

Empowerment-based Mentoring Model for Adolescent Girls: Curriculum Linkages

1. Introduction

The overall goal of the Bihar Mentoring Project (BMP) funded by the Malala Fund was to develop an empowerment-based mentoring model based on an action-research study of three years in ten urban and rural schools in Bihar. Focusing on adolescent boys and girls, the mentoring model introduced a new form of pedagogy that prioritised critical thinking skills to the existing curricula within the government schools. The idea was that the mentoring model would allow adolescent boys and girls to examine and change their perception and knowledge of themselves and their aspirations and enable action related to themselves, their families, and their communities.

The BMP module was based on a pedagogical approach that consolidated and concretised our ideas of education and empowerment. By strengthening the pedagogical processes of delivery through mentoring, we developed a module to not only improve literacy and numeracy skills of children with varied abilities and interests, but also enhance their abilities to critically think, reflect, empathise, question and act. The mentoring process, therefore, was to ensure that the children were able to use the module as a way to engage with their own lives, especially taking into consideration their resource constraints. A major aspect of this was to ensure that children were able to connect different streams of information and use it to produce their own knowledge systems. Part of this process was to ensure that the mentorship module had linkages, both direct and indirect, with the knowledge they were gaining in school. Using the National Curriculum Framework (NCF) and the 6th, 7th, and 8th class Bihar Board textbooks as guideposts, we conceptualised the activities in such a manner that the mentorship module would build on, provide context to, and enhance the learning in classrooms as well. This report documents these linkages and provides examples by which the BMP module can be incorporated within regular classroom teaching to foster critical thinking skills amongst children.

2. Pedagogical framework of the BMP module

The primary pedagogy of the BMP module is participatory. It attempts to transform classroom, school, and community spaces into interactive spaces where children are encouraged to use their experiences as a source of learning. This pedagogy parallels the approach taken by the Bihar Board wherein many of the exercises in each of the chapters in their textbooks are preceded by many interactive and engaging activities. For example, in the science textbooks, there is an emphasis on the use of experiments and use of local available resources for activities. In order to ensure that our mentorship module builds on existing knowledge as well as textbooks that the children were learning from, we reviewed the New Education Policies (NEP) (1992 and 2020), all of the National Curriculum Framework position papers as well as an extensive review of the Bihar Board textbooks. Additionally, we also reviewed various Education Committee

reports (such as the Yashpal Committee Reports) to direct our module towards their recommendations. Based on this review, we tried to incorporate that most important lessons and recommendations that were made in the NCF policy papers. Some of the guidelines that we used while developing our own module, as recommended by the NCF (1992 and 2020) are as follows:

- (1) Connections between the information gained in classrooms and relating it to their own lives so that they create their own knowledge base.
- (2) Creating spaces of inquiry and empowerment
- (3) Creating a pedagogy that emphasises discovery-based, discussion-based, and analysis-based learning
- (4) Responsibility of learning shared by learners and mentors
- (5) All materials related to pedagogy easily sourced from local contexts
- (6) Diverse methods used such as painting, crafts and other artistic tools to encourage non-traditional ways of expression and articulation within the classroom

This emphasis on creating connections between knowledge systems was emphasised in the subject-wise frameworks as well. For example, one of the aims of the Mathematics curriculum framework was that mathematics should be seen as a way to teach children to think, to reason, to analyse, and to articulate in logical terms. It was seen as a vehicle to bring analysis and reasoning into their everyday activities and lives (NCERT, 2006). Similarly, the aim of teaching Science was to enhance the development of scientific temperament amongst the children and the use of locally available material, and the methods of group discussion and peer learning were highly encouraged. Even the teaching of English was not tied to understanding the nuances of the language, but to strengthen the communicative abilities of the students. The aim of Social Sciences, for example, was to ensure that children are able to understand the implications of social issues related to governance, caste, class, gender, literacy and the physical environment around them.

2.1 Methodology used for Curricula Linkages

In order to illustrate the close connections between these broad principles laid out by the NEP (1992 and 2020) and the ways in which the module was developed, we decided to highlight individual linkages found in the policy recommendations, the activities in our modules, and the connection to the existing curricula in Bihar Board. In order to document this systematically, we followed the following steps.

- (1) We first reviewed, page-by-page, the textbooks of classes 6th, 7th and 8th for the following subjects
 - Science
 - Mathematics
 - Political Science
 - History
 - Geography
 - English

- (2) We then identified those activities that had direct linkages with the activities in our BMP module
- (3) We then created a systematic framework to create a direct conceptual and methodological link.
- (4) Based on this framework, we created a frequency distribution of the highest and lowest linkages, and documented these systematically.

While almost all of our activities have some link to the lessons and activities in the textbooks, we wanted to only document those that had the most diverse linkages to exemplify the way in which activities in the BMP module can be used to provide connections between the lessons in different knowledge streams. The way in which we will demonstrate these linkages is to provide an overview of one of the activities of the BMP module, and illustrate the way in which these activities enhance or compliment the activities in other subject areas such as Geography, Mathematics, Political Science etc.

3. Linkages between BMP Module and Curricula

3.1 Facts and Opinions

The purpose of the Facts and Opinion exercise was to help children understand the distinctions between what they believe and what they know to be true. It was also make children question the basis of their knowledge, and to learn to question that which they are not able to verify. The entire activity was first to address one of the most prominent belief systems in the classroom – that of the existence of ghosts. The mentors first asked children whether they believed in ghosts. Then they asked the children whether they believed they could turn into ghosts. The mentors also asked them whether they would believe they were hungry because they had not eaten the entire day. Once there was a lively discussion that illustrated the difference between one belief system and the next, the mentors showed them a video on facts and opinion. After the video was shown, the children were then led into a discussion on what distinguishes facts and opinion based on the specific examples that were raised in the class. The mentors would then link these discussions to an activity that helped to distinguish between fact and opinion. After this, a game was played. The rules of the game were as follows:

1. The mentor reads out a set of statements one by one. Each group has to answer whether it is fact or opinion, by its turn.
2. If the group gets it correctly, then they get a point. If they do not, they do not get a point.
3. If there is prompting by other children, a point is deducted from that team.

Then the mentor reads out a set of statements that is a mixture of facts and opinion (a sample provided below):

1. The sun rises in the east.
2. Birds have wings and hollow bones which help them fly.
3. Fair and thin girls are beautiful
4. Trees use sunlight and carbon dioxide to make their food.
5. Salman khan is a great actor.

6. The earth revolves around the sun.
7. Men also wear jewellery
8. The inventor of the internet was a woman
9. India has had many brilliant women scientists
10. India has a women's cricket team
11. Cooking involves mathematics
12. One should not sleep under the peepal tree at night because of ghosts.
13. It has been 70 years since India got Independence from the British.
14. Women while menstruating should not touch pickle as it will get spoilt by their touch.
15. Cat crossing the road brings bad luck
16. All women are born to be mothers and caregivers.
17. The capital of Karnataka is Bangalore
18. Witchcraft and black magic can cause serious harm to a person
19. Water boils at 100 degree Celsius
20. One should not consume food during an eclipse.

After the game is played, the mentors would lead a small discussion on what defines a fact and what defines an opinion. The main points of the discussion would try to highlight the following: facts remain the same throughout but opinions change from person to person. Facts can be scientifically proven, but opinions can or cannot change, and they might change with people, time, or place. Examples were also illustrated using the game above. If we believe in ghosts, there is no way to prove but we can prove that dogs exist. So, concepts of verifiability and universality were also reinforced. For example, water and oil will not mix under any circumstances, regardless of where one is in the world. But the idea of ghosts might differ from culture to culture, making it an opinion and not a fact.

Using this framework of Facts and Opinion, the mentors consolidated this information by asking the students to do an activity purely based on advertisements. The mentors divided the children into groups and gave one object to each group. These objects could be as simple as stone, ribbon, clock, sticks and duster – anything that they could find in their vicinity and is fairly commonplace. Next, the children were asked to make an advertisement about the object, and then present this advertisement to the rest of the class. The only instructions were that the children could choose a mix of facts and opinions. After the children presented the case, the mentors led a discussion on the various ways in which the children were able to get the audience to pay attention, what techniques they used to convince the other to buy the product and whether they were convinced by the pitch of the other groups.

The mentors used these answers to illustrate the real-world application of how facts and opinions are used to emotionally or rationally manipulate people to buy products. The discussion also included the importance of values and preferences that can cloud us from the facts that are plainly visible. We used real-world examples like Fair and Lovely

cream to illustrate these points. This way, the exercise of facts and opinion allowed us to transition to exploring stereotypes, especially those of gender.

3.1.1 Linkages with Bihar Curricula

The activity described above is in line with the primary objectives of the NCF which stresses the need to cultivate scientific temper among students. It speaks directly to providing children a means by which to ascertain the difference between myths and superstitions.

Science

This has also been adopted by the BSCERT Science text books. For example, in the Class 7 textbook, in Chapter 2, page 29 there is a story related to Nutrition. It is called *Hole in the Stomach*. The story illustrates the difference between what we normally understand digestion to be – a mechanical process – to what it actually is – a chemical one. The story in the chapter, much like the activities in Facts and Opinion, attempts to systematically debunk the popularly-held opinion that digestion is a mechanical process. It does this by systematically discrediting this notion using scientific enquiry. The objective, therefore, of this activity is the same as the one in Facts and Opinion – laying the foundations for developing a scientific temperament.

Political Science

As mentioned earlier, the consolidation activity to the Facts and Opinion session was to create advertisements that allowed students to realise the way in which advertisements portray facts and opinions to sway their customers. This activity could easily be a companion piece to a chapter in Political Science in Class 7. Titled 'Understanding Advertisement', chapter 7 uses a story to explain the concept of a brand (pg. 63). The story is about a boy named Sonu who goes to the stationary shop to buy pencils of a particular brand. The owner of the shop asks Sonu why he wants only that particular brand and Sonu responds by saying that he saw an advertisement claiming that the pencil improves handwriting. The final section of the chapter uses this story to examine the relationship between advertisements and democracy and explains the way in which big businesses spend a lot of time, effort, and money to brand their products, and just because a product is branded doesn't mean that it is better. It can also create false value systems in which people are judged by what they buy instead of who they are.

Taken together, this activity in the BSCERT and our activities reinforcing Facts and Opinion provide children with various dimensions about the ways in which the distinction of facts and opinion influence our lives, the way we purchase things, and the way we look at other people as well as ourselves. These lessons being reinforced in multiple ways allows for a greater clarity on the subject matter.

History

Another way in which the activity on facts and opinion is reinforced is through the subject of history. Precisely because history is written and rewritten and is subject to change based on powerful and dominant narratives, it is important for children to distill and distinguish between that which is knowable and that which is mere speculation. Given that much of today's history is often re-constructed, it is important for children to

be able to have the skills to pick apart false narratives in a story. While the activity on Facts and Opinion lay the foundation of doing this, it is augmented by a chapter (Chapter 9, pg. 158) in the history textbook in Class 7.

The chapter talks about new political structures that was introduced in the 18th century by the Maratha Empire and highlights the role of Shivaji in shaping these. It also discusses many myths about Aurangzeb and Shivaji and encourages children to discuss the stories that are spoken about Shivaji. This activity, thus, can easily be used to build on the conversation of facts and opinions, so that children can identify and understand the histories of these legends. Both activities, therefore, complement each other and let children define, distinguish, and question the basis of their own knowledge systems.

3.2 Knowledge Mapping

Children often believe that knowledge is gained through literacy and by going to schools, and they do not often feel knowledgeable or feel that others are knowledgeable unless it is associated with books or school. In order to get children to understand the complexity of knowledge systems and to gain an understanding that knowledge can be gained from multiple sources, we created an activity of Knowledge Mapping. Part of the motivation came from the aims of the NCF Science Education which emphasizes learning science through familiar experiences, enhancing investigative ability, discouraging rote learning and encouraging creativity and inventiveness. Another part of our motivation was to make children aware and reflect on the various kinds of knowledge that is already present in their surroundings, and to find ways to ensure that children can learn from those who are not considered traditional ‘teachers’.

The basic structure of the activity was that children had to identify the various sources of knowledge around them and the kinds of knowledge that these sources provided. The mentors created two primary groups: one that would identify the sources of knowledge, and the other that would identify the kinds of knowledge produced. In each of the rounds that the children played, they moved from the classroom (such as teachers, books charts), to their homes, to the village. For each answer, the groups would get one point and if they didn't, they would have to pass it onto the next group. This way, the children would compete against each other to identify the various sources, forms, and kinds of knowledge that they can identify. Using this as the base, the mentors then used a few questions to generate a question. Some of these questions were:

1. What are the kinds of knowledge that is more visible than other kinds of knowledge?
2. Do the children think that knowledge of writing is more important than the knowledge of cooking?
3. What does the potter know? How does he/she acquire this information?

Using these questions as a base for exploring children's awareness of the knowledge systems around them, the idea was to ensure that children understood that every person has a wealth of knowledge in themselves, and that no one should be considered non-knowledgeable. Another lesson was to get rid of the idea that children do not have their own knowledge base. A prominent example that was often used in the classroom was to illustrate the way in which cooking as an activity provides a knowledge of

estimation, preservation, chemistry and biology. The fundamental framework of the Knowledge Mapping exercise, therefore, was to ensure that the various lessons learned in various subjects can be integrated into creating a composite knowledge base.

3.2.1 Linkages with Bihar Curricula

The BCERT textbooks also provide similar activities to enhance an understanding of local contexts. For example, the NCF encourages the use of using everyday objects to conduct experiments and enable scientific enquiry. The idea is that sophisticated equipment is not necessary to understand the fundamentals of knowledge, and that knowledge systems can be found in any local context. This is also borne out by some of the activities in Geography, Mathematics, Political Science, and History, which echo the lessons learned during the Knowledge Mapping exercise.

Geography

In chapter 4 of the Class 6 Geography Textbook, the children learn about the major landforms of the Earth. To ensure that children understand the theoretical concepts in the chapter, the lesson encourages them to identify examples of various landforms in their own local surroundings. This is quite similar to the way in which the Knowledge Mapping exercises try to get children to understand the various sources of knowledge closer to home. In another chapter Ch. 12 titled Environment and Ecosystems for Class 7, the activity on page 88 asks children to collect information on rain and temperature by listening to the radio or television. The purpose of the activity is to see the relevance of rain and temperature beyond their textbooks. This way, much like the Knowledge Mapping exercise, the activity tries to connect various sources of knowledge to their everyday life and to see the implications thereof. The Knowledge Mapping exercise, therefore, can directly build on these examples already present in the textbooks.

Mathematics

In Chapter 5 of the Class 6 Mathematics textbook on page 107, there is an activity that encourages children to use just paper to understand line segments. Children are encouraged to take out a piece of paper from their notebook, and fold and unfold in certain sections. Then, children are asked to observe how the fold also acts as a line segment. By using accessible material and to see real-world implications of the concepts, the activity is then reinforcing the different ways in which knowledge can be articulated and depicted.

Political Science

In the subject of Political Science for Class 6, there is an activity called Yellow Box in chapter 3 titled 'Forms of life in cities' on page 29. This activity engages children to explore the people who work on the footpath and the various ways in which they are self-employed. Apart from explaining the different kinds of professions that we can find in a footpath; children are also encouraged to go out and explore individuals who make their livelihoods on the streets and enquire about their everyday experiences. In another activity (Activity 5) that is on page 82 of chapter 8 titled 'Food security' in Class 8, students are asked to visit an Anganwadi Centre and prepare a report on the following points: why are mothers and children weighed at the Centre? What kind of food intake happens at the Centre? What are the main goals of an Anganwadi Centre?

Similarly in the same chapter, on page 86, there is an activity which asks students to visit a PDS shop and asks basic questions around the opening of the shop, the contents of the shop, the different type of card holders etc. These activities encourage the children to think about the various aspects of their lives in terms of knowledge production and create opportunities to map knowledge systematically. This is very close to the Knowledge Mapping where children are encouraged post the exercise to really find out the way in which farmers, potters, or people whom they have listed in their activities (such as their mothers for cooking) have learned what they know and the extent of their knowledge.

History

There are several examples in the History textbooks that also ensure that children understand that knowledge is present everywhere and is not limited to one set or source. In Class 7 textbook on page 22, there is an activity that explains the use of television (TV) as a source of historical information and asks relevant questions related to understanding History. By showcasing a particular show 'Prithvi Raj Chauhan' televised on Doordarshan, the students are asked to name certain pieces of information in this TV show. These questions pertain to the characters as well as the political situation of the time. In another activity for Class 8 on page 55, the students are encouraged to collect information on methods of tilling land in erstwhile times and compare it to how it is being tilled now. By encouraging children to see information in 'entertainment', and by using their access to traditional and modern forms of knowledge, these activities also reinforce the main lessons of the knowledge mapping exercise: knowledge is not limited to classrooms and everyday tasks require tremendous amounts of integrated knowledge.

Science

In the science textbook of class 6, chapter 4 and 6 on page 38 and 67 deal with different types of matter and changes in substances, respectively. Activities in both the chapters ask the children to make use of commonly available materials like rubber band, long stick or table to conduct experiments that could clarify concepts such as the way in which sounds are produced. For example, children are asked to make roti on a stove, cut a piece of paper, and blow air into a balloon and think about how the application of science is visible in each of these activities. In Class 7, in the first chapter on page 2, children are also encouraged to tabulate the amount of water used for various activities, and to gauge the usage and wastage of water. These activities strengthen the idea that traditional knowledge have a basis in 'scientific' methodologies and that these can be easily observed using objects in the proximal environment. This is especially useful to resist the commonly held notion that knowledge is 'out there', and that science is for 'experts'. The mapping of the knowledge sources, therefore, reinforces this idea for children that there is scientific knowledge all around them, and it is not restricted to the classroom.

English

While language courses typically do not reinforce these scientific principles, we found convergence of these concepts in Chapter 5 titled 'Do animals share ideas' (pp. 19-23) in the English textbook for Class 6. In this chapter, there is an activity that asks children

to think about how animals communicate the same and create a list. The purpose of the activity is to decode the different ways in which communication works, and the way that these methods of communication is adopted by various species. In going through this list, children, therefore, can understand the various ways in which knowledge is produced by varied forms of communication and use it to map the diverse forms of knowledge there is.

3.3 Memory and Observation

The traditional pedagogy and classroom teaching often encourages rote-learning and relies on children to remember, rather than learn. However, based on the NCF framework, the mentorship modules have a few activities that allows for the role of memory to be utilitarian in observing the world, instead of merely learning a fact. Therefore, we tried to create engaging activities to improve children's observational and retention skills. For example, in one of our activities, the mentors showed them a flash animation video with several images moving quickly. The children were supposed to write as many images as they understood. The purpose of the exercise was to make children understand the relationship between memory and observation and to appreciate the speed at which the eye is able to discern movement, and the brain is able to recollect the movement.

The next set of exercises was to make children focus on the ways in which they could observe and remember the relationship between objects. The mentors would collect a few things from children's desks or their surroundings, like glasses, pen, ribbon etc., and place it on a corner in the classroom. Then, one by one, the child has one minute to look at all the articles, and then go back and write it down. The rule was that whoever could write the most accurate number of articles wins the prize. The mentors then discussed the various strategies that children came up with to remember the objects.

Once this discussion was done, the purpose of the next activity was to make children aware of the way in which they can categorise things and focus on the way in which ideas could be strung together to boost memory. The mentors did this by assembling a large number of items such as leaves, book phone charger, light bulb, fruit, photograph etc. Then the children were divided into even number of groups. The rule of the game was that each of the group could choose one item from the list but would not tell the other groups. The other groups then had to guess the item chosen, but were allowed only one question per round, upto a limit of twenty questions.

The objective of the game was that if you were in the team who had to guess, you had to guess the answer with the least number of questions, and if you were in the team that had chosen the item, you had to choose in such a way that other teams had to ask more questions. Once the game was played, the children were led into a discussion where they were asked to describe their strategy for winning and the reasons they may have lost. In order to do this, pointed questions such as the plan for each of the choice of article, the question asked, and the strategies were extensively discussed. Based on the answers, a discussion that emphasised a few lessons were consolidated for the group. For example, children learned that when things are sorted into categories, it is easier to remember, or that when we write things down, it is easier to remember as we are using

multiple sensory inputs. Using this, memory techniques were taught that pointed to understanding the underlying relationship between things, instead of rote learning.

This is also echoed in the NCF framework where, in the Social Science framework, in particular, it is emphasised that pedagogy employed for teaching needs to adopt methods or methodologies that would use perspectives that was dependent on creativity, aesthetics as well as critical thinking. The idea is to ensure that children are able to draw relationships between the past and the present, with the purpose of understanding changes taking place in the world (NCERT, 2006). The exercises on memory and observation allow children to apply observational skills and retain important strategies to remember. It also helps develop children's cognitive abilities in a non-threatening fashion, and these have resonance in the BSCERT books as well. For both Science and language (such as English), this learning from memory and observation is very useful. For example, the skills in observation is very critical for scientific research and experiments, and learning of any language is best done with techniques of association and categorisation. So, the techniques learned in Memory and Observations are vital for the subjects of Science and English among other subjects.

3.3.1 Linkages with Bihar Curricula

Geography

In Chapter 6 of the Geography textbook for Class 6, the students are taught about Earth and the Globe. In this chapter, along with teaching the important lines of latitude and longitude, the different zones in which the earth is divided is also mentioned. Instead of encouraging the children to 'rote-learn' this information, the activity on page 59 encourages the children to make a list of things to carry while traveling to the frigid zones. This allows for children to associate the implications of living in these zones and connects the knowledge to its praxis. The same principle that underlies Memory and Observation is used here so that children are able to engage with the concepts and make connections between different ideas.

Maths

For class 6, on page 254, there is an activity (13.2) that encourages children to think about the application of perimeter to a real-world problem. In the activity, children are asked to figure out how to set up a boundary for a farmland, or an orchard or a cricket field. Then children are asked to measure the boundary of a real table top and note down the measurements, so that they are able to associate this with the lines drawn in their notebooks. Two other exercises (1 & 2) in class 8 on page 37 uses these same principles to identify and observe open and closed figures. Students are first asked to identify and then draw open and closed figures. Each of these activities work together to enhance children's comprehension of materials and enhance their observational skills.

Political Science

These skills of memory and observation can also be bolstered when children use the data that is useful for this. This is clearly the purpose of including a Survey of Children on Children for Class 7 students in Chapter 3, titled Role of Government in Education and Health, on page 25. Children are asked to do a survey on why children are not going to school to study. Based on questions for the reason and rationale for dropping out of

school, the teacher encouraged children to collate and analyse the data and provide a means by which the data can be used to mobilise more children to come to school. The activity therefore creates a specific format through which observation and connection of ideas can be brought to bear to understand the problem of children dropping out of schools. Similarly, in Class 8, in the first chapter titled 'Indian democracy' on page 10, there is an activity which features three pictures of girls going to school, a picture of Patna Sahib and a woman addressing farm labourers. The children were asked to observe the pictures closely and relate it to the preamble of the constitution. They were asked to observe and link these pictures to the different kinds of freedom represented. This way of engaging children in connecting ideas and linking that to observation and memory skills is enhanced by clubbing it with the activities of Memory and Observation in the mentorship module.

History

In Chapter 6 of Class 7, there is a specific activity titled Traders and Workers on Page 97 where students are asked to investigate the social composition of their city in terms of caste, religion, and occupation. The students had to also note down the differences between the social groups in terms of what they wore, the food they ate and the work that they would do. Similarly, for Class 8, in Chapter 11, there is an activity that asks children to closely observe building styles (pg. 184). They were asked to match the buildings that they saw to the building described in the chapter itself. They were also supposed to draw the buildings and explain the attributes associated with the building styles. All of these activities allow for association and observation which boosts memory skills of students.

3.4 Maths and Music

One of the major activities that we have incorporated into the mentorship module is to connect different forms of knowledge systems so that children are able to comprehend and create their own. One of the most successful ways in which we were able to do this is to connect Mathematics and Music. The mentors first started talking about how we could communicate to anyone using maths. Then we introduced the topic of how maths is also a language that can be used to communicate across languages, and is something that is present in our daily life – like music. We then explained to the children the basic building blocks of music, and connect the various ways in which music and maths are woven together. For examples, the basic building blocks of music – the 7 scale note systems, the rhythm, the beat and the tempo can be taught in relation to mathematics.

After this, children were asked to make their own music based on the principles that were just explained. The purpose of this was to help children connect the relationship between maths and music and apply it for themselves. The way that we were able to begin this process is to use songs for their own names. By demonstrating how to break their own name into claps – for instance, making syllables into claps – the children could create different claps for their own names. Using this principle of breaking down claps and rhythms, the mentors also played a small activity of musical distance so that children were able to grasp the close connection between maths and music. The mentors would first sing a normal song. They would designate a particular distance in

class (like the length and breadth of the class). The children would then have to take equal amounts of steps to cross the distance by the time the song finished.

When children got a hang of this exercise, the song was increased or decreased in tempo, so that children could then mentally calculate when the song would end, and how many steps they would have to take so that they could understand the way in which the tempo is related to speed, and how the beat is related to division. Using these activities as examples, the mentors could demonstrate that while there might be a fear of maths, they are already using it in their everyday life, no gender or community is good or bad with maths, it is only a matter of training to see the patterns of maths in everything.

These exercises were conceptualised to address some of the suggestions provided in the NCF documents where it recommends enabling students to learn maths through familiar life experiences, or to better understand maths through the application of it. The primary motivation for these recommendations is to dispel the sense of fear and failure associated with maths (especially among girls). Primarily because the Maths and Music exercise focuses on the processes by which the learning happens rather than the content of the lessons themselves, the Maths and Music exercises creates new relationships with concepts that could otherwise be daunting. So, concepts related to estimation, approximation, division, multiplication can be incorporated into the humming of a tune or a dance move. This potentially builds confidence and a sense of wonder and curiosity about the application of mathematics.

3.4.1 Linkages with Bihar Curricula

While this activity doesn't connect to any specific activity mentioned in the Mathematics textbooks, it provides a pathway for children to understand the applications of Mathematics, and to start to conceptualise Mathematics as a language rather than just a subject. This also allows children to be less afraid of the 'idea' of Mathematics and allows them access to the concepts laid within through things that they enjoy such as music and song. This activity, therefore, enhances their familiarity and knowledge of Mathematics, in general.

3.5 Sensory Perceptions

The purpose of the sensory perceptions exercises was to make children aware of the multiple sources of information that they are processing, and to be aware of the knowledge that they already have. For this, we designed a series of games, all of which was to ensure that children were able to understand the way in which they were able to process, store, and analyse information daily.

The first activity was a guessing game, where the mentors took a small clay pot and assembled various small items (like pencil, sharpener, eraser, bangle etc.) and covered it with cloth so that the children could feel the objects without seeing it. Then, the children were asked to put their hands in and feel all the objects through the cloth. After a set time (30 seconds, for instance), the children were asked to write down all the objects that they identified. The child who was able to identify the most number of items was considered the winner. After this exercise, there was a discussion related to what the children felt confused or confident about, and how they were able to

understand the thing that they were holding was the thing itself. Based on the answers of the children, the mentors led a discussion that highlighted the value of gaining knowledge through the senses.

The next activity focused on optical illusions which allowed them to understand two things: (1) the way in which children can process information and find patterns quickly and (2) to make children understand the limitations of perception. Using materials like cardboard and string, a bird cage was made, and children were encouraged to create their own optical illusions. The next activity was about their hearing abilities where they listened to various sounds of the world (like dog barking, mixie grinding etc.), and children had to identify the sounds that were being made in the video. After these sets of exercises, the mentors continued in the next session on other senses such as children's sense of taste. In this exercise, children were asked to identify certain tastes of fruits and vegetables (cut into square cubes, so that they cannot identify it by shape) blindfolded. The purpose of this exercise was also to get children to understand the connections between various senses. For some of the children, we also asked them to close their noses and taste something, so that they could understand the interconnectedness of our various senses.

Using this, our next activity was related to the connections between our sense of smell and memory. For this, we asked them to close their eyes and smell their surroundings. If children said that they couldn't smell anything, the mentors would prompt them to think about what could smell. Could they smell the wind, or the road or their books? Using their responses as guide, the mentors asked them to document the smells in their fields, gardens, homes, and their kitchens. The mentors also asked them to record any memory that they may have related to the smell that they wrote down.

After this was done, a small discussion on the following questions was conducted: Were the children able to find a connection between smell, taste, and memory? What are the kinds of information that different senses provide? How are all of our senses connected? Using the answers, the mentors then would guide the discussion to illustrate that children know a lot of things already – through their fingers, their eyes, their taste, and highlight that they are constantly interpreting new information based on what they know. So, it was important to keep their minds open to new experiences, and that all of their senses contribute in providing consolidated information. The mentors also inserted a word of caution on not quickly assessing things based on what they see as it was clearly illustrated through these examples that their senses could also fool them.

All of these exercises on sensory perception were foundational in building a sense of confidence in children – about their abilities to find out things for themselves and to think for themselves. These small activities can be useful in creating a sense of wonder and curiosity about the world.

3.5.1 Linkages with Bihar Curricula

Science

In the science books in Class 8 in Chapter 18 (Activity 1, page 253), there is an activity which illustrates the different ways in which sound is produced in different musical instruments. Another subsequent activity also provides students with experiments on

how to use commonly available materials like rubber band, long sticks or table to produce different forms of sounds. This activity and the chapter relies heavily on our sense of sound to distinguish between the various tonalities and volume. This activity can be easily combined with the activities in Sensory and Perception for children to understand not only that they can perceive the world through various sensory organs, but that they can also produce and create new things using their sensory organs such as making music or creating art.

3.6 Knowledge and Caste / Stereotypes about knowledge

The focus of the BMP module was to enhance critical thinking skills in children, and one of the primary ways in which we dealt with this is to lay bare the connection between knowledge and caste, and the several sexist casteist stereotypes about knowledge that are prevalent. In order to broach this subject and to ensure that children encounter this in a safe environment and are able to engage with the gravity and depth of the structures that they are likely to encounter. One of the primary ways we did this is by introducing children to the relationship between caste and knowledge. The purpose of these activities was to gently make children understand the implications for different access to different resource, the difficulties in acquiring resources, skills and knowledge, and the difference between equality and equity.

The first activity called 'Choti Chachi ki Chai' and it involved children making an imaginary tea for a guest. First, the mentors divided the class into four groups and gave them photographs of ingredients that they had to make the tea for Choti Chachi. While the basic equipment was the same, the groups were given different ingredients in the following manner:

1. Group 1: Gas stove, saucepan and water
2. Group 2: Gas stove, saucepan, water, milk and sugar
3. Group 3: Gas stove, saucepan, water, tea leaves and sugar
4. Group 4: Gas stove, saucepan, water, tea leaves, milk, sugar, ginger and elaichi

Then, the mentor then went outside and came back pretending to be Choti Chachi. The mentor tasted all of their teas and provide feedback on what could be improved and which tea she liked the best. Once the tea is tasted, Choti Chachi left the class, and once the mentor has come back to the classroom lead a discussion on the connections between the making of the tea and our lives. Using examples from their own lives, such as going to school when there is no transportation etc. the mentors encouraged the children to think about the various ways in which systematic oppression of particular castes have given rise to different concentration of resources without any reason or merit. Emphasis was also laid on the fact that even when resources were unfairly divided, they were judged on similar paradigms, and that there is no 'fault' of the person being deprived. At the end of the exercise, a movie on caste was also shown, to re-emphasise this point.

The next session on stereotypes and knowledge focused on ensuring that children were able to think about stereotypes related to gender, caste, class and knowledge, and to

understand that these biases are barriers to acquire knowledge. The first activity was a fill in the blanks activity where children were given all of ten seconds to write in whatever they felt completed the sentences. Some of the sentences are as follows:

1. Ladki ne _____ se shaadi ki.
2. Mard ko _____ nahi hota.
3. Fair _____ lovely.
4. Ek achcha bacha _____ nahi karta.
5. Bharath ek _____ desh hain.

The mentor then led a discussion on why certain answers came easily to children and why even when choice was given to fill it with anything, they came up with very similar answers. Using this activity as a jumping point, a set of pictures with actions with hands and different kinds of people were distributed to the children. The children then had to match the hands to the different people. The action of the hands could be as diverse as cooking, cleaning, doing surgery etc, and the people were different with older men and younger women being represented.

Once the children matched the hands to people, based on their discussion, the mentors led them into a third activity which created a sentence based on the pictures that the children matched. For example, if a girl was matched with cooking, the children were encouraged to write a sentence about the two pictures. It could be: a girl is cooking. Against each of the statements made, the mentors would then denote whether it was a stereotype or not. Post this activity, the mentors discussed with the children on stereotypes and what constituted stereotypes based on the sets of matches that children made as well as the sentences that they came up with. To ensure that children thought about a bit more debunking of common stereotypes, the session ended with a movie on women inventors. Additionally, we also asked the children to host a play that specifically addressed caste as a subject. We provided three stories to the children and then we asked them to choose one or more of the stories, and use it to create a play. Many schools used this play in their annual functions as well.

3.6.1 Linkages with Bihar Curricula

English

In Class 6, there is a chapter on Discrimination (Chapter 9, pp. 42-43). The entire chapter is a poem which condemns the discrimination of people on the grounds of race, gender, caste, religion etc. The poem is able to connect the various systematic ways in which people are discriminated against caste, and this is a powerful reinforcement to the learnings within the BMP module about the nature of discrimination and the repercussions of stereotyping.

Political Science

In Class 6, the third chapter is on Urban Living which has an activity (pg. 37) which asks children to think about the experiences of a domestic workers and describes their daily routine. Children are encouraged to find out more about the lives of domestic workers and factors workers – they are specifically asked pointed questions about their entitlements, insurance, or any other form of benefits. In another yellow box discussion

in Class 6 textbook, chapter 1 titled 'Understanding diversity' on page 10, the topic directly deals with discrimination and asks children to think more about any forms of discrimination that they have seen and to think more deeply about why discrimination might take place. These activities can be easily augmented with the activities for Stereotyping, as they all indicate the manner in which we are culpable in perpetuating certain forms of discrimination. This form of self-reflectively, therefore, might be useful in creating action or change.

History

In Class 7, the first activity in Chapter 7 on page 112 – Social and Cultural Development – focuses especially on the various ways in which inequality is produced by difference. In the activity, the students are asked to fill in a table explaining equality and inequality in different religions. This, coupled with the exercises in Knowledge and Caste can give children a foundational understanding in which systemic discrimination allocates resources differently, hence contributing to inequitable outcomes. The activities in Knowledge and Caste can be particularly useful when doing the discussion featured in Chapter titled Challenges of Caste System of Class 8 on page 127. In this activity, children are asked to reflect on their experiences of (witnessing) caste discrimination and the potential actions they could take to stop it.

3.7 Ecosystems

Children learn a lot about ecosystems in their classrooms, but sometimes, it is difficult to connect the larger abstract concepts to their everyday lives. In order to make the lessons of environmental justice relevant to the children, we conducted a series of activities focusing on Ecosystems. First, we started with a web of life exercise that could help children understand the importance of ecosystems and how one small thing in one ecosystem could influence another. The children were asked to pick pictures that contained many living and non-living things like a tree, flower, worms, insects, sand, sun, clouds, fish, light etc. Once children picked it, they were instructed to stand in a circle. Taking one ball of string, the mentor provided one end of the string to one child (perhaps a tree) and asked the child to connect it to another child which would be directly related to tree (like flower or rain). Using these self-identified connections, children would then have to make connections between themselves and each of the children in the circle. Finally, when the web is complete, the mentor tried to pull one of the child out of the circle, and then asked the children how many threads moved. Another variation was to cut the tree and remove the tree from the circle and see the way in which the web fell apart. Based on this exercise, the mentors then would ask questions about how the children understood the connections between seemingly unrelated things such as a rock and a tree.

Using this as the background, the mentors moved to the second activity on articulating ecological arguments. This is a simple debate framework where groups are divided into two and each of the group had to argue a particularly contentious point regarding an ecological issue such as: Are malls more important than trees? Based on this discussion where children can think about the various complexities that come with questions of environmental justice, the mentors turned their attention closer to home and posed questions about the things that they used at home and about their families. Questions

could range from how the environment was in their grandfather's time and how it is now, and what were the things that exist now that didn't exist before – both good and bad. Utilising this discussion as a jumping point, the next exercise on recycling (Old is Gold) was introduced. This exercise primarily allowed children to understand the various aspects of ecological practices, and made them aware of their own culpability and agency in creating change.

In this activity, the children were divided into groups and were assigned pictures of waste materials such as leaves, newspaper or old clothes, and asked to think of five ways to use the things in the pictures, but not in its current form. At the end of the session, the groups were asked to present their innovative ideas. The point of the exercise is to ensure that children understood that what we consider 'waste' can also be valuable. The next activity built on the earlier exercise by providing children means to create things on their own from waste. Children were shown video clips that utilised newspaper bags, plastic bags etc., and were also provided materials like old newspapers, glue, string, plastic bottles, or any disposable material and the children could make what they choose from these materials. Following this activity, mentors led a small discussion on the various ways in which children are just a part of the web of life, and they can make anything that has been discarded beautiful again.

3.7.1 Linkages with Bihar Curricula

Geography

These activities illustrated above clearly have a direct link with Geography. Apart from the obvious link to the learning about Earth in Geography, the activities also link to chapter 3 in the class 7 textbook titled Seismic Forces in the Earth. In this chapter, the students learn about the seismic forces in the Earth and the consequences of these activities. The chapter provides pictorial depictions of earthquakes and volcanic eruptions and encourages children to think about the way in which natural disasters influence human life. This activity is augmented by the lessons learned in Ecosystems, as they both reinforce the interconnectedness of environmental events.

Science

For class 8 students, in chapter 19, there is a chapter on air and water pollution. In this chapter, children learn about the components of the environment, air pollution, ozone layer depletion and its impact on humans. These concepts taught in this chapter align perfectly with the objectives of the Ecosystem set of exercises where the discussion is on the way in which Earth has changed due to human action.

English

In chapter 17 of the class 8 English textbook, there is a very interesting recycling rap which highlights the importance of recycling and how it helps in the reduction of waste and pollution. This activity on page 168 asks students to think about the ways in which waste can be reused again and to list the things that could be recycled. Given that one of the activities in the Ecosystem series is precisely about this, these two activities in conjunction reinforce the lesson strongly that we can limit damage to our environment by recycling.

3.8 Mapping your Village or Community

One of the main aims of the BMP module was to make children aware of the social and physical characteristics that make up their world and to help them articulate the spatial division of caste or religion within their own village. In order to do this, we first decided to do a spatial mapping of their village or community. The mentors first divided the children into two or three groups. They were then instructed to build a village of their dreams. There were no rules, and they could make anything that they want. Each of the children within the group would have a turn through which they could add something to their dream village like a school, or a water tank. After each of the villages were built, the groups would then present these villages to the other groups and questions were posed about each of the villages. The questions were: what were the main benefits of the living in this village? Why was this village ideal? What makes them different from their village.

Using the last question to transition to the next activity, the mentors would then divide the children into other groups to make their own actual village. The purpose of this exercise was to ensure that children gained an understanding of the difference between their value systems and the way in which their villages or communities functioned. Once the children were able to draw their own villages onto chart paper, a consolidation exercise was conducted with them, where the mentors tried to get the children to articulate the differences within the village. For example, children were asked about the facilities and whether all of these facilities were available to all of the communities in the villages. When these responses were tabulated systematically, the mentors were then able to direct the conversation to get children to see that their village was not evenly distributed and that not everyone had the same resources. The Mapping of the Village / Community, therefore, was the first step towards trying to build an understanding of the functioning of caste within children's own context.

3.8.1 Linkages with Bihar Curricula

Geography

Apart from the obvious link of cartographies of the village to the subject of Geography, for class 6 students, in Chapter 8, there is also an activity regarding their state – Bihar. In this activity on page 72, the students were asked to think about why *Maneejar* seeds spread in flood prone areas. The students were also asked to identify a similar plant that was currently grown in South Bihar and to try to understand about the topography, the landforms, and the geographical conditions of Bihar that would also allow for *Maneejar* seeds to spread. Taken together, the activity in this chapter the Mapping of the Village allows for children to understand the different ways in which built environments and geographies have implications for people's lives and livelihoods.

Science

For class 7 in Chapter 7 on page 122, there is an activity on Waste Water Management that asks children to do some of the following things: (1) map the path of waste water coming out of a household, (2) survey a road or a lane to list down the number of rooms, and (3) walking along the pathway of an open drain to find out where it ends up and what becomes of this garbage. The purpose of this activity is to understand how waste water is managed in their own villages and communities, and to figure out what or who

is responsible for creating and disposing of these waste water. Given that drainage and its management is an important social and cultural aspect of living in a village, this activity can easily be used in conjunction with Mapping of the Village to understand the social factors behind what is seemingly a benign 'infrastructural' problem.

Political Science

The second chapter for the class 6 textbook is called Forms of Village Life and the chapter maps the space and institutions which exist in the village. The chapter encourages children to tabulate the different crops such as wheat, corn, rice, pulses among others that are available in their households. The chapter then connects this information to the people who produce them, namely farmers, landless labourers etc. The children are also introduced to the work that women do within the household and the kinds of enterprises that make up a village economy. This activity can definitely be complimented with the Mapping the Village as it allows for the consolidation of knowledge about the complexity of village life, especially related to food production.

History

A mapping exercise similar to the one described in Mapping the Village appears in Page 49 of Chapter 5 for Class 6 textbooks. In this exercise titled Early City: First Urbanisation, the children are asked to map the city of Harappa and then compare it to the map of the village and note down the differences between the city and Harappan city.

3.9 Markets

To ensure that children are made aware of their own knowledge regarding markets and to provide space to ensure that children are more proactive in using their knowledge, we devised a series of activities on Markets. The first activity was providing some level of exposure. We showed them a movie about different kinds of markets in the world. After watching the movie, the mentors asked a few questions related to what the vendors were selling, the similarities of the markets, the different products that the markets were selling, and their own experiences of markets. Next, the mentors changed the classroom into a market space. The way that they did this is to divide the group into Buyers' Group and Sellers' Group. For the Seller's group, the instructions were to ensure that children think about the perishability and essentiality of the product as well as the price point. They were also encouraged to make models of the products that they were selling. After the classroom was divided into small sections where the Sellers could set up their make-believe wares.

The Buyers' Group was asked to think about the price point at which they'd like to buy and the kind of strategies that they would employ to purchase essential goods, especially those that they had seen or done, including bargaining etc. Once the Market was set up, the Buyers could go and purchase what they wanted from the Sellers. After a certain set of time, the Market ended, and a discussion was conducted to ask the Sellers and the Buyers about their experiences, on what they concentrated on buying and selling and which strategies were the most successful for both the Buyers and the Sellers. After the discussion, the mentors steered the conversation on the origins of

these articles and to talk about the imports and exports of India and to really understand the way in which markets in India operate.

3.9.1 Linkages with Bihar Curricula

Geography

There are similar activities related to Industries for class 8 students. Chapter 3 in the Geography Textbooks attempts to engage the children on the processes within industries such as the raw materials that they use, the way in which the products are utilised, and the way in which the whole process boosts the economy. The activities in Industries can help children relate this knowledge to their own experiences of markets and help them understand the complexities of commerce.

3.10 Making Maps

In addition to encouraging children to make a map of their own community, we also tried to orient children towards map making. One of the first things we did was to help them familiarise themselves with the globe. We first asked the children to sit in a circle and gave them an inflatable globe. The children would then throw the globe to someone within the circle and yell out any letter of the alphabet. The child who caught it had to find a country beginning with that letter. This activity was also played with a map when the globe was not available. When the children became familiar with the shapes and dimensions of the globe or the map, the next concepts regarding the longitude and latitude, the directions were explained using their own body as orientation. For example, what would be south of the body and north of the body etc. Using this, they were then encouraged to create a 3d map of the village (that would build on the earlier map making of their village). They were asked to put the concepts learnt in the previous session to orienting the village through the various axis.

The mentors also encouraged the children to create symbols that would mark the different categories of things such as kutcha road, house etc. Once the 3-d models were done, the children could go around and look at each other's work at creating these models, so that various perspectives of the children could be understood. After the survey of all the villages, children were led into a consolidation exercise where they were asked whether they were able to think differently about their village now that they had seen it from a different angle, whether they were able to see any commonalities or different in the villages that children drew. Using these examples, the mentors then explained about the history of cartography and its importance.

3.10.1 Linkages with Bihar Curricula

Geography

Almost the same exercise appears in Class 6 textbooks in Chapter 7. The chapter titled Mapping encourages students to draw a map of their village and to label the key institutions, roads, rivers, and railways in the village. The two activities on pages 65 and 66 in combination instructed the children to locate important resources of their villages like anganwadi center, hospital, school etc. In addition to the resource mapping, these activities are useful to understand and make sense of directions and therefore, can be used to understand other forms of landscapes and countries.

3.11 Balanced Diet

In a series concentrated on ensuring that children understand the importance of nutrition, we conducted activities related to Balanced Diet. The mentors first drew three large circles far away from each other in the room. The three circles were named Energy, Growth, and Protection. Children were then gathered together, and a list of foods were read out. Based on what that food group was, children had to quickly move to the circles. For example, with the mention of any carbohydrates, the children had to move to the circle of Energy. After this activity was completed, cards depicting each of the food groups were given to children. The activity was to find groups of three where each member could represent Energy, Growth and Protection. Each of these activities was to ensure that children understood that the primary concepts behind carbohydrates, proteins, vitamins and minerals. The discussion also emphasised the importance of these three kinds of food groups for the protection and nutrition of the body.

3.11.1 Linkages with Bihar Curricula

Science

The exercise on Balanced Diet is a good companion piece to Chapter 2 in Class 6 textbook titled What Constitutes Our food. In this chapter, illustrations are provided to encourage children to investigate the role and use of elements in the food such as Iodine, Carbohydrates, Fats etc. In this activity, the children were also asked to fill a table with common food items that would represent these categories in different states. Given that a descriptive narrative is provided in this chapter to ensure that children understand the different benefits of nutrients and how to identify different nutrients in the food, the activity on Balanced Diet complements this lesson quite well.

3.12 What is Communication and Rules of Engagement

Before we started engaging with children, we first wanted to familiarise the children with the basic tenets of communication and the rules of engagement. While part of the motivation was to ensure that children understand the importance of communication in different situations, another part of it was to ensure that these creation of rules would provide a safe space for all children to interact. So, the first exercise in Communication and Engagement was to allow children to build their communication skills. Using a large open space like a playground, children were paired. One was blindfolded and assigned to find an object (a bottle or a ball) that was prominently kept in the playground, and the companion had to describe the direction in which the blindfolded child had to move in order to find the desired object. After all the children have played the game, the mentors then debriefed the children on the various ways in which children strategized to communicate clearly to their blindfolded partner. This discussion was used to communicate the importance of communication and the ways of communicating clearly and descriptively so that there is a clearer understanding.

The next activity was to get children to come up with the rules of talking to each other so as to ensure openness and respect within the space that they are participating in. Using a chart paper and markers, the mentor facilitated the discussion so that the basic tenets of engagement can be written down. For example, using the first activity as an

example, rules such as clarity in communication, little disturbance, allowing other people to concentrate etc. were written down. These, then, were posted up on a prominent place in the classroom so that students and the mentors could point to it when there were disruptions in the classroom or whenever communication broke down during the activities.

3.12.1 Linkages with Bihar Curricula

English

There are several ways in which these rules of communication and engagement is bolstered by the stories in the subject of English. For class 7, in chapter 10, there is an activity on page 84 which children are put in pairs to enact a conversation with a shopkeeper. The activity is constructed in such a way that children learn the important questions to ask when they go to a shop. For example, they are taught about asking for the availability of the product, its alternatives, its uses, its price, and possible discounts offered. In another activity on page 128 featured in Chapter 15 in Class 7 textbooks, the children are encouraged to write a letter to the civil surgeon of the district to issue a certificate of physically challenged persons. This activity equips children with formal letter writing skills.

In another example for Class 8 in Chapter 16, there is a letter writing exercise where children have to write a letter to a friend describing how water can be harvested. This letter writing exercise on page 167 allows children to explore informal styles of writing letters. In the same class (8), in chapter 5, the emphasis is on trying to communicate without using speech. The activity (pg. 45) divides the children into three groups and then asks the children to decode the signs make by the other group. This activity is to make children empathise with differently abled people who do not or cannot express in the same way as they are expected to. It also makes children push their limits to create ways of communication without speaking and highlights the importance of non-verbal cues in communication. The emphasis on the openness and clarity of information and the importance provided to capturing all forms of communication (verbal or otherwise) is the same as the one conceptualised in Rules of Communication and Engagement. The activities in the textbooks and the BMP modules allow children to learn how to communicate clearly and confidently.

3.13 Assorted Methods

The BMP module used a number of methods to get children to articulate their thoughts and feelings such as using art, speech, storytelling or interviews with the teachers. For example, one of the activities – We are a Work of Art, children are divided into pairs. They are asked to interview each other about their likes and dislikes, their family, their favourite things. Based on the interview, the pair of children have to make drawings of each other and present it to the group. This activity allows children to talk to each other in an informal setting and also encourages articulation of this information through art and speech. Another activity called Just a Minute sessions call for children to speak on any subject continuously for 1 minute. This enables children to express themselves, but also builds their communication skills by thinking quickly on their feet.

Making an Object of Your Emotion is slightly advanced where children are provided an assortment of coloured paper, newspaper, beads, paints, crayons, chart paper, stickers, stones, feathers, seeds, flowers, leaves etc. They are then asked to identify a particular emotion that they are feeling. Once they have identified an emotion, they can use any and all of the articles provided to create an object that would best represent the emotion. This activity allows them to understand their own abstract emotions into physical objects, and enables them to express themselves in non-traditional ways. Another way of expression that was encouraged was Story Telling where children were asked to sit in a circle and write stories of their own. Mentors tried to ensure that the children were not copying the stories that they had read, but used bits and pieces of other stories to write their own. In doing so, the mentors also encouraged them to write about an experience in their lives, or about their lives, so that they could create a new way of telling a story. If this was a hard thing to do, children were also given half of a story and asked to complete the story in their own fashion.

All of these activities fulfilled three objectives. One, it helped children become more comfortable with sharing and speaking in front of others, and two, it fostered creativity and enabled the use of their imagination in daily life, and three, it encouraged discovery as a guiding tool and to break down traditional power hierarchies that often exist within the classroom.

3.13.1 Linkages with Bihar Curricula

Language

All of the activities listed above are linked to the English Subject or Language, in general as the primary motivation of teaching English or any other Language to help students emote, express and communicate. All of these activities in any language class will help children break the barriers of fear and help them to think in the language which also enhances competencies in that language. The activities in the BMP module can also be used easily as small activities within lesson plans to ensure that children have an engagement with language and can use its performative aspect to learn it better. The NCF also encourages using stories as pedagogical tool support, and all of these activities in BMP can be a useful foil in developing mastery over a language, in addition to using discovery as a way to engage with fear or stigma associated with learning new languages. For example, exercise question in the English textbook for Class 6 has several activities (on Page 44 and 56) where they are asked to write about how they felt when they experienced discrimination or what they would do they were King. Other composition essays in Class 7 asked them to write to the civil surgeon of their district to issue a certificate of physically challenged persons. Some of these activities could easily be complemented with the BMP module to create a comprehensive pedagogical tool that will help in providing a sense of confidence to the children.

4. Conclusion

The purpose of the BMP module has been to enhance critical thinking skills in children, a goal aligned with the NEP (1992 and 2020) as well as the Bihar Board of Education. Because the module has been created as a way to enhance the teaching-learning process within the classroom, as illustrated above, it has many activities that cuts across various

subjects, domain areas, and themes. The BMP module has been able to reinforce the knowledge gained within the classrooms by providing various dimensions to the subjects taught in the classrooms. This has been done to ensure that children coming from various backgrounds and possess different inclinations and capabilities are able to access different tools, skills, and knowledge to arrive at the goal of education – the ability to think for themselves.

One of the primary reasons that the BMP module is able to speak to and through the Bihar curricula is because of our emphasis on the integration of knowledge, which is often found in segregated silos. For example, by exploring *multiple* ways in which any concept – such as Facts and Opinion – has applications in the real world, it is easier to highlight the discerning capacities that children already have, and formalise those skills into logical applications such as those within Mathematics, Science or Social Science. By emphasising the foundational skills of critical thinking as well as reinforcing them through multiple and varied applications, children are provided greater understanding of the underlining principles, and how to apply them to diverse situations themselves. Additionally, the focus is not just on encouraging creativity, language skills, logical thinking or even interactive skills. The idea is also to recognise inequality, hierarchy, and discrimination and use these knowledge bases so as to understand why these systems exist, and what can be done about them. It is also an important task to reinforce children’s own wealth of knowledge about the world and use it to reinforce the process of knowledge seeking is not limited to schools and is, in fact, a life-long process.

Another purpose that the module is able to do through the integration of idea is to see the value in any form of knowledge production, whether that is in knitting, sewing, or cooking – traditionally not seen as the centers of knowledge production. By taking children’s knowledge seriously and by integrating the ideas siloed in different subject areas, the module is able to let children explore the expertise necessary in what they might have deemed as the simplest of tasks. The larger goal of this process is also to ensure that the hierarchies of knowledge, often embodied in caste and gender, are destabilised, so that children are free to make up their own minds as to how these knowledges are valued differently by different groups, and how some groups are seen as ‘experts’ in certain forms of knowledge and others are not.

This is especially relevant when we look at the relationship between gender and science, and see that girls are socialised very early to fear Mathematics. By creating a module that destabilises traditional notions of who is ‘good’ at what and what can be done within a certain subject area, we are able to build an alternative narrative force that can help children discover the limitations of stereotyping and the tragedy of discrimination that inevitably follows.

In short, the purpose of the module is to build confidence, curiosity, and clarity in children so that they are able to take some action, big or small, within their own world to think differently. We argue that the module in complimenting and augmenting the current curricula can ensure not only that children are able to communicate clearly and confidently or understand the foundations of knowledge, but they are also active in asking curious questions about the world. The purpose, therefore, of creating the BMP

module and aligning it with the NEP principles is to help create a space where children can learn, analyse and take proactive action as the first step towards being informed and active citizens.

5. Annexures

Table 1: Linkages from Science Textbooks (Vignyan) (2018)

Mentorship Programme Activity	Linkages from Science Textbooks
Module 2: Facts and Opinion	<ul style="list-style-type: none"> Class 7 - Science Textbook called Vignyan Part 2 (2018) - Chapter 2 titled 'Nutrition in Animals' – Activity on page no. 29 is about a story related to nutrition called '<i>Hole in the Stomach</i>'.
Module 2: Knowledge Mapping	<ul style="list-style-type: none"> Class 6 - Science Textbook called Vignyan Part 1 (2018) - Chapter 4 (Page no. 37 – 47) and Chapter 6 (page no. 57-67) are titled 'Different types of matter' and 'Changes of matter', respectively. Class 7 - Science Textbook called Vignyan Part 2 (2018) - Chapter 1 titled 'Forest and Water' - Activity 2 on page no. 4 encourages children to tabulate the amount of water used for various activities, gauge the usage and identify the various water sources close to their homes.
Module 2: Sensory Perceptions I and II	<ul style="list-style-type: none"> Class 8 - Science Textbook called Vignyan Part 3 (2018) - Chapter 18 titled 'Variety of Sounds' - Activity no. 1 on page no. 252 and 253 illustrates the different ways in which sound is produced in different musical instruments.
Module 2: Ecosystems	<ul style="list-style-type: none"> Class 8 - Science Textbook called Vignyan Part 3 (2018) - Chapter 19 (page no. 264-283) titled 'Air and Water Pollution' – Activity on page no. 261 is an experiential learning activity.
Module 2: Mapping your Village or Community	<ul style="list-style-type: none"> Class 7 - Science Textbook called Vignyan Part 2 (2018) - Chapter 7 titled 'World of Microorganisms – Witnessed through a micro scope' - Activity 3 on page no. 122 is about waste water management, sewage and drainage systems.
Module 2: Balanced Diet	<ul style="list-style-type: none"> Class 6 - Science Textbook called Vignyan Part 1 (2018) - Chapter 2 (page no. 11-27) is titled 'What constitutes our food?'

Table 2: Linkages from Mathematics Textbooks (2018)

Mentorship Programme Activity	Linkages from Math Textbooks
Module 2: Knowledge Mapping	<ul style="list-style-type: none"> • Class 6 - Mathematics Textbook Part 1 (2018) - Chapter 5 titled 'Basic Geometric Information' - Activity 4 on page no. 103 encourages children how to use a paper to understand line segments.
Module 2: Memory and Observation	<ul style="list-style-type: none"> • Class 6 - Mathematics Textbook - Chapter 3 titled 'Mensuration: Perimeter and Area' - Section no. 13.2 - An Exercise on page no. 254 encourages students to calculate perimeter of objects of daily use; for example, a table. • Class 8 - Mathematics Textbook - Chapter 3 titled 'Understanding of Geometric Shapes' - Section titled 'Polygon' - Exercise I & II on page no. 37 and 38 respectively, engage children in observing and identifying closed and open figures
Module 2: Maths in Music	<ul style="list-style-type: none"> • Mathematics Textbooks of Class 6, 7 and 8 (2018) – application and conceptualization of mathematics
Module 2: Sensory Perceptions	<ul style="list-style-type: none"> • Class 8 - Mathematics Textbook – Chapter 3 titled 'Understanding Geometric Figures' - An example exercise no. 3.2.3 on page no. 40 helps students understand the interior and exterior of a Polygon.

Table 3: Linkages from Political Science Textbooks (2018)

Mentorship Programme Activity	Linkages from Political Science Textbooks
Module 2: Facts and Opinion	<ul style="list-style-type: none"> • Class 7 - Textbook titled 'Social, Economic and Political Life' Part 2 (2018) - Chapter 7 titled 'Understanding Advertisement' – Activity on page no.63 is a story used to explain the concept of a 'brand'.
Module 2: Knowledge Mapping	<ul style="list-style-type: none"> • Class 6 - Textbook titled 'Social, Economic and Political Life' Part 1 (2018) - Chapter 3 titled 'Forms of Lives in Cities' – Activity on page no. 29 called 'Yellow Box' engages children to explore the people who work on the footpath and the various ways in which they are self-employed. • Class 8 - Textbook titled 'Social, Economic and Political Life' Part 3 (2018) - Chapter 8 titled 'Food Security' - Activity 5 on page no. 82 encourages students to visit an Anganwadi Centre, answer a few questions posed on malnutrition and prepare a report based on that. • Class 8 - Textbook titled 'Social, Economic and Political Life' Part 3 (2018) - Chapter 8 titled 'Food Security' - Activity in a pink box on page no. 86 encourages children to understand the various facets of Public Distribution System by observing the ration distribution centre in their area.

<p>Module 2: Memory and Observation</p>	<ul style="list-style-type: none"> • Class 7 - Textbook titled 'Social, Economic and Political Life' Part 2 (2018) - Chapter 2 titled 'Forms of lives in villages' - A survey activity on page no. 25 engages children with the issues of child labour and attendance at school. • Class 8 - Textbook titled 'Social, Economic and Political Life' Part 3 (2018) - Chapter 1 titled 'Constitution of India' - Activity on page no. 10 guides students towards connecting ideas and linking that to observation and memory skills. The activity directs students to observe 3 pictures and write their opinion on how they are related to freedom in a country with a constitution.
<p>Module 2: Knowledge and Caste / Stereotypes about knowledge</p>	<ul style="list-style-type: none"> • Class 6 - Textbook titled 'Social, Economic and Political Life' Part 1 (2018) - Chapter 1 titled 'Understanding Diversity' – Yellow Box Activity on page no. 10 engages students in understanding the concept of discrimination. • Class 6 - Textbook titled 'Social, Economic and Political Life' Part 1 (2018) - Chapter 3 titled 'Forms of Lives in Cities' - Yellow box Activity on page no. 37 encourages children to enquire into the lives of domestic workers. • Class 7 - Textbook titled 'Social, Economic and Political Life' Part 2 (2018) - Chapter 1 titled 'Equality in Democracy' – On page no. 3, a story on gender discrimination is narrated and students are asked to answer a few questions pertaining to the story and the issue at stake.
<p>Module 2: Mapping your Village or Community</p>	<ul style="list-style-type: none"> • Class 6 - Textbook titled 'Social, Economic and Political Life' Part 1 (2018) - Chapter 2 titled 'Forms of Village Life' (page no. 13-25) – The whole chapter discusses the various kinds of livelihoods in rural India through multiple case studies.

Table 4: Linkages from History Textbooks

Mentorship Programme Activity	Linkages from History Textbooks
Module 2: Facts and Opinion	<ul style="list-style-type: none"> Class 7 - Textbook titled 'The Present of the Past' Part 2 (2018) - Chapter 9 - Activity on page no. 158 helps in understanding how empires were built.
Module 2: Knowledge mapping	<ul style="list-style-type: none"> Class 7 - Textbook titled 'The Present of the Past' Part 2 (2018) - Activity on television on page no. 22. Class 8 - Textbook titled 'The Present of the Past' Part 3 (2018) - Chapter 3 titled 'Village life and Society' – Activity on page no. 55 engages students in mapping the timeline of various historical events in India under the British rule. Class 7 - Textbook titled 'The Present of the Past' Part 2 (2018) - Chapter 6 - Activity on page no. 97 helps investigate the social composition of the city. Class 8 - Textbook titled 'The Present of the Past' Part 3 (2018) - Chapter 11 titled 'Changes in the Field of Art' - Activity on page no. 184 encourages students to observe various building styles and make their own sketches based on those styles.
Module 2: Knowledge and Caste / Stereotypes about knowledge	<ul style="list-style-type: none"> Class 7 - Textbook titled 'The Present of the Past' Part 2 (2018) - Chapter 7 titled 'Social and Cultural Development' - Activity on page 112 helps understand the socio-cultural diversity in India. Class 8 - Textbook titled 'The Present of the Past' Part 3 (2018) – In Chapter 8 titled 'Challenges of Caste System' (page no. 115-127), there are multiple stories, statements and information given in boxes that help students reflect upon caste discrimination.
Module 2: Mapping your Village or Community	<ul style="list-style-type: none"> Class 6 - Textbook titled 'The Present of the Past' Part 1 (2018) - Chapter 5 titled 'Early Cities: First Citizens' - Activity on page no. 49 engages students in comparative mapping.

Table 5: Linkages from Geography Textbooks

Mentorship Programme Activity	Linkages from Geography Textbooks
Module 2: Knowledge Mapping	<ul style="list-style-type: none"> • Class 6 - Textbook titled 'Our World' Part 1 (2018) - Chapter 4 titled 'Earth and its major landforms' (page no. 31-41) - There are multiple inquisitive activities that help students in understanding the various landforms. • Class 7 - Textbook titled 'Our World' Part 2 (2018) - Chapter 12 titled 'Weather and Climate' - Activity on page no. 88 engages with the concept of learning about weather through television media. It encourages students to look at media as a source of learning.
Module 2: Memory and Observation	<ul style="list-style-type: none"> • Class 6 - Textbook titled 'Our World' Part 1 (2018) - Chapter 6 titled 'Earth and Globe' - Activity on page no. 59 engages students on questions about India, the tropics and their placement on the globe. This activity helps connecting knowledge to its Praxis.
Module 2: Ecosystems	<ul style="list-style-type: none"> • Class 7 - Textbook titled 'Our World' Part 2 (2018) - Chapter 3 titled 'Seismic Forces in the Earth and their Formations' - Activity on page no. 19 directs students to map out the various places on Earth that have a threat for existence because they would get submerged by the ocean.
Module 2: Mapping your Village or Community	<ul style="list-style-type: none"> • Class 6 - Textbook titled 'Our World' Part 1 (2018) - Chapter 8 titled 'Our State Bihar' (page no. 68-80) – Multiple activities contextual to the state of Bihar are present.
Module 2: Markets	<ul style="list-style-type: none"> • Class 8 - Textbook titled 'Our World' Part 3 (2018) - Chapter 3 titled 'Industries' (page no. 69-100) - Activities on how commodities come into existence are present.

Table 6: Linkages from English Textbooks

Mentorship Programme Activity	Linkages from English Textbooks
Module 2: Knowledge Mapping	<ul style="list-style-type: none"> • Class 6 - Textbook titled 'Radiance' Part 1 (2018) - Chapter 5 titled 'Bangle Sellers' – an activity on page no. 22 directs students to list the items sold by different kinds of sellers.
Module 2: Knowledge and Caste / Stereotypes about knowledge	<ul style="list-style-type: none"> • Class 6 - Textbook titled 'Radiance' Part 1 (2018) - Chapter 9 titled 'Discrimination' – There is a poem on page no. 42-43 which condemns all forms of discrimination.
Module 2: Ecosystems	<ul style="list-style-type: none"> • Class 8 - Textbook titled 'Radiance' Part 3 (2018) - Chapter 17 titled 'The Recycling Rap' – Activity on recycling on page no. 68.
Module 1: What is Communication and Rules of Engagement?	<ul style="list-style-type: none"> • Class 7 - Textbook titled 'Radiance' Part 2 (2018) - Chapter 10 titled 'The Lost Child' - Activity (E.1) on page no. 84 directs students to work in pairs and role play a conversation with a shopkeeper. • Class 7 - Textbook titled 'Radiance' Part 2 (2018) - Chapter 15 titled 'The Girl with Crutches' - Activity (E.1) on page number 128 engages students with formal letter writing. • Class 8 - Textbook titled 'Radiance' Part 3 (2018) - Chapter 16 titled 'Harvesting Rain' - Activity (E) on page no. 167 engages with informal letter writing. It directs students to write a letter to a friend on ways to save water. • Class 8 - Textbooks titled 'Radiance' Part 3 (2018) - Chapter 5 titled 'One Two Three' - Activity (A) on page no. 36 and Activity (H) on page no. 45 help students identify the various means of communication through mediums other than speech.
Assorted Methods	<ul style="list-style-type: none"> • All of the books of English are in some form linked to assorted methods.