Learning Achievement of Class-1 Learners in Foundational Literacy and Numeracy

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Abstract

On the curricular side, there is an increased focus on foundational literacy and numeracy. The specific focus generally is on reading, writing, speaking, counting, arithmetic, and mathematical thinking. It is highly focused throughout the preparatory and middle school curriculum, with a robust system of continuous formative/adaptive assessment to track the performance of the learners. Specific hours daily and regular events over the year-on activities involving these subjects will be dedicated to encourage and enthuse students. Teacher education and the early grade curriculum is on the ways to be redesigned to have a renewed emphasis on foundational literacy and numeracy. It is observed that in early years learners like to play, paint, sing, dance and question. If we encourage this likeness of the children through the play-based activities, the academic performance of the learners is increased. They love play together and work together. Our school activities must be accompanied by these activities to engross Foundational Literacy and Numeracy. In this research, the findings pertaining to the achievement of Class I learners in Language, Mathematics revealed that the *early grade* have performed very poor .The cause may be that students are not exposed different types of activities. time on task and continuous and comprehensive assessment may be one of the causes. However, the result coincides with the result found by the previous researchers on these areas..The researcher did the comparative discussion among boys and girls students and found that in some competencies boys have done better and in some competencies, girls have done better. Above all students have not performed at par with grade level competencies even lower grade competencies also. The performance of class-1 students in language is below the standards.

Keyword: Foundational Literacy, Numeracy

Introduction

NEP 2020 has received praise for its breadth and inclusion. The first policy to support integrating preschool education into the traditional institutionally run educational system. As a result, it is referred to as a dream policy. A much-needed and significant step is to shift the emphasis from upper to primary classes. Higher education's blossoms grow from its roots, which are found in primary education. In order to grow into a bountiful tree, sufficient care must be given to the sapling. In this regard, the Government of India's national FLN Mission is a significant step in ensuring that our children acquire reading and numeracy abilities by Class III. Oral language acquisition, decoding (sound and symbol relationships), reading fluency, reading comprehension, and writing are all considered to be components of foundational literacy. The development of number sense, comprehension of shapes and spatial relationships, measuring, data handling, etc. are all examples of foundational numeracy. Many first-

generation learners in India lack access to a home setting that fosters reading and numeracy. They run a higher chance of failing to meet the anticipated learning objectives. The NEP 2020 report notes that a sizable fraction of elementary school students—more than five crore, according to estimates—have not attained FLN. NEP 2020 stresses once more the need to address this situation head-on and right away in order to ensure that all kids are able to receive a quality education and that basic learning can take place in classrooms.

Foundational Literacy

The pre-existing knowledge of language helps in building literacy skills in languages. The key components in Foundational Language and Literacy are:

Oral Language Development : The OLD includes improved listening comprehension; oral vocabulary and extended conversation skills. The experiences in oral language are important for developing skills of reading and writing.

Decoding : Decoding involves deciphering written words based on understanding the relationship between symbols and their sounds

Reading Fluency: Reading Fluency refers to the ability to read a text with accuracy, speed (automaticity), expression (prosody), and comprehension that allows children to make meaning from the text. Many children recognize letters, but read them laboriously, one-by-one.

Reading Comprehension : RC involves constructing meaning from a text and thinking critically about it. This domain covers the competencies of understanding texts and retrieving information from them, as well as interpreting texts.

Writing : This domain includes the competencies of writing letters and words as well as writing for expression

Foundational Numeracy

Foundational Numeracy means the ability to reason and to apply simple numerical concepts in daily life problem solving. The major aspects and components of early mathematics are….

Pre-number Concepts : This is important for counting and understand the number system,

Numbers and operations on numbers: Learn conventions needed for mastery of Mathematical techniques such as the use of a base ten system to represent numbers

Shapes and Spatial Understanding : Perform simple computations in her/his own way up to three-digit numbers and apply these to their day to life activities in different contexts

Measurement : Understand and use standard algorithms to perform operations of addition, subtraction, multiplication and division on numbers up to three digits

Data Handling : Identify and extend simple patterns starting from repeating shapes to patterns in numbers, interpret simple data/information in his/her daily life activities.

Rationale of the Study

It is often said, you can't improve what you don't measure. In no context is this more important than in the case of education system and at no time has this been more necessary than now, as the researchers try to build back the schooling system in the society.. NAS 2021 comes as a much-needed reality check of what is working in the country and what has to be improved. To get more reliable and valid data regarding block performance in the district, the researcher decided to make a survey on "**LEARNING ACHIEVEMENT**

OF CLASS-1 LEARNERS IN FOUNDATIONAL LITERACY AND NUMERACY "This survey may help the researcher and the stakeholders to plan for the block and can take remedial measures to improve the performance of the FLN grade learners in the block.

Subject Competencies and Learning Outcomes (LO)

With a reference to pupils' performance mentioned in NEP 2020 and NIPUN Bharat Guidelines, the competencies and the specific learning outcomes per subject are guiding blocks for any survey or research. The baseline survey was conducted having a vision to see the achievement of the children with respective grade specific learning outcomes. As designed by NIPUN Bharat guidelines, the grade specific Learning outcomes are selected, and items were made as per intensity of the competencies in each learning outcome. It is not possible to take all the LOs of a class to assess the performance. So, the researcher has taken the LOs and related activities as per the following table.

Class I (Language Odia)

Competency	Specific Learning Outcome
Listening Comprehension	- Comprehend the story based on vocabulary knowledge
Oral Vocabulary	– Tell the names seeing the pictures
Phonemic Awareness	- Identify initial sounds of the words
Letter Naming	- Identify the letters
Familiar Word Reading	- Read frequently occurring words by sight
Non-word Reading	- Letter- sound correspondence and fluency/decoding
Oral Text Reading	- Fluency / Word reading with fluency
Reading Comprehension	- Comprehension of a passage
Letter Writing	- Ability to write letters
Word Writing	– Ability to write word

Class I (Mathematics)

Competency	Specific Learning Outcome
Counting Objects	– Count the objects provided
Number Identification	– Recognize numbers in numeral form
Counting Bundles	– Count bundles of objects as well as loose objects
Addition	– Knowledge and confidence with basic addition facts
Subtraction	– Knowledge and confidence with basic subtraction facts
Shape Recognition	–Identify the specific shapes among the collection of shapes
Number Comparison	– Make judgments by comparing numbers
Word Problems (Oral)	- Apply addition and subtraction procedural skills to word problem

Objectives of the Study

1. To understand the current levels of the foundational literacy skills of students enrolled in Government Schools in Grades I.
2. To understand the current levels of the foundational numeracy skills of students enrolled in Government Schools in Grades I.

3. To study the comparative analysis of Performance of Boys and Girls in Language (Odia)of Grade 1 Students.
4. To study the comparative analysis of Performance of Boys and Girls in Mathematics of Grade 1 Students.

Scope & Delimitation

There are 122 schools where FLN grade students are learning in Garadpur block of Kendrapara district .The present study was conducted on 15 schools considering one school from each cluster so that the sample better represents the population. It also covers both rural and urban pockets of the block as well as boys and girls in the schools. The researcher finally assessed 88 students from Class I from 15 schools.

Tools and techniques

1- Achievement Test on Language for Class I based on language skills like listening, speaking, reading & writing.
2- Achievement Test in Mathematics for Class I based on counting, addition & subtraction. The test items are mixture of mental mathematics and written math.

Design

Here, the researcher followed both qualitative and quantitative analysis of the data. The score of academic performance of the students have been analysed quantitatively and the response of the teachers, parents and monitoring officers have analysed qualitatively. In Garadpur block, a total of 88 students of FLN grade-1 were taken as the sample and Achievement Test on Language and Mathematics were conducted through one-to-one approach. Besides, to know the impact extraneous variable, questionnaire for teachers, interview for parents and students were also conducted.The findings focus on aiding identification of areas of improvement and developing strategies to address them. The synthesis of the results presented here hopes to enable designing of future course of action for each block and district as a whole and tracking progress.

Analysis of Performance in Language and Mathematics

The purpose of this study was to examine the performance of the children in language and mathematics studying in early grades. (Grade 1). Certainly, there are many factors that influence students' mathematics performance. Recent cross-domain research suggests that one such factor is students' oral language ability (e.g. Chow & Jacobs, 2016; LeFevre et al., 2010; Purpura & Reid, 2016).
The following tables from Table No 1 to Table No-4 will elaborate it briefly.

Table 1 Analysis of Grade 1 Students' Average Performance in Language (Odia)

LC	OV	PA	LN	FWR	NWR	OTR	RC	LW	WW
43%	51%	44%	63%	49%	33%	35%	33%	56%	34%

(LC-Listening Comprehension, PA-Phonemic Awareness, OV-Oral Vocabulary, LN-Letter Naming, FWR-Familiar Word Reading, NWR-Non-word Reading, OTR-Oral Text Reading, RC-Reading Comprehension, LW-Letter Writing, WW- Word Writing)

The above table reveals that the students of Grade 1 have good performance in oral language proficiency

like listening comprehension, oral vocabulary phonemic awareness but very poor in oral text reading, reading comprehension, familiar word reading and non-word reading. That means students were neither exposed reading comprehension no practiced.

The table also represents that the average score of the students in letter writing and word writing are 56% and 34% respectively that means students are good to some extent in letter writing but poor word writing. But many of the students are very poor in dictation. It is revealed in the table that students have good ability in letter naming (More than 60%). That means they have remembered the size and shape of the letter to an extent.

Students of Grade 1 have average score is 33%. This shows that students are very poor in reading comprehension. It shows that learners of Grade I do not have meaningful reading. In other words, the foundation for reading comprehension is very poor.
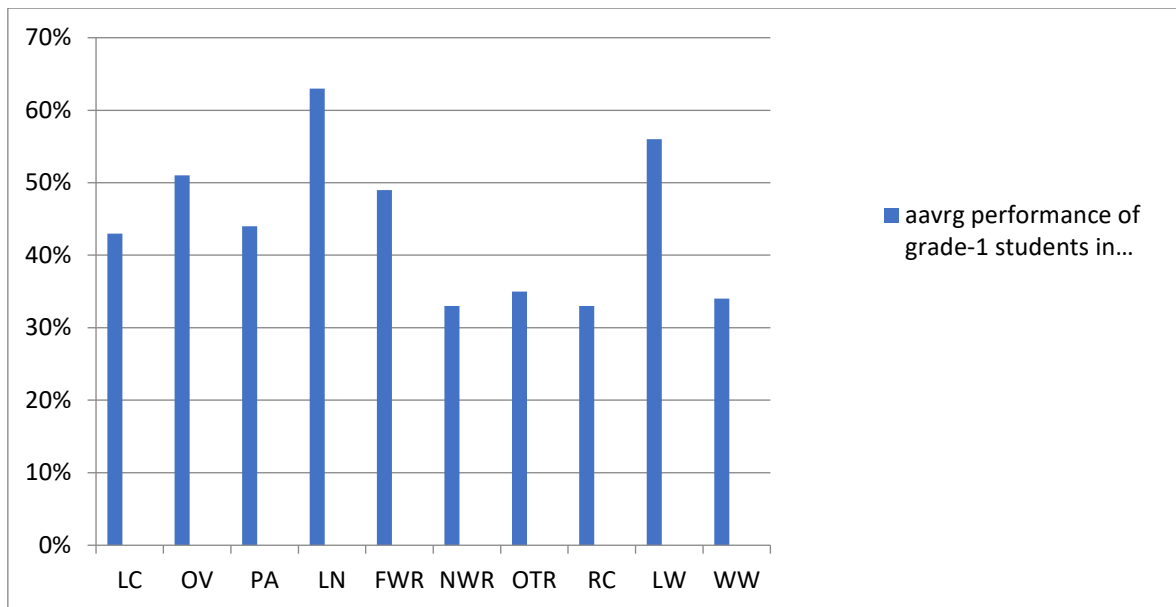

Figure 1(Grade 1 Students' Average Performance in Language (Odia))

Table 2 Analysis of Grade 1 Students' Average Performance in Mathematics

CO	NI	CB	ADD	SUB	SR	NC	WP
47%	48%	54%	45%	35%	62%	35%	26%

(CO- Counting Objects, NI- Number Identification, CB- Counting Bundles, Add- Addition , Sub- Subtraction, SR- Shape Recognition, NC- Number Comparison, WP- Word Problem)

The above table reveals that class I students have secured 47%, 48% in counting objects and number identification respectively. When they have secured 45% in addition and only 35% in subtraction.

The misery is that Grade I learners are very poor in mental math and arithmetic (26% in Word Problem). They are not strong in mathematical problem solving. It is also revealed from the table that the students have secured less than 50% on the competencies like counting objects, addition, subtraction and word problem. The table says that learners are better in recognizing shapes (62%) to some extent in comparison to other competencies.

Number comparison in early grades gives much understanding for further arithmetic problem solving but the table shows that the grade I students have only 35% score in number comparison. These pupils may face a lot of problems in higher classes.
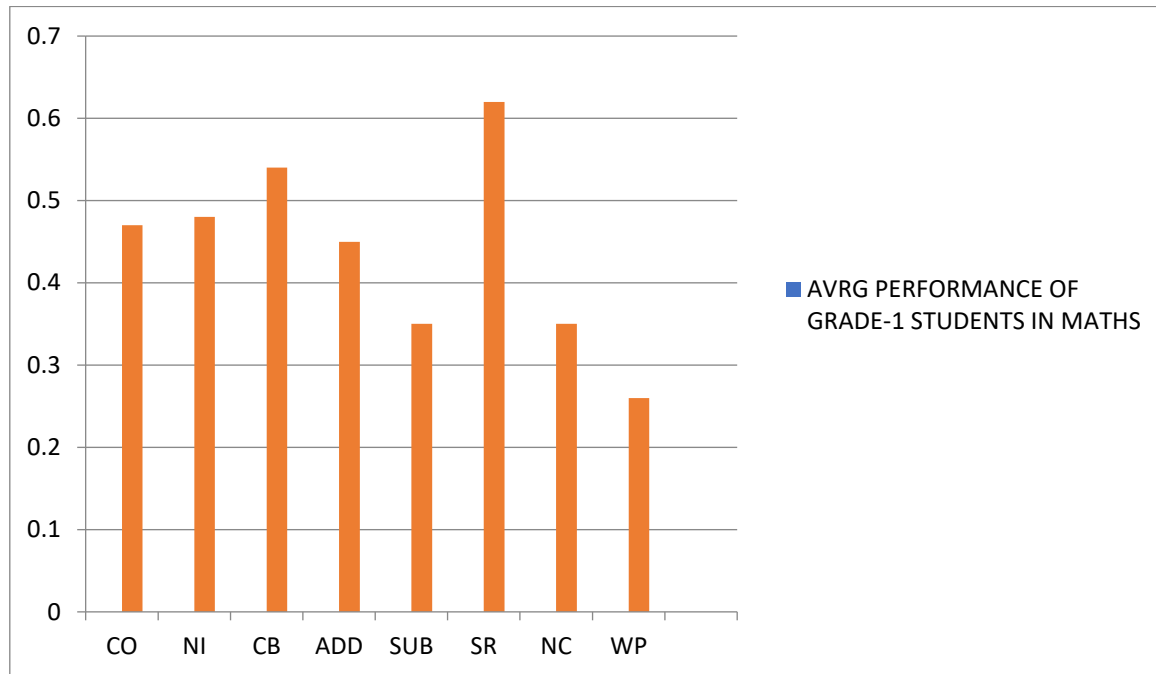

Figure 2 : Grade 1 Students' Average Performance in Mathematics

Table 3 Comparative Analysis of Performance of Boys and Girls in Language (Odia)of Grade 1 Students

Gender	LC	OV	PA	LN	FWR	NWR	OTR	RC	LW	WW
Boys	42%	48%	42%	60%	47%	31%	35%	28%	48%	33%
Girls	44%	54%	47%	60%	51%	36%	36%	37%	52%	33%

(LC-Listening Comprehension, PA – Phonemic Awareness, OV-Oral Vocabulary, LN-Letter Naming, FWR-Familiar Word Reading, NWR-Non-word Reading, OTR-Oral Text Reading, RC-Reading Comprehension, LW-Letter Writing, WW- Word Writing)

The above table reveals that the girls of Grade I have good performance in *Listening Comprehension, Phonemic Awareness, Oral Vocabulary, Familiar Word Reading, Non-word Reading, Reading Comprehension, and Letter Writing* in comparison to their boys' counterpart.

In the competencies like letter naming and writing word, the score is leveled. That means the performance equal among boys and girls.

Boys have secured slightly better score in reading comprehension (37%) i.e., in table 7, row 3, column 9)

If we look at the table, it is revealed that neither boys nor girls have performed well in grade specific language competencies. In many cases they have secured less than 50%.
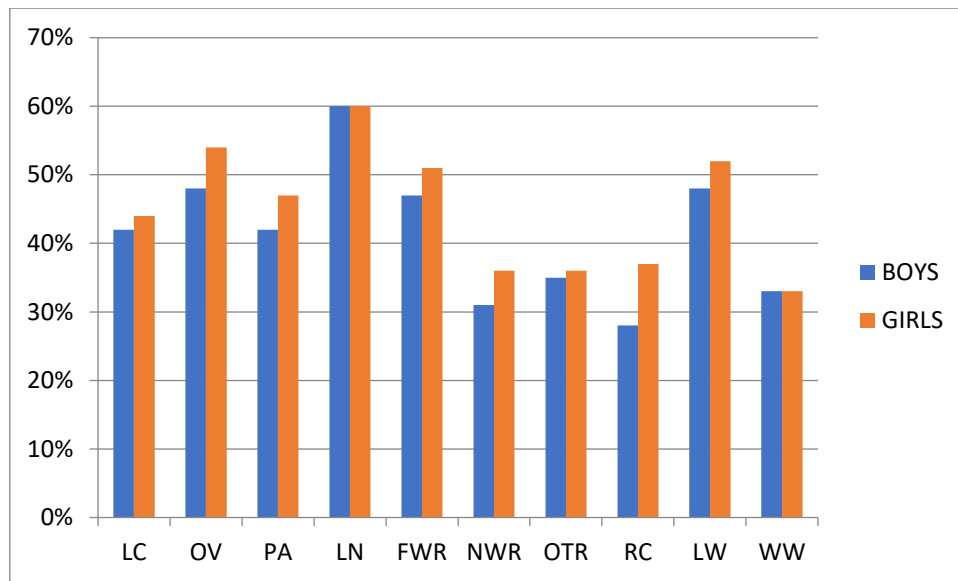
FIGURE-3 Comparative Analysis of Performance of Boys and Girls in Language (Odia)of Grade 1 Students.

Table 4 Comparative Analysis of Performance of Boys and Girls in Mathematics of Grade 1 Students

Gender	CO	NI	CB	ADD	SUB	SR	NC	WP
Boys	53%	51%	55%	44%	40%	64%	44%	26%
Girls	48%	48%	52%	43%	32%	64%	49%	23%

(CO- Counting Objects, NI- Number Identification, CB- Counting Bundles, Add- Addition , Sub-Subtraction, SR- Shape Recognition, NC- Number Comparison, WP- Word Problem)

The above table reveals that the boys of Grade I have secured 53%, 51%, 55% in Counting Objects, Number Identification and Counting Bundles respectively which are better than their girl counterpart. Regarding performance in shape recognition, girls have equal score with boys (64%). Though both category have very low score in word problem (26% for boys and 23% for girls), boys are better to some extent.

Regarding competency of subtraction, girls have secured very poor mark in comparison to score of the girls students.

The misery is that grade both boys and girls are very poor in mental math and arithmetic. They are not strong in mathematical word problem. It is also revealed from the table that the students have secured less than 50% on the competencies like counting objects, The table says that learners are better in recognizing shapes to some extent in comparison to other competencies.
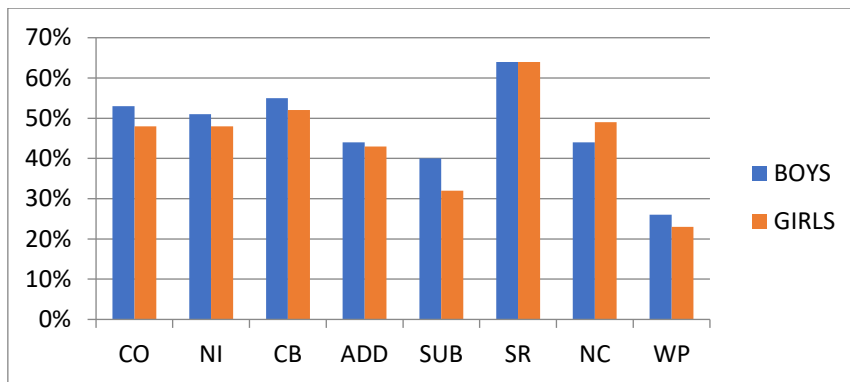
Figure 4: Comparative Analysis of Performance of Boys and Girls in Mathematics of Grade 1 Students

Main Findings

Performance in language:

- The students of early grades have performed very poor in language (foundational literacy) at par with grade level competencies.
- The Girls students have performed slightly well in comparison to their boys counter parts in literacy skills.
- Both boys and girls have secured miserable score in language. The average score is below 40% in many essential competencies.
- The students of Grade I have performed slightly better letter naming.
- Almost all students performed very poor in reading comprehension,
- The chronological performances in grades (Grade-1- 2-3) have been improving grade by grade but the rate of progress is very minimum.

Performance in Mathematics:

- The overall performance of these students is very poor in mathematics. Maximum students have secured below 40% in mathematics.
- The boys have done well in mathematics to an extent in comparison to girls, but the average score is less than 40% in many numeracy competencies.
- The difference in % score between boys and girls students is minimal. It shows that boys and girls are on the same foot.
- In all the classes, the learners are very poor in word problem and mental mathematics.
- Except shape recognition, learners' performance is below basic categories.

Suggestions

Seeing performance of the learners and observing the matters in the classroom activities the researcher has some call/request for the teacher society with a mission to improve the performance of the learners.

A) Teachers are to be positive in their job
B) Teachers must be patient.
C) Teachers have to clear and confident on concept to be taught
D) Teachers have to innovative and improvised

E) Teachers are to be flexible

F) Teachers have to be excellent motivators.

G) Teachers have to be approachable

H) Teachers have to show their love for teaching and taught

CONCLUSION

Due to the scale of the current learning crisis, all viable methods are on the way to be explored to support teachers in the mission of attaining universal foundational literacy and numeracy. Studies around the world show one-on-one peer tutoring to be extremely effective for learning not just for the learner, but also for the tutor. Thus, peer tutoring has been taken up as a voluntary and joyful activity for fellow students under the supervision of trained teachers and by taking due care of safety aspects. Additionally, it will also be made far easier for trained volunteers - from both the local community and beyond - to participate in this large-scale mission.

References

1. NEP 2O20, Ministry of Education, Govt. of India
2. NIPUN BHARAT – Guidelines, Dept. of School Education and Literacy, Ministry of Education, Govt. of India
3. State Report Card -FLS (Odisha) NAS 2021, Ministry of Education, Govt. of India
4. National Curricular and Pedagogical Framework for Early Childhood Education and Care – NCERT & Ministry of Education, Govt. of India
5. "Working together for Literacy", Mary. D. Stringer & Nicholas G. Faraclas.
6. "Revitalizing the Periphery" A Proceedings of the Conference in Language Revitalisation. Sami Institute, 2007.
7. About Language, Language Learning & Multi-linguality, Position Paper, NCF – 2005, NCERT, New Delhi.
8. Schmidt, W., Burroughs, N., Cogan, L., & Houang, R. (2017). The role of subject-matter content in teacher preparation: An international perspective for mathematics. *Journal of Curriculum Studies, 49*(2), 111–131.CrossRefGoogle Scholar
9. Methodology of Educational Research, 1984, Lokesh Koul.
10. Research Methodology, 2004, Research & Technology, C.R. Kothari.