

## Nurturing English Proficiency in Students with Learning Disabilities via Boom Box: A Game-Based Learning Approach

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### ABSTRACT

*English is often a less preferred and challenging subject for students with learning disabilities (LD). Limited cognitive abilities and difficulty keeping focus were factors that contributed to their struggles with English comprehension. The paper describes the best practice of Boom Box, which outlines the implementation steps, playing instructions, and the performance outcomes of three LD learners who were purposively selected and followed the Year 5 Special Education Learning Disabilities Standard Primary School Curriculum (KSSRPK). The research instruments used were observation, pre-test, and post-test, which were analysed qualitatively. The findings show an improvement, with noticeable progress between the pre-test and post-test assessments. It is hoped that the findings of this best practice will offer guidance, direction, and encouragement for educators to consistently remain creative and innovative in their approach to teaching the English language among LD learners in schools.*

**Keywords:** English, Special Education Learning Disabilities, Learning Through Play, Game-based Learning Approach.

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### Introduction of Best Practices

A game-based learning approach is one of teaching approaches that emphasises the importance of play in the developmental and learning processes of children. Research has consistently shown that children learn effectively when they actively engage in meaningful play activities that are relevant to their developmental stage. Several sources have emphasised the significance of game-based learning, for example, as cited in Adipat et al. (2021), game-based learning enables students to navigate through challenging learning environments and grasp specific learning outcomes (Chen et al., 2018). It is also proven by Yee et al., (2022) who stated that learning through play is extremely crucial to consider throughout the early childhood period. In addition, it has been suggested that game-based learning is particularly effective in the context of English-language education (Mozelius & Hettiarachchi, 2017). Furthermore, game-based learning not only motivates interdisciplinary thinking and decision-making but also promotes interactive engagement and social skill development through communication and coordination within the game environment (Boctor, 2013).

In the context of student with learning disabilities (LD), the game-based learning approach stands as one of the most effective and holistic methods to facilitate learning tailored to learners' individual abilities and capacities. Traditional teaching methods often do not adequately address the diverse cognitive, physical, emotional, and social developmental requirements of students with learning disabilities. Hence, game-based learning approach blends learning styles with engaging game concepts to capture their interest, enhances concentration, and delivering meaningful learning experiences. This is particularly beneficial for those who struggle to maintain focus and have limited cognitive abilities.

Furthermore, the game-based learning approach typically involves utilising various sensory experiences, offering hands-on engagement in learning activities. Interactive and hands-on games create opportunities for LD students to use their sensory abilities to explore materials, textures, sounds, and visual cues, thus enriching their understanding of their surroundings. As mention by Ali, Erah & Constantino, Kaitlyn & Hussain, Azhar & Akhtar, Zaiba. (2018), play-based learning allows children to engage in purposeful activities that reflect the variety of experiences they are likely to encounter. Additionally, this approach can aid LD students in improving communication and social skills, especially those facing challenges with speech, language, and communication. Through game-based learning activities, LD students can better grasp social cues such as taking turns, sharing games, and celebrating their peers' successes.

Students with learning disabilities often encounter difficulties in effectively controlling their emotions and behaviours. Consequently, they struggle with managing their emotional responses and appropriate behavioural reactions in various situations. This aspect underscores the importance of the approach that employs game-based learning. This approach serves as a platform that not only facilitates academic growth, but also nurtures their emotional management abilities, encourages them to engage in social interactions and refine their motor skills. The educational environment that embraces the game-based approach thus cultivates an environment that is both enjoyable and supportive for the progress of LD students. This, in turn, empowers them to fully participate in the learning journey, harnessing their individual potential, skills, interests, and creativity.

Recognising the significance of English language education in today's society, it becomes crucial to ensure that children with special needs are provided with equal learning opportunities. Given that children with special needs also have their preferences and interests, the author opt to incorporate innovative teaching tools in the form of educational games. In this context, Boom Box demonstrates the integration of game-based learning concepts to enhance focus and learning experiences for LD students. It represents a best practice that encourages learners to engage actively, enabling them to gain a deeper understanding of the subject matter and retain it more effectively. Boom Box was created with the intention of providing English education for children with special needs while adhering to the competencies outlined in the Content Standards: Curriculum and Assessment Document (DSKP) for Year 5 English Language Learning Disabilities.

## Justification of Best Practices Implementation

Learning Disabilities students tend to attain lower levels of education, making them more vulnerable to social exclusion in the future. The rationale behind implementing these best practices stems from the unique learning challenges faced by students with learning difficulties. Observations by teachers have highlighted a common issue among LD students – they struggle to comprehend the English subject. Frequently, these learners encounter challenges in engaging with traditional learning methods due to their limited cognitive abilities and shorter attention spans. Traditional teaching methods, often employed in classrooms, prove to be ineffective for these students and can sometimes even lead to feelings of pressure and stress in the learning environment. Recognizing these obstacles, there is a call for a more adaptable, interactive, and engaging learning approach.

In response to these observations and the learning difficulties experienced by LD students has prompted educators to devise an alternative teaching strategy centered around the use of educational games. This approach involves incorporating a game-based learning approach named the "Boom Box," which contains educational games designed to align with the curriculum. The fundamental objective of this innovative approach is to enhance the student learning experience providing them with a more effective and enjoyable learning environment that aligns with their capabilities and enhances their educational journey.

## Objectives of Implementation

The goals behind implementing this best practice revolve around evaluating the effectiveness of Boom Box Language Game Kit in enhancing the English language proficiency of Students with Learning Disabilities.

The precise objectives of this best practice are as follows:

1. **Enhance Focus and Interest:** One aim is to enhance the concentration and enthusiasm of LD students toward the English subject. This involves making the learning experience more engaging and compelling for these students.
2. **Improve Achievement:** Another objective is to improve the academic performance of LD students in the English subject. This means striving to enhance their understanding of the subject matter, thereby boosting their overall achievements in this area.

## The Best Practices Implemented

The development of this Boom Box game has a specific goal: to spark interest and improve the English proficiency of LD learners who face learning difficulties. The chosen topic for the game is 'A Bug's Life'. This topic was selected purposely due to its potential to captivate students' attention and facilitate learning. By focusing on this topic, the game aims to create a meaningful and relevant context through which

students can engage with the English language material. The Boom Box’s content is thoughtfully designed to align with the skills outlined in the Content Standards - Curriculum and Assessment Document (DSKP) for Year 5 English Language Learning Disabilities, as per KSSRPK guidelines. This ensures that the game is structured in a way that caters to the unique needs of LD learners, particularly those with learning difficulties.

To measure the progress, both before and after intervention, two assessments were carried out: a pre-test and a post-test. The post-test was administered to three LD students from the Emerald Class, which consisted of eight students. Additionally, the effectiveness of the implemented teaching approach was evaluated through observation. This involved closely monitoring the students during the learning sessions to gauge how well the game-based learning method was working in practice. This observational approach provided valuable insights into whether the students were responding positively and engaging effectively with the introduced teaching strategy.

Before implementing the game-based learning approach, a strategic plan was formulated to ensure its effectiveness. The purpose of this plan was to provide clear guidance to educators and facilitators involved in the implementation. It ensured that all essential elements were considered and executed in a coordinated manner. By following the outlined steps and strategies, educators were able to create an engaging and effective learning environment that catered to the unique needs of LD students. Refer to Table 1, which summarises the essential elements that played a pivotal role in effectively implementing the game-based learning approach.

**Table 1**  
*Implementation Phases of Best Practices*

<b>PHASE</b>	<b>DESCRIPTION</b>
<b>Phase 1:</b> Identifying Issues	Initial observations reveal that within the Emerald class, consisting of eight students, it was observed that three students were encountering challenges in comprehending the subject under study, titled 'A Bug's Life'. Further analysis of the pre-test outcomes revealed that these three students exhibited difficulties in accurately recognizing and identifying various insect names.
<b>Phase 2:</b> Planning Best Practice Actions	Upon recognizing the students' challenges, the teacher formulated a targeted intervention strategy to effectively tackle the identified issues. This involved a series of actions plan such as conducting extensive readings, internet research, engaging in thoughtful discussions with experts in the field of English education, and soliciting guidance from educators within the private school sector. The focus of this plan was to leverage the unique capabilities and features offered by Boom Box Game Kit; a tool designed to aid in educational interventions.

<b>Phase 3:</b> Implementing Best Practice Actions	<p>At this phase, the teacher implemented the focused intervention strategy with the aim of effectively addressing identified challenges.</p> <p>The intervention was conducted in every English language session, twice a week, for three consecutive weeks.</p> <p>The post-test was also conducted in this phase to measure students' achievement after receiving the intervention.</p>
<b>Phase 4:</b> Collecting and Analysing Data	<p>Three methods were employed to gather data: observation, pre-tests, and post-tests.</p> <p>The insights from the qualitative data were carefully studied to assess the efficiency of implemented best practice.</p>
<b>Phase 5:</b> Reflection on the Best Practice	<p>Following the intervention phase, the teacher conducted a thorough evaluation of all implemented actions and formulated plans.</p> <p>This practice of reflective analysis aided in identifying areas for refinement and personal development, thereby laying the groundwork for even more effective future learning strategies.</p>

### Implementation Steps During English Language Sessions

Three essential implementation steps require careful consideration when incorporating Boom Box Game Kit within English language sessions. The application of Boom Box encompasses three distinct stages of execution (See Table 2 for reference).

**Table 2**

*The sequence of actions to be undertaken during English language sessions*

<b>SEQUENCE OF ACTIONS</b>	<b>DESCRIPTION</b>
<b>Step 1:</b> Initiation of Lesson	<p>Prior to employing Boom Box, the teacher delivers instructive session on the subject at hand, 'A Bug's Life'. This step aims to establish foundational knowledge.</p>
<b>Step 2:</b> Interactive Engagement	<p>Following the teacher's explanations, students are given the opportunity to engage with Boom Box tool. This interaction serves to reinforce their understanding of the subject.</p>
<b>Step 3:</b> Transition to Written Practice	<p>Upon completion of Boom Box activities by all students, the lesson progresses into the next stage. Then, students actively engage in completing written practice activities found within the activity book. This component</p>

is designed to evaluate their comprehension of the material.

## Utilising Boom Box

This Boom Box Game Kit is inspired by the concept of an 'explosion gift box,' which is a surprise gift box designed in a way that it will "explode" as soon as its lid is opened, revealing images, messages, or contents inside.

**Figure 1**  
*View of the "Boom Box" Game Kit after its lid is opened.*



**Figure 2**  
Contents of Boom Box, comprising five sections.

**INSTRUCTION**

STEP 1 : Choose and press one colour on the fidget spinner.  
STEP 2 : Spin the fidget spinner until it stops on a picture.  
STEP 3 : Find the picture you get.  
STEP 4 : Find the name and its detail.  
STEP 5 : Write the name.

You can find all the things you need in the Treasure Box.

**SPIN**

**1. WHAT YOU GET?**

↓ ↓ Put my picture here ↓ ↓

**2. WHAT AM I?**

↓ ↓ Put my name here ↓ ↓

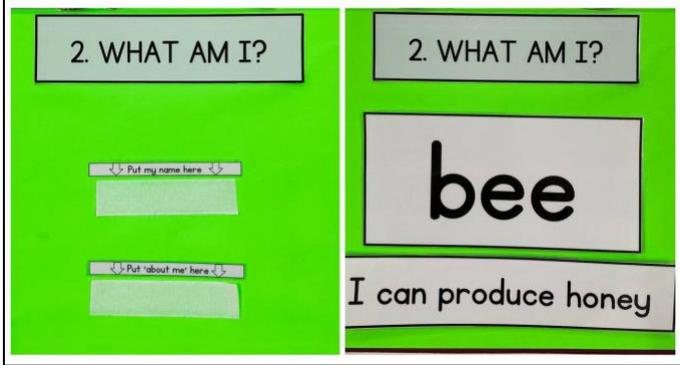
↓ ↓ Put 'about me' here ↓ ↓

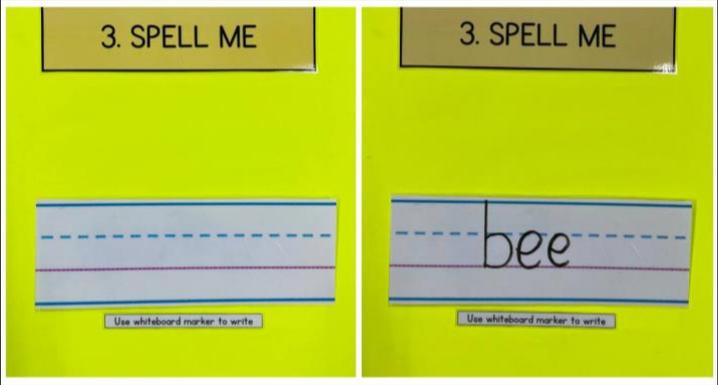
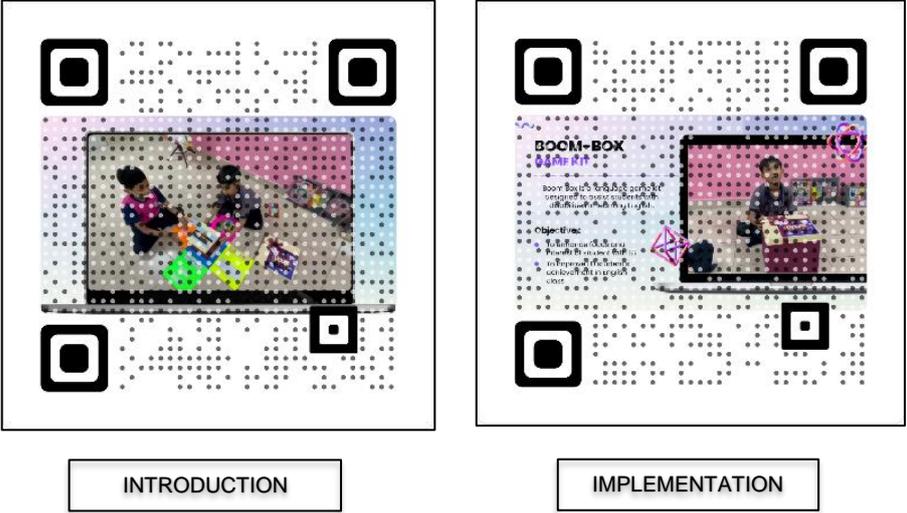
**3. SPELL ME**

Use whiteboard marker to write

## How to Play Boom Box

**Table 3**  
*Playing Instructions*

STEPS	DESCRIPTIONS
Step 1	Each student is required to choose a colour on the fidget spinner that will represent them.
Step 2	<p>Students will spin the fidget spinner until it stops at an insect picture.</p> 
Step 3	<p>Following that, students will answer the first question: “<i>What Do You Get?</i>”                      Students will then search for the matching image in the treasure box.</p> 
Step 4	<p>Students will answer the second question: “<i>What Am I?</i>”                      Subsequently, students will look for the name and description of the relevant insect in the treasure box.</p> 
Step 5	At this stage, students will answer the third question:

	<p><b>“Spell Me”</b> Students will write the name of the insect using a marker pen.</p> 
Reference	<p>Scan the QR Code to watch videos about Boom-Box</p> 

## Impact of Best Practices Implemented

### Reflection on the Best Practice

During induction session, I started the lesson by showing to the pupils a video about insects. Then, the learning session continued by naming the types of insects and their characteristics. Each pupil names each insect and its characteristics with the guidance of the teacher. The following step was a game session using Boom Box held in groups and individually for the three samples. After that, the learning session continued with a writing exercise and ended with singing a song about insects as a closure.

Overall, my teaching and learning sessions were conducted effectively according to the established plan. The pupils were observed to be attentive during the learning session, especially with the use of the Boom Box, and they were able to achieve the intended learning objectives.

## Observation Analysis

Based on observations, it was found that students demonstrated interest and enjoyment while engaging in Boom Box activity. Students were seen to be more focused and made an effort to remember each insect's name whenever responding to questions within the game. Furthermore, the learning environment underwent a positive transformation, leading to enhancement of students' levels of achievement in the topic being studied.

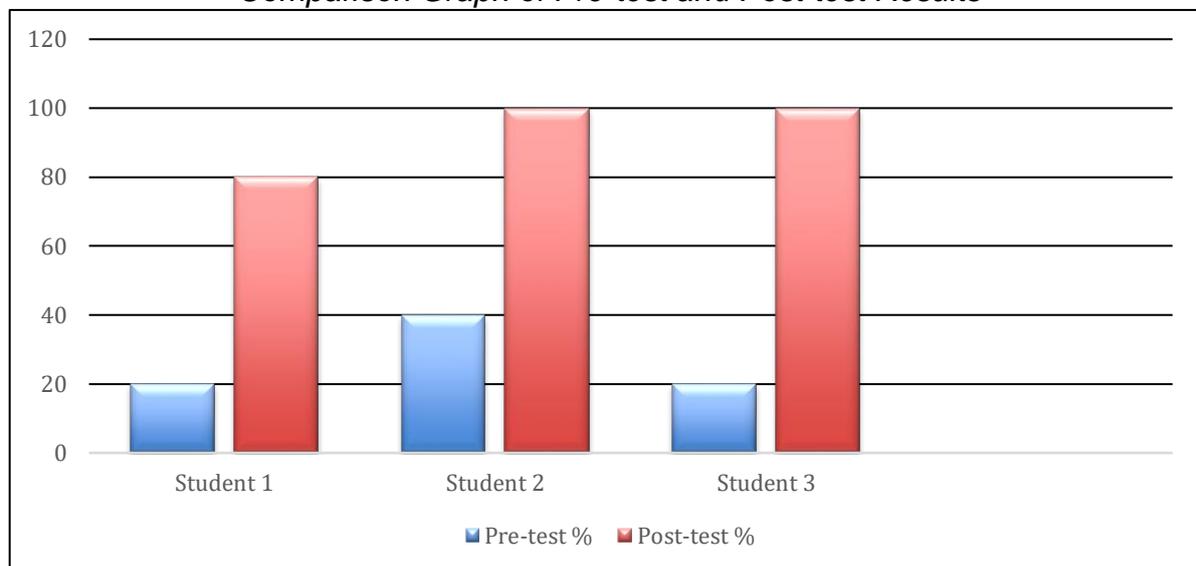
## Pre-test and Post-test Analysis

The outcomes of both the pre-test and post-test were assessed to discover the variations in students' performance before and after the intervention was implemented. The achievement results for both test types are presented in the following table:

**Table 4**  
*Pre-test and Post-test Results*

No	Respondent	Pre-test %	Post-test %
1	Student 1	20	80
2	Student 2	40	100
3	Student 3	20	100

**Figure 3**  
*Comparison Graph of Pre-test and Post-test Results*



Based on Table 4 and Figure 3, it can be observed that there has been an improvement in the achievement results for all three students in both the pre-test and post-test conducted. It becomes apparent that the performance outcomes of all three students have shown signs of improvement after undergoing both the initial assessment (pre-test) and the subsequent assessment (post-test). The first and second students experienced a 60% increase in their post-test scores than their scores in the pre-test. On the other hand, the third student displayed a more substantial improvement, achieving an 80% increase in the results shown between the two tests. In summary, the students' academic performance has advanced, with

noticeable progress between the pre-test and post-test assessments. The extent of improvement varies, with the third student showing the most significant enhancement in the results.

## **Summary and recommendations**

At its core, the challenges faced by students with learning disabilities (LD) in learning English are rooted in their limited cognitive abilities and difficulties in sustaining focus. Recognising that each student possesses a unique cognitive capacity and distinct learning style, the initiative is tailored to accommodate these individual differences. Moreover, this initiative is not merely a response to these challenges, but a strategic approach to creating a supportive learning environment for LD learners. By integrating specialised teaching methods, interactive tools, and engaging activities, educators can effectively counteract the limitations of cognitive abilities and attention spans. This, in turn, empowers LD learners to actively participate in the learning process, promoting a more comprehensive understanding of the English language. As cited by M Mokhtar, MHM Yasin, MM Tahar (2020), that the learning process will be more effective when learning through play is applied to learners with special needs.

Hence, the implementation of Boom Box Game Kit provides a dynamic tool to foster equal participation, improve comprehension, and create an inclusive learning environment where all students can thrive. The implementation of this best practice further validates that a game-based learning approach is among the most effective methods to help students focus and enhance their interest during learning sessions. As mention by Ali and Zamri (2014), playing is the most effective way for students to learn a language topic. With the promising results obtained, it can be inferred that the objectives of implementing this best practice have been achieved, as the level of proficiency of the students in the English subject has been enhanced. The effectiveness of this approach is further demonstrated by observations during the learning sessions. Students were able to focus and show strong interest when using Boom Box Game Kit.

It is hoped that the implementation of this best practice will provide guidance, direction, and encouragement for educators to consistently remain creative and innovative in their approach, ensuring that no student is left behind and that every individual benefits from the educational experience in a meaningful and impactful manner.

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