Bilingual Gaming Kit to Teach English Language through Collaborative Learning

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Abstract—This paper aims to teach English (secondary language) by bridging the understanding between the Regional language (primary language) and the English Language (secondary language). Here primary language is the one a person has learned from birth or within the critical period, while secondary language would be any other language one learns or speaks. The paper also focuses on evolving old teaching methods to a contemporary participatory model of learning and teaching. Pilot studies were conducted to gauge an understanding of student's knowledge of the English language. Teachers and students were interviewed and their academic curriculum was assessed as a part of the initial study. Extensive literature study and design thinking principles were used to devise a solution to the problem. The objective is met using a holistic learning kit/card game to teach children word recognition, word pronunciation, word spelling and writing words. Implication of the paper is a noticeable improvement in the understanding and grasping of English language. With increasing usage and applicability of English as a second language (ESL) world over, the paper becomes relevant due to its easy replicability to any other primary or secondary language. Future scope of this paper would be transforming the idea of participatory learning into self-regulated learning methods. With the upcoming govt. learning centres in rural areas and provision of smart devices such as tablets, the development of the card games into digital applications seems very feasible.

Keywords—English as a second language, vocabulary-building, learning through gamification.

I. BACKGROUND

THIS paper derives its context from the status quo of education in India, which is significantly poor as compared to other developing nations. A rough estimate of the number of illiterates in India would be over 400 million of which 75% live in rural and slum areas [1]. Hence the focus group for this project were children from underprivileged communities studying in public schools.

Public schools in India receive pitiful budget allocations because of which the emphasis on the quality education in negligent. This inferior quality of education deprives students of good employment opportunities and they get caught in a vicious cycle, which we can refer to as the "Poverty Trap".

The majority of public schools use regional language as the primary medium of instruction while most examinations are conducted in English language. Coming from poor families with little understanding and usage of English, children in these schools are bound to face a problem in comprehending English language, diction, grammar and terminology. This

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results in poor understanding of subjects and substandard academic performance.

II. LITERATURE REVIEW

It is proven that speaking two or more languages improves problem-solving and multitasking skills. It can help secure future job opportunities, reduce risk of mental illness in later years, and can be a wonderful source of insight into other cultures as one explores different cultural identities within themselves. While bilingualism can prove helpful for some, it can be really strenuous for others. When a privileged child learns a second language - known as "additive bilingualism"- it is generally recognised to be a positive, even eminent, endeavour. But the same is not true when it comes to "subtractive bilingualism," when a new language supersedes the language spoken at home. Claire Bowern, associate professor of linguistics at Yale University, explains, "for these children, their bilingualism tends to be viewed as a challenge to overcome, rather than an opportunity to be embraced" [2].

Motivation is broadly of two types: Extrinsic and Intrinsic. Extrinsic motivation believes in the ideology that education has a future payoff whereas intrinsic motivation believes that education is enticing, interesting and fun [3]. This project tried to address latter part of the theory. In order to make education intriguing and involving, there is a need to break down the existing paradigms of rote learning and one-to-many classroom models. We need to evolve to a participatory model of learning and teaching. Group activities and discussions can play a crucial role in changing the decorum of the class and making it seem less intimidating.

Children need to be taught in an encouraging environment for them to feel attracted to schools. This would ideally include the friends, the study, and the play [4]. Many times, these children enjoy learning. The yearning for this joy comes across most clearly in those who are deprived of it. One approach to this could be to make learning an integral part of education. Gamification of subjects is one of the many ways this problem can be tackled.

III. PILOT STUDY

A. Subjects

All the participants were studying in sixth grade of Aanuhati High School, Guwahati, Assam. This was an only boys school with the median age being 12 years. According to government norms, the school introduces English as a subject in the first grade itself so these students had already received six years of English instruction, either at school or at

supplementary tuitions classes. The study was conducted in the second semester when they had already finished more than half of their annual syllabus.

B. Academic Curriculum

The academic course material was measured in terms of the following parameters [5]:

- It was updated recently.
- It considered the cultural and linguistic diversity of the student population studying the course.
- It looked visually enticing. Images, Charts and graphics used were intelligible and appropriate for students.
- It contained content relevant to the age and mental ability.
- It was fairly legible. The layout and formatting was appropriate for the student population.
- It addressed a variety of learning forms.
- It consisted of exercises where learners could use their previous learning experience and prior knowledge of the content.

C. Pilot Study

A pilot study to test the current level of understanding and knowledge gave surprising results. Many students of class sixth were unable to recognise several alphabets. A lot of them also faced difficulty in reading and writing three and four letter words.

D. Interview Insights

Students: Most students belonged to a poor background, where their parents were usually engaged in a low-income job. The environment at home was not conducive and productive, which often led to students being uninterested in academics. The understanding and knowledge of subjects was immensely poor despite students taking supplementary tuition classes. The shocking reality was that the students of class sixth were unable to read simple two and three letter English words when their books consisted of high-level English language. On being asked why they could not read, they simply said that they do not understand what is being taught in the class. Unmindful of their learning abilities, the students in class were full of energy and enthusiasm, so much so that they ignored the teacher and concentrated only on sitting and giggling in the class.

Teachers: The English teacher with three years of teaching experience had a very different perspective to the problem discussed. Agreeing to the fact that the difficulty level of the English textbooks was too high for these students, she acknowledged that nothing could be done about it. On being specifically asked about the poor quality of English, she said that the first school of a child is home, and the place where these students come from offers no place to learn and prosper. Further she explained that in a class of 40-45 students, only ten students on an average are good at academics. With few students not even familiar with the alphabets, it is very difficult to teach English language to the class. Also, the course burden was such that she had to finish the syllabus before the exams. On being asked how these students passed the exams, she said that they pass the students if they pass in at-least three subjects while admitting that most students fail the board examinations.

E. Inferences

The interviews were very insightful in understanding the current teaching methods and philosophy. They helped in developing guidelines to model the content to be taught, the teaching aid to be used and the methodology to be followed for a new innovative teaching approach.

The interviews led to a deeper understanding of the fundamentals of knowledge acquisition, to apprehend the cognitive psychology of learning and to comprehend how children grasp words.

IV. LITERATURE REVIEW II

Knowing a word is a complex concept. According to Dale, the extent of knowledge a person has about individual words can range from a little to a lot and it also includes qualitative connotations about words [6]. Dale provides a description of the extent of word knowledge in terms of 5 stages: 1. The student has no knowledge about the word. 2. The student has a general sense of the word. 3. The student has a narrow, context-bound knowledge about the word. 4. The student has a basic knowledge of the word and is able to use it in many appropriate situations. 5. The student has a rich, de-contextualized knowledge of the word and can use it in various appropriate situations. Knowing a word implies knowing many things about the word: Its literal meaning, its various connotations, its spelling, derivations, collocations, frequency, pronunciation, the sort of syntactic constructions into which it enters, the morphological options it offers and a rich variety of semantic associates such as synonyms, antonyms, homonyms.

V. IDEA CONCEPTUALISATION

Since majority of schools have English as their second language, the project aims to teach English via the language they are comfortable/familiar with. The project also focused on evolving old teaching methods to a new and contemporary participatory model of learning and teaching.

The initial few ideas were to familiarize the students with concept of sound and phonetics. Soon it was realised that this method would not work for these students as their first language was Assamese and they will not be able to relate to the sound of English words. The next approach chosen was to teach using psychology of relationships. This involved listing down the words we see everyday, and then teaching them what it means in English. This way they should be able to understand a foreign language with the help of their everyday language. Research said that, the best way to teach children new words is using 'The Dolch high frequency word list' [7]. The list comprises of 220 words that occur most frequently in children's literature and cannot be "read", rather just recognized by sight. Now the objective was to teach students these words but with a regional adaptation. The idea was to bridge the gap using the medium of visuals. After a lot of brainstorming, this was achieved by designing a learning kit

which has a set of two card games; one to teach children how to spell and remember three and four letter words and the other to practice combining nouns, verbs, adjectives, etc. to make sentences. The game aims to address four language skills: speaking, reading, listening and writing [8].

VI. GAME I: WORD RECOGNITION AND SPELLING GAME

The card game assists children in recognising, spelling and remembering three and four letter words.

This game was designed to improve the vocabulary of students via analogy. "An analogy is an implied relationship between two pairs of objects" [6]. Analogies command students to identify a similar relationship between dissimilar objects. This exercise will help them draw an analogy between the Assamese word they already know and the equivalent English word through the medium of pictures.

The game uses an inventory of 30 words based on the Dolch list of words [7], which we come across on an everyday basis. The game consists of two sets of picture cards, one set of picture cards has the picture word written on the backside in English language and the other set of cards has the picture word written in Assamese language. A set of scrabble tokens is also provided, each token representing an alphabet.

The game can be played in a group of 5-8 students. The group is called in the front together but each student plays one at a time.

To play the game, lay the two sets of cards separately with the picture side of the card facing up and keep the alphabets in a pile nearby. The student has to first pick a card randomly from the Assamese set, recognise the picture, and then read it aloud. Then the student has to identify and pick the same picture card from the English set, read the alphabets individually first and then the word as a whole. Finally, the student has to identify and draw those alphabets from the pile and arrange them to write the word.

Fig. 1 Students playing the work recognition game

A. Observations

The children seemed pretty enthusiastic about the game and were very eager to learn and participate contrary to their usual behaviour. The game kept them engaged throughout, so much so that they forgot when the period got over. The pictures used for the game were taken from the Indian context, which helped them relate to the word and remember it without an effort. The exercise of searching, identifying and arranging the alphabets was very effective in memorising the spelling of the word.

B. Limitations

The only drawback was that a few students were familiar with the words being taught and hence they were saying the equivalent English word though they did not know the spelling of the word.

VII. GAME II: SENTENCE FORMATION GAME

The card game helps children practice combining nouns, articles, verbs, adjectives, etc. to make a sentence.

The game consists of 4 sets of card namely the helpers, the nouns, the verbs and the adjectives. Each set of cards is colour coded to distinguish them easily and also to teach different categories of words to students.

- Helpers - a set of words comprising articles, conjunctions, and punctuations. The word is written on the planer side of a card in English while its analogous Assamese word is written on the coloured surface.
- Nouns - these are the picture cards borrowed from the previous game. The word is written on the planer surface while the picture of that noun word is printed on the other side.
- Verbs – a set of words consisting daily activities. The word is written on the planer side of a card in English while its analogous Assamese word is written on the coloured surface. (The game was created for present tense words, however it can be replicated for any tense.)
- Adjectives – a set of words denoting simple adjectives, colours and emotions. The word is written on the planer surface while the picture of that noun word is printed on the other side.

The game can be played in a group of 5-8 students. The group is called in the front together but each student plays one at a time.

To play the game, lay the four sets of cards separately with the coloured side of the cards facing up. The student has to pick a card from each category and then combine them to make a sentence. Multiple sentences can be made on a similar basis by trying different permutation and combinations. The game can be further extended to paragraph forming and story writing.

A. Observations

Writing the word in Assamese on one side of the card helped them identify and understand the meaning of each word in a sentence individually. Colour coding the cards aided them to understand and remember a particular category of words easily. The presence of a group improved the outcome of the activity, as the students were able to explain each other in a better fashion enabling learning while helping each other.

B. Limitations

There were no drawbacks as such, but playing the game with a large group can cause chaos. If the size of the group is

reduced to 5, the activity can be made much more engaging and effective.

Fig. 2 Students playing the sentence formation game

VIII. CONCLUSION

From this study, it is apparent that the bilingual gaming kit proved to be a successful experiment. Because of the small sample size, the results are not conclusive, but they are indicative of an improvement in the following students' skills: speaking, listening, reading and writing.

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