

A PEDAGOGIC ASSESSMENT OF MOBILE LEARNING APPLICATIONS

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Purpose

This paper provides an examination of both the qualities and limitations of the most salient MALL (Mobil Assisted Language Learning) applications available at the moment by assessing their features from a pedagogic point of view. Operating systems like Google's open source Android, Apple's iOS, and Microsoft's Windows 7, are getting more sophisticated all the time and now have the potential to dramatically change ESL. These devices support individual and collaborative learning and are used by methodologists, linguistic engineers and technological enterprises to develop technology which assists students to learn anytime and anywhere. As a consequence, a large amount of applications for mobile phones, tablets and i-pod players are being employed in second language learning. These applications are the object of our analysis.

The underlying motivation for our investigation is the fact that, although the multifarious stimuli from a variety of channels (sound, image, interaction, etc.) are certainly appealing to learners, mobile learning applications also require the thoughtful integration of second language pedagogy. The results here presented are the starting point for the development of MALL applications for EFL teaching/learning as part of the work carried out by linguists and IT engineers within the context of the SO-CALL-ME project in Spain.

1. INTRODUCTION

Mobile learning uses mobile devices such as phones, tablets, PDAs to transmit knowledge and educate users on different aspects. Thanks to the technological advances of the last decade, these devices have improved and become part of everyday citizens, who grow up surrounded by them. As technologies continue to develop, so does their tendency to reduce in size: "Other technologies that hold the capacity for language learning include PDAs, multimedia cellular phones, MP3 players, DVD players, and digital dictionaries" (Zhao 2005: 447). Such portable media – referred to in popular and scholarly literature as mobile, wireless, handheld or nomadic – are now social main ingredients. Little by little, mobile learning is taking force in the field of education, which uses increasingly more portable tools as a support in the classrooms. Mobile devices are not only for the benefits of schools; numerous projects that enhance their educational use are being carried out outside the traditional classrooms.

One of the main features of the information society in which we live nowadays is change. Essential to keep up with change is the concept of lifelong learning, which is synonymous with lifelong training throughout the life cycle of a person. It is a key element of the new century, and it leads to the concepts of "educational society" or "knowledge society", by which everything can be an opportunity to learn and develop the capacities of the individual. Lifelong education must provide the means to achieve a better balance between work and learning, as well as for the exercise of a committed citizenry (Delors 1996). Lifelong learning movement expects education to extend to the whole life cycle of the person, whether a student or a teacher.

In current formal education we can observe the great changes that have been conducted over the years. The incorporation of portables, tablets and all kinds of technological devices allow you to advance and modernize this kind of education, which until now was only based on book-based explanations and the figure of the teacher. What began as an element of informal education has become, or is becoming, increasingly essential in the formal sector.

Beyond the everyday situations of social contact, such as family, group of friends, etc., the scope of informal learning potential, nowadays is reinforced by the possibility of access that new technologies offer. Mobile phones, notebooks, tablets, etc., all with Internet connection, contribute to informal learning, so that there are no standards or guidelines that teach how and what to learn. Any information, any knowledge that is available is useful.

Mobile learning took off in the 1980s, when some schools began testing with the first mobile devices. From the '90s some researches were carried out on early graphics tablets, PDAs, and other instruments that could be used in learning. As mobile phones became popular and started to give good results in the non-formal education, they were gradually included as a pedagogical tool within the school. The first projects were intended for tertiary education, i.e. universities and colleges of higher education. After the good results of those projects, recent projects currently opt for the use of mobile devices in primary and secondary education. Today's children have grown up surrounded by computers and mobile devices; they are completely familiar with their use, which favours their prompt inclusion in the educational system.

The European Commission has been an important institution for the evolution of mobile learning, thanks to its R&D financing. Since 1984, the activities of research and innovation in this field have been grouped under the framework Programmes of Research and Development, the main source of funding.

Besides the framework Programmes of Research and Development, the European Union is launching other initiatives more focused on education and pedagogy than on aspects of scientific and technological innovations.

The main projects of the European Union in mobile learning of the last decade are the following (from ISEA 2009):

MOBIlearn: Project co-financed by the European Union and the United States National Science Foundation, and which includes several universities and telecommunications companies from Australia, Europe and America, between 2002 and 2005. Its objective is the design of contents and an architecture that allows integrating mobile devices in educational virtual environments, outstripping traditional classrooms.

eMapps: (Motivating Active Participation of Primary Schoolchildren), from 2005 to 2008, with the support of the European Commission. The project is aimed at school children from 9 to 12 years to create creative communities in which to communicate with other children from different countries through this new platform connected to the network. Another objective was to develop adaptable interactive tools such as games for mobile devices, which will help to include new technologies in education based on learning games, such as problem solving, memory and physical activity exercises. Players from different countries, connected via the Internet, could communicate by the built-in chat. The program supplied schools with the mobile platform with the corresponding tools to perform common games.

M-Learning: United Kingdom, from 2001 to 2004. Community project of mobile learning directed by the missing Learning and Skills Network to improve public education in the United Kingdom. The project was aimed at helping young people aged between 16 and 24 who suffered school failure and at risk of social exclusion. Subjects committed to participate in learning situations outside the traditional school environment, using mobile technologies, with various creative and teaching activities.

Traxler (2005) points out that there have also been a rising number of references to mobile learning at generalist academic conferences. Online Educa Berlin, the world's largest e-learning conference, includes mobile learning in its theme on Future Technologies for Learning.

In this light, and as a starting point for the development of MALL (Mobile Assisted Language Learning) applications for EFL teaching/learning undertaken by linguists and IT engineers within the context of the SO-CALL-ME project in Spain, our paper provides an examination of both the qualities and limitations of the most salient MALL applications available at the moment by assessing their features from a pedagogic point of view. Our assessment is pedagogic in the sense that, as will be seen, we do not focus here on the technical specifications of the apps, but rather on the kind of EFL teaching or practising they provide. The paper is structured as follows: section 2 gives an overview of the SO-CALL-ME project; section 3 explains the methodology used in our assessment of apps, whereas section 4 shows the results of such assessment; section 5, in turn, provides a final discussion as a way of wrap-up, as well as some concluding remarks.

2. SO-CALL-ME

SO-CALL-ME¹ stands for **S**ocial **O**ntology-based **C**ognitively **A**ugmented **L**anguage learning **M**obile **E**nvironment and it is the latest in a series of projects supported by the MEC² that the group ATLAS (**A**rtificial **I**ntelligence **T**echniques for **L**inguistic **A**pplications) has been carrying out for a number of years. ATLAS, one of the consolidated research groups at UNED (reference no. 87H31) with members from several Spanish universities, started to work in the field of distance L2 learning with the assistance of Information Technology (IT) in 1997. There is an evident need for solutions of this type in a distance

¹ *SO-CALL-ME (FFI 2011-29829)*

² *Spanish Ministry of Education and Science*

university such as the UNED with large numbers of students (over 200,000) and especially in difficult subjects to learn without the help of a teacher, as is the case with language learning. The challenge has always been to try to emulate an experienced English teacher with the use of Artificial Intelligence; to develop ICALL (Intelligent Computer Assisted Language Learning) tools which directly address the different linguistic and communicative competencies (speaking/writing, production, interaction/reception) with a particular emphasis in social and collaborative learning; and to do all of this with a solid linguistic, pedagogical and technological basis.

The objective of this particular project is twofold: firstly, to design and develop a theoretical framework for a hybrid model of ICALL, social and ubiquitous in character, which would adopt augmented reality techniques and could be used from small easily transportable mobile devices with permanent access to the Internet such as smartphones, tablets (i.e. iPad), or even netbooks and laptops. And, secondly, to design and develop a linguistic ontology of audiovisual learning objects which would support this L2 learning by avoiding the common problem of out-of-context materials in standard didactic texts. The intention is to enhance a very flexible form of learning which is adaptive, interactive, practical, dynamic and deeply rooted in daily socio-cultural situations and contexts. As a starting point ATLAS relies on the previous research carried out in I-AGENT³ (Intelligent Adaptive Generic English Tutor), which will provide teaching materials and activities.

There are over 28,000 educational applications for mobile devices in the market at the moment,⁴ therefore the members of the research group considered it essential to assess some of those which are available, their real educational value and the similarity they presented with the objectives of SO-CALL-ME and the materials available from I-AGENT. This would represent the starting point from which to gain knowledge and insights into the features that are effective and suitable for learners using MALL. The increasing technological sophistication of mobile devices can offer support for L2 learning, not only because they are convenient and portable, but also because they are already available across the population and within the university and/or professional communities. Nevertheless, without a sound methodological approach and a solid cognitive scaffolding mechanism many of the available applications are little more than a form of entertainment to fill spare time.

³ I-AGENT (FFI 2008-06030)

⁴ <http://www.eduapps.es>

It is very important for this research group to develop applications which help to improve the communicative competences of the students/users in an independent and effective way, directing the efforts to daily occurrences which they will feel are practical and purposeful and putting to good use the full potential that audiovisual material can provide. As Glasser (2000) points out, humans retain 10% of what they read, 20% of what they hear, 30% of what they see and 50% of what they see and hear. Therefore audiovisual materials seem to offer the perfect learning scenario as they combine sound, image and creative elements which have naturally made their way into entertainment media and allow learners to interact with systems in increasingly complex ways, although their educational potential is only just beginning to be examined (Squire 2002). As early as 1989, Brinton et al. wrote that content-based L2 instruction should aim at eliminating the artificial separation between language teaching and subject matter which exists in most educational settings (1989: 5). In the past 20 years, technology has advanced into a new era, requiring every academic discipline to re-evaluate its possibilities. SO-CALL-ME aims at fully understanding the convergence of language instruction and digital media in order to eliminate the artificial separation between language instruction and everyday life to allow every type of learner to enjoy learning a foreign language.

3. METHODOLOGY

As said in the introduction, the assessment of apps presented in this paper does not focus on the technical specifications of the apps, but rather on their pedagogic goals, in a most general sense. No in-depth methodological analysis of any particular app is therefore intended at this stage. In order to carry out the assessment of apps, two templates were created, and shared through Google Drive: the first was a table with two columns and an extendible number of rows where each of three evaluators could indicate the app assessed and the URL from which such app is available. The purpose of this list of apps was for each evaluator to know what apps had already been dealt with by the two other evaluators and thus avoid repetitions (see figure 1).

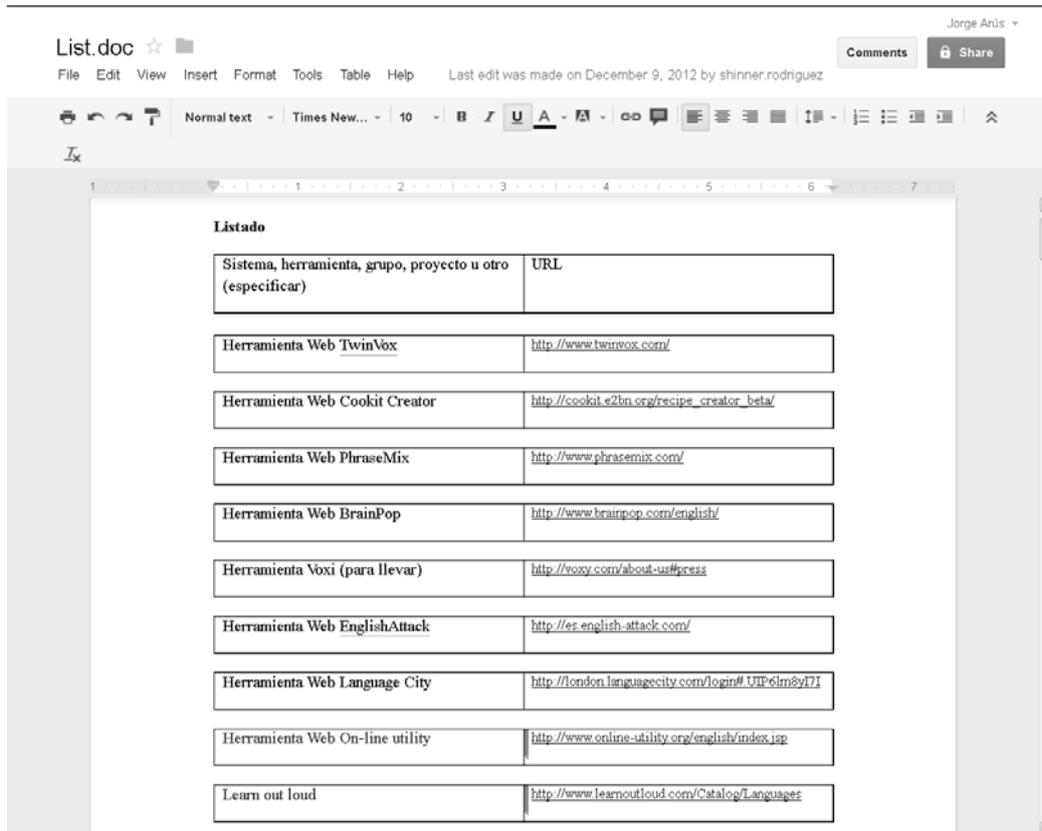


Figure 1 Top rows of the list of evaluated apps and their URLs shared through Google Drive.

The second template consisted in an in-house created rubric with three criteria and a scale from one to five for each of the criteria. The evaluators copied and pasted the rubric as many times as needed, one rubric per app. The purpose of this rubric was to guarantee homogeneity in the assessment process as well as to provide a means for relatively fast assessment which would enable covering a fairly large number of apps in a reasonable amount of time. To that end, the rubric was kept as simple as possible, and, as can be seen in figure 2, very much geared towards our project's specific needs. Thus, the three criteria considered were: 1) the apps cognitive value; 2) similarity of the app with the pedagogic aims of the SO-CALL-ME project; and 3) complementarity with the pedagogic aims of the SO-CALL-ME project. Each rubric was to be accompanied by a brief description of the app and a final evaluative remark.

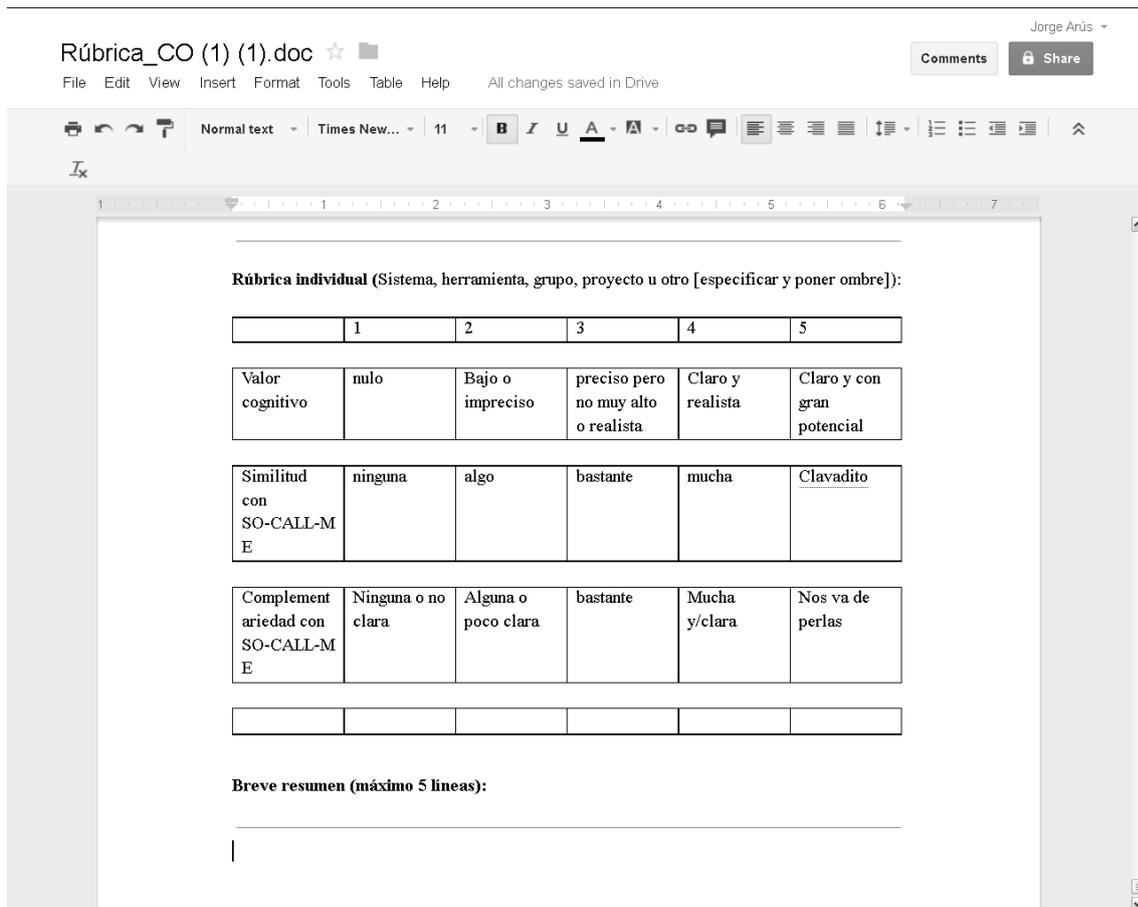


Figure 2 App assessment rubric.

Once the two templates had been created and shared online by the three evaluators, the assessment process proper started.

A total of 67 EFL apps were assessed, combining the scrutiny of the information available on the websites describing each app and, whenever possible, tested on a mobile device –i.e. when they were free to download and once downloaded the apps ran well. As said above, each evaluator assessed different apps, which in principle has the advantage of favouring the assessment of a larger number of apps but also the potential disadvantage of yielding less reliable assessments than if they had been done by more than one evaluator for each app. Given that, as explained above, this was an evaluation geared to the specific needs of the SO-CALL-ME project, we decided at this stage to rely on the individual evaluators' good judgement so as to favour a quantitative approach. In any case, the comparison of the rubrics in the only two cases in which two evaluators accidentally assessed the same app, helps, even if with no statistical relevance, to bring some peace of mind, as their assessments, if not identical, are quite in the same line. Figures 3 and 4 illustrate these two cases. In

figure 3 we see that one of the evaluators has assigned values 3/2/3 whereas the other has assigned values 3/1/3; figure 4 shows 3/2/2 vs. 3/1/3.

Rúbrica individual (Sistema, herramienta, grupo, proyecto u otro [especificar y poner nombre]): Johnny Grammar's Quizz Master (British Council)

| | 1 | 2 | 3 | 4 | 5 |
|----------------------------------|--------------------|---------------------|---|------------------|----------------------------|
| Valor cognitivo | nulo | Bajo o impreciso | p reciso pero no muy alto o realista X | Claro y realista | Claro y con gran potencial |
| Similitud con SO-CALL-ME | ninguna | algo X | bastante | mucha | Clavadito |
| Complementariedad con SO-CALL-ME | Ninguna o no clara | Alguna o poco clara | bastante X | Mucha y/clara | Nos va de perlas |
| | | | | | |

Breve resumen (máximo 5 líneas): Práctica de gramática, vocabulario y spelling con tests al final. Visualmente parece atractiva aunque parece que tiene poco contenido. De nuevo, puede ser una idea como complemento a lo que hagamos, para practicar lo que se haga. Para Android.

Rúbrica individual (Sistema, herramienta, grupo, proyecto u otro [especificar y poner nombre]): Johnny Grammar's Quizmaster

| | 1 | 2 | 3 | 4 | 5 |
|---|--------------------|-----------------------|---------------------------------------|------------------|----------------------------|
| Valor cognitivo | nulo | Bajo o impreciso | preciso pero no muy alto o realista X | Claro y realista | Claro y con gran potencial |
| Similitud con SO-CALL-ME | Ninguna X | algo | Bastante | mucha | Clavadito |
| Complementariedad con SO-CALL-ME | Ninguna o no clara | Alguna o X poco clara | Bastante | Mucha y/clara | Nos va de perlas |
| | | | | | |

Breve resumen (máximo 5 líneas): Se trata de un concurso sobre 1000 palabras comúnmente mal deletreadas en inglés. Un experto dirige las actividades. Estas son principalmente para practicar vocabulario. No tiene mucho más contenido.

Figure 3 Similar assessment of Johnny Grammar's Quizmaster by two evaluators.

Rúbrica individual (Sistema, herramienta, grupo, proyecto u otro [especificar y poner nombre]): 60-Second Word Challenge

| | 1 | 2 | 3 | 4 | 5 |
|---|--------------------|-----------------------|---------------------------------------|------------------|----------------------------|
| Valor cognitivo | nulo | Bajo o impreciso | Preciso pero no muy alto o realista X | Claro y realista | Claro y con gran potencial |
| Similitud con SO-CALL-ME | Ninguna X | Algo | bastante | mucha | Clavadito |
| Complementariedad con SO-CALL-ME | Ninguna o no clara | Alguna o X poco clara | | Mucha y/clara | Nos va de perlas |
| | | | | | |

Breve resumen (máximo 5 líneas): Juego de vocabulario que tiene 10 temas, 3 niveles de dificultad y 600 preguntas. Trata 10 temas cotidianos, de cine, TV y viajes,... Las puntuaciones que se obtienen se pueden compartir en Facebook Falta contenido, sólo para adquirir vocabulario.

Rúbrica individual (Sistema, herramienta, grupo, proyecto u otro [especificar y poner nombre]): 60 Second Word Challenge (British Council)

| | 1 | 2 | 3 | 4 | 5 |
|----------------------------------|--------------------|------------------------------|--|------------------|----------------------------|
| Valor cognitivo | nulo | Bajo o impreciso | preciso pero no muy alto o realista X | Claro y realista | Claro y con gran potencial |
| Similitud con SO-CALL-ME | ninguna | algo X | bastante | mucha | Clavadito |
| Complementariedad con SO-CALL-ME | Ninguna o no clara | Alguna o poco clara X | bastante | Mucha y/clara | Nos va de perlas |
| | | | | | |

Breve resumen (máximo 5 líneas): Para iPhone, iPod Touch and iPad. Quiz de vocabulario con niveles y diferentes tópicos. Te da feedback sobre las respuestas incorrectas. Se puede compartir en Facebook.

Figure 4 Similar assessment of 60 Second Word Challenge by two evaluators.

4. RESULTS

The first outstanding fact observed during the evaluation process was that a high number of apps presented technical problems at the time of downloading or starting them. Forums on the websites of the different applications often include complaints by disgruntled users who cannot get their apps to work. In fact, more than one third of the apps downloaded by the evaluators during the assessment process proved not to work properly or not to work at all.

Concerning software, the vast majority of apps assessed were available for Apple devices –iPhone, iPad and, sometimes, iPod Touch – and around one in four were also available for Android, with very few cases in which the app was only available for the latter. Other operating systems such as BlackBerry OS, Bada or Ovi seem to be much less targeted by app developers. A few of them can also be directly run from the Internet on a conventional computer.

Regarding prices, the most expensive apps assessed were those which consisted in mobile versions of traditional dictionaries, textbooks, vocabulary or grammar tests, etc, whose price can be as high as around 30 euros. A second group consists of apps downloadable for a small amount –usually around one euro, and rarely above three euros– such as Cambridge’s English Monstruo, and those apps with an initial free sample pack and the possibility to download further packs for a small amount (again, around one euro, as e.g. the British Council’s LearnEnglish Grammar. This second group is perhaps the largest set

together with a third group, i.e. that of apps that can be entirely downloaded for free, such as the wide choice of apps available from the British Council, among others. A final group is that of full-fledged English courses such as Busuu or EF's EnglishTown, where the price depends on the needs of the user and/or seasonal offers.

As for types of apps, our scrutiny allowed us to establish the following categories: a) Games, very often aimed at children, e.g. the apps available from Cambridge English Online; b) app versions of dictionaries, handbooks and textbooks, e.g. Cambridge's EFL methods, dictionaries, etc; c) apps providing vocabulary, grammar and/or pronunciation practice, such as My Word Book, Johnny Grammar's Quiz Master, 60 Second Word Challenge or Sounds Right; within this group of apps allowing practising different skills we can also include those apps going beyond mere drilling or quizzing. There are apps to practice listening comprehension by means of podcasts and the exploitation thereof, e.g. Listen-to-English and A Cup Of English, and apps allowing conversation practice, e.g. English Feed, even with other users, e.g. The Language Campus; d) as seen above, one type of apps is the adaptation of online courses such as Busuu and EF's EnglishTown to mobile devices; e) most closely related to the interests and goals of the SO-CALL-ME project are those apps exploiting the use of language in context. Real English speaking context situations are presented in a variety of ways, such as podcasts –e.g. Learn English, Talking Business English– videos –e.g. Learn English Audio & Video, Conversation English– films –e.g. English Attack– and cartoons –e.g. Big City Small World. It is also worth mentioning the existence of apps such as the mobile version of Voxi, where users select the situation in which they need to use their English and the app tells them the expressions to be used; although the output is rather limited –isolated sentences or words– the idea of offering users what they need in the context in which they find themselves has a great potential.

A last item resulting from the assessment of the apps concerns those features found in certain apps which differentiated them from the rest and provided and added value. For instance, the drag-and-drop facility available in some of them, e.g. Learn English Grammar, the possibility to draw with your finger, as in Premier Skills, connectivity with social networks, as offered by Language City, Learn English, 60 Second Word Challenge and Tongue Mystery English, and, finally, a feature we found particularly appealing from a pedagogical point of view, i.e. the inclusion of an Avatar, as in Cambridge's Quiz up. As Cohen (2007) states: "Avatars are excellent for online education. They provide the human interaction that is natural in classrooms and in the traditional learning environment".

5. CONCLUSION

In this paper we have reported on the assessment carried out on a number of MALL applications in the context of EFL so as to gain a global overview of the teaching and/or practising points they cover. As we have seen, our assessment was made by means of a rubric created in-house. This rubric geared the assessing task towards the specific needs of the SO-CALL-ME project, and reflected a quantitative rather than a qualitative approach.

The results obtained from the assessing process were presented in section 4, and they give us an idea of the q

ualities and limitations of the apps evaluated, as a first step in the development, within the context of our project, of other apps that may fill some existing gaps. Pending a more in-depth assessment of specific apps, the quantitative scrutiny here presented has allowed us to ascertain the limited scope of many of the existing products. This limitation is not in itself something negative, and in fact shows the efforts by methodologists, linguistic engineers and technological enterprises to develop technology which assists students to learn anytime and anywhere. Yet, it is also a fact that they tend to provide a rather fragmented language practice: some vocabulary here, some grammar there, etc. Some of the MALL apps evaluated, however, do provide more contextualized practice, as we have seen. It is precisely these apps that we will look at more in detail as a next step in our research so as to learn from their strengths while at the same time trying to find the way to integrate a sound pedagogy that may result in the creation of apps which, without being a mere mobile version of traditional online courses, will provide quality teaching and practice.

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APPS CITED

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Busuu (<https://play.google.com/store/apps/details?id=com.busuu.android.enc>)

Conversation English (<https://itunes.apple.com/ca/app/conversation-english/id296284263?mt=8>)

English Attack (<http://es.english-attack.com/>)

English Feed (<http://www.englishfeed.com/?p=134>)

English Monstruo (<http://www.cambridgemobileapps.com/general/monstruo.html>)

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Premier Skills (<http://learnenglish.britishcouncil.org/en/apps/premier-skills>)

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60 Second Word Challenge (<http://learnenglish.britishcouncil.org/en/apps/60-second-word-challenge>)

Sounds Right (<http://learnenglish.britishcouncil.org/en/apps/sounds-right>)

Talking Business English (<http://www.talkingbusinessenglish.com>)

The Language Campus (http://www.thelanguagecampus.com/?page_id=937)

Tongue Mystery English (<http://www.gamespot.com/tongue-mystery-english/>)

Voxy (<http://voxy.com/about-us#press>)