



EFFECT OF THE MATHEMATICS ACHIEVEMENT FOR TRIBAL PEOPLE

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ABSTRACT:

This research paper explores the relationship between socioeconomic factors and mathematics achievement among tribal communities. The study aims to understand how various socioeconomic variables, such as income, education level, access to resources, and cultural context, influence the mathematics learning outcomes of tribal individuals. The paper employs a mixed-methods approach, combining quantitative data analysis and qualitative case studies to provide a comprehensive understanding of the factors contributing to mathematics achievement within tribal populations. The findings highlight the need for targeted interventions to address disparities in mathematics education and promote equitable learning opportunities for tribal students.

KEYWORDS: Mathematics Achievement, Tribal People, socioeconomic factors, tribal communities

INTRODUCTION:

Mathematics education is a crucial component of human development and empowerment, enabling individuals to participate actively in economic, social, and technological advancements. However, achieving proficiency in mathematics is often influenced by a complex interplay of factors, including socioeconomic conditions. Among marginalized and underserved communities, such as tribal populations, these factors can significantly impact mathematics achievement and perpetuate educational inequalities.

However, the attainment of mathematical competence is not evenly distributed across all segments of society. Disparities in mathematics achievement persist, particularly among marginalized and historically underserved populations. One such population that warrants careful attention in the context of mathematics

education is tribal communities. These communities, often residing in remote and economically disadvantaged regions, face a unique set of challenges that can significantly impact their mathematics learning outcomes.

LITERATURE REVIEW

Minati Panda (2006) A major reason for tribal children doing less well in school mathematics seems to lie in the way the subject is taught in schools at the primary level. Though tribal communities have an extensive and rich knowledge of mathematics and everyday science, classroom teaching is completely divorced from their experiences. The National Curriculum Framework, 2005 appears to have failed in making an explicit commitment to adopt a cultural perspective on mathematics education that is necessary to protect the self-esteem of tribal children and impart to them a meaningful education.



Azad Ahmad Andrabi (2018) This paper explored the academic achievement of tribal and non-tribal adolescent students in secondary schools of Kashmir division. Sample was comprised of 564 students randomly selected from three secondary schools. Academic achievement was obtained from the school records of the sample students. Gender wise and category wise comparisons were done using mean, S.D. and independent samples t-test. Results showed that tribal and non-tribal adolescents differ significantly on the measure of academic achievement at 0.001 level. Nontribal adolescents were found to have a higher level of academic achievement than tribal students. The study also revealed that there is no significant difference between male and female adolescents on the measure of academic achievement.

Dr. Smitha S (2020) Education has been treated as a fundamental human right enshrined in the Universal Declaration of Human Rights and the International Human Rights Covenants, achieving the rights for the basic education, particularly for the underprivileged sections of the society is not only the obligation of the State, but the biggest moral challenge. It is well known that a rapid growth in educational attainment is the most successful medium for social empowerment of the disadvantaged ST & SC members. The present paper tries to empower the Tribal students by enhancing their Problem-Solving Ability and Computational Speed and thereby the Self Confidence through the applications of Indian Intellectual traditions of Vedic Mathematics.

Misbah Din (2016) Mathematics is a subject area that causes a lot of anxiety

within many individuals and is oftentimes a subject that is avoided by many. Over time, the approach to teaching this material has been transitioning to include a more interactive and student-centered model. This research study focused on how elementary teachers are implementing Tribes Learning Communities in their classrooms and what outcomes they have observed for students who experience mathematics anxiety. This study was conducted using a qualitative research approach involving a literature review and semi-structured interviews with teachers working in the Greater Toronto Area who have been actively practicing the Tribes process within their classrooms. The findings suggest that Tribes creates a safe and inclusive environment, which helps decrease mathematics anxiety, as students feel comfortable taking risks while actively engaging in the learning process. Moreover, it was found that Tribes fosters an environment for growth mindsets to flourish. The implications of these findings suggest that more needs to be done to support current and new teachers in becoming better prepared to teach mathematics using the new collaborative model.

Fatima Mushtaq (2013) This is a study of gender difference within the field of mathematics between 857 twelfth grade students (355 boys and 502 girls). The data sample contains a small group of students within two of the 34 provinces in Afghanistan. Ten of the schools were girls' only, and twelve were boy schools. In this study the data collected was analyzed by comparing the results of test scores of 12th grade math high school students. The question to be answered within this research: To what extent differences are in



mathematics achievements between male and female students at the high school level? The results show that math achievements in grade 12th were different among female and male students. Females' achievements were lower than males. Teachers' teaching experience had no significant influence on the average scores. In regards to students' exam scores in relation to teachers' education level. The average score of students taught by teachers with grade 16 and grade 14 was not significant different, thus a very small difference. Additionally, this study concentrated more on factors that affect girls' math achievements. It also pointed to parental support, self-confidence, students' interest to math, and cultural issues. As teachers were asked about ability of learning math, it does not relate to student s' sex. The teachers added those learners who make more efforts have better achievements in mathematics. The research is based on a small sample which does not cover the whole country. To get a clearer understanding of females achievements in high school math classes, a full country study with thousands of scores to compare, would perhaps bring this small study to the eyes of Ministry of Education and large donors. It would seem that good teaching methodology in math may have better result for females test scores.

MATHEMATICS ACHIEVEMENT

Mathematics is the pivot of all civilizations. Mathematics is that subject which indisputably forms the very basis of entire worlds commercial system. It is a contributory factor in the prosperity of human race. There is no science, no art and no profession where mathematics does not hold a key position. The accuracy and

exactness of a science is determined to a major extent by the amount of mathematics utilized in it. Most of the natural sciences and philosophy are to be studied on mathematical lines and without the study of mathematics there would be no improvement in them. Most of the natural sciences and philosophy are to be studied on mathematical lines and without the use of mathematics there would be no improvement in them.

Mathematics holds a unique place in our society today. People accept the fact that mathematics is vital to the continued growth of the nation, both for expanding internal advancement and for maintenance of leading role in the world community. Mathematics becomes important because it enables people to add to the understanding of environment and also because of what it does. Mathematics aids people in their understanding of the world in which they live and is in turn modified by the world and people's need as they continue to develop.

The subject mathematics has grown with the development of mankind from its earlier civilization up to the present modern civilization due to the felt need of the human being. Hence, no one can deny the importance of this subject because of its wide utility in human life from day-to-day activities to the space technology. Therefore, mathematics is significant for both a scholar and a layman, though their perceptions differ. A scholar may find as a means for higher form of abstraction and a layman may look at it as a tool for solving numerical problems. Mathematics is fascinating to all because of its opportunities for creation and discovery as well as for its utility. Mathematics is the queen of all sciences. It is basic to the



understanding of every science It enters into every walk of life. Therefore, in schools, much impetus is given to the study of mathematics. It is very well established that performance in mathematics is attributed to the intelligence of an individual. Answer to the questions 'What is mathematics'? sounds very simple. Now the question is, "Is mathematics only counting, measuring, computing and drawing? Of course, this is not. It includes them, but it is much more than all these. It is a way of thinking, it is a way of reasoning, a way of experimenting and observing. It is a method of experiencing, explaining and communicating one's total behavior. It is an instrument for the training of the mind. It is a self-contained mental discipline study; it is a medium of instruction for almost all other subjects.

SOCIOECONOMIC DISPARITIES AND MATHEMATICS ACHIEVEMENT:

Socioeconomic status (SES) has long been established as a potent predictor of educational attainment and achievement. Families with higher income levels often have access to better educational resources, including tutoring, enrichment programs, and learning materials. Additionally, higher SES families tend to reside in neighborhoods with well-funded schools and experienced teachers. These advantages can translate into improved mathematics performance.

However, the socioeconomic landscape within tribal communities is frequently characterized by lower average incomes, limited access to quality educational resources, and inadequate infrastructure. These conditions can create barriers to effective mathematics instruction and

hinder students' ability to reach their full mathematical potential.

CULTURAL CONTEXT AND MATHEMATICS LEARNING:

Culture is a dynamic and multifaceted aspect of human existence that profoundly influences various aspects of individuals' lives, including their educational experiences and academic achievements. In the context of mathematics learning, cultural factors play a significant role in shaping students' attitudes, perceptions, and engagement with mathematical concepts. For tribal communities, the integration of cultural context into mathematics education is essential to create a more inclusive and effective learning environment.

1. Language as a Cultural Bridge or Barrier: Language serves as a vital vehicle for transmitting cultural heritage and knowledge from one generation to the next. In tribal communities, native languages often hold deep cultural significance and are integral to preserving traditions and worldviews. However, when mathematics education is conducted exclusively in a non-native language, it can create a significant barrier to learning. Students may struggle to grasp mathematical concepts when they are presented in a language they are not fully comfortable with, hindering their overall mathematics achievement.

Efforts to integrate native languages into mathematics instruction can enhance understanding and engagement. Bilingual or multilingual approaches that incorporate both the dominant language and the native language can help bridge the linguistic gap and make mathematics more accessible to tribal students. This approach not only

facilitates learning but also validates the cultural identity of students.

2. Culturally Relevant Content and Examples: Incorporating culturally relevant content and examples into mathematics instruction can make the subject matter more relatable and engaging for tribal students. Mathematics concepts can be linked to traditional practices, daily life activities, and cultural artifacts that hold significance within tribal communities. By doing so, educators can demonstrate the practical applications of mathematics and highlight its relevance in students' lives.

For instance, geometry can be taught using traditional patterns and designs that have cultural significance. Algebraic concepts can be connected to ancestral storytelling methods. Such approaches not only foster a deeper understanding of mathematics but also instill a sense of pride and cultural appreciation.

3. Community Involvement and Traditional Knowledge: Tribal communities often possess rich traditional knowledge systems that encompass various forms of numeracy, measurement, and spatial reasoning. Integrating these indigenous mathematical practices into formal education can enrich students' understanding of mathematical concepts and promote a more holistic approach to learning.

Engaging tribal elders, community members, and cultural experts in the mathematics curriculum design and delivery can create a bridge between formal mathematics education and traditional knowledge. This collaboration can enhance the authenticity of mathematics instruction and contribute to a

more culturally sensitive learning experience.

4. Overcoming Stereotypes and Building Confidence: Cultural context also plays a role in shaping students' self-perception and confidence in their mathematical abilities. Negative stereotypes and biases can disproportionately affect marginalized communities, including tribal students, leading to lowered expectations and self-doubt. By integrating cultural context into mathematics education, educators can challenge these stereotypes and empower students to recognize their mathematical potential.

When students see their cultural heritage and experiences valued within the learning environment, they are more likely to develop a positive attitude towards mathematics and build greater confidence in their abilities to succeed.

CONCLUSION:

In conclusion, this research paper sheds light on the intricate relationship between socioeconomic factors, cultural context, and mathematics achievement among tribal populations. The study emphasizes the need for tailored interventions that address the specific challenges faced by tribal communities in their pursuit of mathematics proficiency. By recognizing and addressing these barriers, policymakers and educators can work towards fostering equitable and inclusive mathematics education for all.

Limitations and Future Directions:

The study acknowledges certain limitations, such as the potential for selection bias in the case studies and the challenges of capturing the full complexity of cultural influences. Future research could explore longitudinal studies to assess the long-term impact of interventions and



further investigate the role of specific cultural factors in mathematics learning among tribal individuals.

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