Understanding Foundational Literacy and Numeracy

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According to the National Education Policy (NEP) 2020 and National Curriculum Framework (NCF) for Foundational Stage 2022, the objective of Foundational Literacy and Numeracy (FLN) is to make young learners proficient in reading, writing and mathematical skills from the early years. The skills mastered at this stage not only better equip them for the educational journey ahead but also prepare them as adept learning individuals.

Figure 1. The ability to read and write early allows learners to access diverse reading material.

The early years (ages 3-8 years) are a period for rapid learning in children, making it crucial to focus on their FLN. The development in the skills of reading and writing along with an understanding of early mathematics, prepares them for the understanding of complex concepts that follow. Acquisition of the ability to read at an early stage allows the learner to easily access textbooks, stories and other teaching materials and utilise them for their learning. This prompts the learner to progress successfully. On the other hand, learners who lag in acquiring the skills of reading, writing and mathematics at the foundational level are limited in their academic progress, leading to a gradual decline in their engagement with learning in subsequent classes. With time, this early performance will reflect in the students' improvement or decline in learning, widening the gap between high-performing and low-performing students.

What comprises FLN?

We understand that FLN stands for 'Foundational Literacy and Numeracy', but it becomes equally important to understand what constitutes FLN to decide how to work with students on language and mathematics. Just as foundational literacy does not mean the ability to read basic sentences by breaking them up (into words or syllables) without comprehension, similarly, number sense is not confined to just the recognition of two- or three-digit numbers. FLN comprises many aspects. By understanding those aspects, we can work towards the

overarching goals of education set by NEP 2020, such as critical thinking and reasoning skills.

The objective of education is not solely to pass examinations; it is the 'holistic development' of learners and developing '21st-century skills, problem-solving and life-skills' in them.

A limited understanding of the foundational numeracy domain confines us merely to digits and operations, whereas it actually includes other concepts, such as number patterns, the relationship between numbers and operations, geometry and more.

Let's talk about 'spatial understanding', that is, the understanding of space, as one of the sub-concepts of geometry. Early learners also have the ability to understand where objects are placed, which ones are near and which are far, and that nearby objects appear larger while the distant ones appear smaller and so on. Spatial understanding includes other sub-concepts: 1. Shape recognition; 2. Understanding of direction and space: such as nearby, distant, left, right, up, down, behind, etc.; 3. Measurement: distance, weight, etc.

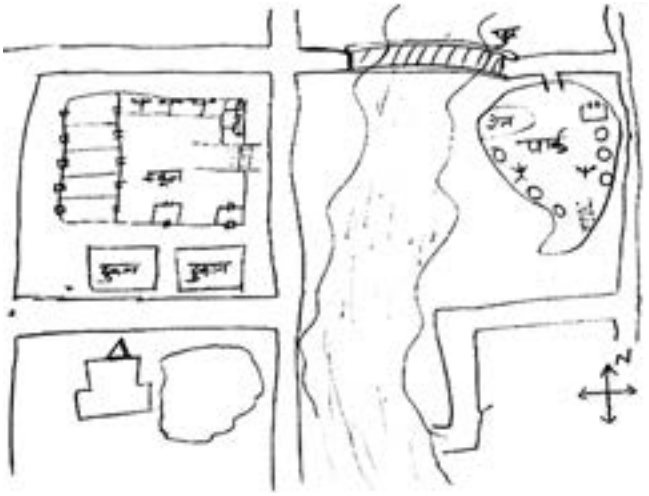

Figure 2. Students used this visual map to find the shortest route from park to school.

Let's look at the impact of foundational competencies in the later classes with the help of an example. In class III, the teacher assigned an activity to the learners in which a visual map indicated the locations of the school, park and students' homes using specific symbols. The students were required to determine how many meters eastward they would need to go from the school to reach the park.

Based on FLN instruction, students' prior learning at this point would include: the ability to read given instructions; interpret the symbols shown on the map (and thereby identify the school and park); determine that the park is to the east of the school; and estimate the approximate distance that needs to be covered to reach the park, and so on.

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While working on this task with their peers, the learners were expected to collaboratively think of multiple aspects at a time:

- Look at the entire map carefully and associate the symbols with their respective locations.
- Understand the locations with reference to up-down, left-right, nearby-far and directions.
- Understand that walking towards which direction will lead them to the park and that if they go in the wrong direction, they will not reach the park.
- Determine in which direction the park is located and how much the distance is from the school.
- What obstacles are there along the way (such as a river) and then decide in which direction to turn or whether to use a bridge to cross the river.
- If there are no obstacles visible, then they can create a new path or build a bridge over the river other than the one shown on the map.

While making all these decisions, they were expected to be able to logically explain to their peers why a particular decision was made to understand the chosen path and the reasons behind it.

Incomplete understanding of FLN

- **Number sense not number names:** Often, foundational numeracy is assumed to be only about teaching children 'number names' and addition-subtraction. Learning number names is a minor component of understanding numeracy. It is 'number sense' that includes the ability to understand relationships between numbers, recognise patterns, and comprehend concepts, such as why one number is smaller or larger than another, etc. While learners memorise and learn to write number names, they are unable to articulate the relationship between, say, 5 and 7, as well as their practical use in everyday life. It is also important to note that when foundational numeracy is confined within fixed boundaries, essential skills and concepts, such as measurement, basic patterns (including problem-solving) and shapes often get overlooked.
- **Reading is not merely the pronunciation of words:** Similarly, reading is understood only as the correct pronunciation of words. Whereas the objective of

foundational language competency is to foster the ability to read with comprehension and analysis in the learners.

- **Overlooking the multilingual perspective:** There is little effort to include the learners' home language in the teaching process. From the perspective of foundational language competency, this is important because it is the medium of the learners' fundamental thought process. In the context of Chhattisgarh, the native languages of most of the learners studying in the northern and southern parts of the state are *Gondi*, *Halbi*, *Kamari*, *Surgujia*, *Kurukh,* etc.
- **Overlooking activities:** Often, understanding of foundational language gets limited to the reading and writing of words. Storytelling, poem recitation, role play, and many other such interesting activities that can be conducted in the classroom are often sidelined in the classroom processes. Foundational language learning means developing an interest in learning the language through engaging activities.
- **Compartmentalising language and mathematics:** Most often, language and mathematics are approached as two different subjects. The understanding of how both these subjects are related and can complement each other is not established. The result of this is that students struggle to express mathematical problems in words or to convert word problems into mathematical expressions.

Home language, context and foundational understanding

National Education Policy 2020 strongly emphasises embracing the home language as the medium of education. The experience presented here is of the students belonging to the 'Kamari' tribe living in the urban area of Dhamtari district in Chhattisgarh. The home language of the learners is 'Kamari', a language different from Chhattisgarhi, which is the regional language used in teaching and learning and interactions in schools. Due to this linguistic difference, students are hesitant to communicate in Chhattisgarhi or Hindi and even to participate in class or attend school. The teachers appointed in the school are themselves unable to speak Kamari, widening the gap in communication between them and the learners.

There are teachers who provide opportunities to learners from classes I to III to interact and express their thoughts in Kamari. They explain and understand these interactions in Chhattisgarhi or Hindi with support from students of classes IV and V. These classrooms have an environment of inclusivity and support.

> The freedom to use the home language did not just elevate learners' confidence but also encouraged learning and support amongst peers – an impactful strategy for teachers. It helped in addressing the hesitance among students to speak and participate and motivated them to also take an interest in learning other languages. While not all students could reach class-level proficiency within one or two years, a significant shift was observed as previously reluctant learners began to view education as a positive experience. It was observed that many of these learners have learned to read and write. This practice demonstrates the impact of respectfully including the home language of learners in schools to bridge the gap between the home and the school.

Such efforts are being made by the teachers in different regions. For instance, experiences of providing education in languages, such as *Gondi* and *Halbi* in the different regions of Bastar in Chhattisgarh, and *Surgujiya* and *Kurukh* in northern Chhattisgarh further affirm this understanding. The state government and various educational organisations have developed textbooks to impart primary education in local languages, such as *Gondi* and *Halbi*.

Similarly, it is important to include examples, activities and references from the learners' context, like the kind of houses, plants, etc., they are surrounded by. This relatability ensures better engagement. Students can be asked to collect different types of leaves and classify them based on criteria, such as long and short leaves, green and less green leaves, or leaves of different colours. They can also count the number of leaves in each group.

No child left behind

The examples discussed so far illustrate that by working on foundational language and numeracy skills at the early stages, we can ensure that every student has the opportunity to succeed, particularly those from marginalised communities.

Translated from Hindi. Translator: Simran Sadh Vetter: Sonam Kumari

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