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RESEARCH REPOSITORY

COLLECTION OF RESEARCH ABSTRACTS



Department of Research & Innovation,
District Institute of Education & Training, Jagatsinghpur
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Volume-III, 2025-26

RESEARCH REPOSITORY
Collection of Research Abstracts



DEPARTMENT OF
RESEARCH AND INNOVATION,
DISTRICT INSTITUTE OF EDUCATION
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Mr. Ramesh Chandra Malik
Principal

Principal's Message...

Dear All,

I am pleased to share my thoughts on the significance of research activities in our academic session 2025-2026. Research plays a vital role in the advancement of education and professional development. Overall, research provides a foundation of knowledge, creation, guiding to explore the diverse aspects of teaching-learning process. In particular, it empowers educators and practitioners to encompass the challenges in the modern trends and issues.

I encourage all the faculty members, researchers and other stakeholders to actively participate and put their findings on different action research activities. Finally, we uphold the values of knowledge and excellence through continuous research activities.



Dr. Tapaswini Mohapatra
Teacher Educator

Department In-charge's Message...

Respected All,

It is a matter of great pleasure to present Research Repository, Volume–III (2025–2026). This repository is a vibrant reflection of the spirit of inquiry, innovation, and academic excellence nurtured in our institution. The abstracts compiled in this volume showcase diverse educational research endeavours, offering valuable insights into contemporary issues and classroom practices. Each study represents a meaningful step towards evidence-based improvement and transformative educational practices.

I extend my sincere appreciation to all contributors for their scholarly commitment and research zeal. I hope this repository will serve as a source of inspiration and a valuable reference for researchers, teacher educators, and practitioners in their pursuit of knowledge and innovation.

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LEVERAGING PARAKH RASHTRIYA SARVEKSHAN 2024 DATA FOR SYSTEMIC IMPROVEMENT: AN ANALYSIS OF LEARNING OUTCOMES & PEDAGOGICAL PRACTICES IN JAGATSINGHPUR DISTRICT

**Mr. Ramesh Chandra Malik, Principal, DIET, Jagatsinghpur*

***Mr. Chittaranjan Das, TE, DIET, Jagatsinghpur*

Introduction:

PARAKH Rashtriya Sarvekshan 2024 marks a major shift in India's educational assessment system from content-based testing to competency-based evaluation aligned with NEP 2020. In Odisha, the assessment covered 3,342 schools, 96,054 students, and 11,711 teachers, while Jagatsinghpur district participated through 40 schools at the foundational stage, creating a strong evidence base for district-level analysis and action. The study was undertaken to move beyond descriptive reporting and examine how learning outcomes, pedagogical practices, equity gaps, and systemic factors can inform improvement planning in Jagatsinghpur.

Objectives:

1. To compare the learning achievement of students based on gender, location, school type, and social background in Jagatsinghpur district.
2. To analyze competency-wise performance in Language and Mathematics of Class III students in Jagatsinghpur district.
3. To investigate the correlation between pedagogical practices and student performance.
4. To develop a district-level improvement planning framework for foundational-stage performance development.

Research Questions:

1. How do learning achievement differ among Class III students in Jagatsinghpur district based on gender, location, school type, and social background?
2. What are the competency-level strengths and weaknesses of Grade III students in Language and Mathematics?
3. Which pedagogical practices and support systems show stronger association with improved student performance?
4. What district-level strategies, timelines, and support mechanisms can strengthen foundational learning outcomes?

Delimitation of the Study:

- The study is delimited to Jagatsinghpur district, Odisha.
- It focuses on the foundational stage and specifically Grade III students.
- The analysis centers on Language and Mathematics competencies assessed through PARAKH Rashtriya Sarvekshan 2024.
- The scope includes 20 purposively selected schools out of the 40 schools that participated in the foundational-stage survey in the district.



Design of the Study:

1. Methodology

Mixed-methods research design integrating quantitative and qualitative analysis.

2. Sample

20 purposively selected schools representing management type, location, and performance level; participants included 350 Grade III students, 40 teachers, 20 school heads, and 8 district or block officials.

3. Tools

PARAKH state and district reports, key insights documents, intervention planning documents, school census and administrative records, and qualitative document analysis frameworks.

4. Procedure for Data Collection

Secondary quantitative data were compiled from official PARAKH documents and district records, while qualitative evidence was extracted from key insights, workshop materials, and intervention planning documents and then integrated for interpretation.

Data Analysis & Interpretation:

The quantitative component used descriptive statistics, gap analysis and correlation analysis to examine performance patterns and disparities. Qualitative data were analyzed through thematic coding to identify student-level, teacher-level, school-level, and system-level contextual factors affecting learning. The integrated analysis showed that Jagatsinghpur district performed above or at par with state and national benchmarks overall, but continued to face major weaknesses in applied Mathematics competencies, persistent social-group disparities, and gaps in teacher's professional development and instructional integration of learning resources.

Major Findings of the Study:

- Jagatsinghpur outperformed both Odisha and national averages in Grade III Language and performed slightly above or at par in Mathematics, with the institutional study showing modest improvement over district PARAKH values.
- Girls performed better than boys in both Language and Mathematics, and notable disparities were also observed across social groups, with OBC students highest and SC students lowest.
- Mathematics showed broader and deeper competency gaps than Language, especially in arithmetic operations, word problems, money use, mathematical vocabulary, and problem solving.
- Government schools scored the highest in the district data. The difference between rural and urban schools was small and didn't follow a clear pattern.



- Major systemic constraints included inadequate professional development, weak preparation for competency-based and experiential pedagogy, uneven use of learning resources, and inconsistent community participation.

Recommendations / Suggestions:

- Strengthen teacher professional development in competency-based pedagogy, experiential learning, inclusive education, and formative assessment.
- Prioritize Mathematics improvement, especially in applied and problem-solving competencies at the foundational stage.
- Design targeted interventions for socially disadvantaged learner groups to reduce persistent equity gaps.
- Improve classroom use of available learning resources such as Jadui Pitara, teacher resource books, and subject-specific kits through guided pedagogical support.
- Build a district-level improvement framework with phased actions, stakeholder roles, monitoring mechanisms, and stronger school-community collaboration.

Conclusion:

The study shows that Jagatsinghpur is a comparatively better-performing district in foundational learning, yet significant challenges remain in Mathematics application, equity, teacher preparedness, and effective instructional use of resources. Therefore, systemic improvement requires a focused district strategy that combines competency-based pedagogy, equity-oriented intervention, stronger professional support, and evidence-based planning grounded in PARAKH findings.



A STUDY ON THE ROLE OF SCHOOL LEVEL ACTIVITIES IN PROMOTING SUSTAINABILITY PRACTICES IN ELEMENTARY SCHOOLS OF ODISHA

Dr. Tapaswini Mohapatra, TE, DIET, Jagatsinghpur

Introduction:

Sustainability has become a key concern in 21st century education due to growing environmental challenges such as climate change, pollution, and resource depletion. Schools play an important role in developing students' awareness, responsibility, and positive attitudes toward the environment. At the elementary level, children are highly receptive and school level activities like plantation drives, cleanliness campaigns, waste management, water conservation, and eco-clubs significantly influence their understanding and behavior. When such activities are integrated into daily school life, sustainability is experienced in practice rather than remaining a theoretical concept.

In India, national policies such as the National Education Policy (NEP) 2020 emphasize environmental awareness, experiential learning, and community engagement to promote sustainability among students. Odisha, being a state vulnerable to frequent natural disasters like cyclones and floods, holds an even greater responsibility to strengthen sustainability education from the early grades. Therefore, examining how schools implement sustainability-related activities can provide valuable insights into current practices, students' participation, and the challenges schools encounter.

Objectives:

1. To identify sustainability practices currently promoted in elementary schools.
2. To study how teachers and school level activities foster sustainability awareness among students.
3. To study the challenges faced by schools and teachers in promoting sustainability practices.
4. To provide recommendations for strengthening sustainability education in elementary schools.

Research Questions:

1. What sustainability practices are currently promoted in elementary schools?
2. How do teachers and school level activities promote sustainability awareness among students?
3. What challenges are faced by schools and teachers in promoting sustainability practices?
4. What recommendations can strengthen sustainability education in schools?

Delimitation of the Study:

- The study was delimited to selected elementary schools of Jagatsinghpur district, Odisha.
- It was confined to Class-V students, teachers, and head teachers.
- The study focused only on selected sustainability practices, namely waste management, plantation, energy conservation, water conservation, and cleanliness drives.



Design of the Study:

1. Methodology

The study adopted a descriptive survey design using a mixed-methods approach, combining both quantitative and qualitative techniques to investigate the role of education in promoting sustainability practices in elementary schools.

2. Sample

The sample for the study included 10 schools selected through simple random sampling, with approximately 20 teachers, 10 head teachers, and 50 Class-V students as respondents.

3. Tools

- **Questionnaire for Teachers** - Used to gather information on teachers' role in promoting sustainability practices.
- **Interview Schedule for Head Teachers** - Used to understand school-level initiatives and leadership support for sustainability.
- **Observation Checklist** - Used to record and verify sustainability practices implemented in schools.
- **Focus Group Discussion (FGD) with Students** - Used to explore students' awareness, participation, and views on sustainability practices.

4. Procedure for Data Collection

School visits were conducted for observations and interactions. Data were collected through questionnaires, interviews, and focus group discussions (FGDs), and the findings were triangulated to ensure the validity and reliability of the study.

Data Analysis & Interpretation:

The data collected through questionnaires, interviews, observations, and focus group discussions were analysed using suitable quantitative and qualitative techniques to ensure a comprehensive understanding of the role of school level activities in promoting sustainability practices in elementary schools of Jagatsinghpur district.

By employing both quantitative and qualitative data analysis techniques, the study ensured a comprehensive and reliable interpretation of findings, enabling a deeper understanding of how school level activities contribute to the promotion of sustainability practices in elementary schools.

Major Findings of the Study:

1. Sustainability Practices in Schools

- Most schools actively promoted cleanliness, plantation, waste management, sanitation and energy conservation.
- Students regularly participated in eco-friendly activities and environmental campaigns.



2. Role of Teachers and School Activities

- Teachers integrated sustainability concepts through classroom teaching and activity-based learning.
- Eco-clubs, awareness programmes, and environmental events enhanced students' sustainability awareness.
- Head teachers provided leadership and support for sustainability initiatives.

3. Challenges in Promoting Sustainability

- Teacher workload, lack of training, and absence of structured guidelines hindered implementation.
- Limited infrastructure, funds, and learning resources affected sustainability practices.

4. Suggestions for Strengthening Sustainability Education

- Greater emphasis on hands-on activities, eco-clubs, and environmental awareness programmes.
- Need for regular teacher training, community participation, and stronger institutional support.

Overall Finding: Sustainability practices are well established in elementary schools, but strengthening teacher capacity, resources, and systematic planning is essential for long-term impact.

Recommendations / Suggestions:

- Integrate sustainability activities into school plans, timetables, and co-curricular programmes.
- Organize regular teacher training on sustainability education and activity-based approaches.
- Strengthen student participation through eco-clubs, plantation drives, and cleanliness campaigns.
- Improve infrastructure and resources for waste management, water conservation, and green practices.
- Ensure active leadership, monitoring, and support from head teachers and school management committees.
- Promote community and parental involvement to reinforce sustainability practices beyond school.

Overall Recommendation: A collaborative approach involving schools, teachers, students, parents, and the community is essential for effective and sustainable environmental education.

Conclusion:

The study concludes that school-level activities and teachers play a vital role in promoting sustainability practices among elementary school students. Activities such as cleanliness drives, plantation programmes, eco-clubs, and environmental awareness campaigns helped develop positive environmental attitudes and behaviours. Despite challenges related to infrastructure, resources, and teacher workload, schools demonstrated a strong commitment to sustainability education. The study highlights the need for regular teacher training, leadership support, community participation, and systematic integration of sustainability practices into school programmes to ensure long-term impact and foster environmentally responsible citizens.



STATUS AND PRACTICES OF ICT INTEGRATION IN ELEMENTARY SCHOOLS: A STUDY ON TEACHERS' PERSPECTIVES AND CLASSROOM APPLICATION

Dr. Priyabrata Priyadarshi Behera, TE, DIET, Jagatsinghpur

Introduction:

The rapid advancement of Information and Communication Technology (ICT) has brought significant changes to the educational landscape across the world. Teaching learning processes are no longer confined to traditional classroom methods; instead, technology has become an important medium for enhancing instructional practices. In the context of school education, ICT has emerged as a powerful tool to support effective teaching, learner engagement, and improved educational outcomes. At the elementary level, education plays a crucial role in building a strong foundation for lifelong learning. The integration of ICT at this stage has the potential to make learning more interactive, meaningful, and inclusive. Digital tools such as computers, projectors, and online resources can help learners understand concepts better through visual and experiential learning. ICT also supports differentiated instruction by addressing the diverse learning needs of children.

The present study focuses on understanding the status and practices of ICT integration in elementary schools by examining teachers' perspectives and classroom application. By exploring these aspects, the study aims to provide insights that can contribute to strengthening ICT integration and improving the quality of teaching and learning at the elementary stage.

Objectives:

1. To identify the current status of ICT based facilities available in elementary schools.
2. To examine teachers' classroom practices and perspectives regarding ICT use.
3. To explore the challenges faced by teachers in implementing ICT effectively.
4. To provide recommendations for improving ICT integration in elementary classrooms.

Research Questions:

1. What is the current status of ICT based facilities available in elementary schools?
2. How do teachers use ICT in classroom teaching and learning?
3. What challenges do teachers face in implementing ICT effectively?
4. What strategies or recommendations can enhance ICT integration in elementary classrooms?

Delimitation of the Study:

- The study was delimited to elementary schools in Balikuda Block of Jagatsinghpur district, Odisha.
- The participants were limited to teachers and head teachers.
- The study focused on teachers' perspectives, classroom practices, and challenges related to ICT integration in elementary schools.



Design of the Study:

1. Methodology

The study adopted a descriptive survey design using a mixed-methods approach, combining quantitative and qualitative data to understand the status, classroom practices, and challenges of ICT integration in elementary schools.

2. Sample

The study included 15 elementary schools selected from Balikuda Block. From each school, 2 teachers and 1 head teacher were selected, making a total of 30 teachers and 15 head teachers. Simple random sampling was used to select the schools and participants.

3. Tools

- **Questionnaire for Teachers** - Used to collect data on ICT classroom practices, ICT usage, challenges, and recommendations.
- **Interview Schedule for Head Teachers** - Used to explore school-level ICT facilities, support, and challenges.
- **Observation Schedule for Classroom Practices** - Used to record actual ICT usage during classroom teaching.

4. Procedure for Data Collection

Data were collected through teacher questionnaires, interviews with head teachers, and classroom observations of ICT usage during teaching-learning processes. The collected data were compiled, analyzed, and triangulated to ensure the accuracy and validity of the findings.

Data Analysis & Interpretation:

The data collected through questionnaires, interview schedules, and classroom observations were analysed using appropriate quantitative and qualitative techniques to achieve the objectives of the study. By combining quantitative and qualitative analysis, the study ensured triangulation of findings, enhancing the validity and reliability of conclusions regarding ICT integration in elementary schools.

Major Findings of the Study:

1. Status of ICT Facilities

- ICT infrastructure was inadequate in most schools, with limited computers, projectors, smart boards and internet facilities.
- Only a few schools had functional computer labs and reliable internet.
- 53.3% of head teachers reported receiving ICT-related support.
- 86.7% of schools reported regular use of ICT by teachers.

2. Teachers' Practices and Perspectives

- Most teachers used ICT mainly for basic teaching activities and relied on DIKSHA and YouTube.



- 100% of teachers believed ICT improves teaching effectiveness and student engagement.
- ICT-supported lessons increased student participation and classroom interaction.

3. Challenges in ICT Integration

- Inadequate infrastructure, poor internet connectivity and lack of functional devices were major challenges.
- Teachers reported insufficient ICT training, limited technical support and workload-related constraints.

4. Measures for Improvement

- Strengthening ICT infrastructure and internet facilities was strongly recommended.
- Regular hands-on ICT training and technical support were identified as essential.
- Curriculum-aligned digital resources and strong leadership support were considered important for effective ICT integration.

Overall Finding: Despite positive teacher attitudes (100%) and regular ICT use (86.7%), effective integration was limited by inadequate infrastructure, training, and support.

Recommendations / Suggestions:

- **Improvement of ICT Infrastructure:** Elementary schools should be equipped with adequate and functional ICT devices, along with reliable internet connectivity, to support regular classroom use.
- **Continuous Professional Development:** Regular, hands-on ICT training programs should be organized to enhance teachers' digital competencies and pedagogical integration skills.
- **Technical Support and Maintenance:** Provision of timely technical support and proper maintenance mechanisms is essential to ensure uninterrupted use of ICT tools.
- **Pedagogical Integration of ICT:** Teachers should be encouraged to integrate ICT meaningfully with subject content rather than using it only for presentation purposes.
- **Leadership and Institutional Support:** Head teachers and educational authorities should actively monitor, motivate, and support teachers in adopting ICT enabled teaching practices.
- **Access to Quality Digital Resources:** Curriculum aligned digital content should be made easily accessible to teachers for effective classroom implementation.

Conclusion:

The study on ICT Integration in Elementary Schools revealed that teachers and head teachers generally held positive attitudes towards the use of ICT in teaching-learning processes. ICT was found to enhance student engagement and classroom interaction; however, its effective integration was limited by inadequate infrastructure, poor internet connectivity, insufficient training, and lack of technical support. The study highlights the need for strengthening ICT facilities, providing continuous professional development for teachers, and ensuring institutional support for meaningful ICT integration. Overall, effective use of ICT has significant potential to improve teaching practices and learning outcomes in elementary schools.



A STUDY ON PARTICIPATION OF PARENTS IN FOUNDATIONAL LITERACY AND NUMERACY (FLN) PROGRAMME

Mr. Sushanta Kumar Naik, Sr. TE, DIET, Jagatsinghpur

Introduction:

The Foundational Literacy and Numeracy (FLN) Programme aims to ensure that every child acquires basic reading, writing and arithmetic skills during their early years of education. Parental participation plays a crucial role in the success of this initiative. Parents who see themselves as partners in education tend to be more proactive in participating in school activities and supporting their child's learning journey. Participation, the actual involvement of parents in the FLN Programme, includes activities such as attending school meetings, assisting with homework, and encouraging reading habits. This active involvement not only enhances the learning experience for children but also fosters a collaborative environment between schools and families, ultimately contributing to the overall effectiveness of the FLN Programme.

Parental participation Foundational Literacy and Numeracy (FLN) Programme is a critical component of holistic learning in children, extending beyond school hours to include home based activities such as literacy and numeracy practice. Parents act as role models, influencing their children's language use and numeracy skills through various engagements at home. Parental practices also play a significant role in shaping children's interest in literacy and numeracy. A positive home learning environment enhances emergent literacy and numeracy, fostering early academic skill development.

Objectives:

1. To study the level of awareness and understanding of parents regarding the objectives and activities of Foundational Literacy and Numeracy (FLN) program
2. To identify the various forms (such as home-based learning support, attendance in school activities, communication with teachers) of parents' participation
3. To assess the level of parent's participation in Foundational Literacy and Numeracy (FLN) program
4. To identify the challenges faced by the parents in participating Foundational Literacy and Numeracy (FLN) program
5. To suggest suitable measures for strengthening parent's participation in Foundational Literacy and Numeracy (FLN) program.

Research Questions:

1. What is the level of parent's awareness and understanding of Foundational Literacy and Numeracy (FLN) Programme?
2. In what ways do parents' participation in the Foundational Literacy and Numeracy (FLN) Program through home support, school activities and teacher communication?



3. What is the level of parent's participation in the Foundational Literacy and Numeracy (FLN) programme?
4. What challenges do parents participation in the Foundational Literacy and Numeracy Programme (FLN)?
5. What measures can strengthen parent's participation in the Foundational Literacy and Numeracy Programme (FLN)?

Delimitation of the Study:

1. The present study is delimited to the sample 06 cluster, 12 schools, 12 headmaster, 24 FLN Teachers and 36 parents of up to grade 3 students of different Government Primary School.
2. The study is limited to Biridi block of Jagatsinghpur District, Odisha.

Design of the Study:

1. Methodology

Descriptive survey method used in the present study

2. Sample

Sampling is a process used in statistical analysis in which a predetermined number of observations were taken from a larger population. Simple random sampling is used to select the parents and collect the data from them. Simple random sampling is the basic technique where we select a group of subjects (a sample) for study from a larger group (a population). Each individual is chosen entirely by chance and each member of the population has an equal chance of being included in the sample. A total 6 clusters, 12 schools, 12 headmasters, 24 FLN dedicated teachers and 36 parents' samples were selected randomly from the Government primary schools of Biridi Block, Jagatsinghpur District, Odisha.

3. Tools

The researcher was used a Self-made interview schedule and questionnaire to collect data.

- Interview schedule for Parents.
- Questionnaire for the Headmaster.
- Questionnaire for the FLN Dedicated Teacher.

4. Procedure for Data Collection

The data was collected through the field investigator who visited personally to the school located at Jagatsinghpur district and collected data from the respondent. The data was collected with the help of developed tool. The investigator had taken the permission of the authority of the institution before collection of data, clear instruction was given to enable them to give there was response meaningfully.

Data Analysis & Interpretation:

The data were analysed both quantitatively and qualitatively using simple percentage statistics for interpretation. Findings from the parent, teacher, and headmaster tools reveal that parents are generally aware



and positive about the Foundational Literacy and Numeracy (FLN) programme, though their participation remains irregular due to limitations such as time constraints, low literacy, limited awareness, and communication gaps.

Objective 1: Awareness and Understanding of FLN

Most parents reported awareness of FLN, with 90% aware of the programme, 80% understanding its meaning, and 70% knowing the literacy and numeracy skills targeted for their children. However, teachers and headmasters perceived only 10% of parents as fully aware, while 70% were partially aware and 20% not aware. Both groups also felt that many parents only somewhat understood their role in supporting FLN at home. This indicates a gap between parents' self-perception and actual understanding, highlighting the need for clearer orientation on FLN objectives and home-based support strategies.

Objectives 2 & 3: Forms and Level of Participation

Parents showed strong participation in school-based activities, with all parents attending PTMs and FLN-related events. Many also reported helping children at home and participating in FLN committees. Headmasters identified meetings and school events as the most common forms of involvement, while communication mainly occurred through PTMs, WhatsApp messages, home visits, and notice boards.

Although attendance in meetings was high, regular engagement remained limited. Teachers reported that only a small proportion of parents communicated regularly about children's progress or provided daily support for FLN activities at home. The findings suggest that participation is mostly event-based rather than continuous, and that parents may overestimate the extent of their home support.

Objective 4: Challenges to Parent Participation

Major barriers identified by headmasters and teachers included lack of awareness, low parental literacy, time constraints, weak school home communication, limited learning resources, and socio-economic difficulties. While parents attended meetings and workshops, fewer received regular guidance on supporting FLN at home or communicated frequently with teachers. These findings indicate that both structural and communication-related barriers affect sustained parental participation.

Objective 5: Measures to Strengthen Participation

Headmasters recommended awareness campaigns, attendance drives, and motivational measures such as prize distribution for parents. Teachers emphasized strategies like PTMs, Mother Teacher Meetings, SMC meetings, home visits, phone calls, and WhatsApp communication. Recommendations also included monthly FLN-focused parent meetings, "Parent Shiksha Abhijan," and clear guidelines for home support. Overall, the findings highlight the need for more systematic, continuous, and FLN-specific parent engagement strategies.

Major Findings of the Study:

1. Awareness and Understanding of Foundational Literacy and Numeracy



Analysis of parental responses shows that 90% of parents are aware of the FLN programme. However, teachers and headmasters reported that only 10% of parents are fully aware of FLN objectives, while 70% are partially aware and 20% are not aware. This indicates that although general awareness exists, in-depth understanding of programme objectives is limited.

PTMs emerged as the major source of information, with 90% of parents receiving FLN-related information through meetings. WhatsApp messages, phone calls, and information through students contributed only minimally (5% each), reflecting limited use of alternative communication channels.

2. Forms of Parents' Participation

Headmasters reported that 20% of parents attend school meetings regularly and 75% participate occasionally, while only 5% remain uninvolved. Teachers identified attending meetings and participation in school events (40% each) as the major forms of involvement. Helping children with homework accounted for only 10%, while monitoring attendance and other activities represented 5% each. The findings indicate that parental participation is more event-oriented than learning-support oriented.

3. Level of Parents' Participation

Teachers observed that parents with higher educational backgrounds demonstrate greater involvement in children's learning. About 30% reported significantly higher participation among educated parents, while 40% observed some difference. This suggests that parental education influences awareness, confidence, and engagement in FLN activities.

4. Challenges to Parents' Participation

- Major challenges identified include:
- Limited awareness of FLN objectives
- Low parental literacy levels
- Time constraints due to work
- Weak home school communication
- Lack of learning materials at home
- Socio-economic barriers affecting active participation

5. Measures and Strategies to Strengthen Participation

- The major strategies adopted for strengthening parental participation include:
- Parent Teacher Meetings (PTMs)
- Mother Teacher Meetings (MTMs)
- School Management Committee (SMC) involvement
- Home visits & Telephonic communication with parents
- WhatsApp-based communication



Recommendations / Suggestions:

- Awareness programmed should be organized for parents to orient them on Foundational Literacy and Numeracy (FLN) Programme.
- Parents' participation should be encouraged for smooth functioning of Foundational Literacy and Numeracy (FLN) Programme.
- Community participation should be encouraged for smooth functioning of Foundational Literacy and Numeracy (FLN) Programme.
- Further researches will be taken in another District of Odisha.
- Further researches will be taken in other one block of Jagatsinghpur District.
- Further researches will be taken in private schools of Jagatsinghpur District.
- Further researches will be taken on different stakeholders involve in Foundational Literacy and Numeracy (FLN) Programme of Jagatsinghpur District.

Conclusion:

The Foundational Literacy and Numeracy (FLN) programme reveals a generally positive perception among parents but highlights significant gaps in detailed understanding and engagement. While most parents are aware of the programme and recognize its importance, inconsistent communication and a lack of comprehensive resources hinder deeper involvement. Many parents are not fully informed about the specific objectives, skills, and milestones of the programme. The findings underscore the necessity for improved communication strategies, more consistent dissemination of detailed information, and enhanced support resources to better align the programme with parental expectations and cultural values. Addressing these areas will likely enhance parental involvement, boost confidence in the Foundational Literacy and Numeracy (FLN) programme, and ultimately improve educational outcomes for students.



IMPACT OF MATHEMATICS TEACHING AND LEARNING ACTIVITIES ON STUDENTS' ACHIEVEMENT AMONG PREPARATORY STAGE LEARNERS

Mrs. Smitashree Biswal, Sr. TE, DIET, Jagatsinghpur

Introduction:

Mathematics is a subject of great importance and dignity, holding a vital place in science, technology, and everyday life. Mathematical knowledge and skills are essential for problem-solving and decision-making in daily activities. At the school level, teachers play a crucial role in developing students' mathematical abilities and nurturing curiosity for discovering new concepts. The major aim of mathematics education is to develop mathematical thinking, logical reasoning, numerical ability, and problem-solving skills through joyful learning experiences. Children should learn to enjoy mathematics rather than fear it, and they should be encouraged to explore, question, and solve meaningful problems. In the 21st century, education has undergone significant transformation with the emergence of positive psychology and experiential learning approaches. These approaches emphasize learning through real-life situations, collaboration, creativity, communication, and active participation, leading to better understanding of concepts. Zakaria and Iksan (2007) highlighted that mathematics learning becomes more effective when students actively participate in collaborative learning and idea sharing. In mathematics, integrating theory with practice enhances conceptual understanding.

In India, the National Education Policy 2020 emphasizes skill-based learning and "learning by doing." Activity-Based Teaching-Learning methods are widely encouraged at the primary level to make students active participants rather than passive learners. Activities and experiments designed according to students' age, understanding level, and subject concepts help make learning enjoyable, meaningful, and self-reliant. Such joyful learning experiences motivate students to learn new mathematical concepts effectively and develop confidence in mathematics.

Objectives:

1. To study different activities conducted on Mathematics by the teachers for preparatory stage learners.
2. To inquire the types of support provided by the teachers for conducting different activities on Mathematics for preparatory stage learners.
3. To study factors affecting mathematics learning among the preparatory stage learners
4. To understand different challenges faced by teachers for conducting activities in Mathematics teaching and learning process for preparatory stage learners
5. To study the impact of Mathematics teaching and learning activities on students' achievement in Mathematics among preparatory stage learner.

Research Questions:

1. What are the activities conducted on Mathematics for preparatory stage learners?



2. What are the factors that affect Mathematics learning among the preparatory stage learners?
3. How the teachers supported for conducting different activities on Mathematics for preparatory stage learners?
4. What are the challenges faced by teachers for conducting activities in Mathematics teaching and learning process for preparatory stage learners?
5. What is the impact of Mathematics teaching and learning activities on students' achievement in mathematics preparatory stage learners?

Delimitation of the Study:

Following are the delimitations of study:

- The present study is delimited to only the Jagatsinghpur District.
- This study is delimited to Grade-V students of preparatory stage

Design of the Study:

1. Methodology

Descriptive survey method was adopted for the present study.

2. Sample

Jagatsinghpur district was selected as the area of the study. For the study 12 schools of Kujanga block (06 rural schools and 06 urban schools) was taken as sample. All the class V students and subject teachers of the twelve schools were included in the sample.

3. Tools

The following techniques were adopted to collect data from the sample schools

- Classroom Observation Schedule
- Focused Group Discussion (FGD) Questionnaire for Students
- Interview Schedule for subject Teachers (Structured Interview)
- Competency based test question

4. Procedure for Data Collection

The data were collected by using self-developed tools developed by researcher, though trained Field Investigators (FIs).

Data Analysis & Interpretation:

Both quantitative and qualitative analyses were done to analysis the data and derive the conclusions, since these strategies suit the objectives and need of the study. The data is assayed using various statistical tools. The measures of central tendency indicate what is typical of the average subject. Measures of variation indicate the distribution of data around the center and correlation refers to the degree to which two variable moves in sync



with one another. Some statistical test like Hypothesis testing, estimations and modeling make inferences about population. They are used to determine whether it is possible to draw general conclusions about a population, or predictions about the future based on the collected data. Advanced modeling techniques may eventually be used to build sophisticated explanations of how the data addresses the original question. But many research projects would never need to go that far; the question would be answered by simple descriptive statistics.

Major Findings of the Study:

The major findings for the study are mentioned below;

- It is found that several of activities concept based competency development classroom activities on Mathematics, puzzle, quiz, mathematical games etc. done by teachers in few schools. But the proper process of conducting the activities is not followed.
- The study reveals that few teachers use TLM like GKA kit picture, chart, model etc. during activities to make learning enjoyable and effective.
- It is also found from the study that teachers ask questions to the students but do not encourage students to ask questions. It is also found that most of the teachers asked knowledge based questions instead of understanding and application based questions.
- The findings also show that most of the teachers do not adopt collaborative approach of learning which may be beneficial for low performer for their improvement
- The research study found out that the low performer students do not get proper remediation for their improvement, which in turns hamper their academic performance
- The study also revealed that in most of the schools, teacher initiated innovative activities like Mathematics Mela, seminar, club activities, quiz, project activities are not done. This leads to a poor holistic skill development of students on Mathematics.
- The findings reveal that the lack of continuous professional development of teachers of Mathematics reduces their work efficiency.
- The findings show that lack of proper adopted method, activities, assessment process, teacher support and family support hamper students' competency development on Mathematics.
- It is also found that very few learners receive support on Mathematics learning from their parents and family members at home, due to lack of knowledge.



Recommendations / Suggestions:

The following recommendations may be taken into consideration;

- Teacher need to be well trained on Mathematics pedagogical processes and continuous professional development of teachers should be taken most priority to ensure quality education.
- Teacher need to prepare well before the classroom activities as per their lesson notes.
- Teacher must adopt various method in order to encourage participatory approach of learning and ensure their participation
- Teacher must give equity based support to all learners for their competency development i.e. remediation to low performer and enrichment activities and questions to high performer.
- Teachers must do different activities along with hands on activities, concept mapping, and developing questions with learners for enhancing their understanding on Mathematics concepts.
- Schools must arrange different activities like, club activities, discussion forum, exhibition, wall activities etc., in order to create a positive and vibrant Mathematics learning opportunities for learners.
- Proper communication on the performance of students on Mathematics should be done with parents. Parents need to be aware on the importance on Mathematics learning at school level.
- Students need to be engaged actively with different activities at classroom and school level, so that they will be motivated to choose Mathematics as their career.

Conclusion:

By considering the importance of Mathematics learning for the students at preparatory stage, steps should be taken to orient teachers and aware parents in order to achieve the broad aim of education. This study is delimited to only Kujanga blocks and its 12 schools of Jagatsinghpur district. In order to generalize the findings, the study may be undertaken for more number of samples. This study may also be extended to gender wise performance on Mathematics.



IMPACT OF DIGITAL LEARNING TOOLS ON STUDENTS' ACADEMIC PERFORMANCE IN ELEMENTARY SCHOOLS

Mrs. Jyotsna Rani Dash, Sr. TE, DIET, Jagatsinghpur

Introduction:

The rapid integration of digital learning tools in education presents both opportunities and challenges, especially in diverse contexts like India. While technology promises personalized and engaging learning, its actual impact on academic performance in Indian elementary schools remains under-researched. This study investigates the relationship between digital tool integration and student academic outcomes in rural and semi-urban schools of Raghunathpur block, Odisha.

Objectives:

1. To identify digital learning tools deployed in elementary schools.
2. To analyse correlations between tool usage and academic performance.
3. To examine teacher and student perceptions of tool effectiveness.
4. To identify implementation challenges and enabling factors.
5. To develop evidence-based recommendations for sustainable integration.

Research Questions:

1. What digital tools are used in participating schools?
2. To what extent does digital tool integration correlate with academic performance?
3. How do perceptions of effectiveness align with performance outcomes?
4. What barriers impede effective technology integration?
5. What strategies can optimize integration outcomes?

Delimitation of the Study:

- Delimited to Grades VI–VII in Raghunathpur block, Jagatsinghpur district.
- Focus on English and Mathematics subjects.
- Excludes administrative technologies and higher education institutions.

Design of the Study:

1. Methodology

Descriptive survey method with mixed-methods approach.

2. Sample

120 respondents (20 teachers, 100 students) from 10 government schools, selected via purposive stratified random sampling.

3. Tools

Structured questionnaires for teachers and students, academic performance records.



4. Procedure for Data Collection

Administered printed/digital questionnaires, collected academic scores, and conducted follow-up interviews (Jan 2026).

Data Analysis & Interpretation:

Quantitative data analysed using descriptive statistics and correlation analysis; qualitative data underwent thematic analysis. Key results include moderate positive correlation between digital tool usage and academic performance ($r=0.42$, $p<0.01$), high perceived engagement (teacher $M=4.2/5$, student $M=3.9/5$), and significant infrastructural barriers (internet, power, device access).

Major Findings of the Study:

- Multimedia and subject-specific apps are most frequently used; LMS and assessment tools are underutilized.
- Significant positive correlation exists between digital tool usage and academic scores.
- Teachers and students perceive digital tools as highly engaging and beneficial.
- Main barriers: inadequate infrastructure, insufficient teacher training, and student access disparities.
- Teachers prefer pedagogy-focused professional development over technical training.

Recommendations / Suggestions:

- Adopt blended learning models combining digital and traditional methods.
- Invest in rural infrastructure (internet, devices, power).
- Provide on-going, pedagogy-centered teacher training.
- Ensure equitable access through device-lending programs.
- Develop institutional frameworks for technology integration aligned with curriculum goals.

Conclusion:

Digital learning tools positively influence academic performance and engagement in elementary schools, but their effectiveness is mediated by infrastructure, teacher preparedness, and equitable access. A balanced, context-sensitive approach supported by systemic investment and professional development is essential for sustainable and inclusive digital integration in education.



EFFECTIVENESS OF MONTHLY CLUSTER LEVEL MEETING ON PROFESSIONAL DEVELOPMENT OF CRCCS AND TEACHERS

Mrs. Prajnadipti Sahoo, TE, DIET, Jagatsinghpur

Introduction:

Continuous Professional Development (CPD) is essential for maintaining and improving the quality of teaching and learning in schools. The Cluster Level Meeting conducted monthly under the guidance of Cluster Resource Centre Coordinators (CRCCs) serves as a vital platform for peer learning, sharing of best practices, addressing classroom challenges, and updating pedagogical skills. Despite its routine implementation, the actual impact of these meetings on teachers' professional competence and CRCCs' capacity-building requires systematic assessment. This study seeks to evaluate the effectiveness of monthly cluster meetings in promoting professional growth and improving teaching-learning outcomes.

Objectives:

1. To assess the effectiveness of monthly cluster level meetings in improving the professional competencies of CRCCs and teachers.
2. To identify the areas of professional growth of CRCCs & Teachers facilitated through cluster meetings.
3. To examine the role of CRCCs in organizing, facilitating, and following up on the outcomes of cluster meetings.
4. To analyze the challenges faced by CRCCs and Teachers in conducting and participating in Monthly Cluster Level Meeting.
5. To suggest measures for strengthening the effectiveness and sustainability of Monthly Cluster Level Meeting for professional development.

Research Questions:

1. How effective are the monthly cluster level meetings in enhancing professional skills and classroom practices of CRCCs and Teachers?
2. What roles do CRCCs play in ensuring the quality and outcome of Monthly Cluster Level Meeting?
3. What factors influence the participation and engagement of teachers in Monthly Cluster Level Meeting?
4. What improvements can be made to maximize the professional benefits of CRCCs and Teachers through Monthly Cluster Level Meeting?

Delimitation of the Study:

- The study will be delimited to Naugaon Block of jagatsinghpur District.
- The study will be delimited to 09 CRCCs and 45 teachers from 09 clusters only.



Design of the Study:

1. Methodology

A descriptive research design will be adopted, combining quantitative and qualitative methods.

2. Sample

All CRCCs and elementary school teachers under the Naugaon Block of Jagatsinghpur District as Population. A purposive sample of 09 CRCCs and 45 teachers from 09 clusters.

3. Tools

- Questionnaires for teachers and CRCCs.
- Observation schedules for MCM sessions conducted by CRCCs.

4. Procedure for Data Collection

Data collected from different schools and CRCCs through the FIs from Naugaon Block.

Data Analysis & Interpretation:

Data will be analyzed & interpreted both quantitatively & qualitatively.

Major Findings of the Study:

A. CRCCs' Perspective

- About 89% of CRCCs reported that MCLMs are regularly organized as per academic guidelines.
- Nearly 90% stated that they effectively facilitate meetings and provide academic support.
- Around 88% felt that cluster meetings enhance their professional competence and leadership skills.
- About 85% agreed that MCLMs strengthen instructional monitoring, though follow-up remains challenging.
- Approximately 78% identified workload and time constraints as major challenges.

B. Teachers' Perspective

- Nearly 93% of teachers agreed that MCLMs are regular, well organized, and academically focused.
- About 92% perceived CRCCs as effective facilitators and academic guides.
- Approximately 94% reported improvement in pedagogy, subject knowledge, and assessment practices.
- Around 86% acknowledged receiving instructional support, though follow-up was sometimes inadequate.
- Nearly 70% identified workload and time limitations as barriers.

C. Classroom Observation

- About 70% of teachers demonstrated proper lesson planning and use of TLMs.
- Nearly 80% adopted learner-centered teaching and formative assessment practices.
- Around 90% effectively managed classrooms and instructional time.
- Nearly 70% of classrooms reflected active student participation.



D. MCLM Observation

- About 89% of CRCCs conducted meetings regularly with clear objectives and academic guidance.
- Around 88% of meetings reflected active teacher participation and sharing of practices.
- Approximately 78% used academic records and assessment data during discussions.
- Nearly 89% reviewed follow-up actions, while almost all meetings reflected a supportive professional environment.

Recommendations / Suggestions:

- Teachers may be encouraged to integrate teaching learning materials more consistently during classroom instruction to enhance conceptual understanding and learner engagement.
- Greater emphasis may be given to strengthening formative assessment practices, particularly timely feedback and systematic tracking of student progress.
- Classroom practices may include more peer interaction and collaborative learning activities to improve student participation and communication skills.
- CRCCs may further promote data-driven discussions during monthly cluster level meetings by regularly analysing assessment trackers and classroom observation findings.
- Follow-up mechanisms after cluster meetings may be strengthened to ensure effective classroom-level implementation of academic decisions.
- Regular capacity-building and orientation programmes may be organised for teachers and CRCCs to enhance instructional and mentoring competencies.

Conclusion:

The present study examined the effectiveness of **classroom instructional practices and monthly cluster level meetings** in supporting teaching quality and professional development. The findings revealed that classroom instruction was largely characterised by sound planning, effective teaching learning processes, and positive classroom management practices. At the same time, monthly cluster level meetings emerged as an effective academic support system, providing guidance, mentoring, monitoring, and opportunities for collaborative professional learning among teachers.

The convergence of effective classroom practices and structured cluster-level academic support significantly contributed to strengthening instructional quality and promoting continuous professional development. The study concludes that when classroom observations and monthly cluster level meetings are systematically planned and purposefully implemented, they serve as powerful mechanisms for improving teaching-learning processes and advancing foundational literacy initiatives. Strengthening these practices further will ensure sustained academic improvement and professional growth at the grassroots level.



IMPACT OF INTEGRATING LOCAL CULTURAL PRACTICES ON THE DEVELOPMENT OF SOCIO-EMOTIONAL & ETHICAL LEARNING SKILLS AMONG CHILDREN IN THE FLN STAGE OF GOVERNMENT SCHOOLS

Mr. Purnendu Kumar Giri, Sr. TE, DIET, Jagatsinghpur

Introduction:

Education is a reformed social process where the students get much more exposures to become socialized. Without reformation, education becomes worthless just as a flower is deprived of affection or care without fragrance. Valuable and reformed education strengthens the figurative architecture of human life. If the foundations are not solid, the skyscraper building blends into the earth with joy for a short time, as well as the materialistic valueless education that draws down human society. We need first a skilled engineer and an experienced mason, no matter how many tools like bricks, stones, chips, iron-rods, cement etc. need to construct a beautiful and lasting building. We need an experienced gardener with a dedicated mind to create a beautiful flower garden. Although classrooms, teaching aids, educational human resources etc. are full, still then without a competent, humane and responsible teacher an educational institution becomes meaningless. In a classroom environment a teacher plays a vital role of an experienced gardener to create many fragrant flowers. Similarly, a skillful and experienced teacher plays the role of engineer to build up the career of students. In this way a teacher gets the opportunity to fully enjoy his/her academic life in the classroom. He/she starts a social atmosphere there. Then he/she can feel “My classroom is my life”.

Foundational Literacy and Numeracy (FLN) is essential for early childhood education, but cognitive skills alone do not ensure holistic development. Socio-emotional and ethical learning (SEEL) skills such as empathy, self-awareness, teamwork and ethical decision making play a crucial role in a child's overall growth. However, in many FLN programs, these aspects receive limited attention. Integrating local cultural practices can provide a meaningful and contextualized approach to developing SEEL skills among young learners. This research explores how indigenous stories, traditional games, folk songs, and community rituals can be utilized to nurture socio-emotional and ethical development in FLN grade children.

Objectives:

1. To identify key cultural elements that effectively enhance SEEL skills in early learners.
2. To analyze the impact of integrating local cultural practices on socio-emotional and ethical learning of FLN-grade children.
3. To develop a culturally responsive SEEL framework for FLN classrooms.

Research Questions:

1. What are the Key activities focused effectively by Community Members for enhancing SEEL skills in early learners?



2. What are the activities carried out for analysis on impact of SEEL skills in the FLN classrooms by teachers?
3. How do the teachers & Community Members perceive the impact of culturally responsive SEEL framework for FLN classroom practices?

Delimitation of the Study:

The study was delimited the following aspects due to shortage of time and resources:

District-Jagatsinghpur, Block-Tirtol, 18 No of Clusters, 36 no. of Schools, 72 no. of Class-II Students, 36 no. of FLN Teachers & 72 No of Parents.

Design of the Study:

1. Methodology

A Descriptive Survey Method was adopted to conduct for this research.

2. Sample

The samples of the study were being selected in a systematically in random way on the basis of detailed. District-Jagatsinghpur, Block-Tirtol, 18 no. of Clusters, 36 no. of Schools, 72 no. of Students, 36 no. of FLN Teachers & 72 no. of PTA Members.

3. Tools

The following tools were used separately for this research activity

- Observation Schedule for FLN students
- Questionnaire for FLN Teachers and CRCCs
- Interview schedule for HMs
- FGD for 72 PTA members

4. Procedure for Data Collection

The data collection was done by the FIs through Observation Schedule for FLN grade students, Questionnaire for FLN teachers and CRCCs, Interview schedule for HMs and FGD schedule for PTA members which were developed for 72 no of Students, 36 Govt. School Headmasters, 18 no of FLN Grade teachers and 18 no of CRCCs and 72 no of PTA members in FGD separately.

Data Analysis & Interpretation:

The collected data were tabulated and analysed keeping in view of Quantitative and Qualitative spell out. The statistical techniques of percentage mean through graphical representation were employed to analyze and interpret the data. In this study the analysis and interpretation of data are stated under two heads as given below.

- The activities carried out for analysis on impact of SEEL skills in the FLN classrooms by teachers.



- The perception of the FLN teachers, Head-masters, CRCCs & Community Members on impact of culturally responsive SEEL framework for FLN classroom practices.

Major Findings of the Study:

Overall, CRCCs, headmasters, teachers, students and PTA members showed positive responses towards the integration of local cultural practices for developing socio-emotional and ethical learning (SEEL) skills among foundational stage learners.

- Integration of local cultural practices significantly enhanced socio-emotional skills such as empathy, cooperation, self-awareness and emotional regulation among children.
- Ethical values like honesty, responsibility, respect, and fair play were effectively developed through folk stories, songs, rituals and community-based activities.
- Cultural activities promoted active participation, positive peer interaction, and internalization of values such as kindness and cooperation.
- SEEL activities such as storytelling, riddles, sharing circles, traditional games, and cultural discussions were regularly integrated into daily classroom practices.
- Teachers and CRCCs demonstrated high awareness of SEEL and National Education Policy 2020 guidelines and showed positive attitudes toward culturally responsive pedagogy.
- Teachers frequently used local cultural resources including folk tales, songs, festivals, and traditional games, though implementation varied due to contextual factors.
- Cultural integration was perceived to improve empathy, teamwork, responsibility, and moral behaviour among children.
- Challenges such as limited training and difficulty aligning cultural practices with learning outcomes were identified, though they did not significantly hinder implementation.
- Headmasters strongly supported school-wide integration of SEEL practices through classroom activities, parental involvement, and community participation.
- SEEL skills were reflected beyond the classroom, as students demonstrated improved behaviour, emotional regulation, and responsibility in community settings.
- PTA members expressed high satisfaction with classroom environment, teaching practices, and students' behavioural improvement, particularly in emotional expression, discipline and social behaviour.

Recommendations / Suggestions:

- Teachers should regularly integrate local cultural practices such as folk stories, traditional games, songs, and rituals into classroom teaching to strengthen socio-emotional and ethical learning (SEEL).
- Regular training, workshops, and orientation programmes should be organized to enhance teachers' competency in culturally responsive SEEL practices.



- A structured and activity-based SEEL framework aligned with National Education Policy 2020 should be developed for foundational classrooms.
- Traditional games and experiential learning activities should be systematically included in the school timetable to promote cooperation, empathy, and emotional development.
- Parents, community elders, and local artists should be actively involved in school activities to provide authentic cultural learning experiences.
- SEEL assessment should be formative and observation-based using tools such as checklists, anecdotal records, and reflective practices.
- Educational authorities should provide teacher-friendly manuals, activity resources, and mentoring support to address implementation challenges.
- Culturally responsive SEEL should be formally integrated into the foundational curriculum at state and national levels in line with National Education Policy 2020.
- TE&SCERT and SCERT should develop standardized SEEL training modules for teachers, headmasters, and CRCCs.
- Schools should receive adequate time, resources, and instructional materials for effective implementation of SEEL activities.
- Headmasters should actively monitor and support SEEL practices through regular review meetings and classroom observations.
- Strong school-home-community partnerships should be developed through parent workshops and community-based cultural programmes.
- SEEL indicators should be included in school evaluation and quality assessment frameworks.
- Further research and longitudinal studies should be conducted to examine the long-term impact of culturally responsive SEEL practices.

Conclusion:

The study concludes that integration of local cultural practices such as folk stories, traditional games, rituals, and community participation significantly enhances socio-emotional and ethical learning (SEEL) among foundational stage children. Culturally responsive pedagogy supports children's emotional well-being, ethical values, cooperation, and social responsibility, aligning closely with the holistic and child-centered vision of National Education Policy 2020. The study further highlights that teachers and headmasters play a vital role in successfully implementing SEEL practices through regular classroom integration and institutional support. Parental and community involvement strengthens the sustainability of these practices beyond the classroom. However, structured training, curricular guidance, and standardized frameworks are necessary for effective large-scale implementation. Overall, the study establishes that culturally integrated SEEL is a meaningful and sustainable approach for promoting holistic development among young learners.



IMPACT OF SAMPRUKTI TRAINING ON TRANSFORMING CLASSROOM PRACTICES IN THE CONTEXT OF NEP-2020

Mr. Trilochan Sahoo, Sr. TE, DIET, Jagatsinghpur

Introduction:

Education is the corner stone of national development, shaping the intellectual, moral, and social fabric of society. In India, the National Education Policy (NEP) 2020, approved by the Union Cabinet on 29th July 2020, represents a historic shift in the country's educational framework. Replacing the earlier policy of 1986, NEP 2020 aims to transform India's education system to meet the demands of the 21st century through a holistic, flexible, and multidisciplinary approach. At the elementary level, NEP 2020 introduces significant reforms emphasizing foundational literacy and numeracy, experiential learning, and child-centered pedagogy. The new 5+3+3+4 structure restructures school education into developmentally appropriate stages, recognizing the importance of early childhood care and education (ECCE) as a foundation for lifelong learning.

While the policy's vision is promising, the implementation of its recommendations in diverse educational contexts especially government and rural schools remains a challenge. This research aims to study how NEP 2020 is being implemented at the elementary level, assess its early impact, and identify the barriers that affect its effectiveness.

Objectives:

1. To analyze the level of awareness and understanding of Headmasters of elementary schools in the context of NEP 2020.
2. To study the impact of 'SAMPRUKTI' Training on changing classroom practices in the context of NEP 2020.
3. To study the impact of 'SAMPRUKTI' Training in achieving learning outcomes.
4. To identify challenges and constraints faced by teachers and headmasters in implementing NEP 2020.
5. To suggest measures for improving the implementation of NEP 2020 at the elementary level.

Research Questions:

1. Is 'SAMPRUKTI' Training in building capacity of the headmasters is qualitative?
2. Is there any positive effect of training in practicing different pedagogical practices in classroom situation?
3. Are the competencies of headmasters developed through the 'SAMPRUKTI' Training?
4. What is the level of preparedness among teachers for implementing NEP 2020 reforms?
5. What challenges do schools and headmasters face in adopting NEP 2020 guidelines effectively?



Delimitation of the Study:

- Jagatsinghpur district only.
- Jagatsinghpur block only.
- All the Headmasters and Assistant teachers of elementary schools

Design of the Study:

1. Methodology

Descriptive survey method was followed for this study.

2. Sample

Elementary school Headmasters of Jagatsinghpur Block. Sample size includes-

- Total no. of clusters-17 & Total no. of schools-17
- Total no. of Headmasters-17 (1 school from each cluster)
- Total no. of Teachers- 34 (2 teachers from each school)
- Total no. of 68 students (4 students from each school)
- Classroom observation-34 classes (2 classes in each school)

3. Tools

- Questionnaires for Headmasters
- Interview schedule for Teachers
- Classroom observations schedule for Teachers
- Interview schedule for students

4. Procedure for Data Collection

Data were collected from different schools, Headmasters, Teachers and students directly by Field investigators.

Data Analysis & Interpretation:

Quantitative data were analyzed using percentages and qualitative data were analyzed thematically.

Major Findings of the Study:

A. Findings from Headmasters' Views

- Headmasters showed high awareness and acceptance of National Education Policy 2020, especially regarding FLN, ECCE, competency-based, and inclusive education.
- SAMPRUKTI training enhanced leadership skills, instructional supervision, and data-based academic decision-making.



- Headmasters actively promoted activity-based learning, TLM use, lesson planning, and inclusive classroom practices.
- Schools reflected safe, child-friendly, and inclusive environments, though challenges related to resources and teacher training remained.
- Continuous professional support was strongly recommended for effective NEP-2020 implementation.

B. Findings from Teachers' Views

- Teachers demonstrated strong pedagogical preparedness and understanding of NEP-2020 classroom practices.
- SAMPRUKTI training improved teaching methods, formative assessment, and understanding of child psychology.
- Activity-based, experiential, learner-centered, and inclusive teaching practices were widely adopted.
- Use of CRA methods, GKA kits, Big Books, multilingual support, and peer learning was evident.
- Teachers identified workload, time, and resource limitations as major challenges and emphasized the need for further training and mentoring.

C. Findings from Classroom Observation

- Most classrooms were rated from “Well Done” to “Very Well Done” across major dimensions.
- Teachers effectively implemented lesson planning, experiential learning, TLM use, and participatory classroom interaction.
- Inclusive practices for SEDG, CWSN, and slow learners were observed consistently.
- Safe, child-friendly environments and positive discipline practices were maintained.
- Formative and competency-based assessment practices were emerging but required further strengthening.

D. Findings from Students' Views

- Students reported high engagement and enjoyment in activity-based and story-oriented learning.
- Teaching-learning materials and use of local language improved conceptual understanding.
- Students experienced supportive, encouraging, and equitable classroom environments.
- Regular feedback and improved teaching methods after SAMPRUKTI training positively influenced learning and school attendance.

Recommendations / Suggestions:

- Regular refresher training and hands-on workshops should be organized to strengthen understanding of FLN, competency-based education, and other provisions of National Education Policy 2020.
- Teachers should receive focused support on formative, diagnostic, and competency-based assessment practices along with simple assessment tools.



- Adequate classroom resources such as Big Books, GKA kits, manipulatives, charts, and low-cost TLMs should be provided and promoted.
- Headmasters should receive advanced leadership training in instructional supervision, mentoring, and academic monitoring.
- Continuous support should be provided for inclusive education practices related to SEDG, CWSN, differentiated instruction, and Universal Design for Learning (UDL).
- On-going mentoring, classroom coaching, and sharing of best practices should be encouraged to ensure consistent use of activity-based and experiential pedagogy.
- Schools should continue promoting student participation, inquiry-based learning, emotional safety, positive discipline, and use of mother tongue/local language.
- SAMPRUKTI training should be institutionalized and expanded as a regular professional development programme aligned with National Education Policy 2020.
- Education authorities should establish continuous monitoring and evaluation systems to assess long-term impact on classroom practices and student learning outcomes.
- Schools should prepare NEP-2020 aligned academic improvement plans and provide opportunities for teacher reflection, collaboration, and innovation.
- Headmasters should be empowered with greater academic leadership and decision-making authority to support instructional improvement.

Conclusion:

The SAMPRUKTI Training Programme has successfully translated NEP-2020 principles into classroom reality. Strong alignment is observed among policy awareness (headmasters), pedagogical readiness (teachers), actual practices (observations), and learner experience (students). The programme has fostered a shift from content-centric to competency-based, inclusive, and learner-centered education. While planning, inclusiveness, interaction, and NEP alignment show high effectiveness, assessment reforms require sustained support. Continuous professional development, mentoring, and resource support are essential for long-term sustainability. Overall, SAMPRUKTI emerges as a powerful capacity-building model for effective implementation of NEP-2020 at the grassroots level.



ENHANCING LEARNING ACHIEVEMENT IN MATHEMATICS THROUGH THE DEVELOPMENT AND USE OF TEACHING LEARNING MATERIALS FOR CLASS-VI STUDENTS

Mr. Janmejaya Dash, Assistant Teacher, Balikuda Block, Jagatsinghpur

Introduction:

Mathematics plays an important role in developing logical reasoning, critical thinking, and problem-solving abilities. However, many students find mathematics difficult and abstract, particularly in topics such as fractions, decimals, and geometry. In Govt. Upper Primary School, Bandar of Balikuda Block, Jagatsinghpur District, many Class-VI students were observed to have low achievement in mathematics.

Traditional chalk-and-talk teaching methods and textbook-based instruction often fail to engage learners and make mathematical concepts meaningful. In this context, Teaching Learning Materials (TLMs) serve as effective tools for creating interactive and concrete learning experiences. Manipulative-based learning helps students understand abstract concepts through hands-on activities. The effectiveness of TLMs increases when they are systematically designed and aligned with specific learning outcomes, helping bridge the gap between curriculum objectives and students' understanding.

Objectives:

1. To systematically design and develop context-specific, Learning Outcome aligned Teaching Learning Materials addressing identified conceptual gaps in fractions, decimals, and geometry for Class-VI students.
2. To implement these purposefully designed TLMs within a structured intervention protocol spanning a 9 week period, integrating them sequentially into regular classroom instruction.
3. To evaluate the effectiveness of TLM based instruction on student learning achievement, engagement, and conceptual understanding through pre-test/post-test assessment, classwork analysis, and skill-based rubric evaluations.
4. To investigate whether deliberately designed TLMs can significantly reduce achievement gaps among students with varying mathematical proficiencies and learning styles.
5. To document student learning patterns, engagement levels, and qualitative feedback regarding TLM-enhanced instruction, thereby generating evidence-based insights for inclusive mathematics pedagogy.

Research Questions:

1. Do systematically designed, Learning Outcome-aligned TLMs significantly improve student achievement in mathematics, particularly in abstract topics like fractions and geometry?
2. How do Teaching Learning Materials influence student engagement, motivation, and conceptual understanding compared to traditional instruction?



3. What specific impact do manipulative-based lessons have on reducing the achievement gap among students with varying mathematical proficiencies?
4. How effectively do TLMs support the concrete-pictorial-abstract progression in student learning?
5. What are student perceptions regarding the use of TLMs in enhancing their mathematical understanding?

Delimitation of the Study:

- The intervention was conducted for 9 weeks during the academic session 2025-26.
- The study was confined to Govt. Upper Primary School, Bandar, Balikuda Block, Jagatsinghpur District.
- The study focused on Class-VI students, with detailed assessment conducted on a selected group of 8-10 learners.
- The intervention covered the units Fractions and Decimals, and Basic Geometry.
- The study utilized four types of Teaching Learning Materials (TLMs): Fraction Circles, Geometric Shape Models, Place Value Blocks, and Measurement Kits prepared from low-cost local materials.

Design of the Study:

1. Methodology

This action research used a mixed-methods quasi-experimental design over 9 weeks. The study included four phases: diagnostic assessment, intervention implementation, post-assessment, and analysis.

The intervention followed the Concrete-Pictorial-Abstract (CPA) approach, helping students learn mathematical concepts through manipulatives, visual representations, and symbolic understanding.

2. Sample

The research involved the entire Class-VI student cohort at Govt. Upper Primary School, Bandar (approximately 30-35 students). For detailed skill-based rubric assessments, a purposefully selected focus group comprising 8-10 students was identified, representing diverse achievement levels and learning profiles.

3. Tools

- **Diagnostic Assessment Tools:** Classroom observation checklists and document analysis of past performance records to identify specific conceptual gaps.
- **Pre-test and Post-test Instruments:** Parallel 25-question assessment instruments specifically designed to align with selected Learning Outcomes in fractions and geometry.
- **Classwork and Homework Assignments:** Structured assignments administered throughout the intervention, analyzing both accuracy and error patterns.
- **Skill-Based Rubric Assessment:** Detailed rubrics evaluating student competency in (a) accurately using fraction circles, (b) identifying geometric properties, and (c) verbally explaining



mathematical concepts.

- **Student Feedback Questionnaire:** Semi-structured instruments capturing student perceptions regarding TLM-enhanced instruction and self-reported understanding improvements.

4. Procedure for Data Collection

Phase 1: Diagnostic Assessment and Material Development

Conceptual gaps were identified through classroom observation and performance analysis. TLMs such as fraction circles, geometric models, place value blocks, and measurement kits were prepared, and lesson plans were developed.

Phase 2: Intervention Implementation

Pre-test was conducted to assess baseline achievement. TLM-based lessons using the Concrete–Pictorial–Abstract (CPA) approach were implemented regularly. Classwork, homework, and classroom observations were recorded throughout the intervention.

Phase 3: Post-Assessment and Data Collection

Post-test, skill-based assessments, and student feedback questionnaires were administered to evaluate learning progress and student perceptions.

Phase 4: Analysis and Reporting

Pre-test and post-test results, assignment performance, and qualitative feedback were analyzed to interpret learning gains and findings.

Data Analysis & Interpretation:

Quantitative data from pre-test and post-test instruments were analyzed using descriptive statistics (mean, standard deviation, range) and gain scores. Learning gain was calculated as the difference between post-test and pre-test scores, adjusted for initial performance levels. Performance by topic was disaggregated to identify differential impacts across units. Classwork and homework error rates were tracked across the intervention period to document progressive skill consolidation.

Skill-based rubric assessments employed leveled rubrics (Levels 1-4) rating students on accuracy of material use, identification of geometric properties, and verbal explanation of concepts. Qualitative data from student feedback questionnaires and reflective journals were thematically analyzed to identify patterns in student perceptions, engagement, and learning processes.

Major Findings of the Study:

- Students showed significant improvement in mathematics achievement, with average scores increasing from 10.8 to 19.3 out of 25 after the TLM-based intervention.
- Greatest improvement was observed in Fractions and Decimals, followed by Basic Geometry.



- Error rates in classwork and homework reduced from 35-40% to 12-15%, indicating better understanding and confidence.
- Most students achieved high competency levels in using fraction circles, identifying geometric properties, and explaining mathematical concepts.
- Student engagement, participation, motivation, and confidence in mathematics increased noticeably, while fear and anxiety towards the subject reduced.

Recommendations / Suggestions:

- Teaching Learning Materials (TLMs) should be systematically designed according to specific learning outcomes.
- Classrooms should adopt the Concrete-Pictorial-Abstract (CPA) approach for better conceptual understanding.
- Teachers should receive training in developing and using context-specific TLMs effectively.
- Schools should ensure availability of low-cost and locally prepared teaching materials.
- TLM-based instruction should be integrated as a regular inclusive teaching strategy.
- Continuous assessment and reflective teaching practices should be followed to improve learning outcomes.

Conclusion:

This action research concludes that systematically designed Teaching Learning Materials (TLMs) aligned with learning outcomes significantly improve students' understanding, achievement, and engagement in mathematics. The use of the Concrete-Pictorial-Abstract (CPA) approach helped make abstract concepts more meaningful and accessible to learners. The study also highlights that effective use of TLMs requires purposeful planning, proper implementation, and alignment with curricular objectives rather than decorative use alone. TLM-based instruction promoted inclusive learning, reduced achievement gaps, and supported diverse learners. The findings provide practical guidance for mathematics teaching in resource-constrained classrooms and offer a replicable model for middle school mathematics instruction.



IMPROVING READING COMPREHENSION AND FLUENCY IN ODIA LANGUAGE AMONG CLASS-V STUDENTS

Mr. Kartik Chandra Muduli, HM I/C, Balikuda Block, Jagatsinghpur

Introduction:

Reading comprehension and fluency are foundational skills essential for academic success, cognitive development, and lifelong learning in any language. In the Indian educational context, where regional languages like Odia serve as the medium of instruction in primary classes, proficiency in reading these languages becomes particularly critical. However, primary teachers often observe that a significant proportion of students struggle with reading tasks in their mother tongue, despite adequate exposure to Odia language instruction. At Govt. UPS, Khalagaon, a preliminary assessment conducted at the beginning of the 2025-26 academic session revealed a concerning trend: approximately 60-70% of Class-V students were reading below their expected grade level in Odia. These students exhibited multiple reading difficulties including inadequate decoding skills, limited oral reading fluency, poor comprehension of text, insufficient vocabulary knowledge, and diminished motivation towards reading activities. This situation prompted systematic investigation through action research to identify effective intervention strategies that could be implemented within regular classroom settings to improve reading outcomes in Odia language among primary learners.

Objectives:

1. Identify and document the specific reading difficulties experienced by Class-V students in Odia language, including decoding challenges, fluency problems, and comprehension issues.
2. Design and implement a structured intervention program incorporating evidence-based instructional strategies such as phonics-based instruction, guided repeated reading, vocabulary development activities, and comprehension-building techniques.
3. Measure the effectiveness of the intervention program through pre-test and post-test assessments of oral reading fluency and reading comprehension performance.

Research Questions:

1. What are the specific reading difficulties exhibited by Class-V students in Odia language, and what underlying factors contribute to these difficulties?
2. To what extent can a structured intervention program incorporating phonics, repeated reading, vocabulary development, and comprehension activities improve oral reading fluency among struggling readers in Odia?
3. How effectively does the intervention program improve reading comprehension abilities and test performance in Odia among Class-V students?



Delimitation of the Study:

- **Geographical scope:** Govt. UPS, Khalagaon, Block Balikuda, District Jagatsinghpur, Odisha
- **Participant sample:** A purposively selected group of 06 Class-V students demonstrating reading difficulties in Odia
- **Language focus:** Odia language reading instruction only
- **Intervention duration:** 4 weeks of structured intervention program
- **Daily intervention time:** 45 minutes per day, integrated within regular Odia language classes
- **Assessment period:** Pre-intervention baseline assessment and post-intervention assessment after 4 weeks
- **Instructional strategies:** Phonics-based instruction, guided repeated reading, vocabulary development, and comprehension-building activities

Design of the Study:

1. Methodology

This action research adopted a mixed-methods research design incorporating both quantitative and qualitative approaches. Quantitative data were collected through pre-test and post-test assessments of oral reading fluency and reading comprehension, while qualitative data were gathered through classroom observations and semi-structured interviews with students. The combined approach provided a comprehensive understanding of students' reading progress and learning experiences.

2. Sample

The sample for the study comprised 06 Class-V students from Govt. UPS, Khalagaon, purposively selected based on their reading difficulties identified through baseline assessment. The students were included with the consent of their parents/guardians and approval from the school authorities. The sample size was considered suitable for implementing and evaluating the classroom-based intervention.

3. Tools

- **Oral Reading Fluency Assessment:** Measured the number of words read correctly per minute using Class-V level reading passages.
- **Reading Comprehension Test:** Assessed students' understanding of the text through comprehension questions.
- **Decoding Error Frequency Chart:** Recorded the types and frequency of decoding errors made by students during reading.
- **Classroom Observation Checklist:** Used to observe students' engagement, participation, and reading behaviour during intervention sessions.
- **Student Interview Guide:** Gathered information on students' reading experiences, difficulties, and attitudes towards reading.



4. Procedure for Data Collection

Baseline data were collected during the first week through oral reading fluency and reading comprehension assessments to determine the initial reading levels of the selected students.

A structured 4-week intervention programme was then implemented, with 45 minutes of daily instruction integrated into regular Odia language classes. The intervention included guided repeated reading, vocabulary development activities, and comprehension-building strategies to improve students' reading skills.

At the end of the intervention period, post-test data were collected using the same or equivalent assessment tools to measure changes in students' oral reading fluency and reading comprehension.

Data Analysis & Interpretation

Quantitative Data Analysis: The quantitative data from oral reading fluency and reading comprehension assessments were analyzed using mean scores and percentage improvement to compare students' performance before and after the intervention.

Qualitative Data Analysis: The qualitative data from classroom observations and student interviews were analyzed to identify patterns related to student participation, confidence, and reading progress.

The findings from both analyses were combined to understand the effectiveness of the intervention.

Major Findings of the Study:

- Students showed significant improvement in oral reading fluency, with increased reading speed and accuracy after the intervention.
- Reading comprehension levels improved, indicating better understanding of texts and vocabulary.
- Decoding errors such as phoneme confusion and word misreading were reduced considerably.
- Students demonstrated higher engagement, participation, and confidence during reading activities.
- The improvement was sustained throughout the 4-week intervention, reflecting the effectiveness of the reading programme.

Recommendations / Suggestions:

- Integrate guided repeated reading activities regularly to improve students' reading fluency and accuracy.
- Strengthen vocabulary development through word walls, contextual learning, and language-rich activities.
- Use comprehension strategies such as prediction, questioning, and summarization to enhance reading understanding.
- Provide differentiated reading instruction based on students' learning needs and reading levels.
- Encourage parental involvement in home-based reading activities to support struggling readers.
- Conduct regular assessment of reading fluency and comprehension to monitor students' progress and provide timely support.



Conclusion:

This action research demonstrates that systematic, structured intervention incorporating evidence-based instructional strategies can effectively improve reading comprehension and fluency in Odia language among primary-level struggling readers. The positive outcomes in oral reading fluency, reading comprehension, decoding accuracy, and student motivation indicate that classroom teachers can implement sustainable improvements in reading outcomes through focused intervention. These findings have important implications for enhancing the quality of Odia language instruction in primary schools within Odisha and similar educational contexts. The action research model itself proved effective for identifying classroom-based problems, developing context-appropriate solutions, and generating evidence for instructional improvement. Continued implementation of recommended strategies, combined with ongoing teacher professional development and systemic support for reading instruction, can significantly enhance reading proficiency and learning outcomes among primary students in regional language classrooms.



IMPROVING STUDENTS' ABILITY TO READ AND UNDERSTAND SIMPLE ODIA STORIES FOR FLN GRADE

Mrs. Madhusmita Sahoo, Assistant Teacher, Biridi Block, Jagatsinghpur

Introduction:

Reading is a fundamental language skill and a cognitive process through which learners construct meaning from text using their prior knowledge and experiences. It plays a vital role in knowledge acquisition, comprehension, and academic success. Foundational literacy is especially important in the early primary years, as it forms the basis for future learning. Despite improvements in access to education in Odisha, many children continue to face difficulties in reading and comprehending simple Odia texts.

Simple and culturally relevant stories can support the development of reading fluency and comprehension. However, limited reading practice, inadequate learning materials, and gaps in phonological awareness often hinder reading development. This study explores instructional approaches such as phonics-based instruction, guided reading, storytelling, and activity-based learning to enhance children's ability to read and understand simple Odia stories. Strengthening reading skills in Odia will contribute to improved literacy and overall academic growth within the FLN framework.

Objectives:

1. To increase student engagement and participation during reading activities.
2. To help students make connections between the story and their own experience.
3. To improve students ability to identify main ideas and supporting details in stories.
4. To know difficulties faced by the students in reading skill of class-I students.

Research Questions:

1. What are the reading and understanding difficulties of students are identify by the teacher?
2. How does different learning activity helps to improve reading skill?
3. How far the story telling / literacy kit big book are help full for both teachers and learners in a classroom?

Delimitation of the Study:

This action research relied chiefly on the results of the different oral reading tests (recognition level) conducted during the period of the program. The descriptive method of research was used in the study to find out the reading performance of the pupils.

Design of the Study:

1. Methodology

Both qualitative and quantitative method will be adopted by the researcher for the present study.



2. Sample

The respondents of this study were grade 1 pupils of Govt. P.S Nailo, Biridi for the academic year 2025-26. 7 students from both gender of Govt P.S Nailo will be included in the sample.

3. Tools

- Classroom Observation Schedule
- Pre-test and Post-test
- Picture Cards, Storytelling Activities, and Big Book-based Questions
- Oral Reading Test

4. Procedure for Data Collection

Data were collected through classroom-based activities using simple Odia stories. Students' reading and comprehension skills were assessed before and after the intervention using oral reading tests, picture-based questions, worksheets, and teacher observation checklists. Their progress in letter recognition, word reading, and story comprehension was regularly recorded to measure improvement in foundational literacy skills.

The study was conducted through the following steps:

Classroom Observation → Pre-test → Intervention Implementation → Monitoring of Progress → Post-test → Data Collection & Analysis → Findings of the Study

Data Analysis & Interpretation:

Improving student's ability to read and understand simple odia stories in FLN grades means helping young learners develop the basic skill needed to read words and short sentences smoothly. It also evolves building their comprehension so they can identify characters events and the main idea of a story. When children can connect picture with text respond to simple questions and retell the story in their own words it shows meaningful improvement this growth reflects stronger vocabulary better decoding skills and increased confidence in reading their mother tongue overall improvement is seen when learner read with understanding enjoyment and readiness to explore more stories.

Major Findings of the Study:

Able to read the words, sentence as well as a short paragraph and simple Odia stories independently.

- Story-based pedagogy significantly improved reading comprehension.
- Students developed confidence in reading aloud.
- Visual support (pictures, charts) enhanced interest and understanding.
- Comprehension improved when teachers asked guided questions.
- Regular assessments helped track progress and adjust teaching strategies.



Recommendations / Suggestions:

More story books should be made available in Odia. Teachers should conduct daily 10 minute reading sessions. Create class room reading corners. Use phonics-based instruction for decoding. Involve parents in home reading activities. Encourage Peer reading & group storytelling.

Conclusion:

The study aimed to improve the ability of FLN-grade students to read and understand simple Odia stories. Pre-test findings revealed difficulties in letter recognition, word reading, reading fluency, and comprehension. Many students also lacked confidence in participating in reading activities.

After a four-week intervention involving guided reading, storytelling, vocabulary activities, picture-supported learning, repeated reading, and comprehension exercises, significant improvement was observed. Students demonstrated better reading fluency, decoding skills, and comprehension. They were able to identify characters, sequence events, retell stories in their own words, and answer comprehension questions more accurately.

The study concludes that interactive, child-centered, and activity-based teaching strategies are effective in strengthening foundational literacy skills. Regular exposure to age-appropriate Odia stories, along with supportive classroom practices, enhances reading ability, comprehension, confidence, and motivation. Overall, the intervention was successful in improving students' reading and understanding of simple Odia stories and highlights the importance of engaging reading experiences in achieving foundational literacy goals.



IMPROVING UNDERSTANDING OF FRACTION THROUGH VISUAL MANIPULATIVES OF GRADE-5 STUDENTS

Mrs. Sasmita Mohanty, Assistant Teacher, Biridi Block, Jagatsinghpur

Introduction:

This action research study aimed to improve grade 5 students' conceptual understanding of fractions by using visual manipulatives as instructional tools. The rationale for the study arose from observed difficulties and learning gaps among students in grasping fraction concepts. Over a period of Four weeks, direct instruction incorporated concrete manipulatives such as fraction bars, number lines, and play dough models to support addition, subtraction, multiplication, and division of fractions. Data was collected through student assessments, observations, and questionnaires reflecting confidence and metacognitive awareness of learning benefits. Results indicated a marked improvement in student performance across fraction topics, increased engagement, and enhanced self-confidence in mathematics. Most students reported that manipulatives helped them visualize and interact with abstract concepts, making learning more concrete and accessible. The study suggests that thoughtfully integrating visual and tactile manipulatives in fraction instruction can effectively support diverse learning styles and boost mathematical understanding for fifth graders. Researcher here encouraged to consider manipulatives especially for students struggling with fractions to foster deeper comprehension and improved outcomes.

Objectives:

1. Determine the level of Grade 5 students' understanding of fractions before the use of visual manipulatives.
2. Implement visual manipulatives such as fraction strips, fraction circles, and pictorial models in teaching fractions.
3. Determine the level of Grade 5 students' understanding of fractions after the use of visual manipulatives.
4. Identify the effectiveness of visual manipulatives in improving Grade 5 students' understanding of fractions.

Research Questions:

1. What is the level of Grade-5 students' understanding of fractions before the use of visual manipulatives?
2. What visual manipulatives can be used to improve Grade-5 students' understanding of fractions?
3. What is the effectiveness of visual manipulatives in improving understanding of fraction of Grade-5 students?
4. How do visual manipulatives affect Grade-5 students' engagement and participation during fraction lessons?



Delimitation of the Study:

- The study was delimited within Biridi block, Jagatsinghpur.
- The study was delimited to Govt. UP School , Dudurampatana , Biridi.
- The study was confined to only 14 student of class 5 of Govt. UP School Dudurampatana.

Design of the Study:

1. Methodology

Both qualitative and quantitative methods used.

2. Sample

- Participants: Grade-5 students
- Sample size: 14 students
- School: Govt UP School, Dudurampatna

3. Tools

- Pre-test on fraction concepts
- Post-test on fraction concepts
- Observation checklist
- Student worksheets

Intervention Strategy

Visual manipulatives such as: Fraction strips, Fraction circles, Paper folding activities & Shaded area models were used to teach fraction concepts like part-whole relationship, comparison of fractions, and equivalent fractions.

4. Procedure for Data Collection

- Planning: Difficult areas in fractions were identified and lesson plans using visual manipulatives were prepared.
- Action: A pre-test was conducted, followed by teaching fractions using visual manipulatives over a period of 3 weeks.
- Observation: Students' participation, understanding, and interest were observed during classroom activities.
- Reflection: A post-test was conducted and results were compared with the pre-test to evaluate improvement.

Data Analysis & Interpretation:

Data were collected through pre-test and post-test assessments, classroom observations, and student activities. The scores were analyzed using mean scores and percentage improvement. The pre-test results showed that



most Grade-5 students had difficulty understanding fractions, particularly equivalent fractions and fraction comparison. Following the use of visual manipulatives such as fraction strips, shaded models, and fraction circles, students demonstrated better understanding, increased participation, and greater confidence.

Classroom observations indicated that students could visualize fractional concepts more effectively, explain their answers using models, and participate actively in discussions. The improved post-test performance suggests that visual manipulatives helped strengthen conceptual understanding of fractions.

Major Findings of the Study:

- There was a significant improvement in students' fraction understanding after using visual manipulatives (avg. mark students' increases from 5 to 14 mark).
- Students showed better conceptual understanding rather than rote memorization.
- Visual manipulatives proved to be an effective instructional strategy for teaching fractions in Grade-5.

Recommendations / Suggestions:

- Teachers should regularly use visual manipulatives such as fraction strips, fraction circles, and number lines to strengthen students' understanding of fractions.
- Fraction lessons should be activity-based, encouraging students to explore concepts through hands-on learning.
- Teachers should receive training on the effective use of visual manipulatives in mathematics teaching.
- Visual manipulatives should be integrated into classroom teaching and lesson planning for fraction concepts.
- Continuous formative assessment should be used to monitor learning progress and identify misconceptions.
- Schools should promote the use of low-cost and locally available materials for preparing visual manipulatives.
- Visual manipulatives should be used as a remedial strategy to support slow learners and improve conceptual understanding.

Conclusion:

Using visual manipulatives in the teaching of fractions has broad educational implications. Not only do they make abstract concepts more concrete and accessible, but they also increase student engagement, support diverse learning styles, and develop problem-solving skills that will benefit students in future mathematics topics. These tools provide a more interactive, inclusive, and effective way of teaching fractions, ultimately laying a strong foundation for students' mathematical growth.



IMPROVING UNDERSTANDING OF PLACE VALUE IN MATHEMATICS (ADDITION) FOR CLASS-3 STUDENTS

Mr. Pabitra Kumar Das, Assistant Teacher, Erasama Block, Jagatsinghpur

Introduction:

Improve place-value understanding in addition among Class 3 learners. By implementing activity based strategies, using concrete aids like base-ten blocks and place-value charts, and providing structured guided practice, this research aims to enhance students' conceptual understanding, accuracy and confidence in mathematics. Place-value forms the conceptual backbone of place-value arithmetic and is essential for accurate addition. The present action research addresses the difficulty many Class 3 learners face when adding two and three-digit numbers errors that typically stem from incomplete understanding of ones, tens and hundreds and from weak regrouping strategies. Strengthening place-value understanding at the foundational stage not only improves accuracy in written computations but also builds a base for mental arithmetic and future topics such as subtraction, multiplication and division.

Objectives:

1. To identify common misconceptions and difficulties students face in understanding place value in addition.
2. To develop and implement targeted interventions and instructional strategies to address these challenges.
3. To assess the effectiveness of the interventions in improving students' understanding and proficiency in place value addition.
4. To provide recommendations for educators to enhance teaching practices related to place value in addition.

Research Questions:

1. What are the common misconceptions or difficulties students encounter in understanding place value in addition?
2. How do students' conceptual understanding of place value impact their performance in addition tasks?
3. What instructional approaches are currently used to teach place value in addition, and how effective are they in addressing students' misconceptions?
4. What interventions or instructional strategies show promise in improving students' understanding of place value in addition?



Delimitation of the Study:

- The present study is delimited to one school of Erasama Block in Jagatsinghpur District.
- This study is delimited to the students of Class 3 of Kaithol PS of Paida UPS Cluster of Erasama Block of Jagatsinghpur district.

Design of the Study:

1. Methodology

Both Quantitative and qualitative method research designs adopted for the present study.

2. Sample

The sample is consisted of 4 students of Class 3 of Kaithol PS of Paida UPS Cluster of Erasama Block of Jagatsinghpur district.

3. Tools

- Pre-assessment questions & Post-assessment questions
- Intervention design and implementation
- Focus group discussion among teachers

4. Procedure for Data Collection

The data collected by the researcher through personal visit to the schools by using self-developed tools i.e. questions, observation sheets.

Data Analysis & Interpretation

Frequency counts and percentages used to analyze the data and derive the conclusions, since these strategies suit the objectives and need of the study.

Major Findings of the Study:

- Most of the students were able to Identification of Place Values, Reading Numbers in Expanded Form, Addition without Carrying, Addition with Carrying, solve the problems by Using TLMs (Abacus/Blocks/Place Value Cards), understand the concept, Interest to participation in the classroom activities.
- From the above analysis, the value of comparative significance of the experiment of pre-test and post-test is clearly seemed the reflection of the reflection of intervention adopted by the researcher. This result is similar to the calculation analysis using MS-EXCEL.

Recommendations / Suggestions:

For further research, long-term studies may be conducted to explore whether improved understanding of place value supports future learning of subtraction, multiplication, and division. Research could also compare the effectiveness of various instructional approaches such as digital tools, manipulatives, peer learning, and



direct instruction. The role of technology, including math-based learning apps and interactive simulations, may be explored to determine their effectiveness in enhancing numeracy skills. Conducting large-scale or multi-school studies would help validate whether these strategies are effective across diverse learning environments. Additionally, further research may focus on how inclusive teaching strategies can support children with specific learning needs, such as dyscalculia, in understanding foundational mathematical concepts. These recommendations aim to strengthen classroom practices and contribute to a broader understanding of effective approaches for achieving foundational numeracy goals identified in NEP 2020.

Conclusion:

This action research successfully demonstrated that improving students' understanding of place value significantly enhances their ability to perform addition accurately, especially when regrouping is required. The intervention strategies such as the use of manipulatives, activity-based learning, collaborative tasks, and structured practice helped transition students from rote calculation to meaningful conceptual understanding. The study concludes that when mathematics is taught using concrete representation, guided practice, and real-life application, it becomes more accessible, meaningful and enjoyable for young learners. Continued reinforcement and periodic assessment will further strengthen numeracy skills and ensure mastery of foundational mathematical concepts.



EFFECTIVENESS OF SCHOOL-HOME LINKAGE TO IMPROVE STUDENTS' ACHIEVEMENT IN LITERACY COMPETENCIES AMONG GRADE-3 STUDENTS

Mr. Bijaya Kumar Das, Assistant Teacher, Erasama Block, Jagatsinghpur

Introduction:

Various initiatives under NIPUN Odisha, such as parental engagement programs, community reading campaigns, home-based learning materials and teacher-parent interactions, aim to create a supportive ecosystem for literacy development. These initiatives help align school instruction with home practices, ensuring continuity and reinforcement of literacy skills. In this context, the present action research focuses on studying the effectiveness of school-home linkage and community engagement initiatives in enhancing literacy competencies among Grade 3 students, with the objective of identifying practical strategies to improve students' achievement and strengthen foundational learning outcomes.

Objectives:

1. To encourage parental involvement in supporting their children's reading and writing activities at home.
2. To improve communication between teachers and parents about students' literacy progress and learning needs.
3. To increase students' interest and participation in literacy-related activities through joint efforts of school and home.

Research Questions:

1. How does parental involvement in home-based reading and writing activities influence students' literacy engagement?
2. In what ways can improved communication between teachers and parents enhance students' literacy progress?
3. How do collaborative efforts between school and home increase students' interest and participation in literacy-related activities?

Delimitation of the Study:

- The present research will be delimited in Govt. U.P. School, Ambiki of Erasama block, Jagatsinghpur district.
- These competencies will be delimited to the students of class-III in Govt. U.P. School, Ambiki.

Design of the Study:

1. Methodology

Both Quantitative and qualitative method research designs adopted for the present study.



2. Sample

The sample is consisted of 10 students of Class-3 of Ambiki Upper Pry. School of Ambiki UPS Cluster of Erasama Block of Jagatsinghpur district.

3. Tools

- Pre-assessment Observation (check list) & Post-assessment Observation (check list)
- Intervention design and implementation
- Weekly observation (Check list)
- Focus group discussion among teachers and parents

4. Procedure for Data Collection

The data collected by the researcher though personal visit to the schools by using self-developed tools i.e. questions, observation sheets.

Data Analysis & Interpretation

Frequency counts and percentages used to analyze the data and derive the conclusions, since these strategies suit the objectives and need of the study.

Major Findings of the Study:

- Recognition of letters and common words improved by 36%, strengthening foundational literacy.
- Reading simple sentences accurately increased by 32% after the intervention.
- Reading comprehension improved by 40%, indicating better understanding of texts.
- Ability to answer comprehension questions increased by 38%.
- Correct spelling of words improved by 30%.
- Writing simple sentences showed the highest improvement (50%).
- Participation in storytelling activities increased by 44%, reflecting greater confidence and engagement.
- Overall, the intervention had a significant positive impact on students' reading, writing and comprehension skills.
- The findings confirm that the action research was effective in improving foundational literacy, learner engagement and home-school collaboration.
- The comparative analysis of pre-test and post-test scores clearly demonstrates the effectiveness of the intervention, which was further validated through MS-Excel analysis.

Recommendations / Suggestions:

For further research, long-term studies may be conducted to explore whether improved understanding of place value supports future learning of subtraction, multiplication, and division. Research could also compare the effectiveness of various instructional approaches such as digital tools, manipulatives, peer learning, and direct



instruction. These recommendations aim to strengthen classroom practices and contribute to a broader understanding of effective approaches for achieving foundational numeracy goals identified in NEP 2020.

Conclusion:

This action research successfully demonstrated that improving students' understanding of place value significantly enhances their ability to perform addition accurately, especially when regrouping is required. The intervention strategies such as the use of manipulatives, activity-based learning, collaborative tasks, and structured practice helped transition students from rote calculation to meaningful conceptual understanding. The study concludes that when mathematics is taught using concrete representation, guided practice, and real-life application, it becomes more accessible, meaningful, and enjoyable for young learners. Continued reinforcement and periodic assessment will further strengthen numeracy skills and ensure mastery of foundational mathematical concept.



IMPROVING THE RECOGNITION LEVEL OF CAPITAL LETTERS OF CLASS-2 PUPILS THROUGH LETTER HUNT METHOD

Mr. Yajnyasis Behera, Assistant Teacher, Jagatsinghpur Block, Jagatsinghpur

Introduction:

Knowledge of the Alphabet is one of the best predictors of an early grade pupil's initial success in reading. In order to begin reading and writing, children need to understand the basics of the English language, the Alphabet. Through alphabet teaching, children are learning the name and sound of each letter, which will help them to begin the reading and writing process smoothly. The alphabet is the key of the language. Without recognizing the letters of the alphabet one cannot improve in the English language. When pupils have problems in recognizing the alphabet, they cannot move to the next level of achievement in language learning and are also left behind in the lesson with their other friends in the class as well. The problem will become more complicated in the assessment stage, where they failed the exam by performing very poorly and the unsuccessful result will demotivate them and also break their inspirational level to learn. These serious concerns in children have become a reason for the researcher to conduct a study on improving the recognition level of capital letters of Class-2 pupils by using the Letter Hunt method.

Objectives:

1. To study the effect of the Letter Hunt method on improving the recognition level of capital letters of Class-2 pupils.
2. To assess the recognition level of capital letters of Class-2 pupils.

Research Questions:

1. What was the effect of using the Letter Hunt method on pupils' alphabet recognition?
2. What was the level of pupils' capital letter recognition before the remedial measures?

Delimitation of the Study:

This research study was delimited to only Class-2 students of Sri Aurobindo Govt. U.P. School, Palasa under Jagatsinghpur block of Jagatsinghpur district.

Design of the Study:

1. Methodology

This research study was conducted using both quantitative and qualitative methods.

2. Sample

Sri Aurobindo Govt. U.P. School, Palasa under Jagatsinghpur block of Jagatsinghpur district has been selected as the area of study. For this research study all the 09 pupils of Class-2 of the above mentioned school were taken as the sample.



3. Tools

- Observation and check list
- Pre-Test & Post-Test format for conducting Pre-Assessment & Post-Assessment of the Class-2 pupils.
- Intervention schedule
- Different activities of Letter Hunt method over a designated period of 04-week.

4. Procedure for Data Collection

All data on both quantitative and qualitative levels regarding English capital letter recognition were collected directly from the students by the researcher through pre-test assessment format.

Data Analysis & Interpretation

The collected data and information was analysed and interpreted numerically using tables and charts to compare pre-test and post-test scores. Data analysis helped the researcher to know whether the intervention succeeded or not.

Major Findings of the Study:

- From the Pre-test quantitative table, it is found that out of the total students of Class-2, 03 no. of pupils were not recognising the English capital letters in order whereas 05 no. of pupils were not recognising the English capital letters out of order.
- From the Pre-test qualitative table, it is found that out of the total students of Class-2, 05 no. of pupils were not actively engaged, 09 no. of pupils were not showing interest, 09 no. of pupils were not expressing happiness while recognizing the English capital letters and 05 no. of pupils were expressing fear while recognizing the English capital letters.
- After the implementation of the Letter Hunt method in the intervention phase, significant improvement was shown among the weaker students in recognizing English capital letters in both sequence and out of sequence (randomly) along with qualitative development.

Recommendations / Suggestions:

By implementing the different activities under the Letter Hunt method through the intervention stage, teachers could empower weaker students of Class-2 to become proficient and confident in letter recognition, which would help them to build a strong foundation for future academic success. This action research contributes children in their early stages to recognize capital letters accurately, particularly and also randomly and to have an enthusiastic, curious and responsible play style, which could help them significantly in future vocabulary and reading and also provides a model for teachers to adapt and implement in their own classrooms.

Conclusion:

From the complete research study, the researcher came to the conclusion that by implementing Letter Hunt method in the intervention phase, a significant improvement was observed in the identification/recognition of English capital letters in order and out of order or randomly in Class-2 weak learners, as well as in various indicators of qualitative development, such as without expressing fear, active engagement, showing interest, and also expressing happiness in identifying/recognising English capital letters.



IMPROVING ADDITION CAPACITY OF TWO DIGIT NUMBERS AMONG CLASS-II LEARNERS USING GAME BASED METHOD

Mrs. Kabita Manjari Pati, Assistant Teacher, Jagatsinghpur Block, Jagatsinghpur

Introduction:

Mathematics is an essential part of daily life and helps children develop number sense, logical thinking, and problem-solving skills. At the primary level, addition is one of the most important mathematical concepts. In Class II, students begin learning two-digit addition, which requires an understanding of place value and carrying. Classroom observations revealed that many students face difficulties in two-digit addition, often making errors in place value and carrying. These difficulties can reduce their confidence and interest in mathematics. Since traditional teaching methods may not adequately address these challenges, this action research was undertaken to examine the effectiveness of a game-based teaching method in improving two-digit addition skills among Class II students through joyful and engaging learning experiences.

Objectives:

1. To help Class II students understand the concept of place value clearly.
2. To improve students' ability to add two-digit numbers with and without carrying.
3. To develop conceptual understanding rather than rote learning.
4. To increase students' interest, confidence, and active participation in mathematics through games.

Research Questions:

1. What difficulties do Class II students face while learning two-digit addition?
2. Does the game-based teaching method help students understand addition better?
3. How does teaching place value through games improve students' accuracy in addition?
4. Does game-based learning reduce fear and improve confidence in mathematics?

Delimitation of the Study:

- It was conducted in only one Government Upper Primary School.
- Only Class II students were included in the study.
- The sample size was limited to eight students.
- The study focused only on two-digit addition.
- Only the game-based method was used as a teaching strategy.

Design of the Study:

1. Methodology

The study adopted an action research approach to address the classroom problem of students' difficulty in two-digit addition. A pre-test was conducted to assess students' prior knowledge and identify common



errors. Based on the findings, game-based activities were implemented during regular mathematics lessons. Students' progress was continuously observed throughout the intervention. Finally, a post-test was administered to measure improvement in their understanding and performance in two-digit addition.

2. Sample

The sample consisted of eight students of Class II from Jankoti Upper Primary School. The group included students of different learning levels-good, average and slow learners. The small sample size allowed close observation of each student's learning progress, behaviour and confidence.

3. Tools

- Pre-test and post-test worksheets
- Observation checklist
- Game-based learning materials such as number cards, dice, matchsticks, flash cards and fake currency notes

4. Procedure for Data Collection

The study was conducted systematically through the following steps:

Pre-test → Identification of Learning Difficulties → Planning of Game-Based Activities → Implementation of Activities → Continuous Classroom Observation → Post-test → Data Analysis and Interpretation

The pre-test identified difficulties related to place value, carrying, and confidence in two-digit addition. Based on these findings, game-based activities such as number card games, dice addition games, bundling matchsticks, and shopping games were implemented. Students' progress was observed throughout the intervention, and a post-test was conducted to assess improvement in learning outcomes.

Data Analysis & Interpretation

The pre-test results revealed that many students had difficulty with two-digit addition, particularly in understanding place value and carrying. Common errors included incorrect placement of digits and failure to carry numbers properly, indicating weak conceptual understanding and low confidence. After the implementation of game-based activities, the post-test results showed noticeable improvement in accuracy and problem-solving skills. Errors related to place value and carrying were significantly reduced and students solved addition problems more confidently.

Classroom observations also revealed positive changes in students' attitudes. Learners became more active, confident and willing to participate in mathematics activities. The games created a joyful and stress-free learning environment, encouraging collaboration and reducing fear of making mistakes. Overall, the findings indicate that game-based teaching effectively improved students' understanding of two-digit addition, confidence and engagement in mathematics learning.



Major Findings of the Study:

- Students initially faced difficulties in understanding place value and carrying.
- Game-based learning helped students understand two-digit addition more effectively.
- Students showed increased confidence and participation during mathematics lessons.
- Fear and hesitation towards mathematics reduced significantly.
- Weak learners showed noticeable improvement.
- The classroom environment became joyful and stress-free.

Recommendations / Suggestions:

- Teachers should use game-based and activity-based methods at the primary level.
- Mathematics teaching should focus on understanding rather than memorization.
- Concrete teaching aids should be used to explain abstract concepts.
- Group activities should be encouraged to promote peer learning.
- Schools should support joyful learning practices as suggested by NEP 2020.

Conclusion:

The study concludes that the game-based teaching method is highly effective in improving two-digit addition skills among Class II students. It helped learners develop a better understanding of place value and carrying, resulting in improved accuracy and confidence in solving addition problems. The intervention also created a joyful and supportive learning environment, increasing students' participation, motivation and interest in mathematics. Through hands-on and playful activities, students were able to understand mathematical concepts more meaningfully and with less fear of making mistakes.

Overall, the study highlights that game-based learning not only improves academic achievement but also promotes positive attitudes towards mathematics, making learning more engaging, enjoyable and effective.



IMPACT OF GAME BASED PEDAGOGY IN ATTAINING LEARNING OUTCOMES OF MATHEMATICS FOR GRADE-6 STUDENTS

Mr. Suryakanta Malla, CRCC, Kujang Block, Jagatsinghpur

Introduction:

Children learn best through exploration and play, which help develop creativity, critical thinking, and problem-solving skills. With the increasing use of technology in education, game-based learning has emerged as an effective approach to create engaging and meaningful learning experiences. It builds on students' interests and promotes active participation in the learning process.

Concerns about declining achievement and interest in mathematics and science have highlighted the need for innovative teaching strategies. Low proficiency levels and reduced participation in STEM-related fields emphasize the importance of making learning more engaging and enjoyable. Game-based learning offers a promising approach to improve students' academic achievement, motivation and interest in mathematics and science, particularly at the middle school level.

Objectives:

1. To what extent do game based learning methods improve students' performance compared to traditional methods.
2. To access different game design elements in influence students engagement and motivation to learn.
3. To the primary benefits and challenges for students and teachers when using game based learning in classroom.

Research Questions:

1. What effect does the use of game-based learning have on mathematics chapter fraction ,decimal and basic geometry?
2. What effect does game-based learning compared to traditional instructions on students achievements in mathematics?
3. What effect does game-based learning have on students' learning on implementing game based learning educational contents?

Delimitation of the Study:

- **Grade Level:** Focus on Class VI students.
- **Subject Area:** Limited to mathematics fraction, decimal and basic geometry.
- **Time Frame:** Short-term study; long-term retention effects are not measured
- **Geographic Context:** Specific to Government U.P. School, pipal.



Design of the Study:

1. Methodology

This research study was conducted using both quantitative and qualitative methods.

2. Sample

The research sample comprises **20 Class-VI students** from Govt. UPS, Pipal, Block KUJANG, District JAGATSINGHPUR, of which approximately 12 are boys and 08 are girls, aged 11-12 years. The students represent a heterogeneous group with varying levels of prior mathematical achievement and diverse learning abilities, including some students with identified learning difficulties and some gifted learners. **Sampling Method:** Purposive sampling was used as the entire Class-VI population from one section constitutes the sample, as this is the class taught by the researcher.

3. Tools

- Pre-Test Assessment Worksheet & Post-Test Assessment Worksheet
- Classwork and Homework Assignment Sheets
- A 4-point skill based rubric scale
- Student Feedback Questionnaire
- Teachers' Daily Observation Schedule

4. Procedure for Data Collection

The data collected by the researcher through personal visit to the schools by using self-developed tools i.e. questions, observation sheets.

Data Analysis & Interpretation

The collected data and information was analysed and interpreted numerically using tables and charts to compare pre-test and post-test scores. Data analysis helped the researcher to know whether the intervention succeeded or not.

Major Findings of the Study:

- Students showed significant improvement in mathematics achievement, with an average gain of 8.5 marks in the post-test.
- The highest improvement was observed in Fractions and Decimals, followed by Basic Geometry.
- Error rates in classwork and homework decreased considerably, indicating better understanding and confidence.
- Most students achieved proficiency in applying mathematical concepts through game-based activities.
- Student engagement, participation, and confidence in mathematics increased significantly.



- Students found mathematics more enjoyable and easier to understand through game-based learning.
- The study confirmed the effectiveness of Learning Outcome-based Game-Based Learning in improving mathematical understanding and achievement.

Recommendations / Suggestions:

- Conduct longitudinal studies to examine the long-term retention of concepts learned through Game-Based Learning (GBL).
- Compare the effectiveness of GBL with other instructional approaches such as digital simulations and virtual manipulatives.
- Replicate the study across different schools, grade levels, and socio-economic contexts to enhance the generalizability of findings.
- Explore the effectiveness of outcome-aligned GBL in other subjects such as science, social studies, and languages.
- Investigate students' cognitive processes and conceptual development during game-based learning activities.
- Examine the influence of teacher beliefs, content knowledge, and pedagogical skills on the successful implementation of GBL.
- Study the cost-effectiveness of developing game-based learning materials using locally available resources compared to commercial alternatives.

Conclusion:

This action research concludes that Learning Outcome-based Game-Based Learning (GBL) is an effective strategy for improving mathematics achievement at the primary level. The study found that well-designed games aligned with specific learning outcomes enhance conceptual understanding and learning achievement. Evidence from assessments, classroom performance, and student feedback confirmed significant learning gains. Difficult mathematical concepts became easier to understand through interactive and engaging game-based activities. The approach also increased student participation, motivation, and problem-solving skills while supporting diverse learning needs and promoting an inclusive learning environment.



ENHANCING PRIMARY LANGUAGE SKILL THROUGH THE USE OF DIGITAL EDUCATIONAL TOOLS AMONG FLN GRADE LEARNERS

Mr. Chitresan Mohanty, Assistant Teacher, Kujang Block, Jagatsinghpur

Introduction:

This action research explores how digital educational tools enhance primary students' language skills-listening, speaking, reading, and writing (LSRW). The study was conducted with 30 students from Class III in a government upper primary school. The objective was to examine how integrating multimedia based learning tools and digital platforms could improve learners' engagement and skill acquisition in the mother tongue. The research followed a cyclic process of planning, acting, observing, and reflecting over an eight-week period. The findings revealed notable improvement in students' performance, particularly in pronunciation, vocabulary, comprehension, and creative expression. The use of storytelling applications, phonics games and digital reading programs fostered curiosity and motivation. The paper concludes that digital integration can transform traditional classrooms into vibrant learning ecosystems that support language acquisition in early learners.

Objectives:

1. To enable repeated listening, differentiated listening levels and immediate reinforcement.
2. To facilitate opportunities for oral practice through voice recording, speech to text and pronunciation tools.
3. To enhance reading speed vocabulary and analytical thinking through graded digital content.

Research Questions:

1. What impact do digital educational tools have on primary learners' LSRW skills?
2. How do digital tools influence learner motivation and classroom participation?
3. Which specific digital activities or tools are most effective in developing each language skill?

Delimitation of the Study:

The study will be limited to only 25 nos. of students of one elementary school of Kujang Block of Jagatsinghpur District.

Design of the Study:

1. Methodology

This research study was conducted using both quantitative and qualitative methods.

2. Sample

Twenty-five (25) nos. of students on Class-III.

3. Tools

Pre-test questions, Post-test questions & Observation schedule.



4. Procedure for Data Collection

Conducted a pre-test for base line assessment of 25 nos. Class III learners. Introduce digital educational tools in learning process for 4 to 5 weeks. Then conducted post-test.

Data Analysis & Interpretation:

Used an observation checklist to monitor student participation, motivation, and performance during each session. Compared pre-test and post-test data.

Major Findings of the Study:

- The data clearly indicate significant improvement across all four language skills. Listening, Speaking and Reading showed the growth due to interactive and creative digital practices.
- Listening and reading comprehension also improved because of the audio-visual support that enhanced understanding and retention.
- Students demonstrated higher levels of intrinsic motivation and collaboration.
- Digital learning helped overcome barriers like fear of mistakes and lack of attention span.
- These results align with existing research suggesting that technology-mediated learning fosters student autonomy, engagement, and multi-sensory development.

Recommendations / Suggestions:

- Schools should adopt blended language learning models combining traditional and digital approaches.
- Teachers should curate age-appropriate apps aligned with curriculum objectives.
- Government and educational bodies must provide training and infrastructure to support digital inclusion.
- Parents should be encouraged to reinforce digital learning at home responsibly.

Conclusion:

The action research validates that digital educational tools significantly enhance primary students' language skills. Students developed better pronunciation, vocabulary, reading comprehension, and creative writing abilities. The integration of technology transformed the classroom into an interactive, student-centered learning environment.

Incorporating digital pedagogy into early language education is not merely an innovation-it is a necessity for preparing young learners to thrive in a digital world.



IMPACT OF THE CONCRETE REPRESENTATIONAL ABSTRACT (CRA) APPROACH ON CONCEPTUAL UNDERSTANDING IN MATHEMATICS OF CLASS-4 STUDENTS

Mr. Dusasan Dixit, Assistant Teacher, Naugaon Block, Jagatsinghpur

Introduction:

Mathematics teaching at the primary level often focuses on procedural skills, leading many students to perform addition and subtraction mechanically without understanding the underlying concepts. This lack of conceptual understanding affects problem-solving ability, retention, and interest in mathematics. The Concrete-Representational-Abstract (C-R-A) approach is an effective instructional strategy that helps students learn concepts through a sequence of concrete materials, visual representations, and abstract symbols. Based on cognitive development and constructivist learning principles, it is particularly suitable for Class IV students who learn best through hands-on and visual experiences.

This action research examines the effectiveness of the C-R-A approach in improving conceptual understanding of addition and subtraction with regrouping among Class IV students.

Objectives:

1. To examine the effectiveness of the Concrete-Representational-Abstract (C-R-A) instructional sequence in enhancing conceptual understanding of addition and subtraction with regrouping among Class-IV students.
2. To assess the impact of systematic use of concrete manipulatives on students' mathematical reasoning and problem-solving abilities.
3. To investigate how progression through representational (pictorial) stages facilitates abstraction and symbolic understanding.
4. To identify the specific benefits of the C-R-A approach in improving student engagement, mathematical communication, and retention of procedural knowledge.
5. To document implementation challenges and develop practical mitigation strategies for classroom application.
6. To provide empirical evidence and practical guidance for mathematics teachers regarding effective instructional design in primary mathematics.

Research Questions:

1. How does systematic implementation of the Concrete-Representational-Abstract instructional approach impact Class-IV students' conceptual understanding of addition and subtraction with regrouping?
2. What is the magnitude of improvement in student performance when transitioning from traditional abstract-focused instruction to the C-R-A sequence?



3. How do students demonstrate mathematical reasoning and problem explanation following C-R-A instruction?
4. What specific challenges emerge during implementation of the C-R-A approach, and how can these be effectively addressed?
5. How does the C-R-A approach affect student engagement, mathematical communication, and long-term retention of mathematical concepts?

Delimitation of the Study:

The study was conducted in Govt. UPS, Kundeswar, Block–Naugaon, Jagatsinghpur District, Odisha. It involved six Class-IV students representing different achievement levels. The study focused on addition and subtraction with regrouping and was carried out over a period of four weeks. The intervention was implemented in a regular classroom setting using concrete manipulatives such as base-ten blocks, counters, and number lines. The language of instruction included both English and the local language.

Design of the Study:

1. Methodology

The study adopted a mixed-methods action research design, combining quantitative and qualitative approaches to assess the effectiveness of the C-R-A instructional approach. A pre-test and post-test design was used, where students' learning outcomes were measured before and after the intervention. The mixed-methods approach provided both numerical evidence of learning improvement and qualitative insights into students' learning experiences. This helped ensure a comprehensive understanding of the impact of the intervention and strengthened the reliability of the findings.

2. Sample

The study included six Class-IV students of Govt. UPS, Kundeswar, purposively selected to represent different levels of achievement in mathematics. Among them, two students were high achievers, two were average achievers, and two were low achievers. This selection enabled the researcher to examine the effectiveness of the Concrete-Representational-Abstract (C-R-A) approach across different learner groups and to closely observe individual learning progress during the intervention.

3. Tools

- **Pre-Test and Post-Test Assessment:** A teacher-created assessment with two sections measuring procedural fluency (4 computation items, 4 points) and conceptual understanding (6 items requiring explanation, representation, and reasoning, 12 points), total 16 points.
- **Student Work Samples:** Photographs and copies of student work at concrete, representational, and abstract stages, documenting progression of learning.



- **Semi-Structured Student Interviews:** Brief individual interviews exploring student understanding, reasoning processes, and perceived difficulty.
- **Teacher Reflective Notes:** Daily observations and reflections on implementation, student responses, challenges encountered, and instructional adjustments.
- **Concrete Manipulatives:** Base-ten blocks, counters, number lines, and other physical materials for concrete stage instruction.

4. Procedure for Data Collection

Pre-test assessments were administered at the beginning of the research period to establish baseline measurements of procedural fluency and conceptual understanding. During the four-week intervention phase, systematic C-R-A instruction was implemented for addition and subtraction with regrouping. Each instructional sequence progressed deliberately from concrete manipulation (students using base-ten blocks and physical counters), through representational stages (students creating drawings, diagrams, and pictorial representations), to abstract symbolic notation (standard written algorithms). Student work samples were collected at each stage, and daily teacher reflective notes documented instructional implementation and student responses. Semi-structured interviews were conducted during or after instruction to understand student reasoning. Post-test assessments, identical to pre-tests, were administered at the conclusion of the intervention period.

Data Analysis & Interpretation:

Quantitative data from pre-test and post-test assessments were analyzed using descriptive statistics (mean scores, standard deviation, range) and individual student comparisons. Procedural fluency scores and conceptual understanding scores were compared separately. Qualitative data including student work samples, interviews, and teacher reflections were analyzed using thematic coding to identify patterns, emerging themes, and specific mechanisms through which conceptual understanding developed. Work samples were analyzed for sophistication of representations, accuracy of reasoning, and evidence of understanding progression across concrete, representational, and abstract stages.

Major Findings of the Study:

- **Improvement in Conceptual Understanding:** All six students demonstrated measurable improvement from pre-test to post-test in conceptual understanding measures, with enhanced ability to explain mathematical reasoning, provide multiple representations, and apply knowledge to novel problems.
- **Concrete-to-Abstract Progression:** Students showed clear progression through the C-R-A sequence, with concrete manipulative experiences building confidence and foundation for representational thinking, and representations facilitating transition to abstract symbolic understanding.



- **Enhanced Mathematical Communication:** Students using the C-R-A approach demonstrated improved ability to articulate mathematical thinking, explain procedures, and justify reasoning compared to baseline.
- **Improved Retention:** Follow-up observations indicated stronger retention of both procedural fluency and conceptual understanding compared to traditional approaches.
- **Differential Impact:** The approach proved particularly effective for students with learning difficulties and below-average achievement, suggesting special benefit for struggling learners.
- **Implementation Insights:** Key implementation considerations included adequate time for concrete stage, teacher's role in orchestrating transition between stages, and importance of student verbalization throughout.

Recommendations / Suggestions:

- Mathematics teachers should integrate concrete manipulatives and visual representations as integral instructional components rather than supplementary activities reserved for struggling learners or enrichment.
- Systematic professional development should equip teachers with competencies in sequential instructional design and strategic use of manipulatives across mathematics curriculum.
- Schools should allocate resources for providing diverse concrete manipulatives accessible to all students, treating them as essential instructional materials rather than optional extras.
- Curriculum and textbooks should be designed with C-R-A progression explicitly embedded, with corresponding pictorial representations and manipulative suggestions.
- Teacher preparation programs should emphasize constructivist approaches and the theoretical foundations of concrete-representational-abstract instruction.
- Further research should examine C-R-A effectiveness with larger samples, across different mathematical concepts, and at different grade levels.

Conclusion:

This action research provides empirical evidence that the Concrete-Representational-Abstract instructional sequence effectively enhances conceptual understanding of addition and subtraction with regrouping among Class-IV students. The systematic progression from tangible manipulative experiences through visual representations to abstract symbols bridges the persistent gap between procedural fluency and conceptual understanding that characterizes much primary mathematics instruction. The approach demonstrates particular promise for supporting students with learning difficulties while benefiting all learners. Implementation of the C-R-A approach requires deliberate planning, adequate time allocation, and teacher understanding of developmental learning principles, but produces meaningful improvements in mathematical understanding, reasoning, and communication. These findings support broader adoption of this evidence-based instructional approach in primary mathematics classrooms and call for corresponding changes in teacher professional development, curriculum design, and educational resource allocation to prioritize quality conceptual understanding alongside procedural skill development.



IMPROVING READING SKILL IN HINDI FOR GRADE-6 STUDENTS BY USING DIFFERENT EFFECTIVE STRATEGIES

Miss. Rojina Muduli, Assistant Teacher, Naugaon Block, Jagatsinghpur

Introduction:

Beginning of any language based on how effectively any learners understand the basic knowledge of that language. Here the researcher researched based on this topic titled as “Improving Reading Skill in Hindi for Grade VI students by using different effective strategies”. It specially based on various games based reading activities to improve student Hindi reading fluency. As Odia medium school’s students face reading problem in Hindi. The researcher tries finding the effective game based learning strategies to gain their interest towards the Hindi learning.

While reading Hindi alphabets they face pronouncing the letter with proper intonation. They always face difficulties in reading Hindi “Shyunktakshar” as they misconnect with Odia term to read. Hindi Shyunktakshar and Odia Shyunktakshar written style are opposite to each other as well as their pronunciation. Odia words end with Odia vowel “a” sound while the Hindi words don’t follow that rule. To solve this kind of confusing obstacles in class the researcher study on this regards.

Objectives:

1. To study the effect of storytelling with images or pictures on improving Hindi reading fluency.
2. To study the effective way to read Shyunktakshar easily.
3. To study the effects of TLM file with game-based in Hindi reading fluency.
4. To improve student’s curiosity to learn other language.

Research Questions:

1. What is the effective way of improving Hindi reading fluency?
2. Is it the best way to improve Hindi reading of Shyunktakshar correctly?
3. Which TLM is best for solving which Hindi reading problem?
4. Is this game based learning effective for combining different reading learners?

Delimitation of the Study:

The study will be limited to Grade VI students of Tentoi UPS, Naugaon, especially for weaker students who faces basic reading problem. There are 23 students in Grade VI. Among them 6 students are poor in reading.

Design of the Study:

1. Methodology

The research was based on both qualitative and quantitative. Mixed methods applied here. It involves collecting and analyzing data to find reliable results for better Hindi reading fluency.



2. Sample

Grade VI students (Total 23 students) among them main sample are weaker Hindi readers (10 students) of Tentoi U.P.S, Naugaon, Jagatsinghpur.

3. Tools

- Reading Test: Picture-based reading, flash cards, Hindi alphabet games, Matra Wheel, rhymes, riddles (Paheliyan), Khajana Dhundo, Ludo and Snake & Ladder with Hindi words, cartoon-based reading activities, and comprehension passages.
- Observation Schedule: Used to record students' reading progress, participation, and difficulties (both quantitative and qualitative).
- Interview Schedule: Weekly interviews conducted with students to identify reading difficulties and monitor progress.
- Questionnaire: Simple questions used to assess students' attention, interest, and understanding during the intervention.

4. Procedure for Data Collection

It is based on Pre-Test and Post-Test. By Pre Test (Simple to Hard), carrying 25 full marks the researcher found how many students are poor in Hindi reading and how many are fluent readers. By implementing tools the researcher to found their stage of difficulties in reading. By observing the student's reading capacity or fluency, the researcher identified the difficulties area of the students. Data collection mostly made by taking interview of each students of Grade VI, those who secured below 10 marks or those who cannot know basic Hindi words especially Hindi letters and Hindi Shyunktakshar.

Data Analysis & Interpretation:

After Data collection, it analysis through quantitative and qualitative way. After every Pre-test and Post-Test data analyzed by the researcher. Among 23 students 2 students were quite good reader but others weren't. Among them 10 students were very weak. After Pre-test and Diagnosis method of their problems we get a good response. Among 10 students 2 were still in alphabet learning process but they can form simple words. Above all among 23 students right now 13 students can read fluently and 8 students can read simple words and phrases easily. Hence, this research results 91% effective results.

Major Findings of the Study:

- Game-based learning gain students interest towards Hindi or any other language.
- 91% achievement found in this study.
- The students' achievement depends upon how much they involve and how much your game-based learning effective.
- Students participate positively with great interest.



- This strategy develops students reading skills as well as their speaking skills.
- It gives the benefits of teacher to develop a TLM according to the learner's need and it can be frequently use. It also can be used for future classes.

Recommendations / Suggestions:

- The action research is a quantitative enquiry to find how game based learning improves the Hindi reading fluency more effectively rather than others strategy.
- Hindi learning process must be implemented through mentioning various games in syllabus.
- This game-based learning must uses modern technology to attract our students towards Hindi reading skills.
- The teachers should engage their students in various activities by forming team for that they need to more focus.

Conclusion:

After doing this research the researcher found the reasons and solution of Hindi language reading problems. It has been found out that students lost their interest towards Hindi reading because of unattractive books, less listening, speaking practices, not aware of Hindi letters, words, shyunktakshar, sentences, paragraphs etc. and their proper pronunciation. By implementing different game based these tools and strategies students can develop their Hindi reading fluency properly. A teacher must apply these game and fun based tools and strategies frequently to get better results. It will make strong student's foundational stage of language learning other than their mother tongue.



IMPROVING PROBLEM SOLVING ABILITY IN MATHEMATICS OF GRADE-VI LEARNERS

Mr. Prasanta Kumar Rout, CRCC, Raghunathpur Block, Jagatsinghpur

Introduction:

Mathematical problem-solving is an essential skill that helps students develop logical thinking, reasoning, and the ability to apply knowledge in daily life. It is considered the heart of mathematics learning because it promotes both conceptual understanding and critical thinking. Effective mathematics teaching enables students to solve problems confidently and use mathematical concepts in real-life situations.

However, many students in the early grades face difficulties in solving mathematical problems. Challenges such as weak computational skills, poor conceptual understanding, language difficulties in word problems, and lack of attention often affect their performance. Ineffective teaching methods may further hinder students' ability to understand mathematical concepts and apply them meaningfully. Therefore, there is a need for engaging and effective instructional strategies to improve students' mathematical problem-solving skills.

Objectives:

1. To improve Mathematical computation and word problems solving ability of grade six learners.

Research Questions:

1. How can I improve Mathematical computation and word problems solving ability of grade six learners?

Delimitation of the Study:

- The present study is delimited to grade VI Odia medium students of Govt. UPS, Adheikul of Cluster Govt UPS, Adheikul, Block Raghunathpur, and District Jagatsinghpur, Odisha.
- The total 17 nos. of students in grade VI.

Design of the Study:

1. Methodology

For my research I have used both quantitative method and qualitative method to collect the data. Researcher has collected data through observation of how students are solving the math problem individually, paired and group during the math class.

2. Sample

The overall total sample for this research was 17, Class VI students of Govt. UPS, Adheikul, Block Raghunathpur, and District Jagatsinghpur.

3. Tools

Questionnaires (5-point Rating Scale, pre and post-test multiple choice questions)



4. Procedure for Data Collection

Data were collected through observation and questionnaires (Pre and Post data). Pre data collected by observation and asking questionnaire (in Tool 1) to students and written data collected by conducting pre-test using pre-test questions (in Tool 2).

Data Analysis & Interpretation:

Initially in the last week of October I have arranged a pre-test for 17 students of class VI. The questionnaire mainly based on word problems. All the 17 students appeared the test individually.

From pre-test data it is observed that most of the students unable to pass while taking only 30% as pass mark. Only 6 students out of 17 got pass mark. 2 students got above 40 % mark and 4 got percentage between 30-40 %. Other 11 students got below 30% mark.

From post-test data it is observed that most of the students able to pass taking 30% as pass mark. 15 students out of 17 got pass mark. Only 2 students got marks between 25-30 %.

Comparing the pre and post test data, and observation during intervention period it was confirmed that problem solving in pairs, and in groups is more effective than solving individually. Also there is increase in marks of 31 % in post-test compared to pre-test.

Major Findings of the Study:

Comparing the pre and post test data, and observation during intervention period it was confirmed that problem solving in pairs, and in groups is more effective than solving individually. During the period of the observation it was noticed that maximum number of students were able to solve the problems in groups compared to the problem solved individually and in pairs. In groups students were given more places for sharing their idea and learning. These results in more number of students passing and there were no student who scored zero. It was also observed that appx. 31% increase in marks of post –test in comparison to pre-test. The result shows that students learn more through group activities. They were able to understand the problem solving question and solve it in the group without any problem. If we continue this process in class there will be further improvements in solving mathematical problems and no students will remain unsuccessful.

Recommendations / Suggestions:

- Group problem-solving activities should be regularly integrated into mathematics teaching.
- Teachers should encourage peer discussion and collaborative learning in the classroom.
- Mixed-ability groups should be formed to support learning among all students.
- Activity-based and learner-centered teaching methods should be promoted.
- Continuous assessment should be conducted to monitor students' progress.
- Teachers should receive training on effective cooperative learning strategies.
- Similar interventions may be implemented in other subjects to improve learning outcomes.



- Conduct the study with a larger sample of students.
- Compare the effectiveness of individual, pair, and group learning methods.
- Examine the long-term impact of group-based learning.
- Study the effect of collaborative learning in other subjects.
- Investigate its impact on students' critical thinking, communication, and confidence.

Conclusion:

The study found that group work is an effective strategy for improving mathematical problem-solving ability among Grade VI learners. Initially, most students faced difficulties in understanding and solving mathematical problems, showed little interest in practice, and performed poorly in the pre-test. After implementing group-based learning and problem-solving strategies, students demonstrated better understanding of questions, increased interest in mathematics, and improved performance in the post-test.

The findings also revealed that students solved problems more effectively in groups than individually, as peer discussion and idea sharing helped clarify concepts and improve understanding. Overall, the intervention successfully enhanced students' problem-solving skills, participation, confidence, and achievement in mathematics.



A STUDY ON SCHOOL ABSENTEEISM AMONG THE CLASS-9 STUDENTS

Mrs. Sona Mohanty, CRCC, Raghunathpur Block, Jagatsinghpur

Introduction:

Student absenteeism is a serious and persistent problem affecting students' academic performance and overall development. Many schools face challenges with students who remain absent from classes without valid reasons. Frequent absenteeism reduces participation in classroom activities, weakens peer relationships, and negatively affects learning outcomes.

This case study was conducted in Harikrushna Govt. High School, Barty, to investigate the causes of absenteeism among Grade 9 students. The study involved 20 students and used a semi-structured interview schedule to collect data. The findings aim to identify the factors contributing to absenteeism and suggest measures to improve regular school attendance and student engagement.

Objectives:

1. To find out the causes of absenteeism.
2. To decrease student absenteeism.

Research Questions:

1. What are the causes of absenteeism?
2. What are the prevention and strategies to minimize student absenteeism?

Delimitation of the Study:

The study was limited to the causes of absenteeism and decrease student absenteeism among the 20 students of class 9 of Harekrushna Govt. High School, Barty for the year 2025-26 (Oct- Nov).

Design of the Study:

1. Methodology

In this study researcher used qualitative analysis & descriptive method.

2. Sample

Research considered 20 students as a sample who are absent in class 9.

3. Tools

- Pre-assessment & Post-assessment Question Sets
- Observation schedule
- Intervention design & implementation
- Focus group discussion among teachers & parents

4. Procedure for Data Collection

The data collected by the researcher to personal visit to school by using self-developed tools that is questions observations sheets & doing home visit.



Data Analysis & Interpretation:

Frequency counts & percentages used to analyze the data & derive the conclusion since these strategies suit the objectives and need of the study.

Major Findings of the Study:

- Home related problem is the primary reason why the students are absent from their classes. This is seen that (From Home visit) when parents went to their daily earning our absentee students (i.e elder brother / sister of younger one of their home.) take care of their younger ones and girls make cooking at home being absent from classes. The classes they also going to the work place of their parent to help in their work. So being absent from classes from long term stay at home, their academic standard gone below and they are not taking interest towards study, so it is necessary to keep on counseling to students and parents also about the benefit of keeping in school and of study.
- Flu and fever is the leading culprit of absenteeism, so regular yoga classes and counseling towards use of medicinal herbs affected for decreasing absenteeism.
- Personal attitude of the students like feeling lazy , today I have no mood to go for school, keeping mobile in the hand of children increases willingness towards watching mobile and decreases interest to attend classes at school.
- If we see towards the physical problem regarding absenteeism, students those have no bicycle (when they feel ill and weakness) they are not willing to come by foot. The list reason they give in related to their physical environment that is long distance from home to school.

Recommendations / Suggestions:

- Inform parents about the benefit of keeping their children in school.
- Educate the students on how to take care of their over all wellbeing.
- Ensure that classroom atmosphere is conducive to learning.
- Give extra attentions to those who are left behind in the lessons emphasize that academic success is very much dependent on student attitude.
- Parents counseling must be done to inform about the significance of good attendance for achieving success and providing protection for reach factors not only in the school life but also in the future work life.
- Student positive relationship with teachers will increase committeemen to the school and will play a role in the reduction of absenteeism.

Conclusion:

The study examined the impact of the school family and personal issues on student absenteeism in addition the study provide possible solution for the problem of absenteeism. The problem is impetuous by interaction of an array of factors which are both internal and external to the students and or the school. Among all the causes presented **Home related problem**. In light of finding service study the researcher identified that, parent and student counseling, Games & sports integrated learning, yoga classes, regular use of medicinal herbs, drawing & painting classes, Effectively works to reduce absenteeism.



IMPROVING WRITING SKILL IN ENGLISH AMONG SEVENTH GRADE STUDENTS

Mr. Jagannath Swain, Assistant Teacher, Tirtol Block, Jagatsinghpur

Introduction:

Writing is an essential language skill that enables students to express their ideas, thoughts, feelings, and experiences effectively. It supports critical thinking, creativity, problem-solving, and communication skills. Writing proficiency develops through continuous practice and involves several stages, including prewriting, drafting, revising, editing, and publishing.

During practice teaching at Govt. Upper Primary School, Putting-Jayasinghpur, it was observed that many Class VII students faced difficulties in writing English compositions. Their challenges included limited vocabulary, spelling errors, incorrect punctuation, grammatical mistakes, poor organization, and weak content development. Therefore, this action research was undertaken to improve the writing skills of Class VII students through appropriate instructional strategies and regular writing practice.

Objectives:

1. To identify the various difficulties of writing skill in English of seventh grade students.
2. To develop different strategies for developing writing skills in English among seventh grade students.
3. To apply those strategies in a systematic manner to develop writing skills in English of seventh grade students.

Research Questions:

1. How does the researcher identify the various difficulties of writing skill in English of seventh grade students?
2. What are the most effective strategies for developing writing skills in English among seventh grade students?
3. How do the strategies apply in a systematic manner to develop writing skills in English of seventh grade students?

Delimitation of the Study:

This study will be limited to one class of 15 students restricted to class VII only in Govt. Upper Primary School, Putting-Jayasinghpur under Tirtol Block in Jagatsinghpur district.

Design of the Study:

1. Methodology

The Researcher determined action research (Experimental designing) for this study. During the research a pre-test was done, interventions were made consistently and finally post-test was done. This method was designed as both quantitative and qualitative. For this research, all students of Govt. Upper Primary School, Putting-Jayasinghpur in class VII were taken as sample.



2. Sample

The study was conducted on a sample of 15 Class VII students of Govt. Upper Primary School, Putting-Jayasinghpur, Block-Tirtol, District-Jagatsinghpur. The students were in the age group of 11–13 years. They faced difficulties in speaking and writing English fluently and accurately, particularly in composition writing. To assess the effectiveness of the intervention, pre-test and post-test were conducted, and students' performance was measured and compared during the study period.

3. Tools

- Pre-Test & Post-Test Question Sets
- Intervention design & implementation

4. Procedure for Data Collection

Data were collected in two stages-before and after the intervention. A pre-test was conducted to assess the initial writing skills of 15 Class VII students. Based on the identified difficulties, a four-week intervention programme was implemented, focusing on planning, drafting, writing, editing, correction, presentation, and evaluation. After the intervention, a post-test was administered to measure improvement in writing skills. Students' performance was recorded and analyzed using a criteria-based assessment chart, with students coded as S1 to S15 for both pre-test and post-test data analysis.

Data Analysis & Interpretation:

The data collected by the researchers in pre-test and post-test was analyzed. The scores were compared to obtain the difference between the two tests. The data analysis of pre-test and post-test was done by applying Standard Deviation.

Major Findings of the Study:

- The analysis of the pre-test and post-test data revealed a significant improvement in the writing skills of the students.
- The overall performance of the students increased by 66% after the implementation of various teaching strategies and activities.
- The mean score increased from 6 in the pre-test to 10 in the post-test, showing an improvement of 4 points.
- The standard deviation increased from 0.4 in the pre-test to 1.7 in the post-test, with a difference of 1.3.
- The comparison of the average scores in the pre-test and post-test indicates a significant improvement in students' writing performance.
- The findings clearly show that the use of different instructional strategies and activity-based interventions effectively enhanced the writing skills of the students.
- Therefore, it can be concluded that the intervention was successful in developing the writing abilities of the learners.



Recommendations / Suggestions:

For Teachers

- Use interactive strategies to improve vocabulary, grammar, spelling, and writing skills.
- Provide continuous guidance and feedback to help students improve their writing.

For Students

- Develop regular reading and writing habits.
- Practice writing frequently to enhance fluency and accuracy.

For Future Research

- Examine the impact of digital tools and peer-learning strategies on writing development.
- Conduct similar studies with larger groups of students in different contexts.

Conclusion:

From this action research, it has been concluded that the intervention has been proved to be fruitful in most of the students while some reflection is required for those who did not progress. The intervention proved to bring out significant improvements in enhancing the composition writing skills of the student. The findings of this research can be beneficial for the teacher of both elementary and secondary school. This may very helpful for the teachers to adopt suitable pedagogical process for improvement of writing skill of their students. It would be enjoyable and beneficial for those teachers who have direct contact with the students and they would be excited to witness a change.



IMPACT OF PEER LEARNING ON ACHIEVEMENT IN MATHEMATICS AMONG PRIMARY SCHOOL CHILDREN

Mr. Susanta Prasad Kar, Assistant Teacher, Tirtol Block, Jagatsinghpur

Introduction:

Mathematics at the primary level provides the foundation for future learning and everyday problem-solving. However, traditional teacher-centered methods often fail to address the diverse learning needs and abilities of students, especially in resource-constrained classrooms. Many learners face difficulties in mastering addition and subtraction with regrouping (carryover and borrowing), leading to gaps in mathematical understanding and achievement.

Peer learning, where students learn through collaboration and mutual support, offers an effective and practical solution. Based on constructivist and social learning theories, peer learning promotes active participation, conceptual understanding, communication, cooperation, and problem-solving skills. It also helps provide individualized support, making mathematics learning more engaging and meaningful for all learners.

Objectives:

1. To systematically investigate and document the measurable effect of structured peer learning activities specifically Think-Pair-Share, Peer Tutoring and Group Problem Solving on the mathematical achievement of Class III students, with particular emphasis on addition and subtraction with regrouping.
2. To identify, analyze, and evaluate changes in student participation, engagement levels, behavioral involvement and affective dimensions (confidence, anxiety reduction, motivation) following introduction of peer learning interventions.
3. To examine qualitative dimensions of peer interaction patterns including communication dynamics, collaborative problem-solving processes, peer support mechanisms and the development of mathematical vocabulary and reasoning articulation.
4. To generate evidence-based insights and practical recommendations regarding the feasibility, effectiveness, and optimal implementation of peer learning as a sustainable instructional strategy within resource-constrained primary school contexts.

Research Questions:

1. What is the measurable effect of peer learning strategies on the mathematics achievement scores of Class III students?
2. How does implementation of peer learning influence student engagement, participation levels, and behavioral involvement in mathematics classes?
3. What patterns and characteristics emerge in peer interaction, communication quality, and collaborative problem-solving during peer learning activities?



4. To what extent do students demonstrate improved confidence, reduced mathematics anxiety, and enhanced intrinsic motivation through participation in peer learning contexts?

Delimitation of the Study:

- **Geographic Scope:** Limited to Class III students of Government Primary School, Imadhoti
- **Curricular Focus:** Concentrated exclusively on mathematics topics of addition and subtraction with carryover and borrowing
- **Duration:** Intervention period of 4 weeks with 6 sessions (3 sessions weekly, each 30-40 minutes)
- **Sample:** 6 students selected purposively based on low mathematics performance
- **Grade Level:** Class III students (approximately 8-9 years old)
- **Subject Area:** Mathematics exclusively; other subjects excluded
- **Design Limitation:** One-group pre-test post-test design without control group; therefore, causality inferences require cautious interpretation

Design of the Study:

1. Methodology

The research employed a mixed-method design integrating quantitative and qualitative approaches:

Quantitative Component: One-group quasi-experimental pre-test post-test design measuring achievement score changes.

Qualitative Component: Structured observations and anecdotal records documenting engagement patterns, interaction quality, and behavioral changes.

Rationale: Mixed-method integration provides comprehensive understanding encompassing both measurable achievement improvements and the underlying processes through which peer learning operates. Quantitative data demonstrate efficacy; qualitative data illuminate mechanisms.

2. Sample

- **Sample Size:** 6 students from Class III
- **Selection Method:** Purposive (non-random) sampling based on consistently low mathematics performance
- **Participants:** Yushra Firdous, Sidhi Barik, Biswajit Sahoo, Subhrajit Dalai, Agnesh Mallick, SK Riyasat Alli
- **Rationale:** Purposive selection targets students most likely to benefit from peer support, enabling investigation of peer learning effectiveness for struggling learners

3. Tools

Mathematics Achievement Test: Self-designed, consisting of 15 questions (5 simple additions, 5 additions with carryover, 5 subtraction with borrowing), 1 mark each and total 15 marks. Parallel pre-test and post-test forms ensured equivalent difficulty and cognitive demand.

Observation Schedule: Structured narrative recording documenting student behaviors during peer learning sessions across indicators including on-task engagement, communication quality, collaboration



level, confidence demonstration, help-seeking, and peer support provision. Five-point rating scale (1=Minimal, 5=Extensive).

Anecdotal Records: Qualitative documentation of significant incidents, breakthrough moments, meaningful interactions, emotional responses, behavioral changes, and student quotes demonstrating understanding or attitude transformation.

4. Procedure for Data Collection

The study was conducted in three phases over four weeks. In Phase I, research tools were finalized, necessary permissions were obtained, students were oriented, and a pre-test along with initial classroom observation was conducted to establish baseline data. In Phase II, six structured peer-learning sessions were implemented using strategies such as Think-Pair-Share, Peer Tutoring, and Group Problem Solving, while continuous observations and anecdotal records were maintained. In Phase III, a post-test and final classroom observation was conducted, followed by data analysis, interpretation of findings, and preparation of recommendations.

Data Analysis & Interpretation:

Data were analyzed using both quantitative and qualitative methods. Pre-test and post-test scores were compared to determine learning gains. The mean score improved from 5.17 to 11.17 out of 15, with all six students showing an improvement of 6 marks (40%), indicating the effectiveness of peer learning.

Classroom observations and anecdotal records revealed increased student confidence, active participation, improved mathematical communication, and greater collaboration. Students gradually became more independent, supported one another, and demonstrated better problem-solving skills through peer interaction.

Major Findings of the Study:

- **Significant Improvement in Achievement:** All students showed a 40% increase in scores after the peer-learning intervention.
- **Better Academic Performance:** Most students moved from below-satisfactory to satisfactory or higher achievement levels.
- **Increased Engagement:** Students participated more actively and showed greater interest in mathematics learning.
- **Improved Mathematical Communication:** Students became more confident in explaining mathematical concepts and problem-solving steps.
- **Enhanced Collaborative Learning:** Students effectively supported one another and solved problems with minimal teacher assistance.
- **Positive Learning Environment:** Peer learning reduced mathematics anxiety and increased students' confidence and sense of belonging.



Recommendations / Suggestions:

For Teachers

- Integrate peer learning regularly in classroom teaching.
- Use strategies such as Think-Pair-Share, peer tutoring, and group problem-solving.
- Encourage positive peer interaction and collaborative learning.
- Form balanced groups to support all learners effectively.

For School Leaders

- Promote peer learning as a school-wide instructional practice.
- Provide training, resources, and academic support for teachers.
- Monitor and encourage effective implementation of peer-learning activities.

For Future Research

- Conduct similar studies with larger samples and longer durations.
- Compare peer learning with traditional teaching methods.
- Explore its effectiveness across different subjects and grade levels.

Conclusion:

The study concludes that structured peer learning is an effective strategy for improving mathematics achievement, engagement, and confidence among primary school students. The intervention led to noticeable improvement in academic performance, mathematical communication, collaborative problem-solving, and active participation. Peer learning created a supportive and inclusive classroom environment where students learned from one another and developed greater confidence in mathematics. The findings suggest that peer learning is a practical, low-cost, and learner-centered approach that can enhance mathematics learning, particularly in resource-constrained classrooms. Therefore, it may be effectively integrated into regular classroom practice to promote meaningful and equitable learning outcomes.



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