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Context-based learning materials for English at a foundational level

Collaboration with NGO Aarohi, Uttarakhand

Submitted By
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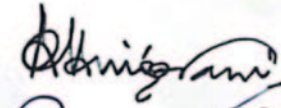
Project Guide
Prof. Alka Hingorani



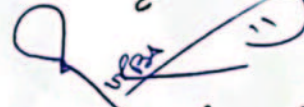
Approval sheet

This project report entitled 'Context-based learning materials for English at a foundational level, Collaboration with NGO Aarohi, Uttarakhand' by Abhijith K S, 18U130002 is approved for partial fulfillment of the requirements for Masters of Design Degree in IDC, IIT Bombay.

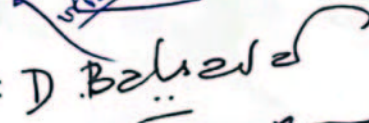
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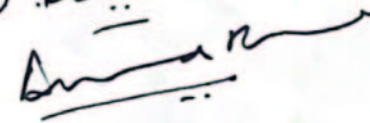
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Declaration

I declare that this written submission represents my ideas in my own words and where others' opinions or words have been included, I have adequately cited and referenced the sources.

I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been appropriately cited or from whom proper permission has not been taken when needed.

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Place: IDC, IIT Bombay

Acknowledgments

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Abstract

This project aims to create context-based learning materials to teach English to first and second-grade students in the Kumaon region of Uttarakhand. The learning materials are designed to be engaging and interactive by introducing the language through activities that encourage inquiry-based learning.

Through this project, three activities were created for foundational-level classes using visuals familiar to the students and stories from the region. The activities went through several rounds of testing over four schools in the Nainital district with the help of Siksha Sahayaks. The project is being carried out in collaboration with an NGO called Aarohi in Uttarakhand.

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Introduction

Over the course of this semester, I got the opportunity to work with the NGO Aarohi in Uttarakhand to create learning materials for foundational-level students to learn language and mathematics. Aarohi focuses on improving the quality of education and health in the rural Himalayan areas of India, especially in the Kumaon region of Uttarakhand.

The national education policy¹ emphasizes the importance of foundational literacy and numeracy. The ability to read and write, and perform basic operations with numbers, is a necessary foundation and an indispensable prerequisite for all future schooling and lifelong learning. However, a large proportion of students currently in elementary school - estimated to be over five crores in number have not attained foundational literacy and numeracy, i.e., the ability to read and comprehend basic text and the ability to carry out basic addition and subtraction with Indian numerals.

The Wipro project by Aarohi focuses on training Siksha Sahayaks to carry out classes focussing on language and mathematics by using alternate teaching methods like Context-based learning, Game-based learning, Theater in learning, Activity based learning, etc.

However, the lack of context-based learning materials and lack of exposure to the English-speaking environment is making it challenging to teach the language. I was assigned to develop creative solutions to solve the problems mentioned above.

Objective

First of all, when I got an opportunity to work outside campus, I took it without hesitation because I wanted to explore the possibilities of an environment different from what I was used to working in my previous projects. I wanted to learn more and put down what I have learned in my four years in a design school to use in an actual situation.

The primary objective of this research project is to investigate and develop a learning environment that is both relatable and engaging for foundational-level students in the Kumaon region. The villages in this area predominantly consist of first-generation learners within their families, resulting in low school enrollment rates. Another challenge is that some schools had only one teacher handling multiple subjects for primary classes; because of all this, the classrooms often lacked organization and structure.

To address these issues, this project aims to undertake a comprehensive study of the region's culture, stories, and educational landscape over a period of two months.

By immersing myself in the local community and research, I intend to understand the specific needs and challenges faced

by students and teachers in the region. The expected outcome of this project is the development of innovative and effective teaching materials and methods that are contextualized and relatable to the students.

Research

Literature review -

The research began by understanding the Indian education policy, national curriculum framework², and the learning goals set by the government for the foundational level classes³. These materials gave me a clear idea of what the Wipro project focuses on.

'The impulse to teach everything arises from the lack of faith in children's creative instincts and their capacity to construct knowledge from their experience' (NCF 2005).

The national curriculum framework discusses the importance of peer-to-peer, contextualized, and inquiry-based learning. It also proposes some guiding principles for curriculum development. Some points that were important for my project were connecting knowledge to life outside the school and ensuring that learning shifts away from rote methods enriching the curriculum so that it goes beyond textbooks

As I have mentioned earlier, the national education policy highlights the importance of prioritizing language and mathematics at the foundational level. This was the focus of the project. Upon further reading, I understood the updated

structure of classes which is divided into four parts.

Foundational includes classes one to two, preparatory from three to five, middle school from six to eight, and secondary from nine to twelve. This helped to understand the target groups. The learning goals set by the government for each of the classes in each subject were another material that helped me choose the target audience.

After the initial research, I met with the team at Aarohi to understand the project further and what has been done till now. The project focuses on using context-based learning, gamification, and inquiry-based learning.

This narrowed down my research, and I went through multiple papers and books on Context-based and Learning through play.

David Wood's How children think and Learn⁴ is one book that helped me understand children's minds. This book helped me to gain a deeper understanding of how children's minds work by taking me through studies of psychologists such as Piaget, Bruner, Vygotsky, and Chomsky. These studies provided valuable insights, such as the significance of informal teaching, which occurs through interactions with peers, family, teachers, and the community. It was also highlighted that cognitive development is influenced by the

formation of relationships and emotional experiences within the home.

Another crucial aspect emphasized in these studies was that the knowledge imparted to children at school must be relevant to their everyday lives. Children should learn through play, observation, questioning, and experimentation, with guided participation or scaffolding from tutors to fill the gap between what is known and what is to be learned. It was found that children are egocentric and have difficulty switching from their viewpoints. Therefore, tutors must provide instructions, scheduled reinforcement, reminders, suggestions, and praise to help them learn. Social experiences can help children restructure their thinking, and tutors should play a crucial role in assisting them in this process.

These insights helped me understand effective teaching strategies that I can use to help children's cognitive development and enhance their learning experiences.

I also went through materials about game-based learning, such as Sandeep Athawales Endogen framework for designing endogenous educational games⁵. This material helped in understanding different games that are best effective for teaching various topics and the process of game

design. The age group in the foundational level, which is from six to eight, has a very low attention span, and games that involve strategies and multiple steps and levels will make it difficult to make it engaging. This was another challenge that needs to be solved moving forward.

Interaction with the stakeholders -

During a training camp, I had the opportunity to speak with teachers and Siksha Sahayaks from Aarohi and gain insight into the challenges students and educators face. One of the most significant problems identified was the need for a good learning environment. English is taught as a third language after Kumaoni and Hindi, and students do not have access to an English-speaking environment. Furthermore, parents display minimal involvement in their children's education, leaving their responsibility to the teachers.

The COVID-19 pandemic has worsened the situation, with Anganwadi facing operational challenges and government schools having very few enrollments. As a result, many children have little to no knowledge of English.

Additionally, some teachers reported issues with low student engagement and participation in the classroom. Even basic questions went unanswered, even in their mother tongue.

This lack of engagement further compounds the language learning challenges faced by students.

Another significant issue was the need for more contextualized materials for language subjects, particularly English. The absence of relevant materials made it more difficult for children to relate to what was being taught.

The Sisksha Sahayaks also helped me understand the teaching methods used currently at the schools by them

1. Self-learning
2. Classroom setting/environment
3. Rituals
4. Contextualized learning
5. Introduction
6. Inquiry-based learning
7. Gamification
8. Participatory learning
9. Theater in learning
10. Art-based learning



Teachers training camp at Aarohi



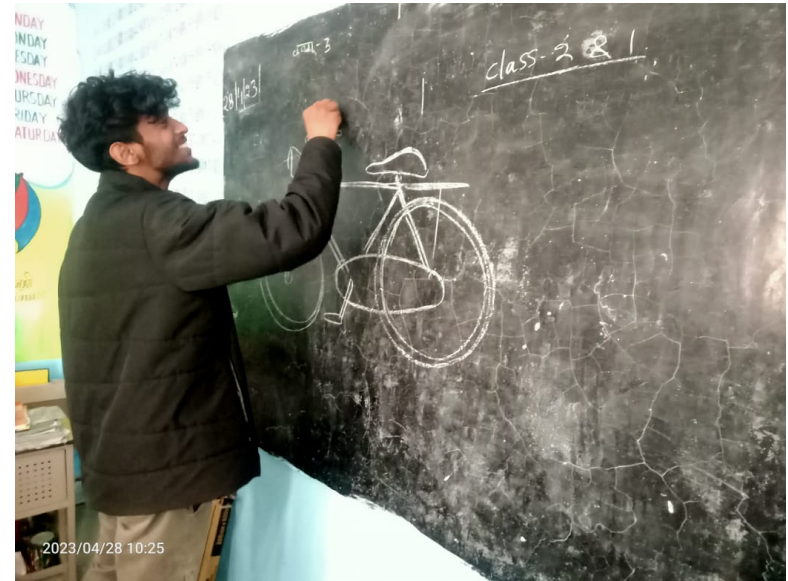
Workshops at Happy children's library, Seam

As part of the training camp at Aarohi, I got the chance to visit an alternate teaching center called Happy Children Library at Seam and learn how effective these methods are by observing and participating in a few of their workshops. During my stay there, I participated in a science workshop conducted by Pratham and a theater and dance workshop by Jayesh and Nidhi, along with the students. This helped me to connect with the students and learn how engaging these methods was and how much they enjoyed them. I also got to talk with the founder of the library, Jaya di, and Atul da, and understand from their point of view how the children have improved in terms of their learning, confidence, and interaction with the people because of the different workshops at the library.

From the time I reached Aarohi, I could talk to the students in various schools around the region and learn from them their interests, learnings, and problems they faced. I visited three schools majorly to collect information about how much the students know about their region and what they usually observe. With the help of Nidhi and Jayesh, I conducted a few activities at these schools with classes one and two.

During one activity, we asked the students to close their eyes and visualize themselves at home, then walk around and observe their surroundings. After two minutes, they were

instructed to open their eyes and share what they saw. The responses were varied and intriguing, ranging from a mother making roti in the kitchen to peach and plum trees, a black dog with white patches on its forehead, and even an elephant and mango not native to the region. We then took the students on an imaginary walk through the jungle, encouraging them to move their legs as if they were walking, and asked them the same questions. This activity allowed us to gather information on the student's knowledge of local flora, fauna, and other visual elements in their environment. Finally, we asked the students to draw everything they could see around their house, village, and jungle on an A4-sized sheet of paper. This activity provided fascinating insights into the visualizations and perspectives of the children on their surroundings



Activity at Aarohi Bal Sansar

Testing at GPS Sunkhiya

Ideation

My research and interaction with the stakeholders allowed me to narrow down my subject, target group, learning goals, and learning methods.

For this project, I will focus on teaching the English language at foundational level classes, that is first and second grade.

Based on the target group, I selected three learning goals from the list published by the government -

1. Associates words with pictures
2. Name familiar objects seen in the pictures
3. Uses nouns such as 'boy', and 'sun', and prepositions like 'in', 'on', 'under', etc.

After discussing with Aarohi and the teachers, it was decided to use contextualized, activity-based, and inquiry-based learning methods to create the learning materials.

Additionally, I aimed to incorporate parents in the learning process and encourage students to give oral and written outputs, allowing teachers to assess their learning better.

Ideation -

I started my ideation process by understanding various types of games that can be used in learning. In Sandeep Athavale's paper 'Strategies for endogenous design of educational games,' I came across content about game type mapping by Prensky⁶. This gives examples of different types of games that can be used to teach various topics. For example, language learning through role-playing, reflex, and flash card games.

Based on my research I identified several important points that should be taken into account during the ideation process. Firstly through interaction with teachers and my target group, I learned about the student's attention span. It was evident that the students lost interest very quickly in classes and they took many existing activities as work instead of play because of how they were being introduced to them. Considering this making games with strategies and levels will make it difficult for the age group I am focussing on to enjoy them. Because of this, I decided to shift my focus toward designing fun-to-play activities with the help of learning aids. These activities will be supported by the Siksha Sahayaks and will be based on the children's existing knowledge, allowing for building upon their existing knowledge.

Another important finding from my research is the concept of Recite, Revisit and Reiterate. This approach helps in effective learning by repeatedly presenting and reinforcing the same information, enabling students to remember it through practice. The Siksha Sahayaks will be playing an important role here by providing scaffolding in the form of cues, hints, and prompts. Additionally incorporating peer-to-peer learning in the activities was another important feature that needs to be included in the design.

Along with my reading, I started noting down all the ideas that came to my mind on the drawing board. A few ideas that were shortlisted were -

1. A memory card game with text on the back.
2. Board with the different landscapes and attachable cards with trees, birds, and other things found in the area.
3. A board game where players place the biome cards/ boards to create a landscape of their choice.
4. Place boards/ cards on top like layers to create a hill landscape.
5. A card activity where they place cards with images of words on a board with the letters with which they start.
6. A tabletop game where players create stories from the visuals provided to them.

7. A card activity where there are cards with visuals, and players have to create a story by connecting the visuals.

From this list, after discussion with guides and peers, two ideas were selected.

1. A card activity where players create stories from the visuals on the cards
2. A board activity with familiar landscapes, with attachable cards which have images of locally found flora, fauna, and other objects.

Idea 1 was further divided into three different types. One is where the cards will have familiar visuals with an existing story, second with visuals of familiar folktales and mythologies, and third with just familiar visuals with no story.

Prototypes

After ideation and brainstorming, a total of four quick and dirty prototypes were created. I used the data collected from classroom activities to create these prototypes. One of the prototypes focused on local stories and folktales, for which I referred to the book 'Where Gods Dwell' by Kusum Budhwar⁷ and selected three stories: Nanda Sunanda, Goludev's story, and Ghughutiya story. To ensure the relevance of these stories to the children, I went back to the schools and enquired whether the students were familiar with any of them. Unfortunately, I found that class 1 and 2 students were not aware of any folktales from Uttarakhand but were familiar with various festivals that are associated with the region.

Given that Ghughutiya was one of the festivals the children celebrated, I chose this story to develop the prototype. While creating the prototypes, I ensured that the visuals were contextually relevant and appealing to the children, thereby enhancing their engagement with the learning material.

Prototype 1.1

The first idea of using familiar images with a small inbuilt story was used to make this set of cards. A total of six cards were made using images collected from online resources. It

was a story of two birds, among which one finds the easy way of stealing its food and gets trapped, while the other finds its food from the jungle. Images of red-billed blue magpies locally called Lampoochdi were used for the bird, and the other visuals of jungle, fruits, and market were contextually accurate. Each card had names of three things seen in the image written at the bottom. This was planned so that the teacher could choose which word to use.



Prototype 1.1

Prototype 1.2

The second design was a set of Nine cards visualizing the story of Ghughutiya. Since I could not find images online, I illustrated the story into nine cards. I studied the traditional art styles to understand the clothing and visuals used to illustrate folktales. I found a few exciting designs and finally had to settle for an easy style because I had less time. Words were not added to these cards to test how they would affect the teachers when used.

Prototype 1.3

The third version was six cards with familiar visuals but was created without any story in them. Here again, images were collected online using the data collected from students of classes one and two. This set of cards contained three words similar to the first set of cards to help the teachers while doing the activity.



Prototype 1.2



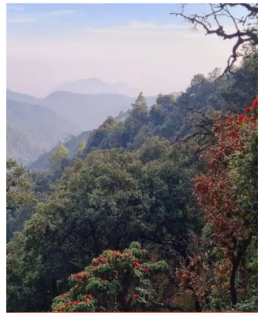
MONKEY BABY MOTHER



GOAT MAN FOOD



COOK MOTHER FOOD



FOREST TREE LEAF



HOUSE HILL SKY

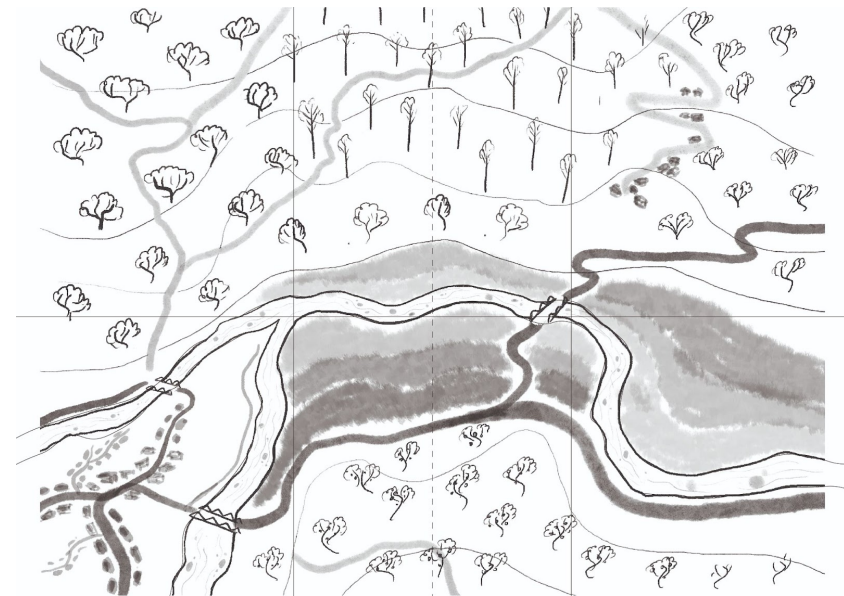


PEACH LEAF TREE

Prototype 1.3

Prototype 2.1

The final activity was a board with visuals of the region's landscape. Since I had time constraints, I skipped making the board and decided to use the blackboard in the classroom to make it. While testing, the classroom blackboard was used to create the landscapes, and this illustration was decided beforehand. The landscape contained pine forests, mixed forests (Oak, Rhododendron), horticulture, wheat fields, rivers, and villages. Nine cards were made with images of objects seen in these landscapes (Pine cone, Wheat, Peach, Rhododendron, Fish, Goat, Dog, Monkey, Bulbul) with its name in English on the cards.





WHEAT



GOAT



FISH



PINE CONE



FLOWER / RHODODENDRON



ACORN



MONKEY



DOG



BIRD / BULBUL

Prototype 2.1

Testing

All the prototypes were tested in two schools in the Kumaon region. Government public school Sunkhiya and Government public school Hari Nagar. Thirty-one students participated in the test from both schools, with twenty-one from Sunkhiya and ten from Hari Nagar.

Test 1-

With the help of Siksha Sahayak Dinesh, I was able to test three prototypes at GPS Sunkhiya. The class consisted of students from the first to the third class. I divided the class into two groups, one with first grade and the other with second and third grade. Since first-standard students were just promoted from Anganwadis, they were less interactive but still enjoyed and engaged in the activities.

Prototype 1.1

I tested this version with class 1 (6 students) because it had a straightforward story and clear visuals that the children were familiar with.

Initially, the group was made to sit around a circular table available in the classroom, and then the six cards were given out to the students so they could go through them. They were asked to share the cards with each other so that all the

students see all the cards. After this, the cards were collected back and introduced one by one with a small sentence in Hindi by asking them what they saw in the card.

For example, in the card in image 1A, the kids responded that they see 'pahad, ped, kethi, etc.' and the sentence 'ek sundar sa pahad dikh raha hai' was formed. Similarly, all six cards were introduced, and sentences were formed, which made the story.



Image 1A

In the second round, the kids were asked to arrange the cards and tell the story, and while the sentence was formed, one word was translated into English and introduced to the class. Thus the sentence in the previous example became 'ek sundar sa Hill dikh raha hai.' The words were introduced with actions and once they could tell the English name correctly they were rewarded with handshakes or high fives. This was continued, and four words (Hill, Bird, Tree, Store) were introduced to the class.

Prototype 1.2

This set of cards was tested with class one first, but they were unaware of the Ghughuti festival and needed clarification, so I had to change my target group to class two (15 students).

This group was also unaware of the Ghughutiya story, but they knew the festival and remembered the song they sang during it. Like the previous test, the group was arranged around a circular table. All nine cards were distributed to the students to go through carefully.

After 2 minutes, the cards were collected back, and the story was introduced to them one card at a time by making small sentences.

For example, in image 1B, the students made the sentence 'Rani aur bete bathe kar rahe hain.'

I would clear it and continue the process whenever there was a doubt. After the story was introduced, the students were asked to arrange the card. There was some difficulty here, and I had to do another round where I would put down cards in order by myself and ask them what was happening in each card. The students could tell the story correctly, and four English words (King, Crow, Queen, Prince) were introduced throughout the session.



Image 1B

Prototype 2.1

This activity was tested with classes two and three. Class one was not available during this time. Since the board was not made, the blackboard was used to illustrate the different landscapes. First, all the different biomes on the board were introduced to the students by walking through the board. Because the biomes were familiar to the students, they understood everything quickly and responded to what they saw in each place.

After this, all the students were asked to stand up and move their legs like walking. I joined them in this activity and moved my hand through the board as if we were all walking through the board. I would occasionally stop in each biome and asked what they saw, and the students responded by naming various objects they knew. In the end, I showed them images of things found in the region and asked them to spot where they found it on the board, and whoever raised their hand was asked to come and spot it.

A total of six words were introduced in this activity (Pine, Wheat, Flower, Oak, Fish, Goat).



Testing at GPS Sunkhiya

Test 2-

The second test was done at GPS Harinagar with the help of Siksha Sahayak Suman. Here the students in first grade were not responsive because they had just got promoted from Anganwadi. Because of this, all the games were tested with class two students. A total of ten students participated in all the tests.

Prototype 1.1

I followed the same steps as the previous school to test these cards. After three rounds, six words were introduced to the students (Bird, Tree, Sit, Hill, Store, Fruit). They could repeat the words themselves by the third round, and if there was trouble, there was always one or two students who could remember it correctly and help the whole class. The activity was engaging, and they could tell the moral of the story themselves without help which was 'stealing is a bad thing to do'.

Prototype 1.2

Again similar to the previous test, this version also followed the same steps. I played three rounds with the students, and they even sang the Ghughuti festival song after the session. A total of four words were introduced by the end. (King, Prince, Crow, Jungle)

Prototype 1.3

This was tested for the first time in Hari Nagar school. The cards had no story when it was made, making them a little tricky to test. I followed the same process of handing out the cards to the students to observe them clearly and then collected them back. Later the cards were shown to the group individually, and they were asked to create a sentence with what they saw. They could create sentences easily, and when in doubt, I helped them.

After this, I asked them if they could tell me a story with the cards. This was difficult for the students, and the activity did not move forward there.

To introduce the words, I used the sentences the children created and changed one of the words into English, similar to the previous tests. A total of six words were introduced (monkey, food, hill, goat, peach, tree).

Prototype 2.1

This time I made nine small cards with images of objects seen around the region and familiar to the children. The images were chosen from the data collected from the children. These cards had their name written in English on them. Like the previous school, the board was illustrated on the blackboard, and the children were taken on a walk through it. After introducing all the biomes, the cards were handed out to them, and then the walk was repeated. This

time after stopping at each biome they were asked to give me the card of the object seen in the area. The students could correctly hand over the card, and the object's name was introduced to them in Hindi and English. A total of nine words were introduced throughout the session (Pine, acorn, wheat, fish, monkey, flower, goat, fish, bulbul bird).



Testing at GPS Harinagar

Test 3-

For the third test, I went back to GPS Sunkhiya. I met with Siksha Sahayak Dinesh this time and gave him the guidelines to take the session himself. This way, I wanted to see the activities conducted through a different person who is also experienced in teaching and one of my stakeholders. The class consisted of eleven students from second and third grade.

Prototype 1.1

For the testing, the tables were rearranged so that everyone could sit around in a semicircle facing the teacher. Dinesh sir started by introducing the cards himself by showing each card and asking them what they saw. The students in this group had not played these cards in the previous session and were unfamiliar with the story. But they were able to make sentences and create the story correctly. A total of ten words were introduced in the session (bird, sit, eat, tree, cage, hill, sky, store, fruit, fly). Since few words were repeated from a game played in the previous session, they could tell the English names themselves without assistance.

Prototype 1.2

The group had already played this set of cards in the last testing session and was familiar with the story. This made them more interested, and everyone was eager to play.

This time the teacher gave out the cards to the students. After everyone went through the cards, they were collected back. Dinesh sir started the round by putting down one card at a time and asking the student what happened in the image. They were able to remember and tell the story correctly. The sentences were entirely in Hindi, and when asked what specific words were called in English, the students could tell the English names correctly.

During the round where they were asked to create the story themselves, the students used the numbering on the top left corner of the cards to understand the order of the cards. The group remembered almost all the words from the previous session. When someone made a mistake, friends could correct it, and this process repeated throughout the session.

There were a few new words, too. For example, one student was explaining the visuals and called a kidnapper Kidneychor. The activity went on for fifteen minutes, and eight words were remembered correctly (king, prince, queen, crow, kidnap, tree, jungle, sit).

Prototype 1.3

This was the first time this group played this version. The teacher gave out the cards as before and collected them back once they looked at all of them. Each card was then

introduced, and what was in the image was named correctly. Then the students were asked to create a story with it. Two students from third grade could connect a few images together but could not create a story with all the cards. After this round, Dinesh sir made a short narrative with the cards and introduced ten words to the students. Since many words were repeated from the previous activity, they could tell the English names without help. The whole session took around twenty minutes to complete.

Prototype 2.1

Like the last two sessions, the board was created on the blackboard. Dinesh sir found it challenging to illustrate the landscape, and I had to help him with this part. After this, the biomes were introduced to the students through a walk through the board. They started singing the rhyme 'Walking in the jungle, walking in the Jungle' themselves. After this, the cards were handed out to the class, and one more session of walking through the board was done. After stopping at each biome they were asked to show the card with the image seen in the area. They could show the cards correctly, and the word was introduced to the class in English. The whole session took around 20 minutes, with the introduction of nine words.



Second testing at GPS Sunkhiya

Feedback

A total of four tests were conducted across three schools in the villages of the Kumaon region, providing valuable insights for improvement. Each session proved to be a valuable learning experience for both myself and the children involved. Through these tests, I gained a deeper understanding of the effectiveness of different activities and how to introduce various topics to the children.

All the sessions were enjoyed by the students as learning through play was very little in their current class system.

During the testing process, I had the opportunity to lead two sessions myself and then observe and learn while the Siksha Sahayak took over. This allowed me to receive valuable feedback to improve the activities. Overall, the tests were successful in achieving their objectives.

First of all the activities were very engaging. The students were fully immersed in the activities and remained focused throughout the entire duration, without any distractions. The initial playtime for each activity averaged around thirty minutes, which decreased to fifteen to twenty minutes during subsequent plays.

- I found that an introductory session before starting each game was crucial for helping the students connect with the activity. For example, before beginning, we engaged in a small activity where they identified elements around their houses and villages. Prior to playing the folk tale game, we introduced the festival and set the story's context.
- Giving out the cards to the students allowed them to carefully examine and interact with the visuals, enhancing their understanding of the cards. This helped them to notice small details and craft the sentences better. Later questions were asked about what they saw and they were able to tell all they observed in that few minutes.
- The usage of familiar visuals from the data collected from the children helped them connect with what they saw easily. This was particularly evident in prototypes 1.1 and 1.3, where they shared personal stories related to the images they encountered and presented the story on the cards in their own unique way.
- The repetition of certain words in all the activities aided in the learning process. The second round of testing in GPS Sukhiya demonstrated that the students had learned these words due to their repeated introduction through the activities.

- Incorporating numbers on the cards helped the students in understanding the order of the cards and describe the story. When they were asked to organize the cards and construct stories amongst themselves, peer-to-peer learning was observed as they engaged in discussions and assisted one another in determining the correct card sequence.
- English words written on the cards assisted the teachers to understand what all words can be introduced and this helped introduce more words easily. Without the text, the teachers faced confusion and were limited to teaching only a few words.
- Offering rewards after correctly remembering the words helped the children to be engaged in the game and keep learning. These rewards could take the form of clapping, handshakes, songs, cheers, high-fives, and more.
- Introducing stories and words through actions made the activities more enjoyable for the students, who actively participated and even created their own actions as the sessions progressed.
- Conducting a drawing session after each activity helped the children visualize the words in their own ways.
- Different levels of cards need to be made. There can be one set of cards with easier words with three and four letters and another set with more complex words.
- Repetition of words is important so that the students remember it better. Rhyming words can also be used so that it's easier to learn.

The second round of Testing

After the initial round of testing, I got some valuable feedback from all my stakeholders which is mentioned in the previous section. I had discussions with my mentors and peers to determine the next step I need to take in order to make the materials better and their implementation.

The next step was to create another set of materials with a higher vocabulary level. This needed to be tested with more students to understand how effective the materials are and how the Siksha Sahayaks are using them. I went back to the drawing board and selected two stories to create these cards.

Based on the feedback from the previous testing, the focus was on making, short story cards which would have six to eight cards for class one, and folk tale cards which would have nine to 12 cards for classes two and three. Additionally, an Illustrated board was created to address the challenge faced by teachers in creating the landscapes on the blackboard during sessions.

Prototype B1.1

For the first activity short story cards were developed by selecting a moral and using familiar visuals collected from student data to create the story. Once the story was finalized it was divided into short sentences and then visualized to make cards. Each card was numbered and three words seen in the visuals with a second level of difficulty were added to the cards.



Prototype B1.1

Prototype B1.2

Activity Two cards were made using a folk tale of the region. During my research, I had collected multiple folktales from Uttarakhand. I selected the story of Nanda Sunanda for this set of cards. This followed the same steps of dividing the story into sentences and visualising them. This time there were twelve cards in the deck.



Prototype B1.2

Prototype B2.1

I created a board using the previous illustration I had made for the teachers for this activity. In the initial tests, I noticed that the teachers were finding it challenging to create an illustration on the blackboard during the session. The board consisted of Pine trees, mixed forests, rivers, wheat fields, orchards, and villages.



Prototype B2.1

Test 4 -

For the next round of testing, I went to a new school GPS Pathlot. Nidhi and Siksha Sahayak Yamuna helped me to conduct the sessions here. The school is situated in Okhalkanda block which was around 2 hours from Aarohi. We had selected this school because there were around fifteen students in classes one and two, but the day we went there only five students were present because of the bad weather in the morning.

We tested the materials with the students present and collected feedback. This time I explained how the materials work and how the activities need to be taken to the Siksha Sahayak and Nidhi and let them take the session. This helped me understand more methods to conduct the activity from experienced teachers.

Activity 1

Similar to the initial tests the tables available in the classroom were arranged into a circle to conduct the session. After the students sat around the table the cards were handed out in order to each student. After everyone received one card they were asked to explain what they saw in the cards and they were able to tell the teacher what they saw in detail. After this, the story was introduced to the students using each card by the teacher. While the story was introduced

questions were asked to the students and English words were introduced as part of the conversation. The teacher also tried to relate the story to real-life situations. For example, the story was about helping those in need, and the students were asked have you helped anyone before and they responded with stories of them helping their friends and parents in various forms. The word help was introduced through one card and then later repeated throughout these conversations.

In the initial round, the story was introduced in Hindi and then English words were used in the second round. Students were rewarded with praises and claps throughout the activity when they responded with answers to all the questions.

Another interesting activity the teacher used was roleplaying. After the students understood the story properly the teacher asked the students to act out what they learned. When asked who want to play the role of the monkey and the farmer all the students raised their hands. The teacher selected two students and they acted out the story by creating dialogues on the spot with little help from the teacher.

The words Monkey, friends, farmer, cloud, rain, help, sad and happy were introduced through the activity which took a total time of forty-five minutes.

Activity 3

Nidhi started the activity by asking them where they usually go around in their village and what they see in these places. After this the board was introduced to the students and the landscapes were introduced one by one. Once they were familiar with the visuals they were asked to place their fingers on the board, close their eyes, and move them on the board. When Nidhi said to stop the students had to open their eyes and tell where they were and what they see around. A few students faced some difficulties in explaining what they see around and their friends helped them in answering when required.

Once this round was over the cards were handed out face down to each student and when their name was called they had to pick up their card and place it on the correct landscape on the board. When they did so the English name of the image on the card was introduced to the class.

One interesting point noted here was, some cards were placed in a different landscape, and when they were asked why is it there the students told interesting reasons for their placement. For example, one student placed a pinecone in the river and told it fell into the river and flowed all the way there.

The activity took around thirty minutes and all nine cards were introduced in English.



Testing at GPS Pathlot



Test 5 -

I went back to GPS Sunkhiya for the next testing. Siksha Sahayak Dinesh was the one person who had joined me in multiple tests before and knew how the material worked. Since the students in GPS Sunkhiya had already played the previous materials two times I could understand the learning curve by going back to this school. I had connected with the students here so much through my previous interactions and they enjoyed the sessions and learned with so much interest.

This time I gave the instructions to Dinesh and asked him to take the materials and feel free to try them out in his own way. We divided the class into two groups of class one and two. Classes one and two had seven students each.

Activity 1

Dinesh sir started the activity by handing out the cards to the students. They were asked to observe the cards and tell what they saw. The students took their time and told us what all they saw. After this, the cards were kept down on the table and the students were asked to create a story out of it. This made them have discussions among themselves to understand the connections between the visuals. They made use of the numbering on the cards to understand the order and then helped each other to tell the story correctly.

After the story was introduced the moral of the story was discussed by connecting them to real-life scenarios and asking questions. A total of twelve words were introduced (monkey, tree, trunk, farmer, forest, cloud, black, white, rain, sad, peach, friends) in this activity which took around thrifty minutes.

Activity 2

The folk tales cards were tested out with class two students. Similar to the previous tests Dinesh sir started the session by giving the cards to the students to observe and speak about what they saw in the cards.

Instead of introducing the story Dinesh sir asked the students to make it by connecting the visuals this time. Since there was no numbering on the cards and it was a slightly complex narrative the students found it difficult to create the story.

Upon understanding the situation, Dinesh sir took over and introduced the story one by one. In the second round the students were asked to tell the story using the cards and words were introduced in English using actions and rewards. It was interesting to notice that they remembered words which was introduced in the previous materials, like tree and king, and used them while telling the story.

After two rounds the students were asked if they would act out the story and they were all interested to do so. Each student was given a role and they acted the entire story with the help of Dinesh sir and even created dialogues on the spot. One interesting point noted was, in the story when Nanda and Sunanda asked a turmeric plant for help, the students who were playing the role of turmeric recited a few lines of a rhyme they had learned earlier which goes 'no no, no no, go far away'.

Twelve words (king, goat, bull, run, pine, tree, no, turmeric, wheat, Himalaya, Banana, temple) were introduced in the activity which took around 30 minutes.

Activity 3

This activity was tested separately with both classes one and two. The same method was used to test both classes. After they were seated in a circle the board was introduced to the class by explaining the landscapes.

The students were asked to tell what they have seen in each of the landscapes and once they were familiar with the board cards were handed out face down.

In the next round, the teacher placed one finger on the board and moved through the board while the class does actions of walking, jumping, and swimming according to the situation.

Dinesh sir would occasionally stop at some place and ask them to pluck flowers or catch fish and so on.

After a round of walking through the board, the students were asked to look at the card they have and place it on the board where it is found. When any student misplaced a card others helped and corrected them. Some also had good reasons for why that card is placed in a specific place on the board.

English words of different landscapes were introduced throughout the activity and the nine cards were also introduced in English (forest, river, jump, walk, tree, bridge, monkey, bird, flower, pine, acorn, dog, goat, fish, wheat).



Third test at GPS Sunkhiya

Feedback

After the second round of testing I got to sit down with Nidhi, Jayesh, and the Siksha Sahayaks and discuss the result of the activities and what can be done for the final design.

First of all the activities were giving very good results and the students were learning and enjoying while using them. The students were able to relate to the visuals and stories used in the materials and this helps them to keep engaged in the activities.

The first two activities with the card games were very effective with the students. In class one when the number of cards increased to more than nine they found it challenging to keep up with the story and in class two when it increased to more than twelve their attention slowly drifted away.

The simple style of illustrations used made it easier for them to understand the visuals and create the story.

The numbering on the cards was very important. It acted as a guide for the students to understand the order of the cards and connect them without the siksha sahayak intervening and explaining the story. They were able to create the story themselves and add things from their own creativity to the story. A few visuals need to be illustrated better, for example, they were not able to understand wheat because the illustration did not have grains on the plant.

The board activity was also very engaging as it involved more physical interactions and discussions with each other. The children were collaborating and helped each other while it was played to choose the correct cards and name the visuals they saw. More cards can be easily produced by the Siksha Sahayaks itself if needed in the future using small illustrations or Google images. The board can also be made in 3D by layering cardboard on top of each other to make a miniature version of a hill.

Another feedback was that all the activities needed a clear set of instructions for the Siksha Sahayaks on how to use them to get the best result in the class.

Final design

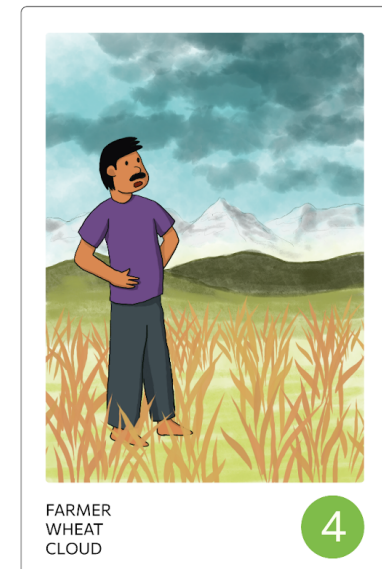
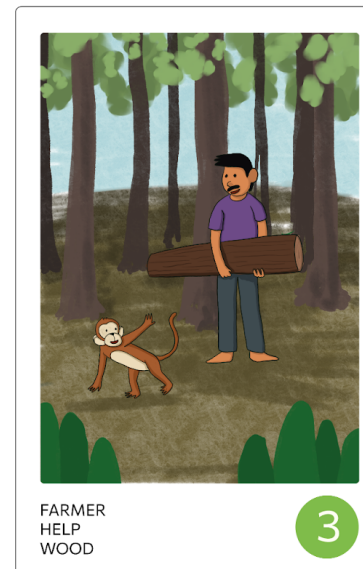
The multiple rounds of testing over the period of two months helped me to understand the most effective activities and best layout for the materials. With interactions with students, Siksha Sahayaks, and my mentors I also understood the best way of using the materials and conducting the activities.

Finally, three activities were selected for implementation.

Activity 1

The first activity is the short story cards for class one students. This set of cards has a story created with familiar visuals illustrated using six to nine cards. The cards are numbered in order of the story and three words of the visuals seen in the card are added at the base of the cards. Numbering the cards was important as it acts as hints for the students to connect the cards together. The words on the cards help the teachers by giving them the option of words to introduce through each card.

There will be multiple decks of different vocabulary levels and have to be used according to the level of English knowledge the students have.

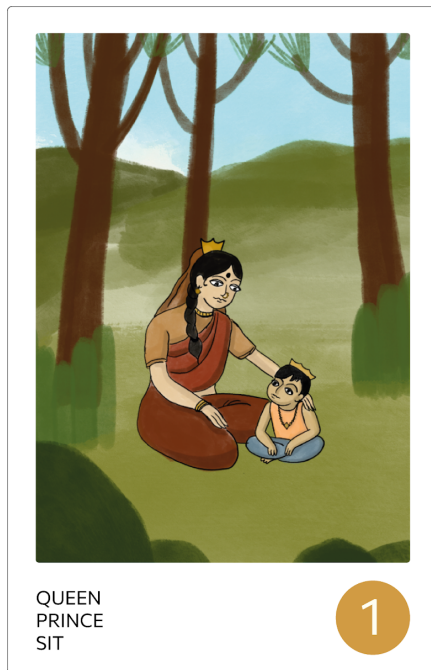


Few cards from Activity 1

Activity 2

The second version is folk story cards. This is targeted at class two and three students and has nine to twelve cards in the deck. Similar to the previous cards this set also has a card that is numbered in order of the story and three words in English written on the cards.

Two cards are created for implementation which uses stories of Ghughutiya and Nanda Devi. these stories were selected based on the festival and characters familiar to the students.



Few cards from Activity 2 - Ghutghutiya story



Few cards from Activity 2 - Nanda Sunanda story

Instructions on how to conduct Activity 1 and 2

1. The students need to be seated in a circle so that everyone can interact with each other and see the cards easily.
2. An introductory activity needs to be done to loosen the students and make them ready for the activity.
3. One example of this is by asking them to close their eyes and taking them for an imaginary walk through the jungle or village and asking them what they see and hear.
4. The cards have to be handed over to the students so that they can go through them closely and carefully.
5. Questions should be asked to the students about what they see in the cards and what is happening in the visuals.
6. After this round all the cards should be collected back and kept in front of them and the students should be asked to discuss with each other and create a story using the cards.
7. Hints and help should be given by the Siksha Sahayaks in order to successfully connect the visuals.
8. Actions should be used for words while sentences are formed. This helps to keep the group engaged.
9. Rewards should be given to the students in the form of claps, high-fives, and praises when they successfully create the story.

10. Once the story is created another round should be played where the story is created again and this time one word in the sentence needs to be translated into English.
11. Actions used before should be repeated when English words are introduced, and words need to be repeated when they come again in the next cards.
12. Once the students are familiar with the story the Siksha Shayak need to ask them questions about the moral and what they learned. They should also connect the moral of the story to real-life scenarios.
13. The activity can be ended by asking the students to act out the story they learned or having a drawing session to draw what they saw in the cards.
14. The activity should be taken again in future classes so that the words are repeated and recited by the students.

Activity 3

The third material is the board activity which is targeted at classes one, two, and three. The materials include an A3 size board and a set of nine to twelve cards. The board has illustrations of the landscapes found in the region like pine forests, mixed forests, wheat fields, rivers, horticulture farms, and villages. The cards have images of things found in the landscapes on the board. These cards can be made using Google images and thus can be created by the Siksha Sahayaks easily.

Instructions to use

1. The students should be arranged in a circle so that they can access the board easily and have interactions with each other.
2. The activity should begin by asking them what they see around their house and villages. This should follow by discussions about different trees, birds, landscapes, and so on.
3. After the students are introduced to this idea the board should be introduced by placing it in the center of the circle.
4. The landscapes on the board should be introduced by asking them about what they see on the board. The Siksha Sahayak should help by giving hints and correcting them in case there are any wrong answers.

5. The board can also be introduced by the Siksha Sahayak, by placing their finger on the board and moving it, and occasionally stopping to ask where they have reached. While the finger is moved the students should be asked to use actions according to the situation, like swinging their shoulders when walking, Moving their arms while swimming through the river, and so on.
6. Once the students were familiar with the landscapes the cards were handed over to them face down. They should be asked to not look at the cards till their names were called out.
7. After this round, the Siksha Sahayak should call out students one by one and they should place the card on the board. They should be allowed to place it anywhere they think it is found and when done so, the students should be asked why they place it there and what is it doing there. Allow the students to come up with creative reasons for their decision. If they find it difficult to answer the class can help them make the right decision.
8. The image on the card should be introduced in Hindi and English when the cards are placed on the board.

Feedback and future steps

1. The sample material with instructions to use them is handed over to the WIPRO team at Aarohi and will be used to train the teachers in the next training camp.
 2. Siksha Sahayak Dinesh who had accompanied me in the tests is familiar with the teaching methods and will be helping the other team members in using the materials.
 3. The materials will be tested in eleven schools across three blocks in the Nainital district and feedback will be collected.
 4. The Siksha Sahayaks will also be trained to create more materials using the methods followed to create the existing materials.
2. Placing the number and text at the back helps to give most importance to the illustration and make the students focus on it more without any distractions.
 3. Placing the words at the back would help the teachers to access them easier while they introduce the cards. The teacher can hold the card in a way where the illustration is facing the students and the texts on the back towards the teachers.

Feedbacks from experts

1. One important feedback received from the experts was redesigning the cards such that the numbering and words are placed on the back. This would help to make the activity more creative by forcing the students to connect the cards without any help first and then use the numbering only when required.

Summary and conclusion

The project began with the understanding that there was a lack of contextualized learning materials available for the students in language and mathematics. Through my research and interactions with my stakeholders, I understood the problems further from different points of view. This helped me to come up with creative solutions for the problems identified.

Coming to the materials, learning through play emerged as an effective method to teach English to foundational-level students. It encourages active participation, problem-solving, and critical thinking skills. Different types of activities, such as role-playing, visual cards, and storytelling, were explored to make the learning experience more enjoyable and interactive.

Integrating local culture, folktales, and stories into the learning materials proved to be highly beneficial. It provided students with a sense of familiarity and connection to their environment, making the learning process more relatable and meaningful.

Collaborating with the NGO, teachers, students, and other stakeholders played a vital role in the success of this project.

Their insights, feedback, and perspectives helped shape the learning materials to better meet the needs and challenges faced by students and educators in the region.

In the future the materials can be further expanded or new materials can be created using the existing ideas and research done for this project. The process of creating learning materials for a specific context requires continuous learning, adaptation, and refinement. Feedback from teachers, students, and other stakeholders should be considered to make iterative improvements and ensure the effectiveness of the materials.

I faced multiple challenges throughout the project. The first was interacting with the students. I got to spend time with teachers and students through this project and understand how to connect with the students and what teaching methods to use to make the activities most effective. The language barrier was another issue that got solved over time because I was forced to speak in Hindi and learn from my stakeholders.

Understanding the locality, culture, and stories and adapting to the new environment took some time but turned out to be very useful for the project as I had to use these to create the materials.

In conclusion, this project helps in tackling the issues of English language learning for foundational-level students of the Kumaon region by creating materials that can be used to conduct playful activities that are engaging and enjoyable. Although it does not solve the issue completely, these materials can be a start for the further creation of contextualized materials for foundational-level classes.

Learnings from Kumaon

Kumaon welcomed and hosted me like a family member. Throughout my two-month stay around the villages of Saitoli, Kaphora, Mauna, and Seetla, I had the pleasure of meeting numerous individuals and forming lasting friendships. I was worried about language issues before I left for the project, but over the course of the project, I was teaching English to first graders, and they were teaching me Hindi.

The people of Kumaon were very friendly, and I spent a lot of time talking with a lot of people. This knowledge exchange enabled me to gain profound insights into Kumaoni culture, captivating folk tales, agricultural practices, awe-inspiring landscapes, and various other facets of life in Kumaon. Simultaneously, I had the privilege of sharing stories from my background, fostering a genuine cultural exchange.

It took me a few days to settle into the new environment in the hills. The hills welcomed me with rain, and I found it difficult to survive the cold nights. The people at Aarohi helped me by providing all the necessary equipment for the cold and were always available to assist whenever needed. I loved to walk, and it became my primary mode of transportation during the two months. This allowed me to

explore nearby villages and regions like Mukteshwar, Kapileshwar, Almora, and Kasad Devi through walking and occasional hitchhiking. Additionally, this allowed me to discover a diverse range of flora and fauna. Throughout my time in Kumaon, I had the pleasure of spotting over fifty bird species and encountering several remarkable animals like Pine martens, Hares, and Langurs.

One of the most enriching aspects of my experience was the opportunity to participate in teacher training camps, where I met dedicated educators working towards developing education in rural areas of Kumaon. I also got to visit the schools, interact with the children, and try my hand at teaching. These visits helped me learn how to connect with students and how to introduce activities and learn from the session I had with the students. During my free time, I organized frisbee workshops and enthusiastically joined the children in cricket and kho-kho games. I also created a mural with the students for the Aarohi Bal Sansar school.

In summary, this project allowed me to employ my skills to contribute to the English language learning of teachers and children in Kumaon. Through this process, I not only enhanced my abilities but also gained a wealth of knowledge in the field of education. My journey in Kumaon has been incredible. It helped me foster deep connections, broadening

my understanding of diverse cultures and equipping me with valuable insights that will undoubtedly shape my future endeavors.

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Appendix

Gallery -

<https://drive.google.com/drive/folders/1GSI5h5R71cjOPIEJ8jNQ-WdwjJJmtypM?usp=sharing>

Kumaon Journal -

https://docs.google.com/document/d/1TCn-4nkGJ9cVaoMvem4Lzwm7iISFo5sGCh4_zx6kXAU/edit?usp=sharing

