



# **ENHANCING COGNITIVE SKILLS**

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## Enhancing cognitive skills

People perform hundreds of cognitive tasks every day without being aware of the effort involved or the attention that each requires. Think of the vocabulary needed to give meaning to situations, noticing colours, remembering names and even just looking at a clock to tell the time. Different areas of the brain are constantly active, depending on the task being performed or the focus that it demands. We have many distinct types of cognitive abilities that we use to give meaning and provide enrichment in our lives.

Following comprehensive research, Boston Language School has developed a programme of activities to challenge participants in an environment that is entertaining and enriching. This programme includes Reading for Results, to stimulate reading fluency and enhance memory abilities, and numerous games including Crossword Puzzles, Find the Words, Improve Vocabulary, Improve Vocabulary in Different Contexts and Following Instructions and Vocabulary. Each of these has been developed to stimulate mental functioning and inspire. They are also fun to complete!

Crossword puzzles, word searches, and vocabulary games offer more than just entertainment; they actively enhance cognitive functioning. These word-based activities stimulate various mental processes, including memory, problem-solving, and language skills. When solving crossword puzzles, individuals recall words and their meanings, exercising memory and expanding vocabulary. The challenge of finding words in a jumble sharpens analytical thinking and pattern recognition. Moreover, these games encourage attention to detail and the ability to decipher clues and contexts, promoting critical thinking. Consistent engagement with such activities can boost cognitive resilience, potentially reducing the risk of cognitive decline as individuals age. By fostering mental agility and vocabulary enrichment, word games contribute to lifelong learning and mental well-being.

# RESEARCH

## Research on language activities

Research on the benefits of crossword puzzles, vocabulary games, and word searches for language learning is a topic that has been explored by various researchers and educators over the years.

**Some of the researchers who have contributed to this area of study include:**

- **Charles Perfetti:** A prominent researcher in the field of reading and language comprehension, Perfetti has explored vocabulary acquisition and the role of context in word learning.
- **Linda Gottfredson:** Her work in psychometrics and cognitive psychology has implications for understanding how cognitive abilities, including word knowledge, impact language learning.
- **Keith Stanovich:** A researcher in the psychology of reading and language development, Stanovich has examined the role of word knowledge in reading comprehension.
- **Thomas Cobb:** Known for his work on computer-assisted language learning, Cobb has studied the effectiveness of vocabulary games and activities in language acquisition.
- **Paul Nation:** A leading expert in vocabulary acquisition, Nation has researched various methods for learning and teaching vocabulary, including the use of games and activities.

**Research suggests that crossword puzzles, vocabulary games, and word searches can offer several benefits for language learning:**

- **Vocabulary expansion:** Engaging with these games exposes learners to new words and phrases, helping them expand their vocabulary.
- **Contextual learning:** Solving puzzles or word searches provides context for vocabulary, aiding in better retention and understanding.
- **Cognitive benefits:** These activities stimulate cognitive functions such as memory, problem-solving, and pattern recognition, which are valuable in language acquisition.
- **Spelling and pronunciation:** Crossword puzzles and word searches encourage correct spelling, and by extension, proper pronunciation.
- **Fun and motivation:** The enjoyable nature of these games can enhance motivation and engagement in language learning.
- **Variety in learning:** They offer a break from traditional language learning methods, adding variety to study routines.
- **Cultural understanding:** Crossword clues and word search themes can introduce cultural and contextual aspects of the language.

While these games are valuable tools, they are most effective when used in conjunction with other language learning activities such as reading, listening, and speaking practice to ensure a holistic approach to language learning and development.

### **Pillars of Language Acquisition**

It is widely accepted that the learning of a language rests on four pillars: writing, reading, listening and speaking. However, there is much criticism of the teaching of these four pillars in isolation as opposed to recognising their interrelationship. This is simply a fragmented way of teaching a language that does not encourage overall language fluency. An additional criticism is that the listening and speaking aspects are compromised at the expense of the reading and writing.

Boston Language School is cognizant of the four pillars of language learning and the possibility of a fragmented approach. For this reason, Boston Language School has developed enriching listening and speaking sections that address a cohesive approach to language learning. The AI speaking app encourages students to hone their pronunciation and correct sentence construction, while the listening comprehensions enhance active listening skills and connect to learning in writing and reading, for example, listening to and responding to articles and reviews.

## Assessment

Assessing English language proficiency using a combination of games and multiple-choice assessments is an innovative and research-supported approach. Research has shown that incorporating gamified elements into language assessments can enhance motivation, engagement, and test performance. The interactive nature of games can reduce test anxiety and make assessments more enjoyable, particularly for younger learners and those new to the English language.

Research also indicates that multiple-choice assessments, when well-constructed, are effective in evaluating a wide range of language skills. They provide a standardized and objective way to measure vocabulary knowledge, grammar understanding, and reading comprehension. In addition, multiple-choice questions can efficiently assess listening skills by presenting audio clips followed by answer choices.

When combined, these methods can provide a comprehensive picture of an individual's language proficiency, covering aspects of receptive and productive skills. Research supports the idea that this combination is particularly effective in educational contexts.

Boston Language School has ensured the quality of both the games and multiple-choice questions, as well as the alignment with language proficiency standards. The focus has been on validity, reliability, and fairness to ensure accurate and equitable results for all students.

## STRUCTURE

The Enhancing Cognitive Skills platform has been divided into five levels to accommodate all levels of language ability. These levels are progressive in that they become more challenging as participants move through the different stages.

### Level 1

Level 1 is aimed at beginner English speakers. A beginner language speaker is someone who has just started learning a new language and has very limited or basic proficiency in that language. Beginner language learners typically have a limited vocabulary, basic understanding of grammar rules, and may struggle with pronunciation and fluency.

There are 34 weeks in this level, and each week consists of the following activities that need to be completed:

#### Games

Phonics: Complete the sentences  
Logic and reasoning: Crosswords  
Instructions and vocabulary  
Improving vocabulary: Drag and drop  
Improving word recognition: Word search

#### Oral

Read Aloud  
Speak Solo

#### Reading

Comprehension: Reading for results

#### Spelling

Enhanced listening skills: Listening comprehensions

## Level 2

Level 2 is aimed at lower-intermediate English speakers, those who have a basic understanding of the language. A lower intermediate speaker might have a slightly more extensive vocabulary and a somewhat better grasp of grammar compared to a basic or beginner learner. They may be able to engage in more extended conversations on familiar topics but still struggle with more complex language structures and advanced vocabulary.

There are 34 weeks in this level, and each week consists of the following activities that need to be completed:

### Games

Vocabulary in context: Complete the sentences

Logic and reasoning: Crosswords

Instructions and vocabulary

Improving vocabulary: Drag and drop

Improving word recognition: Word search

### Oral

Read Aloud

Speak Solo

### Reading

Speed reading and memory: Reading for results

### Spelling

Enhanced listening skills: Listening comprehensions

## Level 3

Level 3 is aimed at intermediate English speakers, those who have a functional knowledge of the language and who possesses a moderate level of proficiency. This level typically falls between the beginner or basic level and the advanced or fluent level. Intermediate speakers can usually communicate effectively in everyday situations, understand and participate in common conversations, and handle routine tasks in English.

There are 10 weeks, and each week consists of the following activities that need to be completed:

### Games

Vocabulary in context: Complete the sentences

Logic and reasoning: Crosswords

Instructions and vocabulary

Improving vocabulary: Drag and drop

Word search

### Oral

Read Aloud

Speak Solo

### Reading

Speed reading and memory: Reading for results

### Spelling

Enhanced listening skills: Listening comprehensions



## Level 4

Level 4 is aimed at intermediate–advanced English speakers. A participant at this level might have a solid grasp of grammar and vocabulary but may still struggle with complex conversational nuances or fluency. They can hold conversations and understand a range of topics but may not be completely comfortable in all situations.

There are 10 weeks, and each week consists of the following activities that need to be completed:

### Games

Vocabulary in context: Complete the sentences  
Logic and reasoning: Crosswords  
Instructions and vocabulary  
Improving vocabulary: Drag and drop  
Improving word recognition: Word search

### Oral

Read Aloud  
Speak Solo

### Reading

Speed reading and memory: Reading for results

### Spelling

Enhanced listening skills: Listening comprehensions

## Level 5

Level 5 is aimed at advanced English speakers. An advanced language speaker is someone who has achieved a high level of proficiency in a particular language. Advanced speakers have a deep understanding of the language's grammar, vocabulary, and cultural nuances, allowing them to communicate effectively in a wide range of contexts. The purpose of this level is to allow advanced speakers to refine their skills further.

There are 10 weeks, and each week consists of the following activities that need to be completed:

### Games

Vocabulary in context: Complete the sentences

Logic and reasoning: Crosswords

Instructions and vocabulary

Improving vocabulary: Drag and drop

Improving word recognition: Word search

Improving vocabulary: Word cards

### Oral

Read Aloud

Speak Solo

### Reading

Speed reading and memory: Reading for results

### Spelling

Enhanced listening skills: Listening comprehensions

# ACTIVITIES

## Reading for Results

Reading rate is the number of words a person can read accurately in a minute. It is important for people to be able to read correctly and at a consistent rate as this improves their reading fluency. If people are unable to read fluently, their engagement with the world will be compromised.

The Reading for Results course has been designed to improve people's reading skills and fluency. Each Reading for Results extract has been written in an accessible and academic style, suitable for specific levels, to give participants practice in reading. The extracts are followed by questions to test recall of facts that have been read. This is to encourage focused reading for meaning and enhance memory skills.

Participants are able to monitor their own reading rate at Levels 3, 4 and 5 as the reading of the extract will be timed. Following this, they will be required to answer the questions from memory without access to the extract. This will allow participants to assess themselves in terms of reading rate and memory skills.

**There are numerous benefits to this course including:**

- Improving memory skills
- Progressing at an individual pace
- Monitoring personal progress
- Improving comprehension and understanding of extracts
- Assessing different styles and registers

## Language Games

The games have been designed to allow participants to improve their language skills but also to inspire to have fun while improving cognitive functioning.

### Crossword Puzzles

Not only do crossword puzzles improve logic and reasoning, but they boost executive brain functioning in terms of recollection of words and improving vocabulary. Finding a specific six letter word can be frustrating but reaching for a dictionary for assistance is beneficial as this also enhances reading and deciphering abilities. There is a sense of satisfaction when a crossword puzzle is completed which leads to improved self-confidence and being ready to begin the next one!

### Drag and Drop

Drag and drop exercises are a fun way to improve vocabulary and grammar skills. Words or groups of words have to fit into sentences or phrases in such a way that they are correct within specific semantic contexts but also in terms of grammatical structures. This enhances memory and vocabulary skills but choosing the correct word or words to drag and drop also stimulates sorting, ordering and organising pre-listed items.

### Word Recognition

Trying to find words within a maze of letters improves word recognition which is a vital skill in reading fluency. These games also improve memory recall and vocabulary.

### Complete the Sentences

These exercises challenge participants in that they need to find the correct words that fit into sentences in terms of semantic contexts but also correct grammatical structures. These are fun activities that stimulate sorting, ordering and organising pre-listed items, thus improving memory and vocabulary.

### Instructions and vocabulary

These tasks challenge participants in that they need to read instructions, remember them and then follow them, so they are valuable in terms of exercising short term memory. They also involve sorting, ordering and organising pre-listed items, thus improving memory and vocabulary.

### Definitions and vocabulary

These word cards give participants the meanings of challenging words and the answers to general knowledge questions, and then there are quizzes to test recall. These games increase general knowledge and improve vocabulary and memory skills.

# OUTCOMES

## Crosswords

- Enhanced vocabulary and spelling skills.
- Improved problem-solving and critical thinking abilities.
- Exposure to new words and their definitions.

## Instructions and Vocabulary

- Improved understanding of common instructions in English.
- Expanded vocabulary related to everyday tasks.
- Enhanced comprehension of how-to guides and directions.

## Drag and Drop

- Improved digital literacy and computer skills.
- Enhanced vocabulary through interactive exercises.
- Practice in organizing and categorizing information.

## Word Search

- Strengthened word recognition and spelling skills.
- Increased visual scanning and pattern recognition abilities.
- Exposure to a variety of English words in a fun format.

## Read Aloud

- Improved pronunciation and fluency in reading.
- Enhanced comprehension of written texts through verbalization.
- Confidence building in reading aloud to others.

## Speak Solo

- Increased confidence in speaking independently.
- Improved fluency and articulation.
- Practice in expressing thoughts and ideas without assistance

## Reading for Results

- Improved ability to extract key information from texts.
- Enhanced reading comprehension for specific purposes.
- Better understanding of texts in different contexts.
- Enhanced comprehension and vocabulary development.
- Improved reading speed and comprehension skills.
- Exposure to different writing styles and genres.

## Spelling

- Strengthened spelling skills and accuracy.
- Increased familiarity with common spelling patterns.
- Improved written communication skills.

## Listening Comprehensions

- Enhanced listening skills, including understanding different accents.
- Improved comprehension of spoken English.
- Practice in following and understanding oral instructions.

# GAMIFICATION

Incorporating gamification into English learning is a valuable strategy to create a dynamic and effective learning environment. It can benefit students of all ages, making the language acquisition process more enjoyable and successful.

Not only does gamification result in improved retention but games require students to solve problems, make decisions, and apply their knowledge in real-world contexts. This active learning approach can improve the retention of English language skills and vocabulary because it reinforces learning through practical application.

Schools have the opportunity to launch competitions amongst students. Gamification makes learning more fun and interactive. Students are often more engaged and motivated when they have the opportunity to play games, earn points, and compete with their peers. This heightened engagement can lead to better retention of language concepts.

## Reporting

Participants can see their results immediately after completion of each game and activity. These results are recorded, and participants can then also receive a report with a summary of results of each section and level of the programme.

Reports are also available weekly to allow students the opportunity to improve the results they achieved following the weekly activities.

### Benefits of participating in the programme:

Participating in the programme has numerous benefits including the following:

- Enhanced memory
- Improved vocabulary
- Improved sorting, ordering and organising information
- Increased reading speed and fluency
- Improved logic and reasoning
- Improved general knowledge
- Progress at individual pace
- Improved language skills

## Duration

It is expected that participants spend four to five hours per week in each level.

Levels 1 and 2 should take 34 weeks to complete which is the length of the academic year. The lessons in these levels have been designed to provide enrichment and stimulation for beginner speakers, who will need determination, enthusiasm, and effort to begin the language learning journey. Learning a new language can be challenging, especially at the beginning, and it often requires a push or a strong initial commitment to get started. Ultimately, consistent practice and dedication are key factors in achieving proficiency in a new language.

Levels 3, 4 and 5 should take 10 weeks to complete. These levels aim to strengthen language skills, expand vocabulary, and prepare learners for real-life communication. In addition, the advanced level focuses on achieving high proficiency, mastering complex structures, and specialized language use.

## ENDORSEMENT

### Enhancing Cognitive Skills and your child's development

#### **An endorsement by Dr Laura Fisher PhD (Psychology)**

Enhancing Cognitive Skills is a course poised to cultivate and nurture children's mental processes, assisting them in developing and improving various skills related to their cognition and mental processes.

Erik Erikson (1902-1994) was a formidable force in developmental psychology. His work continues to influence cognitive psychology today. His theory of psychosocial development provides a comprehensive understanding of how cognitive abilities develop in the broader context of social and emotional growth. Erikson's theory suggests that individuals experience eight stages of psychosocial development throughout their lifespan. Each stage presents a unique conflict or challenge that must be resolved to progress to the next stage successfully. The fifth stage, which occurs during childhood (around 6-12 years old), known as "Industry vs. Inferiority", is when children begin to develop a sense of competence and accomplishment through their interactions and activities in school and with peers.

Enhancing Cognitive Skills will profoundly advance children through the "Industry vs Inferiority " stage. It will help children develop the cognitive abilities and skills needed to successfully handle their academic and social challenges, leading to a greater sense of competence and self-esteem.

The concepts and skills taught in the course, such as problem-solving, critical thinking, and executive function, are also crucial for successful development in later stages of life. They provide the foundation for future challenges and acknowledge the importance of addressing and enhancing cognitive skills during childhood.

As children see improvement in their cognitive skills through this course, they will gain confidence in their abilities, leading to a more positive attitude towards learning and tackling new challenges. This course will ultimately provide children with a strong foundation for academic success and personal growth, empowering them to reach their full potential.