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iPADDING SIXTH GRADERS TO IMPACT LANGUAGE LEARNING: AN EMPIRICAL MOBILE STUDY

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ABSTRACT

This paper reports on an empirical study in mobile language learning, with the purpose of exploring how mobile technology affects the learning of a foreign language.

Mobile devices possess fundamental properties, such as portability, individuality, interactivity and connectivity, that are essential to language learning, in that they enhance exposure and noticing, promote interaction and calibrate corrective feedback.

The mobile device adopted for this study is the iPad, which can fulfill the functions of a computer with the additional plus of being lightweight and therefore easily portable. It has a wide high-resolution touch screen, which enhances input as well as learners' attention, making them focus on key language features and raising their awareness. Furthermore, the iPad is compatible with the most recent applications for the development of interactive skills.

The author investigated the impact of iPad on a class of sixth graders in their first year of learning Italian and compared their learning to a non-iPadded class over two years' time, first in sixth grade and then in seventh grade. Results show that, thanks to mobile technology, the iPadded sixth graders generally progressed better than the non-iPadded sixth graders, but, remarkably, even better than the non-iPadded seventh graders in oral interactive tasks.

INTRODUCTION

The empirical study presented in this paper involves an experimental group, consisting of 14 iPadded sixth graders in their first year of learning Italian and a control group consisting of 8 non-iPadded learners in sixth grade and later in seventh grade. The study examines the impact of mobile technology in the learning experience of these sixth graders. Prior to presenting the study, we contextualize the affordances of mobile technology in terms of an interactionist approach to language learning and present the Common European Framework of Reference for Languages (CEF) as the basis for the foreign language curriculum at our institution.

MOBILE LANGUAGE LEARNING: WHERE MOBILE TECHNOLOGY MEETS LANGUAGE LEARNING

It is implausible to see a foreign language class without technology. Technology responds to the pedagogical need of making the foreign language come to life in the classroom and, consequently, motivate and engage learners in effective learning. Technology has evolved into multimedia and hypermedia, but the goal basically remains the same: help the learner learn. The idea of technology as a help to the learner permeates the field of computer-assisted language learning (CALL), which since the 1960s has been preoccupied with exploiting the potential of technology to benefit language learning. CALL has expanded to cover a wide range of technological tools as well the study of their utilization both inside and outside the foreign language classroom. One of the latest applications of CALL is MALL, i.e. mobile assisted language learning.

But there are reasons why CALL and MALL should be considered as separate fields of inquiry:

> MALL differs from computer-assisted language learning in its use of personal, portable devices that enable new ways of learning, emphasizing continuity or spontaneity of access and interaction across different contexts of use. (Kukulska-Hulme & Shield 2008:273)

It is not just the devices that are mobile but also the learning itself and the learner as an individual who is therefore able to create continuously fluid learning contexts anytime anywhere. Such learning in not 'assisted' by mobile

technology the same way it would be 'assisted' by a computer. 'Assistance' implies external help whereas mobility is an intrinsic feature of the learning as well as an intrinsic feature of the learner. Computers may 'assist', but handhelds make both the learning and the learner spatially as well as temporally mobile. Thus, I prefer the more agile label 'mobile language learning' (henceforth, MoLL) to what is normally referred as 'mobile assisted language learning'.

According to Klopfer et al. (2002), there are five features of mobile technology that provide fundamental pedagogical benefits: 1) portability, 2) interactivity, 3) context sensitivity, 4) connectivity 5) individuality. It is easy to see these five features applied to key areas pertaining to language learning such as input, interaction, output, individual variation, and learner's autonomy, among others. Of these five properties the one that most of all has piqued the attention of researchers and educators alike is interactivity (Sims 1997; Zhang & Zhou 2003; Roussou 2004; Zhang 2005; Moreno & Mayer 2007; Beauchamp & Kennewell 2010; Huang et al. 2012; Plass et al. 2012; Churchill et al. 2013, Corono et al. 2013; Lau et al. 2014). Deeply rooted in constructivist approaches to education, interactivity underlies the assumption that, for learning to be effective and knowledge to be constructed, the learner needs to be actively engaged in the process.

Interactivity is a dynamic process, a bidirectional relationship based not only on reciprocity, but also on responsiveness (Johnson et al. 2006). In other words, for this relationship to continue, a pattern of action and reaction is not sufficient because the actions and reactions in question need also to be connected in a more symbiotic way, which underscores the importance of context. When I search Google Maps, as soon as I start to type in an address, I get a scroll-down menu to facilitate my task. When the address I was looking for shows up, I am offered more options, such as route options a street view, a save option and a share option, just to name a few. All these options are the results of my interaction with a device within the context of utilizing an application to obtain street directions. Thus, interactivity is dynamic, contextualized, and multifaceted as well.

Domagk et al. (2010) propose a six-part model of multimedia interactivity that integrates: 1) the learning environment, 2) behavioral activities, 3) cognitive and metacognitive activities, 4) motivation and emotion, 5) learner variables, and 6) learning outcomes. Interactivity is defined as

> reciprocal activity between a learner and a multimedia learning system, in which the [re]action of the learner is dependent upon the [re]action of the system and vice versa. (Domagk et al. 2010:1032)

The learning scenario this model depicts is centered on the learner as an individual with a complex set of interconnected cognitive, metacognitive and affective variables that influence and are influenced by the interactive learning process. Through behavioral decisions, the learner manipulates the affordances of the multimedia learning system, 'inducing changes in the system that may lead in turn to change the learner' (p.1028). This definition of interactivity refers to an interdependent human-computer relationship.

Human, face-to-face interaction is also characterized by interdependence because interlocutors need to do their part to keep the conversation going and by doing so, more avenues open up for both parties. Face-to-face interaction is at the heart of the interactionist approach (Gass and Mackey 2006, 2007; Mackey et al. 2012), a basic construct in SLA research that has long supported the strong link between interaction and language learning. The interactionist approach evolved from the *Interaction Hypothesis* (Long 1981, 1996) that incorporated aspects of the *Input Hypothesis* (Krashen 1982, 1985) and, later, the original *Output Hypothesis* (Swain 1985, 1995) as well.

When a learner interacts with a native speaker or a more proficient non-native speaker, communication difficulties may arise requiring both parties to make adjustments to keep the conversation going. This effort on the learner part to understand and to be understood, promotes his/her language development. The learner may receive input that has been modified so as to make it comprehensible. S/he may also receive input in the form of corrective feedback, more or less explicit. Through interaction, the learner may notice the gap (Schmidt 1990) between his/her interlanguage and certain language features in the input. Noticing the gap may push the learner to modify his/her output to make it more comprehensible and target-like, thus integrating new linguistic forms into existing knowledge (Swain and Lapkin 1995; Schmidt 2012).

In sum, face-to-face interaction, just like human-computer interaction, is based on interdependence. However, any interaction needs input to start:

> All theories of second language learning recognize the significance of input as a basic component in the acquisition process. Language is not learned in a vacuum; learners need "raw data" to serve as linguistic

> evidence which they can use to formulate hypotheses about the second language system. (Gass & Mackey 2006:5)

Notwithstanding the teacher's role, in a digital classroom the major source of input comes from technological devices, i.e. the iPad for the study presented here. Thanks to the iPad, input is enhanced interactively. The goal of input enhancement (Sharwood Smith 1993) is to make input more noticeable by making it more salient. It is a pedagogical approach that affects both aural and written input as well as corrective feedback, which can also be considered as a form of input directed to the learner. Enhancement strategies come in a variety of shapes and forms. They can be simple, such as repetition or highlighting, or more complex, such as simplification, translation, and visualization.

Input enhancement is fundamental in a foreign language classroom, where the input is intrinsically impoverished for reasons that are not only institutional, i.e. number of teaching periods, resources allocated or curricular choices, but also pedagogical in that the approach adopted, more often than not, limits learners' exposure to authentic input. In an effort to maintain learners' attention and motivation, input is made comprehensible through simplification – and oversimplification sometimes – which can be artificial and detrimental to language development. This is where mobile technology lends a helping hand since the iPad allows the learner to enhance the input interactively, anytime anywhere, beyond classroom boundaries.

Aural input can be played and replayed several times at various speed, written input can be underlined or enlarged, annotations can be inserted, images can be added, online dictionaries and other internet resources can be easily accessed through embedded hyperlinks. Most importantly, the iPad allows the leaner to enhance the input by controlling it, tailoring it to the individual needs, thus magnifying the chances of noticing. Not only does the iPad allow for input control, it also allows for output control, in that learners exert control over the language they produce by planning beforehand and accessing online resources, recording themselves and monitoring their output, repairing it through self-correction. This practice is also applicable to written activities, albeit without recording, but with more opportunities for monitoring and self-correction than oral activities, given the more reflective nature of writing.

In my study, learners utilized their iPad primarily to audio- or video-record themselves in spoken production tasks, or role-playing with another student in spoken interaction tasks. This type of interaction does not fall exactly within the

parameters of the interactionist approach in that it is an interaction between learners at a similar proficiency level and, given the constraints of classroom contexts and curricular demands, such interaction entails few communication breakdowns in need of repair. However, it does fall within the parameters of human-computer interaction in that the learner exploits the affordances of the iPads to fulfill his/her needs.

To sum up, this section presented MoLL as the intersection of mobile technology and language learning, in that the former is endowed with key features, i.e. portability, interactivity, context sensitivity, connectivity and individuality, that befit key paradigms of the latter, i.e. input, interaction, output, individual variation and learner's autonomy, among others. Interactivity was singled out as the key link between mobile technology and language learning and therefore as a defining feature of mobile language learning. Interactivity is a multifaceted, dynamic relationship in context. Interactivity drives interaction, whether human-to-human or human-computer. The iPad-learner interaction affects both parties but, most importantly, it affects learning processes and outcomes. To maximize this impact, interaction needs to be featured prominently in the curriculum. Next, I will present the role of interaction in the foreign language curriculum, as seen through the lens of the Common European Framework.

THE COMMON EUROPEAN FRAMEWORK OF REFERENCE FOR LANGUAGES

Issued in 2001 by the Language Policy Unit of the Council of Europe and translated in 39 languages since then, the Common European Framework (henceforth, CEF) provides comprehensive underpinnings for foreign language learning, teaching and assessment.

CEF 'action-oriented approach' is encapsulated in the statement below (CEF p.9 - boldface is original):

> Language use, embracing language learning, comprises the actions performed by persons who as individuals and as social agents develop a range of **competences**, both **general** and in particular **communicative language competences**. They draw on the competences at their disposal in various contexts under various **conditions** and under various **constraints** to engage in **language**

> **activities** involving language processes to produce and/or receive **texts** in relation to **themes** in specific **domains**, activating those **strategies** which seem most appropriate for carrying out the **tasks** to be accomplished. The monitoring of these actions by the participants leads to the reinforcement or modification of their competences.

What stands out is the definition of the language learner as a language user who, acting in - and interacting with - a social context, employs strategies to fulfill tasks. Basically, the learner is a doer, who uses the language to achieve a goal. This explains why language proficiency is described with 'can-do' statements, as shown below:

Table 1: CEF levels (CEF p.24)

Proficient User	C2	Can understand with ease virtually everything heard or read. Can summarise information from different spoken and written sources, reconstructing arguments and accounts in a coherent presentation. Can express him/herself spontaneously, very fluently and precisely, differentiating finer shades of meaning even in more complex situations.
	C1	Can understand a wide range of demanding, longer texts, and recognise implicit meaning. Can express him/herself fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organisational patterns, connectors and cohesive devices.
Independent User	B2	Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.
	B1	Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can deal with most situations likely to arise whilst travelling in an area where the language is spoken. Can produce simple connected text on topics which are familiar or of personal interest. Can describe experiences and events, dreams, hopes and ambitions and briefly give reasons and explanations for opinions and plans.
Basic User	A2	Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment). Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Can describe in simple terms aspects of his/her background, immediate environment and matters in areas of immediate need.
	A1	Can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Can introduce him/herself and others and can ask and answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. Can interact in a simple way provided the other person talks slowly and clearly and is prepared to help.

There are six CEF performance levels divided into three main blocks that classify the learner/user. For the purpose of my study, only the most basic of these levels is of concern (see Table 2). The school that launched this study follows the French National Curriculum, where modern languages other than French and English fall into a specific category, namely *LV2* (*Langue Vivante 2*, i.e. 2nd Foreign Language). In line with the French National Curriculum, students are expected to attain CEF level A2 by the end of 9th grade, and CEF level B1 by the end of 12th grade.

Table 2: CEF level A1 self-assessment grid (CEF p.26)

		A1
UNDERSTANDING	**Listening**	I can recognise familiar words and very basic phrases concerning myself, my family and immediate concrete surroundings when people speak slowly and clearly.
	Reading	I can understand familiar names, words and very simple sentences, for example on notices and posters or in catalogues.
SPEAKING	**Spoken Interaction**	I can interact in a simple way provided the other person is prepared to repeat or rephrase things at a slower rate of speech and help me formulate what I'm trying to say. I can ask and answer simple questions in areas of immediate need or on very familiar topics.
	Spoken Production	I can use simple phrases and sentences to describe where I live and people I know.
WRITING	**Writing**	I can write a short, simple postcard, for example sending holiday greetings. I can fill in forms with personal details, for example entering my name, nationality and address on a hotel registration form.

CEF labels the four traditionally defined language skills – listening, speaking, reading and writing – as language activities and introduces interaction as a hybrid between reception and production that the learner needs to master *per se* for communication to be successful.

Table 3: CEF communicative language activities (CEF p.222)

RECEPTION	**Spoken**	• Overall listening comprehension • Understanding Interaction between native speakers • Listening as a member of a live audience • Listening to announcements and instructions • Listening to radio & audio recordings
	Audio/Visual	• Watching TV & film
	Written	• Overall reading comprehension • Reading correspondence • Reading for orientation • Reading for information and argument • Reading instructions
INTERACTION	**Spoken**	• Overall spoken interaction • Comprehension in interaction • Understanding a native speaker interlocutor • Conversation • Informal discussion • Formal discussion (Meetings) • Goal-oriented co-operation • Obtaining goods and services • Information exchange • Interviewing & being interviewed
	Written	• Overall written interaction • Correspondence • Notes, messages & forms
PRODUCTION	**Spoken**	• Overall spoken production • Sustained monologue: describing experience • Sustained monologue: putting a case (e.g. debate) • Public announcements • Addressing audiences
	Written	• Overall written production • Creative writing • Writing reports and essays

The table above summarizes all the language activities for which *can do* descriptors are offered. Notice the preponderance of oral activities over written ones and, better still, the absolute preponderance of spoken interaction activities, as to signify their fundamental importance for communication. This CEF feature aligns with second language acquisition research. In fact, in the previous section, face-to-face interaction is depicted as a core tenet of SLA research since it represents a primary *locus* for language development. Another type of interaction was also introduced, namely the iPad-learner interaction that allows learners to enhance the input they are exposed to as well as the output they produce. Spoken

interaction and iPad-learner interaction are both crucial for the study presented below.

THE STUDY

Research Questions

There is one basic research question that motivated this study:

Does the experimental iPadded group achieve better results than the control non-iPadded group?

If so:

Does the 6th grade experimental group perform better than the 6th grade control group in all CEF language activities?
Does the 6th grade experimental group perform better than the 7th grade control group in all CEF language activities?

Participants

All the participants, in the experimental group as well as in the control group, are bilingual French-English children who, since the age of three, have been attending a private French bilingual school in New York with a strong American curricular component. In addition to French and English, students from sixth grade onwards mandatorily learn another language, choosing from German, Italian, Mandarin and Spanish. Since the goal of this study is to observe the impact of mobile technology at the onset of language learning, data from learners with Italian background were collected but excluded from the analysis, so as to avoid biased results. In the end, the data that were tallied belonged to 14 learners in the experimental group (8 females and 6 males) and to 8 learners in the control group (4 females and 4 males).

Method

Both the experiment group and the control group share the following constants: the same teacher, the same material, the same number of lessons per week – 3 periods of 45 minutes each. Two variables changed: class size and

iPads. The experimental group has almost twice the number of participants, but they have iPads as part of the school 1:1 program. In terms of coursework, notwithstanding the same material for both groups, the way it was dealt with by both teacher and learners differed for the iPadded group, giving rise to specific iPadded lesson features, listed below:

- - *paperless*: assignments and assessments are completed using the iPad;
- - *focused*: a textbook teaching unit is divided into sub-units that are labeled according to the type of task (e.g. U1 LISTENING);
- - *shared*: the teacher shares these sub-units with learners and learners share their work files with the teacher;
- - *interactive*: learners interact with the material (e.g. highlight, underline, annotate, illustrate, write, record, playback) and with each other (e.g. role-plays, interviews, peer testing)

In a typical iPadded lesson, the application 'Notability' has superseded both textbook and notebook. The teacher shared with the learners the material she wanted them to work on and they did their assignments – aural, oral or written; in pairs or individually, depending on the task. This application also allows audio recording, therefore learners recorded themselves, as in the case of spoken production tasks, and recorded each other, as in the case of spoken interaction tasks. Most importantly, they could listen to their own output and self-evaluate their performance.

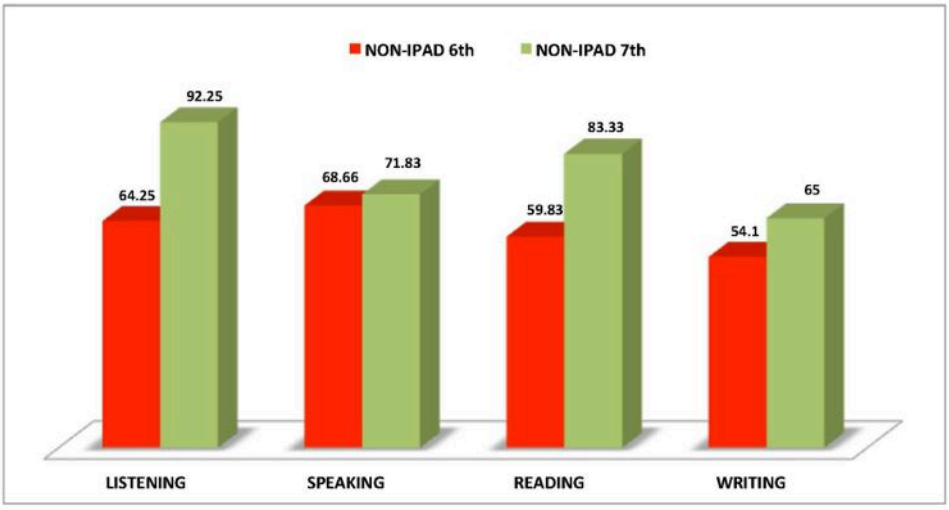
At the end of the school year, a comprehensive CEF level A1 test was administered. This test consisted of four components of the CILS examination (*Certificazione di Italiano come Lingua Straniera* – Certification of Italian as a Foreign Language) offered by the Foreigners University of Siena. These four components correspond to four CEF language activities – listening comprehension, spoken interaction, reading comprehension and written production. The control group took this test in sixth and seventh grade – same CEF level, different tasks. Neither the experimental group nor the control group ever received prior ad-hoc test training.

RESULTS

Test scoring was conducted according to the guidelines provided by the examining body. Raw scores were averaged and transformed into percentages for ease of presentation and comprehension. The three charts below illustrate the results. The first chart presents the results of the control group for two

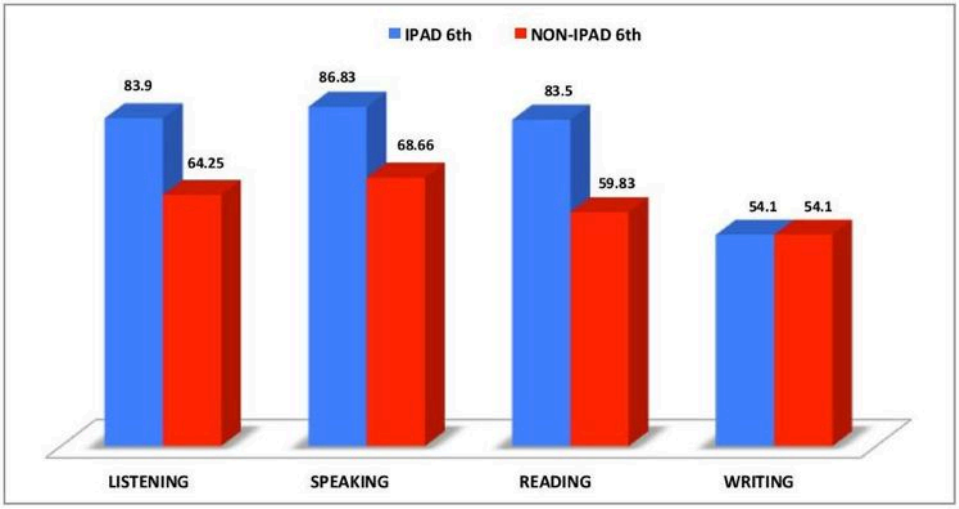
consecutive years; the second chart compares the iPadded sixth graders with the non-iPadded sixth graders; the third chart compares the iPadded sixth graders with the non-iPadded seventh graders.

Figure 1: Results of non-iPadded group over two years.



In the chart above, we can see the development of the non-iPadded group over two years. Indeed, they progressed in all four components. The six graders performed better in oral skills (listening and speaking) than in written skills (reading and writing), obtaining their best average score in speaking. However, in seventh grade their receptive skills (listening and reading) progressed more than their productive skills (speaking and writing). For listening, the average score was 28% higher and for reading it was 23.5% higher whereas for speaking it was 3.17% higher and for writing it was 10.9% higher. Listening comprehension is the skill that progressed the most whereas written production is the one that progressed the least.

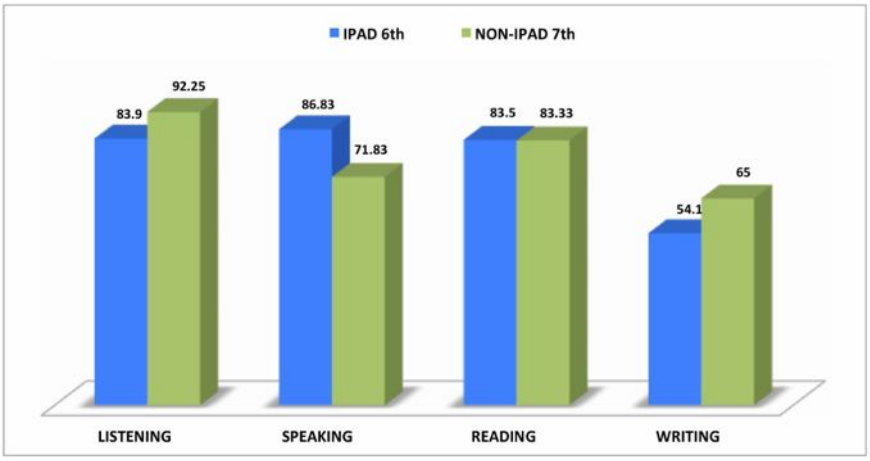
Figure 2: Results of the two 6th graders' groups



Results indicate that the iPadded sixth graders generally outperformed their non-iPadded counterparts. More specifically, the experimental group performed better in listening (+19.65%), speaking (+18.17%) and reading (+23.67%), whereas the average score in writing was the same for both groups. Interestingly, for the experimental group, productive skills yielded the most opposite results: the best average score was for speaking whereas the worst was for writing. A ranking pattern can be noticed for both groups: speaking ranks first, followed by listening, then reading, and finally, writing.

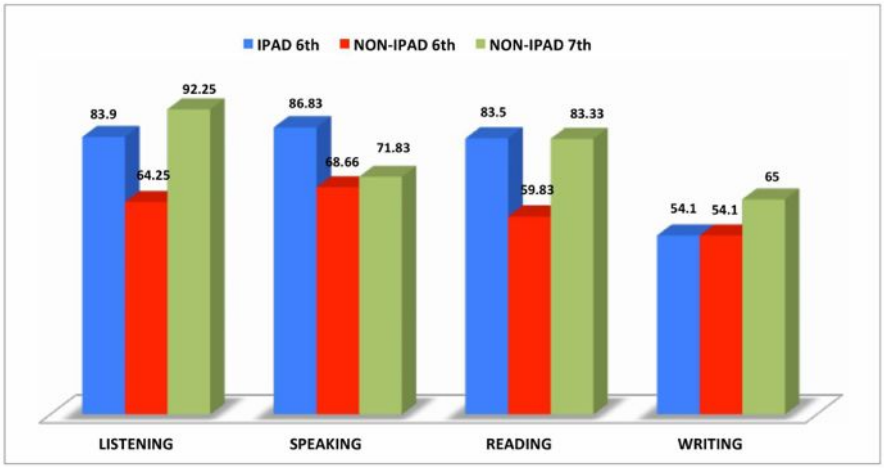
The difference, however, lies in the score level of the two groups. With the exception of writing, where both groups scored the same average, the average score for the other three skills ranges from 59.83% to 64.25% for the non-iPadded group and 83.5% to 86.83% for the iPadded group. The control group performed more uniformly across the four skills, with a margin difference of 10.15%, whereas the experimental group performed even more uniformly across the three skills of listening, speaking and reading, with a margin difference of only 3.33%. However, this range becomes almost ten times wider (32.73%) when writing is taken into account. The results of the writing component will be discussed in the next section.

Figure 3: Results of iPadded 6th graders vs. non-iPadded 7th graders



We expect learners' proficiency to progress in successive grades. Indeed, Figure 1 shows the progress of the control group from sixth to seven grade in all four skills. Thus, in principle, Figure 3 should display better scores for the older children. However, this meliority does not appear systematically across the four skills and it is in fact only noticeable in writing. The seventh graders performed better in listening as well, but the margin of difference is smaller than the one by the same group the year before, as shown in Figure 4. In reading, the difference between the experimental group and the older control group is totally negligible. While the seventh graders have improved their score in all components since the previous year, the iPadded sixth graders outperformed them by 15% in spoken interaction.

Figure 4: Overall results of control group vs. experimental group.



In sum, results indicate that the iPadded sixth graders performed better than the non-iPadded sixth graders in listening, speaking and reading, and most surprisingly, even better than the non-iPadded seventh graders in speaking.

LIMITATIONS OF THE STUDY

This is a case study conceived within my classroom experience. I was intrigued by the launch of the 1:1 iPad program and wanted to explore its impact. Setting up a control group and an experimental group requires the control of many variables, which I painstakingly tried to do. The sample is too small to apply any inferential statistics and to necessarily draw wider generalizations. Nevertheless, this study represents a well-structured attempt at providing empirical data in a new field, mobile language learning, where such studies are still relatively scarce.

DISCUSSION

These results show that the basic research question posed above is answered mostly in the affirmative, with interesting differential results. iPadded sixth graders have better receptive skills than the non-iPadded sixth graders and better interactive skills than the non-iPadded group both in sixth and seventh grade. The control group and the experimental group shared the same teacher, the same curriculum, the same textbook and the same number of lessons per week. What seemed to have made the difference is the introduction of the iPad, whose features allowed for the enhancement of key variables in language learning.

First and foremost, the input. While it goes without saying that no input equals no learning, it also goes without saying that for learning to occur input has to be comprehensible. But this is not enough. Earlier, I defined the input in the foreign language classroom as 'impoverished' because it generally lacks quantity and authenticity. Thus, more often than not, teaching input is made comprehensible through impoverishment instead of enhancement. Through connectivity and interactivity, the iPad can enhance the input.

Let's focus on comprehension skills, which help to process the input. For listening tasks, learners can replay audio files at their leisure, pinpointing difficult parts and lingering on them while skipping over easy ones. For reading tasks, learners can personalize the text they are working on by choosing a virtual

paper as a background and a virtual pen with which to illustrate, annotate or highlight relevant parts. They can also type using a zoom window. In sum, the iPad allows learners to enhance the input by controlling it.

Not only do they control it, they interact with it as well. For all the above activities that pertain to receptive skills, learners use the iPad to interact with the input and construct meanings. For oral tasks, learners can record themselves, i.e. spoken production or each other, i.e. spoken interaction. Recording allows for self-monitoring and self-evaluation. This practice turned out to be very effective as to learners' ability to check their spoken output and improve it. Learners can listen to themselves and if they are not satisfied, they can repeat the task until they are, before sharing it with the teacher for assessment. The teacher, on the other hand, is able to provide a fine-tuned feedback, because she can go through the recording with each individual learner, pointing out strengths and weaknesses, stopping and replaying if necessary and showing the learner how to improve.

In a regular foreign language class, it is very difficult to provide feedback on oral tasks without interrupting the flow of communication and embarrass the learners, who might have a different perception of their output than the teacher does. iPad recording obviates this problem. It gives learners enough distance to enable them to analyze their output more objectively. Plus, teacher's feedback is dead-on, individual as well as personalized. In sum, thanks to the iPad, learners can pace and personalize their language learning experience.

A final word is in order to explain the results in written production, which yielded the lowest score for both the experimental group and the control group. Even if the latter improved their writing in seventh grade, it is still the skill with the lowest score. This is not surprising if we bear in mind that the curriculum for those grades favors oral skills over written ones. Furthermore, writing is generally considered the most difficult of the four skills, the one that takes longer to develop. As far as the iPadded group is concerned, I find it interesting that they performed the worst in the least interactive of the four skills, the one where the iPad could be least helpful. Even receptive skills such as listening and reading have an interactive component in that learners need to interact with a text, whether written or aural, to construct meaning.

To conclude, the iPadded group performed beyond grade level because they were equipped with a device that allowed them to enhance and successfully interact with the input they were exposed to by controlling it at their own pace.

Furthermore, the iPad allowed them to monitor and evaluate their spoken output as well as receive personalized, calibrated feedback. In other words, mobile technology empowers learners by opening up learning paths that seem unattainable in a regular foreign language class.

CONCLUSION

Technology has been linked to language learning and teaching since Edison invented the phonograph in 1877. Given that languages are spoken before they are written, technology has always been an invaluable pedagogical tool in giving voice to languages and bringing them to life. As technology improved, its role in language learning and teaching became increasingly more essential. Today, mobile technology is opening even more pedagogical avenues that, thanks to a small lightweight device, allow for multimodality and interactivity, and not only for the practice of aural-oral skills, as with more traditional technology. This study shows that mobile technology impacted successfully on the language learning experience of a group of sixth graders, leading them to perform beyond expectations. Most importantly, what this study shows is that the iPad can easily be transformed into a personal, portable, and efficient language laboratory that can be used anytime and anywhere.

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Sonia Rocca obtained a PhD in Applied Linguistics from the University of Edinburgh. She is currently teaching Italian at the Lycée Français de New York. She has taught French and English at secondary level in Italy, and Italian at primary, secondary and college levels in Britain. She is the author of *Child Second Language Acquisition* (Amsterdam: Benjamins, 2007). Her research interests include: child and adolescent second language acquisition, foreign language education, differentiated instruction, mobile language learning.

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