



A Project to Promote English Learning in Primary School: “An English Island®” E-learning Platform

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Abstract. The present study was aimed to investigate English learning as second language, in school, in first, second and third graders of twelve classes randomly assigned to a control or an experimental group. Children in the latter are exposed during English school teaching to the method “An English Island®” and to its platform activities. The method “An English Island®” offers a variety of strategies for teaching English in primary school, an innovative digital tool that promotes teaching/learning English language’s communicative approach, lead students to become familiar with the language in a sort of continuous, inclusive workout, in which everyone participates and talks.

English skills as well as cognitive abilities are tested in both groups at the beginning and at the end of the school year with the aim to compare control and experimental classes in both a longitudinal and a cross-sectional design.

Keywords: English learning · English teaching · Primary school · English communicative skills

1 Introduction

According to the M.I.U.R. National Guidelines for nursery and primary schools (September 2012, p. 37), “in learning languages, motivation comes from the students’ natural aptitude to communicate, socialize, and interact as well as from their willingness to “*exercise their tongues*” [1].

Thus, the *communicative* aspect prevails when the starting point is the oral language. Because of the lack of linguistic transparency in English, the written language gets in the way, causes errors, and creates disparities in students with SLD, Specific Learning Disabilities, or other problems [2]. *Writing*, especially in primary school, means *speaking on paper*, and it is about arriving at spelling only after being *spoken correctly*.

In order to keep the children's motivation alive and steady, it is important to use multi-sensory strategies, presenting information through different methods. In addition, the effectiveness in the learning phase of integrating sensory input through other channels is now recognized.

Factors such as stress and anxiety are reduced by increasing communication skills, motivation, and self-esteem, highlighting that “both activity and direct personal experiences—games, physical activities—play a fundamental role in children's development and early learning” [3].

The different phonemes and graphemes between the English and Italian languages should always be considered so as not to create difficulties in understanding and speaking [4]. The child must become familiar with the sounds and sound differences always associated with the meaning/phoneme through conscious and unconscious assimilation” [5]. Consequently, the language becomes proactive communication, with “language learning based on the children's recognizing their ability to communicate with others, their sensitivity to visual attention, and a desire to imitate” [6].

The method “*An English Island*®” uses a series of didactic strategies to transform the role of the teacher, who becomes coach and observer, and directs the learning process, focusing closely on the learner role (*learner-centred*) and the learning process (*process-oriented instruction*).

The “*An English Island*®” methodology develops a “*circular learning path*” that activates three expressive languages (mime, visual, and oral) to fix almost simultaneously the elements by association. The synergy of these three languages helps to create the *mental/physical grooves* that, developed over time, expand through habit and repetition and help to create familiarity. Thanks to this mental groove, created through mime and drawing, the child can globalize the written word with the oral one and read it correctly.

Thus, written language is introduced gradually, as shown by recent studies: “Among the multiple language competences to be pursued, writing is definitely the lowest priority in primary school, also in consideration of specific learning difficulties (dyslexia, dysgraphia, dysorthography) that usually emerge at this school level and that may be, in some way, also increased in the mother-tongue by an approach to English which focuses too much on writing” [7].

An innovative approach to teaching and teaching foreign languages cannot ignore the issues of inclusion and the personalization of teaching-learning paths. The method “*An English Island*®” offers a variety of strategies for teaching English in primary school that, through codified modalities, seek to achieve the same goal: to develop oral communication skills in all children.

“The use of the spoken language should be introduced by the teacher in a systematic way, proceeding gradually according to the complexity of the language structures presented” [7]. On the other hand, speaking English for the child has to become a natural activity, preferably integrated with the use of creative and interactive games that can be supported by other nonverbal languages (music, movements, images, etc.) to promote participation and involvement in cooperative learning activities [8, 9].

Finally, creating a learning environment that responds to metacognitive teaching canons will enhance the development of a generation of people who will know how to

navigate in a constantly and unpredictably changing panorama of life by being effective problem solvers and lifelong learners.

2 Learning English as Foreign Language

The research on foreign language learning suggested that it is a complex skill, largely based upon native language proficiency. Sparks and Ganschow [10, 11], for example, analysing learning and cognitive profiles of high school and college students, showed that foreign language learning is built on phonological-orthographic and syntactic skills in native language, according to the Linguistic Coding Difference Hypothesis – LCDH they developed following their evidence. LCDH predicts that students with weaker native language skills, particularly in grammatical knowledge and sensitivity as well as sound-symbol association and language phonology, may show poor foreign language proficiency [12].

The involvement of L1 processing in FL learning was confirmed by several studies conducted within different languages. For example, a series of studies conducted on Finnish young student, learning English as foreign language, demonstrated that phonological-orthographic ability in L1 and phonological memory are prerequisites for learning English as foreign language [13–15]. Moreover, an association between native reading decoding skills and second language learning has been observed. FL proficiency was explained by the ability of word reading in L1 [16]. Similar results were obtained with a group of college students: The authors found that the native language decoding skills predicted students' second language proficiency [17].

Some studies have been conducted with Italian students learning English as foreign language. Young Italian students with Difficulties in Learning English as Foreign Language (FLLD) were compared to control students without difficulties [18] on memory measures both verbal and visuo-spatial. Results indicated that poor components of verbal working memory are related to students' foreign language learning difficulties. These students showed also weak ability in phonological sensitivity [18], again verbal skills. Indeed, phonological sensitivity, a broad terms that refer to the analysis and manipulation of the sub-components of spoken word forms, including specific processes such as blending, deleting, and synthesising the speech units [19] seemed to be relevant not only to native language acquisition and reading abilities [20, 21] but also contribute to a correct analysis, representation, and manipulation of a new phonological trace during foreign language learning [22]. However, it should be noticed that due to the high transparency of Italian orthography, Italian readers can use effectively a phonological strategy (i.e. a direct grapheme to phoneme conversion) but, such phonological strategy seems not effective in English, due to its low orthographic regularity [23]. Palladino et al. [24, 25] demonstrated how children with dyslexia may have trouble in learning to read and to write in English as second language. However their performance were not completely negative since reading non-words appeared comparable to peers without dyslexia and in spelling errors were mainly phonological. Non phonological errors were comparable between same age groups, with or without dyslexia.

In the Italian context, the article 5 (point 2c) of the law 170/2010 describes the devices that schools have to adopt for teaching FL to student with specific learning

difficulties. Beside the use of compensatory tools promoting oral communication and ensuring a gradual learning, the law allow the possibility of exemption. In addition, it is recommended to choose, if possible, a transparent second language. However, this kind of policies (i.e. exemption and the choice of a transparent FL) seem disadvantageous for students with learning impairments. Research demonstrates indeed that in a more immersive environment, with an appropriate balance between literacy and communication, teaching may be really inclusive and learning may be promoted for all students [26].

Miller-Guron and Lundberg [27] discovered adults with dyslexia with a preference for reading in English: they were Swedish adults able to learn English at school at such a good level to be able to feel so confident in using the second language for reading.

3 Why the “An English Island®” E-learning Platform was Created

There is increasing discussion of “digitization”, as highlighted in the National Plan for the Digital School. “It is, therefore, necessary that digitization efforts be channelled into the idea of innovation, of a school no longer solely transmissive, and an open, inclusive school in a changing society... At the same time, staff training geared towards didactic innovation and openness to organizational innovation will be crucial for taking a step forward. Education in the digital age must not focus on technology but on the new models of didactic interaction that use it. Moreover, teachers, particularly with regard to digital skills, must have the right conditions to act as facilitators of innovative educational courses based on more familiar content. Teacher training must be centred on didactic innovation, taking digital technologies into account as a support for implementing new educational paradigms and the operational planning of activities” [28].

Alongside this important prospect is Legislative Decree no. 62 of 13 April 2017, which introduced important changes in student assessment, including the INVALSI tests. Over the years, these tests have shown different, although positive on average, results in the three Italian macro-areas, starting with primary school. However, a closer look shows the importance of focusing on the degree of equity in the educational system. While it is stated that “Schools should ensure the same educational opportunities for all, without offering more fortunate students because of their family or social background the best possibilities, and vice versa”, the results show that “the variability component between schools and between classes is higher in southern Italy and the islands than in central and northern Italy. This means test results are not only lower overall in the south and on the islands; they also differ more from one school to another and from one class to another in contrast to the rest of Italy. Therefore, the school system is less effective in the south and less capable of ensuring students have the same educational opportunities” [29].

The 2021 INVALSI tests confirm that “Primary-school outcomes are substantially stable, but the considerable difference between schools and classes in the south and the rest of the country remains.... Very important differences were already found within the school system in the first analysis of the data, not only for the territories but also depending on the original social environment” [30].

In light of these challenges, the British School-Pistoia created the e-learning platform “An English Island®” as an innovative and effective digital tool that homogenizes

teaching/learning both vertically and horizontally between the various classes and the various schools. This facilitating tool for teachers conveys the English language's communicative approach through a series of teaching strategies that, in various forms, lead students to become familiar with the language in a sort of continuous, inclusive workout, in which everyone participates and talks. The main *goal* is to ensure that all students are included, even those most disadvantaged from a socio-economic-cultural point of view, along the democratic course of learning that must take place in public schools.

Furthermore, and by no means secondary, if skills/knowledge in the primary school can be increased, there will be a push upwards, and fertile ground will be further cultivated in the lower and upper secondary schools, improving current results and providing a *passe-partout* for active citizenship.

The innovative e-learning platform “*An English Island*®” was designed and constructed to offer primary school classes 1 to 5 an educational path, divided into units, complete with suggestions, strategies, audio, videos, multimedia, and printable materials. In addition, the use of educational content can be conveyed through an IWB, Smart-TV, and other devices to make students' participation in this learning program even more appealing.

The knowledge and skills developed and acquired over a five-year period meet the corresponding goals of the A1 Level of the Common European Framework for Languages (C.E.F.R.) of the Council of Europe.

In programming the platform, particular attention was paid to teachers in their role as educational facilitators and who, therefore, must become familiar with the structural system, the founding principles, and its applications. Therefore, a *Training* area on guidelines and strategies for “*An English Island*®” was produced. Moreover, it is always available for a self-directed consultation through a series of 11 podcasts that can be used immediately to develop an in-class teaching activity and facilitate the coach's role. Over time, *on-the-job training* accompanies the teacher, whose support and advice become a personal reference for resolving doubts or oversights and optimal planning of activities.

Not only is the teacher's *scaffolding* action intellectual or technical [31], it is also emotional, cognitive, and metacognitive. The emotional sphere concerns stimulating the student to learn through encouragement and overcoming motivational barriers. The development of metacognitive skills enables the child to learn *continuously* and confront more complex processes such as reflection [32]. An awareness of one's progress and being equipped with the required skills help to increase the student's self-esteem.

4 Structure of the E-learning Platform “An English Island®”

This digital platform was developed to provide practical support for teaching children to speak English through continuous practice. Its focus on oral communication makes it a practical tool that integrates curricular teaching.

Each platform step has video and audio made by native speakers, cards with codified drawings that move when clicked and speak individually or move by building the various sentences by pronouncing them, following the right rhythm. With the same video game appeal, children are excited about participating, acting with the body, using cards, writing through drawings, and touching the IWB until they become protagonists and teachers themselves.

Five levels have been created, one for each primary school class, modelled on the same structure scheme repeated for all 48 units, inserting different and progressively more complex contents in line with the school program.

The teacher has a general index representing the year's activity and contents to enter the various units directly. Each is introduced by a *mission* that the teacher presents to the class, focusing on motivation and consequent *problem-solving*.

Each unit is developed with the following series of *learning strategies*: *Mimes*, *Board Game*, *Circles*, *Twin Brother*, *Initials* (from class 3 onwards), and *Mix & Match*.

Mimes:

This engaging strategy associates three languages: mime/visual/oral. It captures the students' attention and enables increasing their participation as they become conscious actors.

Board Game:

It is the most powerful strategy: through the drawing cards, grouped by chunks, which "speak" and are moved by clicking on them, the students construct the sentences without any written words yet. The exercise uses the drawing cards already associated with *Mimes* and repeats orally in different ways what has already been learned, forming complete sentences.

Circles:

A *listening comprehension* exercise: a layout is used where the drawing cards of the grammar structure are positioned at the top, and the empty circles, representing the second part of the sentence, are at the bottom. The teacher plays the sentence several times, and the students then draw what they hear in the circles below. By clicking on the circle, the corresponding drawings appear. Therefore, it is possible to self-correct. (Written words have not been introduced yet!). It is an inclusive, SLD-friendly exercise.

Twin Brother:

This exercise associates the oral word with its *spelling* and is the first encounter with written words. Despite this, students are confident because they have acquired familiarity and habit via the various modes of repetition earlier.

Initials:

Initials is an aid, a kind of visual guide, that helps to understand how many words are contained in a chunk or a sentence. It also helps to avoid grammatical mistakes. They are the last step to arrive at the written word now that oral familiarity has been acquired. This exercise is seen as a game by all the students who view it as a sort of competition to recognize the sentence and then say it. It is first introduced in the third grade.

Mix&Match:

It trains for sequential or random *listening comprehension* of sentences spoken by native speakers identified in the list and heard both in English and Italian to verify understanding and do any translation. The exercise leads to a conscious consideration that represents a transition from *habit* to *knowledge*.

The platform offers teachers four specific podcasts on *Extra Speaking Games* (*Cards/Pencil Game/Finger Game/Child Actors*), which are played with the students to improve rhythm in pronouncing chunks or phrases, correct any errors without explaining grammar rules, and the sequential positioning of the drawing cards to build the sentences

respecting the rhythm. These are games that the teacher can introduce at any time with the IWB off and repeated by involving the students as fully as possible.

The platform has a Dashboard through which the teacher can move from one exercise to another, from one unit to another, play games, suggest activities, and continuous listening for use in passive and active phases. In addition, the ‘T’ = Teacher area can be consulted where suggestions and tips are put forward, as well as any printable materials for classroom exercises.

5 Aims of the Study

The present study is aimed to test the role of cognitive variables such as short term memory and working memory but also emotions and motivation in learning English as second language at school. In particular the study compared two conditions of learning: a control condition where teachers followed traditional textbooks and an experimental conditions where teachers were able to implement in the ordinary teaching activity the use of the e-learning platform “an English Island”.

6 Methodology and Tools

6.1 Design

The study has a longitudinal design and wants to investigate whether the use of the app An English Island has significant effects in learning English in primary school children.

To this end, a battery of assessment was provided to be given at two different times (t1 and t2) i.e. before and after the treatment. The treatment is identified in the learning of the English language through the app An English Island. The group was divided into control group and experimental group in order to assess the presence or absence of any significant change.

At t1, collective tests were administered in order to investigate emotions related to learning English; subsequently, an individual assessment was conducted using a battery of instruments set for the reference class (first grade; second grade; third grade). Currently, the study is in the individual assessment phase at t1.

In concomitance, interested teachers are learning the use of the app. Teachers have in fact experienced an initial cognitive and exploratory meeting about the project’s aims and the educational and training objectives of the platform; currently, teachers are being trained through specific webinars and lessons built to meet the needs of the teachers and children involved.

6.2 Participants

The participants of the study are primary school children aged between 6 and 8 years. The school of reference is the “Istituto Comprensivo Santa Chiara - Pascoli – Altamura” located in Foggia. In particular, the participants are children attending elementary school in the Santa Chiara and Altamura school complexes.

The study involves $n = 12$ classes of elementary school for a total of $n = 193$ participants ($n = 102$ males; $n = 91$ female), the participants are distributed in control group ($n = 102$; $n = 51$ males; $n = 51$ female) and experimental group ($n = 91$; $n = 51$ males; $n = 40$ female). Specifically, the control group consisted of $n = 2$ first classes ($n = 23$; $n = 11$ males; $n = 12$ female); $n = 2$ second classes ($n = 40$; $n = 22$ males; $n = 18$ female); $n = 2$ third classes ($n = 39$; $n = 18$ males; $n = 21$ female). The experimental group consisted of $n = 2$ first classes ($n = 30$; $n = 19$ males; $n = 11$ female); $n = 2$ second classes ($n = 26$; $n = 12$ males; $n = 14$ female); $n = 2$ third classes ($n = 35$; $n = 20$ males; $n = 15$ female).

6.3 Procedure

The participants in the experimental group follow an English course through an innovative didactic method using the app *An English Island*. In order to compare the skills acquired by the experimental group with those of the control group, a collective battery and an individual battery are administered before and after the course, both conventional and experimental. During the screening session with collective battery, participants provide written informed consent before undergoing an assessment.

Collective Test: AEQ-ES

Achievement emotions in English as a second language were assessed by means of the Italian version of the Achievement Emotion Questionnaire for elementary school children [33] (AEQ-ES). Since the original questionnaire included only the domain of first language (i.e., Italian), for the present study, we adapted the questionnaire by substituting Italian with English. The questionnaire consisted of a total of 32 items: nine on enjoyment, 12 on anxiety, 11 on boredom. These were divided in three parts referring to different settings, that is, attending English class (e.g., I enjoy English class), doing English homework (e.g., English homework bores me to death), and taking English tests (e.g., When I take an English test, I am afraid of getting a bad grade). For each item children had to rate the intensity of their emotion on a five-point Likert scale ranging from 1 (= not at all) to 5 (= very much). The scale was supported by pictures of faces of boys or girls (matched with children's gender) representing the intensity of emotions [34]. The completion of the questionnaire took a total of 45 min. In order to avoid fatigue, children were given the possibility to take short breaks between the different parts of the questionnaire.

Individual Battery

The individual battery consists of 7 tests that assess: learning new words, working memory, long-term memory, comprehension, production, pronunciation and repetition of English words, metacognition of the performance produced and problem-solving skills. Below are the tests that make up the battery.

a) Learning New Words

The test for learning new words is an Auditory Verbal Learning Test, where the participant is asked to repeat a list of 10 non-words (such as *Zila*, *Muci* and *Libo*), consisting of 2 syllables and having a total of 4 phonemes [35]. When children hear and then utter a non-word for the first time, they must transform a novel speech signal into a series of coordinated, precisely timed oral movements. The test is used

to measure verbal learning and is administered by reading the list of non-words to the child at a rate of one word per second. At the end of the reading, the child is asked to repeat as many of the newly heard non-words as possible in any order. This procedure is used, with the same list of words, for five consecutive times, each time recording the correct non-words recalled as well as the intruding words reported by the subject. The test is expected to measure learning.

b) **Digit Span**

The children's version of digit span is a subtest from the WISC-IV scale [36]. The test consists of an immediate serial recall of a string of numbers. This test requires children to recall a sequence of digits in the same order (DSF) or in reverse order (DSB) that the experimenter has given them verbally [37]. The score corresponds to the highest span measure, with the sequences produced correctly at least two out of three times.

c) **Delayed Recall**

Approximately 10 min after the immediate recall test, during which time the digit span test is administered, the patient is asked to remember (without the list being presented again by the examiner) as many words as possible from the list. This is the second part of the test and consists of delayed recall. The test measures verbal long-term memory capacity.

d) **Repetition of Short Words**

In this test, an audio recorder is set up so that the details of the performance can be assessed later. The Experimenter reads to the child words in English and requires the child to repeat the verbal stimuli just heard. The terms used are *read, turn, seat, mind, law, hell*. Children's production is recorded and analysed in order to score two different indices: Accuracy and correct pronunciation.

e) **English Vocabulary**

This test involves comprehension and production of the English language. The tests are individualized and are videotaped so that comprehension and production constructs can be analyzed later. All vocabulary tests begin with an initial familiarization phase to the task and are individualized with respect to the target classes. Rehearsals include a first part during which the child listens to the production, by the experimenter, and, immediately afterwards, states the corresponding picture to the word heard. In the second part, the child produces the word associated with the image indicated by the experimenter.

- For the first grade, the assessment alternates between the comprehension task and the production task: the child listens, one at a time, to the following numbers in English “*four, eight, three, six, ten, five*” and points with his fingers to the corresponding number. Next, the experimenter points to the following numbers on the relevant pictures “*nine, two, seven, four, eight, six*” and the child verbally produces the corresponding number in English. In the second phase, there is again a comprehension task: the child listens, one at a time, to the following colors “*yellow, green, black, orange, red, brown*” and points to the corresponding color from the selected and presented pictures. Next, the experimenter points to the following colors “*black, orange, brown, green, yellow, red*” and the child verbally produces in English the corresponding color.

- For class two, the assessment alternates between the comprehension task and the production task: the child listens, one at a time, to the production of the following school objects in English “*pencil, rubber, book, ruler, glue, pen*” and points to the corresponding object among the pictures selected and presented. Next, the experimenter points to the following animal names “*tiger, cat, fish, dog, cow, sheep*” and the child verbally produces in English the corresponding animal from the pictures presented.
- For the third grade, the assessment alternates between the comprehension task and the production task: the child listens, one at a time, to the production of the following garments in English “*t-shirt, dress, shoes, jacket, coat, scarf*” and points to the corresponding garment among the pictures selected and presented. Next, the experimenter indicates the following domestic environments “*bathroom, living room, kitchen, dining room, bedroom, basement*” and the child verbally produces in English the corresponding environment among the pictures presented.

It should be noted, moreover, that all the images come from depository without copyright.

f) Metacognitive Control Task

The metacognitive control task is closely related to the English vocabulary production test. The test was adapted from the studies of Roebbers et al. [40] and Lavis and Mahy [41]. In the test, the experimenter presents a 5-point confidence scale consisting of faces. The scale has 5 faces and represents the confidence judgment. Specifically, the extremes represent a very smiling face and a frowning face. The smiling face means “very, very sure”, the frowning face means “not sure at all”, in the middle there is a neutral face meaning “uncertain”. At the end of the vocabulary rehearsal, the safety judgment through faces is explained to the child; we verify that the child has understood by asking control questions such as “*how old are you?*”, “*how old am I?*”, “*how much hair do you have on your head?*” and based on the indication on the scale we try to understand if the child has understood the safety judgment scale. Next, the pictures related to the vocabulary task are presented again and the child is asked to indicate how confident they were in the vocabulary they provided.

Next, two boxes are presented to the child: one red and one green. The child is asked to put pictures in the red box if they think they said the wrong word and to put pictures in the green box if they think they said the right word. The purpose of these confidence judgments is to encourage children to reflect on the accuracy of their verbal production after performing the task.

g) Problem Solving

This test has problem solving skills applied in a situation where communication in English is necessary. The experimenter introduces the child to a situation that must be solved through verbal production in English. The tests are individual and are video-recorded in order to be able to subsequently analyze the investigated constructs; moreover, the tests are individualized with respect to the reference classes. Each problem solving test has, in particular, two phases: in the first phase there is the simulation of a situation, in the second phase the child must respond, in English, to a question posed in English.

- For class one, in the first part, a situation is simulated in which it is necessary to ask another child, in English, his or her name. In the second phase, the child is asked, in English, how old he/she is and asked to answer in English.
- For class two, in the first part, a situation is simulated where you want to ask a child, in English, who his favorite singer is. In the second phase, the child is asked, in English, what his favorite sport is and is asked to answer in English.
- For the third grade, in the first part, a situation is simulated where the child is in an ice cream shop and is asked, in English, for a chocolate ice cream. In the second phase, the child is asked, in English, when his class starts.

7 Conclusions

The spirit that inspired the British School-Pistoia to create the “*An English Island*®” e-learning platform is connected to a *vision* whose fundamental core is to improve English language knowledge/skills as early as primary school. Pistoia is, by definition, the city of plants, a permanent nursery that focuses on producing strong and healthy plants. If some in the group of plants are a little weaker, they are supported by the others, and everyone together can create a wonderful forest under the banner of *inclusiveness*. No matter where they teach—classroom, school, or city—teachers can find in this platform an organized framework that facilitates their work, advancing the goals pursued in their constant daily effort to achieve our School 3.0. Our study may therefore better clarify the role that a teaching approach like that promoted by this e-learning platform may exert on learning English as second language at school in early grades of primary school and shed light on the complex relationships between cognitive and metacognitive processes and emotion and English learning at school comparing two different teaching conditions.

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