. The sex ratio of the district is 1032 per 1000 male and Koraput possesses 4th rank in the state. More than 83% of the total population lives in the tribal, hilly and rural area of the district. The major tribes found in the district are Paraja, Bhottoda (Bhatara) and Amanatya. In addition to these Kandha, Gadaba, Bhumia, Soura and Penthia tribes are found in the district.

Koraput is a tribal dominated district and hence its socio-cultural and economic status is mostly reflected by the tribal communities residing here. The inhabitants of the district possess a rich socio-cultural tradition and heritage. Each of the tribe possesses their own sociocultural history and they have their own language. But,

almost all of them speak and tell a common language, called the Desia Bhasa, which is a mixture of the languages of different tribes of the district and the Odia language. The economic status and characteristics of the district is primarily based upon forest and agriculture. The economy of almost all the people is of subsistence type and more than 60% of the people are living below the poverty line.

The educational status in the tribal district Koraput is not so encouraging. The literacy rate of the district is 49.21%, which is very less than the literacy rate of Odisha (72.87) and India (72.98).

Table-1.1: Literacy Rate - Koraput District

Gender	Koraput District	Odisha	India
Female	38.55%	64.01%	65.46
Male	60.32%	81.59%	82.14
Total	**49.21%**	**72.87%**	**74.04**

(Source: Census of India-2011.)

The total literacy rate of Koraput district was 49.21% in 2011 which is less than average literacy rate 72.87% of Odisha. Population-wise, out of total 568,090 literates, males were 340,843 while females were 227,247. Also the male literacy rate was 60.32% and the female literacy rate was 38.55% in Koraput district.

The literacy rate of the scheduled tribe category especially that of the scheduled tribe female (25.37%) and the literacy rate of rural area population (31.26%) is very miserable. Table 1.2 gives us a clear picture regarding total literates and the literacy rate of Koraput district.

Table-1.2: Details on Literate and Literacy Rate of Koraput District.

Area	Male	Female	Total
Rural	2,50,926 (54.14%)	1,53,499 (31.26%)	4,04,425 (42.37%)
Urban	89,918 (89.48%)	73,748 (74.90%)	1,63,665 (81.80%)
Scheduled Tribe	1,26,799 (46.20%)	75,542 (25.37%)	2,20,341 (35.36%)
Scheduled Caste	51,969 (64.72%)	34,352 (41.05%)	86,321 (52.64%)
Total	**3,40,843 (60.32%)**	**2,27,247 (38.55%)**	**5,68,090 (49.21%)**

(Source: Census of India-2011.)

Schedule Caste (SC) constitutes 14.2% while Schedule Tribe (ST) were 50.6% of total population in Koraput district of Odisha

Table-1.3: Caste-wise Population - Koraput district

Caste	Male	Female	Total
Schedule Caste	96789	99751	196540
Schedule Tribe	337373	360210	697583

(Source: Census of India-2011.)

1.5.0 SOCIO-ECONOMIC BACKGROUND OF KORAPUT DISTRICT

The purpose of this study of factors affecting academic achievement of pupils at eighth grade level was to study the impact of socio-cultural characteristics on the school achievement of tribal and non-tribal pupils. An attempt has also been made to compare the academic achievements of tribal students with those of non-tribals. And for this purpose, the tribal and non-tribal pupils of the same areas were studied.

1.5.1 SCHEDULE TRIBE OF KORAPUT

Koraput district in southern Odisha is renowned for its rich tribal heritage, with Scheduled Tribes (STs) comprising over 50% of its population-approximately 697,583 individuals as per the 2011 Census. The district is home to diverse tribal communities, including the Paroja, Gadaba, Bhumia, Chandala, Saura, Bhottada, Durua, Didayi, and Kandha Gauda, each possessing distinct languages, customs, and socio-cultural practices. forms the backbone of the tribal economy in Koraput. Communities engage in subsistence farming, cultivating crops like paddy, millets, pulses, and oilseeds. Traditional agricultural practices, such as shifting cultivation and integrated farming systems, are prevalent. Livestock management is integral, with free-range grazing and the use of indigenous breeds adapted to local conditions. Forests play a crucial role, providing non-timber forest products (NTFPs) like roots, fruits, and medicinal herbs, which supplement livelihoods and contribute to food security.

The tribal communities of Koraput have a rich cultural tapestry, with festivals and rituals deeply intertwined with agricultural cycles and natural resources. Festivals like Nuakhai Parab and Push Parab are celebrated with offerings from the harvest and communal feasts. Sacred groves, patches of virgin forests, are revered and protected as abodes of deities, reflecting the communities' deep ecological knowledge and conservation ethics.

Despite their rich heritage, the tribal populations face significant challenges. Literacy rates are notably low, and rights remain a contentious issue; many tribal families are landless due to historical dispossession. The Scheduled Tribes of Koraput are custodians of a rich cultural and ecological legacy. Addressing educational gaps, securing land rights, and integrating traditional knowledge into development initiatives are essential steps toward empowering these communities and preserving their unique heritage.

1.5.2 SOCIO-CULTURAL DIFFERENCES IN TRIBAL AND NON-TRIBAL PUPILS

In the Koraput district of Odisha, the socio-cultural differences between tribal and non-tribal pupils significantly influence their educational experiences and outcomes. Tribal pupils, who belong to communities like the Paroja, Gadaba, and Saura, often grow up speaking indigenous dialects that differ from Odia—the medium of instruction in most schools. This language gap hampers their comprehension and communication in classrooms. In contrast, non-tribal pupils typically speak Odia at home and are more familiar with formal language, giving them an advantage in academic settings. Moreover, the home environment of tribal children is often marked by low literacy and limited parental support, as many tribal parents are either illiterate or engaged in subsistence livelihoods. Education may not always be a priority due to economic constraints or cultural perceptions, leading to irregular attendance or early dropouts.

On the other hand, non-tribal pupils usually come from families that value formal education and can provide academic support or access to private coaching. Culturally, tribal children are more rooted in oral traditions, communal lifestyles, and nature-based rituals, which may not align with the structured, textbook-driven school system. This mismatch often leads to lower participation and self-confidence among tribal students. Non-tribal pupils, being more exposed to mainstream societal norms and practices, tend to adapt more easily to school routines and participate actively in academic and extracurricular activities. Addressing these disparities requires inclusive education strategies that recognize cultural diversity, support multilingual learning, and involve the tribal community in the educational process.

1.5.3 SOCIO-ECONOMIC DIFFERENCE OF TRIBAL AND NON-TRIBAL

Economic self-sufficiency vas a characteristic of tribal culture. But due to the impact of neighbouring cultures, tribals have learned new ways of life and their socio-economic set-up has been disturbed, with the result that today they are considered to be socio-economically disadvantaged and weaker people. They have to depend on supplementary occupations in which they engage their children also. The artisan Paroja, Kandha, and Saura are mostly landless and economically deprived, most of them being highly in debts. The Kandha of the Laxmipur area of Koraput are facing land problems. Their ancestral land holdings have either been snatched by neighbouring non-tribals or they have been dispossessed of their land by the State Forest Department. Even in cases where the tribels possess sufficient land, they are unable to exploit it fully because of their primitive means of exploiting the natural resources.

Thus, the tribals from outside may seem to possess good economic status, in fact, are not economically well off. The scheduled castes are also socio-economically at remarkably low position. But their problems are of different nature and mostly arising out of the tradition of untouchability which existed in past. Their traditional

occupations being less remunerative, they are economically backward. Due to lack of education, they have to practise mostly their hereditary occupations. Scheduled caste parents often prefer their children to engage in hereditary occupations rather than sending then to schools. Children of school going age are economic assets for then since their labour adds to the family earnings. In social / castes hierarchy the scheduled caste for the lowest rung.

The pupils belonging to the group of castes other than the scheduled tribes and scheduled castes is socio-economically better. They belong to the castes of comparatively higher prestige in the traditional Hindu caste hierarchy. Educationally they are more aware. Other caste people have shown such social and economic mobility, are performing better occupations and are numerically dominant in the state and also in the districts included in present study.

1.5.4 DIFFERENCES IN ACADEMIC ACHIEVEMENT

Foregoing description of socio-cultural characteristics of scheduled tribe (Paroja, Kandha, Gadaba and Saura), and non-tribal (the scheduled caste and other caste) groups of pupils demonstrated how these pupils differed with respect to the factors generally considered educationally relevant. The academic achievement of scheduled tribe and non-tribal pupils are also expected to differ because of the differences between the social position of the two. Because academic achievement is often adversely affected by lack of social acceptance. Those who are well accepted perform better than those who are neglected and much better than those who are actually rejected (Hurlock, 1983).

1.6.0 STUDENT ACHIEVEMENT IN MATHEMATICS AS PER NEP-2020

The **National Education Policy (NEP) 2020** places a strong emphasis on improving **student achievement in mathematics**, recognizing it as a foundational skill essential for logical reasoning, problem-solving, and scientific temper. The policy acknowledges that a large percentage of students in India struggle with basic mathematical concepts, which leads to poor learning outcomes in higher grades. To address this, NEP 2020 outlines several transformative strategies aimed at enhancing mathematics learning from the foundational stage through secondary education.

One of the most important goals of NEP 2020 is ensuring that all children attain **Foundational Literacy and Numeracy (FLN)** by Grade 3, including basic arithmetic and number sense. This mission is considered critical, as early understanding of mathematics forms the bedrock of future academic success. The **National Mission on Foundational Literacy and Numeracy**, launched under NEP 2020, specifically targets improvement in basic math skills through engaging, activity-based, and child-centered learning. Mathematics is not to be taught as a mechanical subject, but as a meaningful and enjoyable discipline that builds reasoning and analytical thinking. The policy further advocates for **experiential and conceptual learning in mathematics**, moving away from rote memorization. Students are to be exposed to real-life problem-

solving, puzzles, games, and hands-on activities that make mathematics interesting and relevant. NEP 2020 also stresses the need for **competency-based assessments** that test a student's understanding of concepts and their ability to apply them, rather than just recalling formulas or procedures.

Moreover, NEP 2020 encourages the **use of technology and digital tools** to personalize mathematics learning. Adaptive learning software and digital resources can help cater to the varied learning levels of students, especially those from disadvantaged backgrounds. The policy also emphasizes **teacher training** in innovative and child-friendly pedagogy, enabling educators to better support students' mathematical development.In conclusion, NEP 2020 envisions a mathematics education system that promotes clarity of concepts, enjoyment of learning, and development of critical skills. Through foundational literacy goals, hands-on and experiential learning, assessment reform, and use of technology, the policy aims to significantly improve **student achievement in mathematics** across all levels, thereby preparing students for higher studies and a rapidly evolving, knowledge-based economy.

1.7.0 STUDENT ACHIEVEMENT IN MATHEMATICS AS PER NCFSE-2023

The **National Curriculum Framework for School Education (NCFSE) 2023**, developed in alignment with the National Education Policy (NEP) 2020, places a strong emphasis on enhancing student achievement in mathematics. Recognizing mathematics as a critical discipline for logical reasoning, problem-solving, and its applications in various fields such as artificial intelligence and data science, the framework aims to make mathematics education more engaging, inclusive, and effective. The **Secondary Stage** focuses on developing students' ability to **justify claims and arguments through logical reasoning**. Students engage with advanced mathematical concepts, including mathematical modelling and algorithm development, preparing them for higher education and various career paths.

To make mathematics more relatable and reduce anxiety associated with the subject, the NCFSE 2023 recommends integrating mathematics with **arts, sports, and language**. For instance, using patterns in rangoli, origami, and architectural designs can help students appreciate the aesthetic aspects of mathematics. Assessment methods are also reformed to move beyond rote memorization. The framework suggests using **formative assessments**, including problem-solving tasks, projects, and peer assessments, to evaluate students' understanding and application of mathematical concepts.

Furthermore, the NCFSE 2023 acknowledges India's rich mathematical heritage, emphasizing the contributions of ancient Indian mathematicians like Aryabhata and Ramanujan. Incorporating these historical perspectives aims to install a sense of pride and contextual understanding among students. Overly, the NCFSE

2023 envisions a comprehensive and inclusive approach to mathematics education, aiming to develop not only computational skills but also critical thinking, creativity, and a lifelong appreciation for the subject.

1.8.0 CONCEPTUAL BACKGROUND OF THE STUDY

Considered as one of the most basic and important courses in the contemporary educational framework is mathematics everywhere. It is absolutely important for learners' cognitive development as well as for their academic performance. From basic arithmetic to sophisticated decision-making procedures, the subject is fundamental for many facets of daily life and underlies professions in science, technology, engineering, and economics. Mathematical ability is thus generally agreed to be a main sign of academic success and future employability. Nevertheless, despite its significance, many Indian students-especially those from underprivileged and socio- economically deprived areas-find it difficult to reach Achievement in Mathematics. Studies and national education polls have repeatedly revealed that the mathematical performance of rural students differs from others and tribal areas usually fall rather short of the national average. Given these students already encounter several socioeconomic and cultural obstacles in obtaining high-quality education, this trend is concerning. In this regard, knowing the achievement levels in mathematics among tribal students-especially those in isolated and underdeveloped areas-because absolutely vital in closing the educational disparity and guaranteeing fairness in the system.

Considered as one of the most educationally backward areas in India, the southern Odisha district of Koraput is mostly inhabited by tribal communities. Difficult terrain, inadequate connection, low literacy rates, and great poverty define the area. Census statistics and other government studies indicate that most of the tribal people living in Koraput reside in isolated villages with inadequate access to learning resources, certified teachers, and educational infrastructure. Particularly in disciplines like mathematics which are seen as challenging, the schools in these areas often suffer from high dropout rates, teacher absenteeism, and a lack of student motivation. Further challenges for students come from traditional tribal lifestyles, linguistic diversity, and cultural practices not always matching with mainstream curricula and pedagogical strategies. Particularly in disciplines like mathematics that call for logical reasoning and abstract thinking, these institutional obstacles cause an ongoing learning gap and poor academic performance. Tribal students in Odisha, particularly in areas like Koraput, routinely score below the expected grade-level competencies in mathematics, according past studies and national surveys including NAS (National Achievement Survey) and ASER (Annual Status of Education Report). However, this study attempts to solve a clear dearth of localized, in-depth research focusing especially on the elements influencing mathematics performance in these regions.

As the basis for secondary education and finally the high-stakes board exams, the switch to Class IX marks a turning point in a student's academic path. Students' future academic and job decisions depend much on their mathematical performance at

this level. Under this background, it becomes imperative to review the success. However, this study intends to fill the gap in localized and comprehensive research that focuses specifically on the factors influencing mathematics achievement in these areas.

Since it lays the groundwork for secondary education and, eventually, the highly competitive board exams, the move to Class IX marks a significant turning point in a student's academic career. Students' future academic and professional decisions are greatly influenced by their performance in mathematics at this point. In light of this, it is imperative to assess the Achievement in Mathematics of Class IX tribal students in Koraput. This is done not only to pinpoint academic shortcomings but also to comprehend the institutional, sociocultural, and economic factors that impact learning outcomes. The current study aims to investigate the current state of these students' Achievement in Mathematics and examine the effects of factors like gender, school type, parental education, learning environment, and the accessibility of educational materials on their performance. This study intends to offer insights that can guide curriculum design, educational policy, and intervention tactics aimed at enhancing learning outcomes in tribal areas by concentrating on a particular demographic and geographic circumstance. The study intends to add to the current conversation on inclusive education and the necessity of equity-driven educational reforms in India by conducting a thorough and empirical investigation.

1.9.0 NEED AND JUSTIFICATION OF THE STUDY

The academic achievement of students, especially in mathematics, is a crucial indicator of their educational development and future opportunities. Mathematics, as a foundational discipline, is essential for logical reasoning, problem-solving, and participation in a knowledge-based economy. Despite its importance, students from marginalized communities particularly Scheduled Tribes (STs) have historically underperformed in this subject due to a host of socio-economic, cultural, and institutional challenges.

The Koraput district of Odisha, a tribal-dominated and educationally backward region, presents a unique context where over 50% of the population belongs to Scheduled Tribes. Government reports, including Census 2011 and the NAS (National Achievement Survey), consistently reveal that literacy and academic achievement especially in mathematics remain significantly lower among tribal students compared to their non-tribal peers. This gap is exacerbated by factors such as poverty, parental illiteracy, inadequate infrastructure, distance to school, and language barriers.

This study is both timely and essential as it aims to bridge the research gap in understanding tribal students' educational challenges in mathematics. The findings will contribute to national goals of equity and excellence in education and provide data-driven insights that can inform local and regional education planning. Additionally, the study supports the broader goal of inclusive development, by

ensuring that tribal students are not left behind in the race toward academic success and societal integration.

Given this context, there is an urgent need to:

- Evaluate the current level of Achievement in Mathematics among Class IX tribal students in Koraput.
- Identify the socio-economic and educational factors that significantly influence their achievement.
- Compare academic outcomes between tribal and non-tribal students to better understand disparities.
- Support evidence-based interventions that can inform educators, policymakers, and curriculum developers.

This study is both timely and essential as it aims to bridge the research gap in understanding tribal students' educational challenges in mathematics. The findings will contribute to national goals of equity and excellence in education and provide data-driven insights that can inform local and regional education planning. Additionally, the study supports the broader goal of inclusive development, by ensuring that tribal students are not left behind in the race toward academic success and societal integration.

1.10.0 STATEMENT OF THE PROBLEM

The problem for the proposed study is worded as follows:

"A STUDY OF ACHIEVEMENT IN MATHEMATICS OF CLASS IX STUDENTS BELONGING TO SCHEDULE TRIBE OF KORAPUT DISTRICT, ODISHA"

1.11.0 OPERATIONAL DEFINATIONS OF THE KEY TERMS USED

The operational definitions of the following terms are given, below:

1. **Achievement**

   Achievement" refers to the extent to which a learner has attained the intended educational goals or learning outcomes, typically measured through standardized tests, teacher assessments, or academic grades. **Crow and Crow (1973):** *"Achievement means the extent to which a learner is profiting from instruction in a given area of learning."*

2. **Academic Achievement**

   Academic achievement is considered as key criteria to judge one's total potentialities and capacities. The term 'academic achievement' refers to the degree of level of success and that of proficiency attained in some specific areas concerning scholastic and academic works.

The researcher has used the term 'academic achievement on the basis of examination results of the students which is achieved by them in their school examination.

3. Achievement In Mathematics

In the present study mathematics achievement has been taken as the scores obtained by the students on an achievement test in mathematics school examination result score of mathematics subject. Basically, it was to test their retention and understanding of the Achievement in Mathematics.

4. Schedule Tribe

The framers of the constitution took note of the fact that certain communities in the country were suffering from extreme social, educational and economic backwardness arising out of age-old practice of untouchability and certain others on account of these primitive agricultural practices, lack of infrastructure facilities and geographical isolation, and who need special consideration for safeguarding their interests and for their accelerated socio-economic development. These communities were notified as scheduled castes and scheduled tribes as per provisions contained in ***clause 1*** of ***articles 341*** and ***342*** of the constitution respectively.

As per ***Article 366 (25)*** of constitution of India the ***scheduled tribes*** are defined as:

Such tribes or tribal communities or part of or groups within such tribes or tribal communities as are deemed under **Article *342*** to the scheduled tribes for the purposes of this Indian constitution.

5. Socio Economic Status

Socio-economic status is an economic and sociological combined total measure of a person's work, experience and of individual's or family's economic and social position related to others, based on income, education and occupation. Here the researcher has used "socio-economic status "as the household income, status of family, mentality of the family members and education and occupation of the family.

1.12.0 OBJECTIVE OF THE STUDY

1. To compare the Achievement in Mathematics of tribal and non-tribal students of class IX.
2. To compare the Achievement in all subjects of tribal and non-tribal students of class IX.
3. To identify factors influencing students' achievement levels of mathematics, including socio-economic background, parental education and occupation,

geographical location, attendance rate, and problems faced by the students, distance to school, well-constructed road from home to school.

4. To analyse the classroom Teaching - Learning Processes.

1.13.0 HYPOTHESIS

1. There is a significant difference in the achievement in mathematics between tribal and non-tribal students of class IX.

1.14.0 DELIMITATIONS OF THE STUDY

The present study is confined within certain boundaries to ensure focused and manageable research. The delimitations are as follows:

1. **Geographical Delimitation**:

   The study is limited to the **Koraput district** of Odisha. Findings from this study may not be generalized to tribal students in other districts or states.

2. **Population Delimitation**:

   The study is confined only to **tribal students**. Students from other non-tribal students are not included.

3. **Grade Delimitation**:

   The study is confined only to **IX class students**. Students from other class/ grade students are not included.

4. **Subject Delimitation**:

   The academic subject considered in this study is **Mathematics**. Achievement levels in other subjects such as Science, Social Studies, or Languages are not examined.