



## Visual, Tactile and Motor Grammar Learning in the Project-Based Approach

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### Abstract

*The Project-Based Approach (PBA) to young foreign language learning has been introduced in primary teaching (children aged 5–11) to combine the lexical approach, project work and socialisation, while at the same time supporting the neurology of learning, which is the basis for academic learning. Since children up to 12 years of age cannot yet comprehend abstract thinking, the PBA introduces visual and tactile sentences, stories and grammar, created with flashcards. Visual-motor integration and hand-eye coordination are employed to execute the activities, which enable better procedural thinking and understanding, as well as enhancing imagination and divergent thinking. In order to comprehend the time concept, specific rhythmic and movement games are integrated and tailored to the context covered. Cooperating with peers makes the activities highly motivating (as a change from digital technology), and children enjoy the challenge of being able to understand abstract knowledge (grammar) by the age of 11.*

**Keywords:** *lexical approach, project work, socialisation, hand-eye coordination, visual-motor integration, primary school language learning.*

### 1. Introduction

The traditional practice when introducing a foreign language to young learners is to teach children vocabulary; children's memory works brilliantly, and they can memorise things quickly. In order to facilitate memorisation, coursebook chapters are divided by topic and activities are gamified (learning by association and through action). Since children cannot yet comprehend a lecture on abstract knowledge (grammar) due to their developmental stage, the traditional 'coursebook' approach teaches isolated vocabulary and random structures; the focus is only on learning a language by heart, while meaningful communication is not taught.

Compared to the 'coursebook' approach, CLIL, Language Immersion and Content-Based Instruction (CBI) have shown better social and academic results. When students are immersed in communication, peer interaction and are interested in material they are learning they are intrinsically motivated and can achieve more [1], [2]. Learning a language through content, or lexically (through chunks: polywords, collocations, institutionalised expressions) [3] makes language useful and meaningful.

According to the learning skills pyramid (Fig. 1), cognitive learning is possible only when neuro-sensory-motor integration is well developed to establish healthy conditions for socialising, learning to communicate and, lastly, developing strategies for academic learning.

The Project-Based Approach (PBA) is a CBI for young learners; the content is a project and the language learning promotes communication. Projects subtly and systematically integrate language and social skill learning through steps. The activities stimulate sensory and motor functions at an early age in order to establish the conditions for effective academic learning. From the age of nine, the activities address academic learning through visual, tactile and motor engagement. Each PBA activity has different levels, so that it can address children with different abilities within the same age group.

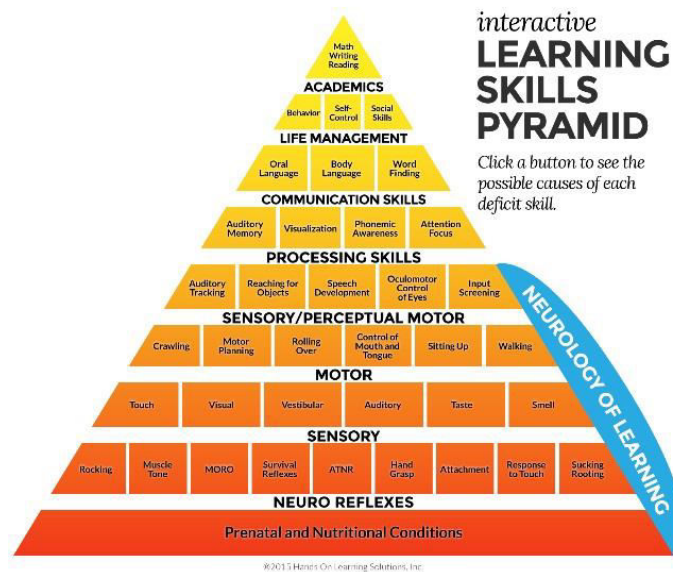


Fig. 1: Learning Skills Pyramid (Hands On Learning Solutions, 2015)

## 2. Methodology of the PBA

The PBA model was developed in small groups (up to eight children) to establish a framework. Later, it was put into practice in public schools with groups of up to 30 children. Projects address various themes through five steps with a set of activities combining social, motor, sensory and language skills.

### 2.1 Age 5 to 8

Children experience *the use of language* through a varied set of activities, while at the same time practising sensory, social and motor skills. They are immersed in the project through a story; in this way, the language is presented in a mixed-topic context (rather than being divided by topic) in which vocabulary and grammar are embedded in the story. The story makes the learning process *meaningful*.

The activities used in the PBA are called *serious games* [4]; they have all the elements of a game, but what the players win is knowledge. Games make language learning *engaging* and enable children to interact with their peers, which makes the learning *natural*.

The activities are organised so as to address the *children's point of view*, where everything is a game with their peers and they are motor, sensory and tactile engaged.

### 2.2 Age 9 to 11

In this period, children are already asking for clarification of specific grammar rules; however, explaining rules abstractly is not met with understanding. 'Showing grammar' through visual, tactile and motor activities, on the other hand, makes it understandable. Building sentences by arranging vocabulary and grammar flashcards, changing their positions and relating them to other flashcards [9] helps children to explain sentence structure, the plural of nouns, the time concept, grammar tenses, the relationship between question words and parts of speech, the use of auxiliaries, the forms of verbs in relation to tenses, and the use of prepositions. In order to address sensory and motor skills through grammar learning, and to prepare the brain for a higher state of performance (flow) [5], one specific three-beat rhythmic game, based on the 'We Will Rock You' (WWRY) beat by Queen, is employed (See Fig. 2).

## 3. The model of the PBA framework

The well-structured framework has five goal-oriented steps for the teacher to follow. Each step focuses on different language and social skills, which, followed sequentially, enable the children to understand the content (project), use (and learn) the language, and benefit from cooperation.

### 3.1 Step one: OPENING THE THEME

The theme is opened through storytelling. The main aim of this step is for the children to understand the gist of the story (global understanding – listening skill) from which the whole project is developed.



Through the three parts of the storytelling (pre-storytelling, storytelling and post-storytelling activity), motor and sensory skills as well as pre-literacy are addressed.

### 3.2 Step two: DO IT YOURSELF

The children take relevant pieces of information (vocabulary, chunks and the relevant 'grammar') from the story presented and create a new, similar story through open-question instructions. For example, they choose the character's friends, family, the place they live, the clothes they wear, the food they eat, etc., and create a drawing based on their choices.

The activity centres on practising focused listening, fine motor skills and pre-literacy (introducing writing). The children create the worksheets themselves while using the language they believe is important to them, thus establishing personal attachment, which consequently enhances motivation.

### 3.3 Step three: SOCIAL GAMES

For lexical and meaningful learning, grammar and vocabulary are embedded in gamified activities (*serious games*).

Flashcards are used as isolated words (pieces of information), which, in the context of games, acquire the linking text according to different situations. While playing, the children create sentences: they ask questions, give answers, use different structures, etc. The WWRY rhythmic game provides the basis for a gamified activity that addresses different sensors and enhances focus and concentration, while also introducing time (past, present, future) and sentence structure (the 3-beats relate to subject-verb-object/time).



Fig. 2 Rhythmic game (author's archive)

### 3.4 Step four: LITERACY

The children learn how to present a structured topic. The activities should be introduced sequentially, as listed below, with each new activity commencing only after the previous one has been comprehended.

**Reading picture books** (from the age of eight). A colour-coded reading method [6] helps the children to connect sounds to letters through story reading.

**Visual and tactile sentences** [8] (Fig. 3) (from the age of eight). The children take flashcards (words) from the unique Picture Dictionary (The Theme and Alphabet House) [7], [8], and create sentences on a pre-structured chart. When placing a word in its proper location, or changing its location according to its use, the children employ hand-eye coordination (tactile activity). In the process, they become familiar with certain question words, parts of speech (subject, noun, verb) and prepositions.

**Text activities** (from the age of eight/nine). Using a text prepared on the theme covered in the project, the children learn how to determine text structure (introduction, body, conclusion), how to find information in a text, how to understand an unknown word from the context, and how to find grammar that has already been practised through visual sentences.



Fig. 3 – Visual and tactile sentences (author's archive)

**Visual and tactile story** [8] (Fig 4) (from the age of nine). Organising visual sentences chronologically, the children create a story. Through a tactile activity, they learn about parts of speech, question words, word order, the time concept, tenses and their auxiliaries.

**Word-web** [8] (from the age of ten). Word-web is a tool similar to a mind-map. It helps the children to understand word order, parts of speech, question words and grammar, without using flashcards.

**Visual and tactile grammar** [8] (Fig. 5) (from the age of ten). A tactile, visual and colour-coded activity helps the children to understand sentence structure, question words, parts of speech and some relevant grammar.

**Poster writing** (from the age of ten). The teacher writes a project-related text on a poster. The children help her/him by dictating relevant sentences.

**Text writing** (from the age of ten). The children write a structured text on their own, based on a known theme, with the help of a structured mind-map, using all of the acquired knowledge.



Fig. 4 – Visual and tactile story (author's archive)

### 3.5 Step five: LISTEN, PRESENT AND RESPOND

The children orally present a project-related theme or convey a meaningful message.

**Giving/executing instructions.** One child gives another child instructions, and the second child executes them.

**Finding the correct information in a spoken text.** The children listen to a short story and mark the objects/information in an illustration according to the instructions.



**Poster/theme presentation.** The children present a known story or theme with the help of illustrations to guide them through the presentation.



Fig. 5 – Visual and tactile grammar (author's archive)

#### 4. Conclusion

In practice, the PBA has shown better results than the traditional 'coursebook approach'. Children instructed using the PBA from the age of five cooperated better and were more eagerly engaged in activities than their peers using the 'coursebook approach'. Moreover, they took responsibility for their learning.

By the age of eleven, the children communicated in English: they followed English instructions easily and spoke or wrote in English using all of the basic tenses (simple past and present, progressive past and present, GTF and WF) while presenting a structured and familiar topic. In spontaneous conversation, they still mixed tenses to express the future, sometimes choosing the incorrect form of the verb, and sentence structure was influenced by their mother-tongue. However, the message was consistently conveyed.

Visual, tactile and motor grammar learning has proved to be a very good approach for children who have learning disabilities, as hand-eye coordination helps them with their procedural thinking.

The PBA can be effectively used in institutions where foreign language instruction is limited to 2–3 hours per week, with only appropriate flashcards [9] and picture books required. Moreover, the same PBA model can be used for any language, not only English.

Practice has shown that children enjoy the challenge presented by the PBA; they are highly motivated and not afraid to speak. It is, however, more challenging for teachers to accept language as a communication tool rather than as an object of learning as in a 'coursebook' approach.

For the above observations to be confirmed, further research should be undertaken.

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