

# **Eco-friendly and Low/No Cost English Language Teaching-Learning Materials: An Empirical Study on Primary Education in Dhaka**

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## **Abstract**

The paper sheds light on how young learners can effectively learn English language with no/low cost self-prepared materials developed from the thrown away packets of daily life goods. It also shows the ways how children keep the environment clean and safe collecting the wastes to prepare their project work and learning aids through collaboration and scaffolding. The researchers conducted the research among thirty teachers of ten government and non-government primary schools in Dhaka North City Corporation. To conduct the study, the investigators adopted qualitative approach where data were collected through in-depth interview and Focus Group Discussion. (FGD). The findings reveal that while learning English language with fun and collaboration, children can contribute to the reduction of environmental pollution resulting in the decrease of dangers for the globe and death for mankind and animals. Children also grow a sense of support and sympathy for fellows while working in team. The investigators invite researchers, environmentalists, policymakers, and linguists for conducting further studies in this area.

**Keywords:** No/low Cost, Materials, Environment, Clean, Learning English Language

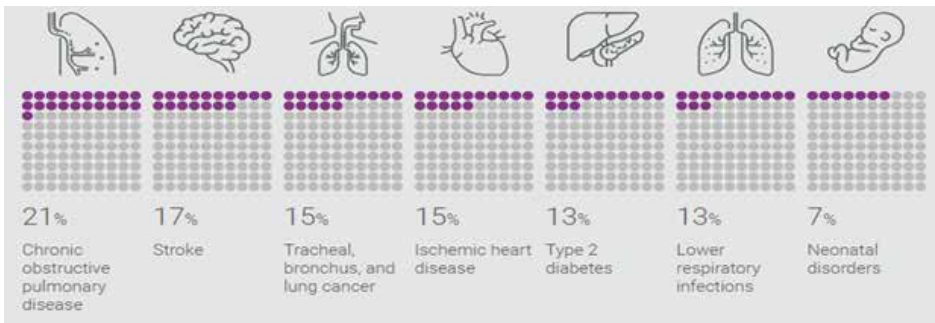
## **Introduction**

Teaching-learning has never been isolated from life, sources of life, support of life and spirits of life. When the question of life is there, the question of the environment will be there. Strictly speaking, teaching-learning of English language, to be the most global language, has a significant role to make learners aware of life and of the environment. But due to global warming, sprawl of cities, changes of climate, our environment has been facing diverse unwanted issues which cannot be ignored anymore. Nations and countries across the world are coming together to raise their voice and to work accordingly to save life, to save the environment. Since people of all ages, particularly children across the world are learning English language and using it for everyday necessity, teaching English as a second or foreign language with eco-friendly and low/no cost English language teaching-learning materials can be the next rational stairway for creating a greener world and ensuring sustainability.

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In practice, we are not very much aware of the threats we are welcoming by making our environment toxic. Toxicating our life and environment is not confined to a particular territory of the earth, rather it has been a globally high serious issue. According to WHO (2022), “Outdoor air pollution is a major environmental health problem affecting everyone in low-, middle-, and high-income countries”. Though ambient air pollution is a worldwide problem, its impact is not impartial; it particularly affects the people living in developing countries, most importantly the vulnerable people like children, women and elderly. Pollution in both cities and villages causes around 4.2 million unexpected and premature deaths across the world in each year according to a report of 2019 by the UN (2021). The following data show the percent of deaths due to different diseases resulting from environmental pollution.



Source: UNEP (2021), Pollution Action Note – Data you need to know

The figure proves that environment pollution is like a mother disease which gives birth to various chronic diseases everywhere in the world. According to a report of WMO (2023), the environment of Europe, America and Asia of 2022 was respectively as follows:

- a. “The year 2022 was marked by extreme heat, drought and wildfires. Sea surface temperatures around Europe reached new highs, accompanied by marine heatwaves”.
- b. “Extreme weather and climate shocks are becoming more acute in Latin America and the Caribbean, as the long-term warming trend and sea level rise accelerate”.
- c. “Extreme weather and climate change impacts are increasing in Asia, which ricocheted between droughts and floods in 2022, ruining lives and destroying livelihoods”.

The scenario is not different in Bangladesh even, rather it is getting worse here day by day. With rapid urbanization, big cities like Dhaka are embracing unexpected consequences on livability. Approximately 25,000 tons of solid waste are generated daily in urban areas of Bangladesh, with 170 kilograms (kg) per capita per year (Ahmed, 2019, cited in Islam 2021). Another data shows that air pollution in Dhaka City escalated by around 27% in the month of January 2023 in comparison to yesteryear. The average Air Quality Index (AQI) of Dhaka was 221 in 2022 whereas it is 281 in 2023. It is to be mentioned that when the income of a community rises, the consumption of daily life household goods is in higher use which results in the rising amount of household wastes. The increasing share of plastic and non-biodegradable wastes is responsible for undesired toxic contamination of Dhaka City.

Being sensitized by the contaminated condition of Dhaka City as well as the country and the world, the researchers have felt the urge to try to raise awareness among the teachers and students of Dhaka City North. As primary school days are a better time to build up any habit, the investigators have selected the population from primary schools of Dhaka City North. Moreover, English language teaching-learning has become the trend of the time when students and guardians are very much serious about the knowledge and performances of English. To learn English with fun, primary school students can be involved in project works where the learners will collect the household empty packets of soaps, detergent powder, chips and other daily life and grocery products. The packets contain various English words which are in most cases unknown to the learners of primary level. The students will cut and pick the words from the packets, learn their meaning, make sentences and finally create a figure of various familiar entities like a globe, a school building, a flag etc. as a project. The researchers hypothesize that it will be an effective effort to grow the sense of responsibility among students to keep the environment clean, learn English language with interactions and fun, support each other to attain the assigned responsibility.

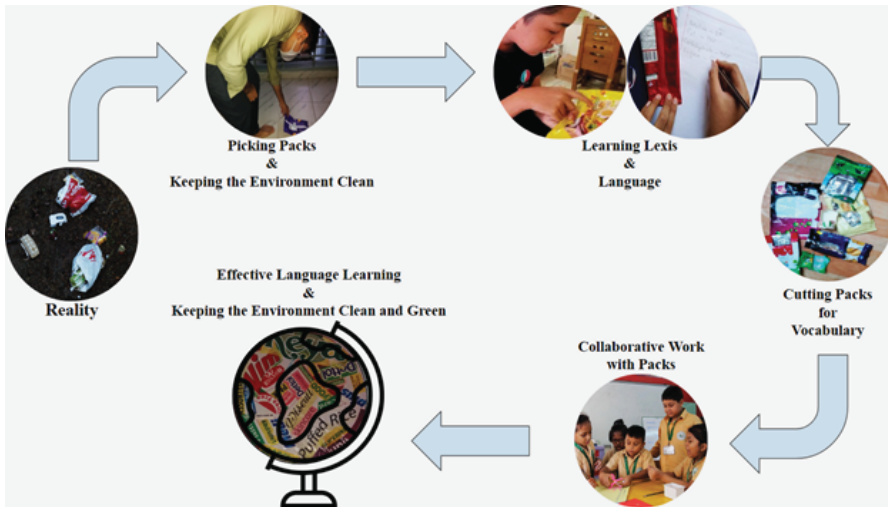


Figure 1: Cleaning the environment and creating English language teaching-learning materials

**Objective:** The prime objective of this paper is to address how low/no cost effective teaching and learning of English language can there be along with the maintenance of the environment. The study has also some other secondary objectives:

- To sensitize learners to keep the environment clean
- To ensure task based effective English language teaching-learning with fun and no/low cost materials
- To involve students in scaffolding to accelerate learning Teachers sometimes can involve learners in activities to project something creative with the waste around them and society. It gives the learners the feelings of ownership and motivation that expedite teaching and learning.

## 2. Literature Review

Teaching-learning has always been effective when contexts, culture, and customizations are there. Learning becomes lasting if real-life-oriented and task-based teaching materials can be ensured. To develop tailor-made, student-centered and appropriate classroom materials, learners' needs, background, and educational settings are very significant. According to McDonough (2013) the more specific environment of, say, a particular school or college, the possibilities for actually implementing them will be directly related both to the learners themselves – their needs, characteristics and so on – and to the whole educational setting in which the teaching is to take place.(p.6)

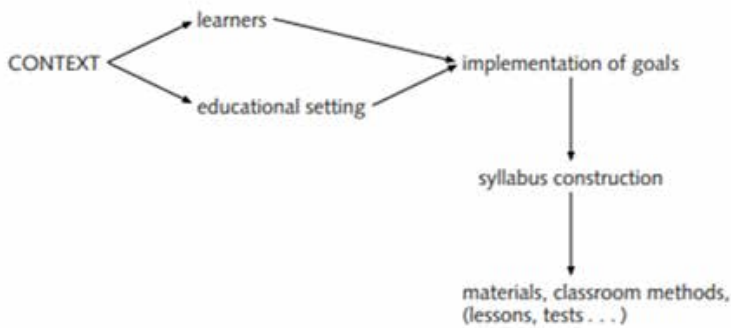


Figure 2: The framework of language teaching (Source: McDonough et.al, 2013, p.6)

Thus, contexts cover considerable areas of effective classroom materials to expedite language teaching and learning. Along with contexts, scaffolding, learner autonomy, and learners' active involvement also play a substantial role in English language teaching and learning. Vygotsky (1978, p. 86) has defined scaffolding or the zone of proximal development (ZPD) as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers". Therefore, good learning happens when social interactions with and supports of peers, parents and teachers are there. As Benson (2001) has stated autonomy - the capacity to take control of one's learning, which was based on his desire, ability, and freedom to control. Effective teachers develop and tailor materials to involve learners to work within their abilities and control.

The present study aims to propose a project-based learning methodology that would be both affordable and environmentally sustainable and introduce it as the viable English Language Teaching-Learning Material. The research also demonstrates how educators may use household recycled materials or thrown-out items to produce inexpensive and environmentally friendly teaching tools that engage students in project works and foster environmental awareness. Thus, this study promotes the education for sustainable development (ESD) led by UNESCO which aims to create awareness of eco-friendly activities and environment empowerment among learners of all ages. Hand-on activity-based effective teaching-learning materials ought to incorporate not only to improve proficiency in English communication but also to raise their ecological consciousness in a manner that positively impacts their lives; and keeps the environment clean; for this may prevent ecological disasters (Al-Jamal & Al-Omari, 2014).

According to the United Nations Educational, Scientific and Cultural Orga

nization (UNESCO), ecological education or eco-friendly teaching learning material works as the catalyst that lightens pupils' consciousness and trains their mind to consider the issues related to ecological problems. According to Potter (2003), eco-friendly teaching and learning are the techniques that stimulate critical thinking and problem-solving abilities rather than based on ecological knowledge or ecological subsistence. The North American Association for Environmental Education (NAAEE) specified these skills developed by the eco-friendly materials, "Environmental education prepares all citizens with 21st Century essential skills that contribute to healthier, more environmentally sustainable, and economically prosperous communities". Highlighting the role of environment-friendly teaching-learning materials, Lieberman and Hoody (1998) mentioned "Using the environment as an integrating context is interdisciplinary, collaborative, student-centered, hands-on and engages students in learning".

In the context of English language teaching and learning, Brown (1991) considered the role of English teachers to be very crucial. As English is the global language of communication, English teachers may incorporate the teaching-learning materials in the English curriculum which is the blend of developing communication skills as well as integrating environmental awareness so that the learner can understand the global problem and communicate for the solution of those problems. Exploring the development of the material concentrating on the ecological issues was carried out by many researchers. Nkwetisama (2011) examined the integration of environmental education in English language teaching and learning in Cameroon. He explored that language teaching-learning is not confined only to the development of proficiency of the learners, rather it helps them develop their critical thinking and soft skills which substantially contribute to the sustainability of the environment. Shishkovskaya et al. (2015) explored the role of "paperless" technology in teaching-learning of English for General and Specific Purposes. It ultimately supports saving the environment.

Additionally, for a child to experience maximal brain and personality development, age-appropriate learning materials must be created, and their lives must be filled with motivating, inspiring hands-on experiences. They are better able to develop their intrinsic abilities when they are given the right learning materials (teaching aids). For this, teachers sometimes can involve learners in activities to project something creative with the waste around them and society. It gives the learners feelings of ownership and motivation that expedite teaching and learning. These materials may include, discarded packets of biscuits, dry foods, shoe boxes, bottles, small and big cartons, ice cream sticks, old newspapers and magazines, etc. which are considered low-cost/no-cost teaching aids.

Low-cost/no-cost teaching materials are the offhand constructed teaching aids that are used to expedite the classroom learning process in a creative way using inexpensively available and locally accessible resources (Ali & Papaiah, 2015). They are created using elements that are easily accessible in our surroundings and natural world, such as domestic garbage and discarded things and help the teachers in making the teaching interesting and concrete (Ali & Papaiah, 2015). Low-cost teaching aids can be utilized to demonstrate any concept of science, mathematics, or English at any level, especially in primary and secondary levels of education that can supplement the theoretical knowledge resulting in the creation of a long-lasting understanding.

Gupta (2016) worked on how low-cost/no-cost teaching materials help elementary school science teachers and students teach and learn better in the context of Punjab, India. He argued for the development of low/no-cost problem-solving, critical thinking, and creative materials for the effective learning of science students. He found low/no cost materials to be effective tools to bring behavioral changes among students and recommended more involvement of teachers and students in the development and application of low/no cost materials for the improvement of scientific attitude and skills. Ali and Papaiah (2015) explored how learning results from making innovative use of low-cost/no-cost teaching learning materials escalate the learning of science students. They recommend three areas for effective scientific learning: a. to adopt an inquiry-based approach, b. to prepare low/no cost scientific materials, and c. to ensure effective implementation of 'learning by doing'. Lawrence-Brown (2012) explored how both gifted and differently-abled students can learn effectively when appropriate general supports, low/no cost technological supports and improvised instructional supports are there. She emphasized on adopting and implementing the general standard curriculum for students in general, adapted curriculum for special students, and low/no cost technologically supported instructions where needed. Aminu (2018) showed how the application of cost-effective and almost low/no cost course materials can better learning and research activities for both students and staff in an Open University in Nigeria.

People from economically resource-constrained nations like India, Pakistan, and Bangladesh still have knowledge deficiency about the proper processes for disposing of household waste and recycling used items, and they have a propensity to throw away large mounds of trash and garbage on the roadsides and in the street corner of public places. In this instance, trash and domestic waste can be used to create low-cost/no-cost teaching aids that are both practical and effective (Ali & Papaiah, 2015). In the context of learning a foreign language where working in a group and in collaboration to solve problems is equally important in addition to

theoretical knowledge, teachers may design their lessons engaging students in group work to prepare different props that include materials such as discarded packets or boxes of dry foods, paper, plastic, rubber, etc. In addition to increasing student and teacher engagement and creativity, the widespread use of teaching tools that cost little or nil will also help to maintain a clean environment promoting education for sustainable development (ESD). Therefore, this practice fosters environmental awareness among young pupils.

Each reviewed paper above has its own urge and interest whereas the current paper is unique in its aims and objectives. Gupta (2016), Ali and Papaiah (2015), Shishkovskaya et al. (2015) explored how low/no-cost English language teaching materials can be effective for students of science and engineering majors. Lawrence-Brown (2012) focused on low/no cost technologically supported and improvised instructions for fruit learning of the English language. Nkwetisama (2011) found that the inclusion of environmental education in language teaching can contribute to developing language proficiency and sustaining the environment. However, this paper will show how the thrown-away packets of daily life commodities can be used as raw materials for project-based learning, as tools to involve students in scaffolding and group works, as effective teaching-learning materials for the English language resulting in keeping the environment clean and sustainable. The paper therefore aims at investigating the answers to research questions: a. How can teachers motivate students to be eco-friendly while teaching and learning English language? b. How can teachers ensure effective teaching and learning of English language with low/no cost materials? and c. What are the ways to make students responsible to help their fellows?

### 3. Methodology

To conduct the research, the researchers adopted a qualitative approach. Data were collected from in-depth interviews of 6 respondents and Focus Group Discussion (FGD) of 24 respondents. These thirty respondents were from 5 Govt. and 5 Non-Govt. Primary Schools of Dhaka City. The researchers arranged a day-long workshop for the respondents as well. The teacher respondents included both male and female and were of 25 to 55 age range. The respondents were of almost similar educational background having graduate and postgraduate education. The researchers demonstrated how the teachers will involve learners to collect thrown away packets of daily commodities like soap, chips, detergent powder and so on. They also showed the respondents how they can select and pick English words from those packets and cut them into pieces to design and develop interesting figures like the map of Bangladesh, a banyan tree, a primary school building, a globe etc. to showcase around the classroom. The researchers as trainers also

demonstrated how contextual sentences can be made using the words collected from the wasted packets. They again invited the teacher respondents after around 10 days to interview them and conduct FGD to collect data regarding the impact of this teaching-learning practice as well as the impression of the students who were involved in this project based learning.

#### 4. Findings and Discussion

The findings of both interview and focus group discussion expose informative, insightful and inspiring data. The interviews of the teachers reveal that most of the learners, even their guardians, are highly motivated and satisfied when they have come to know the project on keeping the environment clean to learn the English language. Some of the teachers have argued that students have become easily convinced and motivated to work on the cleaning project to learn English when the teachers first tell them about the importance of keeping the environment clean. Once the students have understood the importance of keeping their surroundings healthy, they are ready to execute it cheerfully. Again, six of the respondent teachers believe that young learners love to learn with fun. According to them, when they ask students to work in groups to prepare interesting images or figures with the English words of thrown away packets, they feel a sense of ownership and enjoyment. One respondent teacher think that English teachers can show the primary level learners video clips on the eco-friendly environment which will inculcate an urge among the students to keep the environment clean. She further emphasizes on conducting some classes in a greenery place, in the lap of nature that is outside the classroom so that they can nurture love for the environment as well as for nature. In FGD, almost all the teachers argued for including reading texts on eco-friendly environment and also for involving children in various project works in an attempt to practically involve them in saving the environment from the dangers of the time.

The students, particularly primary level learners, are arguably the blind followers and true disciples of their teachers. The young learners are very much softhearted and teachers can easily sow the seeds of any good practices in their minds. It is often said that children imitate how their teachers walk, talk, and even part their hair. Moreover, the practices, values and behaviors children learn in their childhood keep continuing for life time. Once students are motivated and driven by their teachers to keep their surroundings clean and healthy, they keep the practice up forever. It will definitely be a strong step forward to reduce the pollution of air, water above all the whole environment and increase the longevity of human beings on the earth. Therefore, learning English language being sensitized with an urge to make the globe safe and sound has been a milestone for the twenty-first century.

This practice also touches 8.4 of Sustainable Development Goal (SDG) where it has emphasized on “consumption and production, and endeavor to decouple economic growth from environmental degradation in accordance with the 10-year framework of programmes on sustainable consumption and production... (ILO, 2023, para.1)”. Effective language teaching-learning is accelerated when contextual, culture oriented and materials with low/no are applied in the classrooms. The findings of in-depth interview and FGD of teachers discover that students feel confident and pleased with the new vocabulary they have learned from the thrown away packets of various daily life used products. Most of the teachers complied with each other in FGD that students can even make almost error free contextual sentences with the vocabulary they have learnt from this project. One teacher strongly argued that as students prepare their learning materials by themselves with the help of their teachers, their learnings go into long term memory and become sustainable which effectively meets 4.7 of SDG “all learners acquire the knowledge and skills needed to promote sustainable development” (Meta for the global, 2023, p.68). Almost all the respondents agreed that language learning becomes effective when a triangulation of the involvement of the teachers, students and peers are there in the development of age appropriate materials with no or affordable costs. According to Developing Learning Materials (2023, s.3), “Age appropriate learning material is essential for maximum mental growth and personality development, a child’s life needs to be filled with stimulating, encouraging hands-on experiences. Appropriate learning materials (teaching aids) help children to develop their innate abilities.”

Children learn more curiously, effectively and dedicatedly what they are taught in their early childhood and childhood than the time when they are at secondary and tertiary levels. The findings prove that when students are in team work, when they are assigned with any specific responsibilities, they pay their utmost efforts to execute their responsibilities. Both interview and FGD reveal that as the performance or production of the whole team depends on the assigned job of each team member, any failure and success is associated with the performance of each member. The respondent teachers found that when any students lag behind in his/her responsibility, other members come forward to helping the students stepped back. This sort of scaffolding creates a sense of responsibility and ownership to support fellows which in fact works as sowing seeds to grow leadership quality in the lives of children in future.

## 5. Recommendation

Skilled and quality human resources result from quality and effective teaching and learning. Learning becomes effective and practical when teachers teach and train their students from life, by life and of life. Teachers are the agents who can

really make the lessons interesting, practical, friendly, supportive and contributory. The paper has shown how teachers and students can successfully work together to contribute to saving the environment, effective English language teaching and becoming supportive to the fellows. As the whole process involves in collecting daily life used thrown away waste packets and labels and recycling them in preparing teaching learning materials, it contributes to the society, to the globe and to humanity in three layers. It immensely helps the globe be safe from the dangers of pollution; it ensures effective and sustainable language learning; it raises the sense of support and responsibility among the young learners. The researchers, thus, recommend including chapters or texts on the importance of an eco-friendly environment in the books of primary and secondary levels. The teachers can assign their students various project works on keeping the environment clean and pollution free. Stakeholders of schools and colleges should organize seminars, symposiums, conferences and even workshops on how students can be considerate to the environment through learning their targeted contents and language. The researchers also argue that institutions should arrange intra and inter school competition on how students can effectively learn English language with no/low cost materials and they can keep their surroundings clean and pollution free. The authority should also arrange teacher training for teachers to grow the sense of responsibility among them to involve students in project works on eco-friendly environment as a part of their language learning. Like English language teaching-learning, all other disciplines and language learning can also adopt ecofriendly materials for making teaching meaningful, sustainable and contributory.

## 6. Conclusion

From long back, English is used as a language which covers a large number of demography and a wide area of geography. It is taught and learnt through the whole world and children start learning English with their mother tongue from their primary level. Therefore, choosing English language learning to make the learners aware about environment and teaching the language effectively and sustainably with no/low cost materials have been the urge and demand of the time. The more the discussion about nature and environment is there, the more the materials are made of self-supports and peer supports from around, the more sustainable teaching with fun will be there. As students are assigned to do project work on language learning with the thrown away packets, labels and cans, it develops their skills along with knowledge, the sense of responsibility for the environment, feelings and sympathy for the fellows to accomplish the assigned job in time. It also creates spaces for learners to learn English language with learner autonomy and real life experienced materials. The efforts, therefore, should be honored and implemented at schools, colleges throughout the country even the world.

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