From Computer Assisted Language Learning (CALL) to Mobile Assisted Language Use (MALU)

Huw Jarvis
University of Salford, UK
<h.a.jarvis@salford.ac.uk>

Marianna Achilleos
Freelance EFL tutor, Cyprus
<dorantello@hotmail.com>

Abstract

This article begins by critiquing the long-established acronym CALL (Computer Assisted Language Learning). We then go on to report on a small-scale study which examines how student non-native speakers of English use a range of digital devices beyond the classroom in both their first (L1) and second (L2) languages. We look also at the extent to which they believe that their L2-based activity helps consciously and/or unconsciously with their language learning, practice, and acquisition. We argue that these data, combined with other recent trends in the field, suggest a need to move from CALL towards a more accurate acronym: mobile assisted language use (MALU). We conclude with a definition of MALU together with a brief discussion of a potential alignment of MALU with the notion of the digital resident and a newly emerging educational theory of connectivism.

Introduction

The term Computer Assisted Language Learning (CALL) became established in language education in the early 1980s (Chapelle, 2001). Arguably, practitioners and researchers in Teaching English to Speakers of Other Languages (TESOL) have been at the forefront of innovation, theory, and practice. Levy (1997) comments, "[W]ithin the field of computers in Education, especially within humanities computing, it is teachers in the area of English as a Foreign Language (EFL)…that have been in the vanguard" (p. 3). TESOL has done much to shape the direction of CALL; the acronym has served as a useful frame of reference. In the early days, CALL reflected a field that was heavily based on programmed instruction and on the behaviourist premises of language learning. The discipline has of course come a long way since then, with a combination of education theory and technology being the two interrelated primary drivers of change. Language education theory has moved away from what Stern (1983) usefully characterises as "pedagogically audiolingualism, psychologically behaviourism and linguistically structuralism" (p. 169) towards recognizing the significance of social

constructivism that emerged out of Vygotsky's work (1978). When applied to CALL, this manifests itself in what might be characterised under the umbrella term "technology and task-based pedagogy." There is a wide range of practical classroom ideas under this umbrella term, as well as an emerging theoretical foundation (Thomas & Reinders, 2010). The era of limited access to desktop computers with a few basic mechanical "drill and kill" software programs is long gone in many contexts. CALL has grown to include online blogs, use of apps, virtual learning environments, computer-mediate-communication, among others. However, despite recognition that the dominant acronym CALL is "anachronistic" (Thorne & Smith, 2011, p. 268) it nevertheless remains with us. The critique of CALL illustrates how alternative acronyms began to emerge with the arrival of the Internet. However, CALL continues to dominate and it is fair to assert that to date a viable long-lasting alternative is yet to emerge. Attempts to move away from CALL at the time when the Internet began have effectively become off-shoots of CALL – a viable long-lasting alternative, it is reasonable to argue, is yet to emerge.

In this article, we begin by defining and critiquing CALL. We then report on a small-scale study which examines the practices and perceptions of non-native speakers of English (NNSoE) when using a range of computer notebooks and laptops as well as Other Mobile Devices (OMDs) outside formal classroom learning contexts. We argue that this work, together with other trends within the field, suggests that we are now in a post-CALL era and that the acronym no longer suits its purpose.

A critique of CALL

A number of scholars have provided us with now well-established definitions. For Levy, CALL is "the search for and study of applications of the computer in language teaching and learning" (1997, p. 1). Beatty refers to CALL as "any process in which a learner uses a computer and, as a result, improves his or her language.... [This] encompasses a broad spectrum of current practices in teaching and learning at the computer" (2003, p. 7), whilst Egbert states that CALL is "learners learning language in any context with, through, and around computer technologies" (2005, p. 4). As noted, alternative acronyms to CALL emerged in recognition of the rise of the Internet. Bush and Terry (1997) proposed Technology Enhanced Language Learning (TELL), which emphasises the technology the computer provides rather than the computer itself. Web-enhanced Language Learning (WELL) was coined to refer to the Internet as a medium for instruction, whilst Warschauer and Kern (2000) proposed Network-based Language Learning (NBLL), which stresses computers connected to one another with human-to-human communication as the focus. Importantly, these definitions and acronyms have at their core the notion of students working on a desktop or laptop computer, usually in order to consciously practise or learn a language. With the computer at the core and applications usually centered on consciously practicing languages, it is not difficult to see how these alternative acronyms effectively became no more than off-shoots of CALL, as they did not challenge its defining characteristics.

We have in recent years seen a recognition of OMDs such as smartphones and eBook readers, such as Amazon.com's Kindle. The widespread availability and use of such devices has led to the acronym Mobile Assisted Language Learning (MALL), which

"differs from CALL in its use of personal, portable devices that enable new ways of learning, emphasising continuity or spontaneity of access across different contexts of use" (Kukulska-Hulme & Shields, 2008, p. 273). A number of studies report favourably on the role of a variety of OMDs in assisting language learning, these include mobile phones (Kiernan & Aizawa, 2004; Nah et al., 2008), tablet PCs (Lan et al., 2007) and MP3 players and Podcasting (O' Bryan & Hegelheimer, 2007; M'hammed et al., 2009). With MALL comes an awareness that OMDs allow for a crossing of boundaries between formal learning inside the classroom and informal learning outside the classroom (Kukulska-Hulme, 2009). However, whilst MALL recognises a crossing of boundaries and changes in technology from computer desktops and laptops, it nevertheless shares with CALL an emphasis on the "assisted language learning" components of the acronym. With this comes an emphasis on the role and value of usually a single software program in the conscious learning or practising of language. Such an emphasis is not without its limitations.

In terms of education theory, a number of scholars including Bax (2003) and Warschauer and Kern (2000) have documented how CALL moved out of its early phase and into a cognitive view that challenged students to think and work things out. This was then followed by a socio-cognitive view whereby learning is viewed as taking place not just through thinking, but also through interaction and negotiation with others. Here learning is socially constructed, typically involving students communicating with each other via computers. With these changing phases of CALL has come a shift from viewing the computer as a tutor or a tool to a medium. The term technology and task-based pedagogy is particularly useful to describe such prevalent thinking. To date, however, whilst CALL cannot be separated from the broader education theory of social constructivism, such theory is frequently derived from work outside of CALL—CALL, in other words, has reflected current educational thinking. Whether CALL, or technology more generally, can continue to do no more than simply reflect current thinking in educational theory is, as we will discuss in our conclusion, but one potential point of departure for MALU.

The Study

This study is motivated by the critique that we have documented, together with on-going interest in the literature on technology and self-study or learner training (Godwin-Jones, 2011; Jarvis, 2008; Jarvis & Szymczyk, 2010; Jarvis, 2012; Schmenk, 2005). In an era of continuous access with a wide range of digital devices and programmes, what happens outside the classroom in less formal contexts is an area of increasing importance; the perceptions practices and beliefs of the users are significant. As Kern (2006) notes, it is important to "understand the effectiveness of technology in terms of the specifics of what people do with computers, how they do it, and what it means to them" (p. 189). Allowing the learners' voices to contribute to the validity of the CALL acronym is, in this article, the bridge between the critique that we offer and the proposed MALU alternative. The voice of the learner is particularly important given the global availability and use of computers and OMDs by many millions of NNSoE in their everyday lives, outside the formal settings of the language classroom.

In this study, we build on the work of Jarvis (2012), which found that NNSoE in home country contexts of the United Arab Emirates and Thailand make use of a wide variety of computer-based materials (CBMs) beyond the classroom in both L1 and L2. They view such material as helping with their language learning irrespective of whether or not it was the explicit intention of the material. Watching videos in English or posting on Facebook, for example, were seen by many participants as helping with language learning almost as much as using online dictionaries or practicing grammar on the web. Our study attempts to both replicate and further build on this work, but in a host country context. An acknowledged limitation of the previous study was its focus on the computer desktop or laptop and the consequential use of CBMs to frame the research questions. A failure to recognise the significance of OMDs was a significant shortfall that this study attempts to address.

Aims

The study examines the practices and perceptions of NNSoE adult learners in their use of computers and OMDs. We ask the following questions:

1. Which devices and applications do learners use? What do they use them for?

2. To what extent do learners use the English language as an L2 when using the various technologies for purposes beyond their language studies, and why?

3. To what extent do students believe their language learning is enhanced by the use of these technologies?

4. To what extent do learners use these technologies to consciously learn English?

5. To what extent do learners believe that through exposure to the language 'unconscious acquisition' may occur?

In answering these questions we argue that the acronym CALL is no longer the most valid term for understanding the field.

Methodology

Our data collection combined quantitative and qualitative techniques, which as with many literature sources (see, for example, Newman & Benz, 1998), we view not as polar opposites or dichotomies, but rather as representing two ends on a continuum. The quantitative element involved asking closed-ended questions and eliciting responses to statements via a paper-based questionnaire (piloted and amended as required). We reduced the number of questions, as pilot study participants reported that the instrument was too long. We added headings in italics so that participants could see the classification of questions. The Appendix shows the final questionnaire; for convenience and space purposes, this has been amended to include the collated data as well.

The qualitative component consisted of one-to-one, semi-structured interviews, conducted by one of the co-authors whose age category (18-24) was aligned with the participants'. We felt that participants would be more at ease being interviewed by a fellow student (a teacher-trainee, completing a dissertation on an MA TESOL programme). These sessions were usually 20 to 30 minutes long, and were conducted in a range of campus locations (usually the canteen or an empty

classroom). Participants were invited to talk further about their responses, allowing the possibility to discover new and important realities unintentionally (Adler & Adler, 1998). In short, we favoured a mixed methods approach, which "attempts to consider multiple viewpoints, perspectives, positions and standpoints" (Johnson et al., 2007, p. 113). We acknowledge the inherent limitations of self-reporting, but feel that our small scale-study with its questionnaires and interviews nevertheless provides insights into the practices and perceptions of NNSoE. Further work in this area using a broader range of techniques, including observational data together with a larger qualitative sample and statistical analysis would be a welcomed addition to the research.

Participants

The participants were NNSoE who were students aged 18-24 at a university in the UK with an upper intermediate level of English equating to an overall IELTS score of at least band 6 or a TOEFLiBT of 80. A total of 70 questionnaires were administered. The return rate was 64, of which 56 could be used. Eight questionnaires were disregarded because of incomplete or inconsistent answers. A total of 32 participants were on a pre-sessional English language summer course preparing to enter either an undergraduate or postgraduate course. The remaining 24 participants were already enrolled on an undergraduate or postgraduate course. Participants on the pre-sessional course were new to the UK, whilst those who were already enrolled on a degree course had been in the UK for at least ten months. The collated data, however, revealed no significant differences between these two groups. For reporting purposes, we do not differentiate between them. From the questionnaires, 23 students indicated a willingness to participate in the second qualitative phase of our study. From these, 7 students were chosen based on a both a spread of responses and a variety of country of origin. Our interviews were recorded and transcribed.

In line with institutional policy and literature-based recommendations (see, for example, Seliger & Shohamy, 1989) all precautions and procedures were put in place from the start, and maintained during and after data collection and analysis, in order to ensure that every effort was made to minimize any risk to the participants. For reporting purposes, we combine quantitative and qualitative data. With the agreement of the participants, we have coded interview comments as follows: SAM = Saudi Arabian Male; SAF = Saudi Arabian Female; GF = Greek Female; CHM = Chinese Male; POF = Polish Female; CYF = Cypriot Female; PAM = Pakistani Male. In reporting what students said, italics are used;, the English has not been corrected, as their meaning is clear despite some language errors. Our study generated a large amount of data, and our questionnaire was designed to revisit and crosscheck answers to the key questions in our aims. Such an approach brings some inevitable repetition, but this repetition in the questionnaire, when combined with our interview data, also allows for a degree of triangulation.

Results and discussion

We have synthesised our discussion under two headings, "*Use of devices," and "Applications and the role of English*." Full statistics for the questionnaire data are available in the Appendix.

Use of devices

All participants use computers and other OMDs, and view them as essential to their daily lives, as indicated in Question 2.7 (Q2.7). A POF explained, *"I believe that I could not do anything without technology, I feel lost when I don't have internet,"* a view endorsed by a PAM who said *"[I]t just makes life easier, so I need it."* They make frequent use of computers with a clear preference for laptops over desktops (Qs2.1, 2.2, 2.3, 2.4). *"Desktops are old now, everybody now has a laptop if you go to shop a computer usually you see only laptops and it is cheaper"* (CHM). Other reasons for a preference of laptops over desktops suggest that the mobility factor is an important one: *"I can take it with me anywhere I want"* (SAM), *"I am not at my home so I need to take my computer with me home and bring it here to the UK when I come to study"* (CYF).

Responses to Q2.5 show that 87.5% of participants use OMDs, with the vast majority (83.7%) doing so on a daily basis (Q2.6). A significant majority of participants view both computers and OMDs as essential in their daily lives (Q2.7), with the reasons covering both social and academic purposes: *"I listen to music, You Tube etcetera. I watch some videos, movies, series I download. Many times I make some research for my studies, I look for articles, I also read news, look weather, I communicate Facebook, Twitter all this stuff"* (GF). Whilst SAF noted, *"I use my laptop and my iphone all day, I listen music also I talk on Facebook with my friends and I send text messages also I search the internet maybe for information I need or use dictionary … when I am out and want to figure something out, either information or the meaning of a word or something I will use my smartphone, I have it with me all the time and it is easy to take with me."* The anywhere/anytime convenience of such devices can be further seen from the answer to Q6A, with 87.5% agreeing with the statement: "I think that Mobile devices are convenient because I can have them with me all the time and use them in the same way as my computer." Overall, the data suggest a need to recognise that the field is no longer restricted to computers, and that mobility–together with a wide variety of uses–are a defining characteristic of NNSoE practices. The English language is of major importance to such users.

Applications and the role of English

Answers to questions 3, 4, 5 and 6, when taken in totality, point to the importance of both computers and other OMDs as used for both social and academic purposes in both L1 and L2. In response to Q4, 85.7% of participants recognise the dominant role of the English language on the Internet (Q4A); *"[M]ost information on internet is in English"* (PAM); *"I can't find as many thing as I need in Greek"* (GF); *"Sometimes, I might find something in my language about the topic I am searching to get a general idea of what it is about because it is more easy for me to understand and then I will look for it in English because there is more information. English in the international language so it is much easier to find things."* (SAM).

A total of 91.1% agreed that they use English when using electronic devices because it is a way to practise their language skills (Q4B). As might be expected with a very similar statement in Q5.1 91.1% agreed (30.4%) or strongly agreed (60.7%) that the various devices help them to practise and\or learn English. More specifically 69.6% use

English to communicate with others (Q4C). English learning and practice, it would seem, is not only an end in itself for many participants, but is also a means to an end. The end could be characterised as engaging in social networking sites, accessing information from the web, online gaming, and so forth; in such cases, English is the means to do so. *"English is everywhere and it has everything in English so if I find something and I might translate in my language, but I don't use it exclusively to learn English but I learn many things in this way"* (POF).

When asked in Q5.3 to decide which helped most with language learning–narrowly defined tutorial packages as specified in Q5.3A, or using English without explicitly learning it as in Q 5.3B– 71.4% opted for the latter. Our interview participants elaborated as follows: *"[R]eading various articles, news, etcetera helps me to make my English better also communicating through Facebook with my friends in English also helps me because I speak in English and sometimes I make mistakes and also I see how other people (I am talking about people who language is English) speak and this helps me"* (POF)*; "I believe that reading and communicating in general and doing other things helps me more because I see and use real language everyday, when I practice only grammar it is very specific the language use in tenses"* (SAM); *"So many year we are learning grammar rules and we practice many times, it is not the same when you use language in real life it is more difficult so I think for my level now it is better to read some article newspapers"* (SAF)*; "I don't intentionally use English to communicate or to read something so I can learn thing but I definitely believe I learn many things like vocabulary and new expressions phrases etc.* (SAM)*"; "[M]any times when I watch films or videos on You Tube I learn different things, maybe not immediately but if I watch different things all the time I am sure I learnt many things from this"* (CYF).

None of the participants indicated that they read e-books in only their L1; out of the relatively small sample of 20 participants that read e-books, 60% (N=12) do so mostly in English and only less frequently in their L1. Thirty percent (N=6) use only English. When I asked why, a typical reply was *"[T]he e-books I read are for my studies so I use English"* (POF).

Taken in combination, we believe that the data on what is perceived as helping with participants' English is significant. In the era before global Internet usage, Krashen (1982) distinguished between *acquisition* as a "a subconscious process; language acquirers are not usually aware of the fact that they are acquiring language, but are only aware of the fact that they are using the language for communication…" and learning "to refer to the conscious knowledge of a second language" (p. 10), which means knowing the rules, being aware of them, and being able to talk about them. In nontechnical terms, learning is "knowing about a language." Our data suggest that thirty years on, and with a prevalence of digitalized devices and programmes, such distinctions are possibly even more relevant for our learners than before. Jarvis (2008, p. 380) has argued that now we need specifically to apply such distinctions to an electronic environment with notions of e-learning and e-acquisition: this study supports the suggestion that students believe that they are "picking-up" language through using it. This area remains underexplored; we advocate a MALU framework as more appropriate for addressing such issues than CALL, which is still largely located within

and restricted by what might be characterized as "conscious e-learning." It is interesting to note that only 16.1% reported a changing of their practice because they were studying in the UK. Participants recognise the significance of English, irrespective of location when using laptops and OMDs (Q4D and Q5.2), as typified by the following: "*[I]n my home country I don't hear many everyday expressions because not many people speak English so I think that I learnt many things from watching videos on You Tube or reading different things on the internet*" (GF). Indeed, we would argue that one of the advantages of shifting from CALL to MALU is that it allows us to better recognise that NNSoE have unprecedented continuous access not only "anytime" but also "anywhere". In such less formal learning contexts, the "host country" or location-specific "self-access language learning centres" are probably not as significant as they once were in a pre-MALU environment, when access to English was more restricted.

In response to Q3, which attempts to identify preferences for devices when applied to specific activities, we should note that there is very little to separate different applications being used either on laptops or on OMDs–participants use both of these devices for a range of activities. We have already noted the decline in the use of desktops, which is confirmed here. Most noteworthy with this data is that where there are differences between computer laptops and OMDs, participants preferred laptops significantly to OMDs in two specific applications: using the web to access academic information (76.8% compared to 21.4%), and to practice their English (58.9% compared to 26.8%). Of all the listed applications, these two involve conscious learning; it seems that OMDs are not the vast majority's preference for such activities. Therefore, whilst all kinds of devices are valued as assisting with unconscious acquisition, in contrast, desktop computers and laptops are preferred for conscious learning.

With a more detailed analysis of the language used for each of the applications (Q3), we should note low percentages for all applications in column A ("only my first language"): participants do not appear to be making exclusive use of their L1. There is some variation between applications and participants' use primarily of mainly L1 (column B) or mainly L2 (column C). As might be expected, the largest percentage of mainly L1 use is "accessing personal information on the WWW" (48.2%). However, even with this application, 41% used mainly L2 and 7.2% used only L2. The role of using applications mainly in L2 (column C) or only L2 (column D) is generally high for all applications. The role of English, as we have already noted, is of a major significance to these NNSoE for whatever applications they happen to be using. It is of even higher significance when used to access academic information, with 46.4% using mainly L2 and 32.1% using only L2. However, even with social networking sites such as Facebook and Twitter, among others, English remains important–41.1% indicated that they used mostly English and some of their L1, 21.5% use mostly their L1 and some English, 31.3% use only English, and only 5.8% use only their L1. English is used not only for accessing information but also for communicating information of a social nature: *"I don't have many English friends, but I have friends from different countries so we talk in English"* (CYF). With entertainment, as might be expected, we see a slightly higher use of L1, where participants are more likely to be just accessing information rather than accessing and communicating, as with social networking. However, a GF wanted to differentiate

between our listed items: *"In my language I listen to music and also read news etc. but in English I play games, there are nice games in English and also English music is very popular so I listen to it because I like it I also watch English films and series."*

Finally, responses to Q6E point to the significance of multi-tasking for these NNSoE: 87.5% reported using more than one application at the same time. Participants do not restrict themselves to one application in either L1 or L2; in all likelihood they use both L1 and L2 on Facebook and Twitter, whilst also working on an assignment and/or listening to music. Again, we argue that such practices challenge traditional CALL frameworks, which tend to focus on one software program used to practice English in controlled location specific contexts.

Conclusions

We acknowledge that CALL remains relevant, to the extent that there will still be a role for it to play in students working on a computer desktop or laptop. Our data suggests that they are the preferred tools for conscious learning activities, for now at least. However, as we have seen, there is a need to take a more comprehensive view. In this study, NNSoE use a range of devices for a variety of social and academic purposes. These include conscious learning, but also cover other activities which allow for the possibility of "picking up language" or unconscious acquisition. Whilst we have not attempted to measure learning outcomes from such activities, there is nevertheless a newly emerging literature pointing favourably to the impact of such practices on language learning. In relation to online gaming for example Kuure (2011) suggests that "[A]ctivities around such games may provide important affordances for language learning, not as an objective as such, but as means of nurturing social relationships and participating in collaborative problem-solving and networking among peers" (p. 35).

The practices of NNSoE users do, we feel, now necessitate a shift from CALL to MALU. We define MALU as non-native speakers using of a variety of mobile devices in order to access and/or communicate information on an anywhere/anytime basis and for a range of social and/or academic purposes in an L2. Such a definition encompasses all the features of CALL and even MALL, in that it allows for conscious study purposes on desktops, laptops and OMDs, but is not constrained by the limitations and also recognises social uses in the L2 in both formal and less formal learning situations. It recognises that devices can be used not only as a means to an end, where the end is language learning, but also where the end is accessing and posting information as globally networked citizens with English (as the L2) as well as L1 being the means to do so. We take issue with the view that the umbrella term CALL remains the most appropriate, as is still explicitly stated in some of the literature. Such a view has, for example, been recently articulated by Garret (2011, p. 723) who states, "What is changing most radically in the complex factors that define CALL today is the larger context of language education in today's world…". It is however precisely this larger context, driven in significant measure by the practices and perceptions of NNSoE who access and communicate information in both their L1 and L2 with a wide range of devices which make such definitions problematic and suggest a need for an alternative. According to Internet World Stats (http://www.internetworldstats.com) in 2010, 825.1 million were located in Asia. Europe has 475.1 million users and North

America has 266.2 million. The English language has an estimated 536.3 million speakers, followed by Chinese (444.9) and Spanish (153.3). It is clear that users throughout the globe are accessing and communicating information in their L1 and L2 (with English dominating L2 use), and they are doing so for study, business, and social purposes. Many of these users, including those who participated in this study are digital residents in that "A proportion of their lives is actually lived out online…" (White & Cornu, 2011), and significantly, some of their time is spent residing in a second language. As we have seen, some of this time may be spent learning, but it is not the prevailing activity. As such, CALL is no longer an adequate point of reference. We are in a post-CALL era because the field is not "just" about the computer, nor is it "just" about assisted language learning, it is about MALU.

Finally, our suggested shift to MALU has the potential to better complement a newly emerging educational theory of connectivism than CALL is ever able to. Siemens (2005) argues, "How people work and function is altered when new tools are utilized" and that "[w]e can no longer personally experience and acquire learning that we need to act. We derive our competence from forming connections." Such a view sees "… formal education as no longer comprising the majority of our learning" (n.p). Arguably we don't "need to know" in the same way because the answers to many of our questions are now within easy reach on a wireless laptop or OMD, and significantly, are usually in English as an L2. Whether this alternative represents a new theory for the digital age is, as might be expected, much contested. Bell (2011) for example, argues that this is more of a phenomenon than a theory. Theory or phenomenon, further work in this area is needed and in language education, irrespective of the answers, arguably MALU now needs to be our defining point of reference in keeping TESOL at the vanguard.

About the Authors

Huw Jarvis is a Senior Lecturer in TESOL at the University of Salford in the UK and is the founder and editor of http://www.TESOLacademic.org, which disseminates research through a series of freely accessible video talks.

Marinna Achilleos has recently completed her MA TESOL at the University of Salford, UK and is currently working as a freelance EFL/ESL tutor in Cyprus.

References

Adler, P.A., & Adler, P., (1998). Observational techniques, In N. K. Denzin & and Y. S. Lincoln (Eds.), *Collecting and interpreting qualitative materials* (pp. 79-109). London: Sage Publishers.

Bax, S., (2003). CALL – past, present and future. *System 31(1),* 13-28.

Beatty, K., (2003). *Teaching and researching computer assisted language learning.* London: Longman.

Bell, F., (2011). Connectivism: Its place in theory-informed research and innovation in technology-enabled learning. *The International Review of Research in Open and Distance Learning 12(3),* 98-118.

Bush, M.D., & Terry, M.R., (Eds.), (1997). *Technology-enhanced languagelLearning.* Lincolnwood, IL: National Textbook Company.

Chapelle, C., (2001). *Computer applications in second language acquisition: Foundations for teaching, testing and research.* Cambridge: Cambridge University Press.

Egbert, J.L., (2005). Conducting research on CALLIn J.L Egbert & G.M. Petrie (Eds.), *CALL research perspectives* (pp. 4-8)*.* Mahwah, NJ: Lawrence Erlbaum.

Garrett, N., (2009). Computer-assisted language learning trends and issues Revisited: Integrating Innovation. *The Modern Language Journal 93(1)*, 719-740.

Godwin-Jones, R., (2011). Emerging technologies autonomous language learning. *Language Learning and Technology 15(3)*, 4-11.

Jarvis, H., (2012). *Computers and learner autonomy: Trends and issues.* ELT Research Papers 12(2). London: The British Council.

Jarvis, H., & Szymczyk, M. (2010). Student views on learning grammar with web and book-based materials. *English Language Teaching Journal 61(1)*, 32-44.

Jarvis, H., (2008). Computers and independent study: practices and perceptions of students, In P. Torres & R. Marriot (Eds.), *Handbook of research on e-Learning methodologies for language acquisition* (pp. 367-386). Hershey, NY: Information Science Reference.

Johnson, B., Onwuegbuzie, J.A. & Turner, L.A. (2007). Towards a definition of mixed methods research.*Journal of Mixed Methods 1(2),* 112-133.

Kern, R., (2006). Perspectives on technology in learning and teaching languages. *TESOL Quarterly 40(1)*, 183-210.

Kiernan, P.J., & Aizawa, K., (2004). Cell phones in task based learning – Are cell phones useful language learning tools? *ReCALL 16(1)*, 71-84.

Krashen, S., (1982). *Principles and practice in second language acquisition*. London: Pergamon.

Kukulska-Hulme, A., (2009). Will mobile learning change language learning? *ReCALL 21(2)*, 157-165.

Kukulska-Hulme, A., & Shields, L., (2008). An overview of mobile assisted language learning: from content delivery to supported collaboration and interaction. *ReCALL 20(3)*, 271-289.

Kuure, L., (2011). Places for learning: Technology-mediated language learning practices beyond the classroom In P. Benson & H. Reinders (Eds.), *Beyond the Language Classroom* (pp. 35-46). Basingstoke: Palgrave Macmillan.

Lan, Y.J., Sung, Y.T., & Chang, K.E., (2007). A mobile-device-supported peer-assisted learning system for collaborative early EFL reading. *Language Learning & Technology 11(3)*, 130-151.

Levy, M., (1997). *Computer-assisted language learning: Context and conceptualization*. NY: Oxford University Press.

M'hammed, A., Camarena, M.M., & Facer, R.B., (2009). MALL technology: Use of academic podcasting in the foreign language classroom. *ReCALL 21(1)*, 76-95.

Nah, C.K., White, P., & Sussex, R., (2008). The potential of using a mobile phone to access the internet for learning EFL listening skills within a Korean Context. *ReCALL 20(3)*, 331-347.

Newman, I., & Benz, R.C., (1998). *Qualitative-quantitative research methodology. Exploring the interactive continuum*. Carbondale: Southern Illinois University Press.

O' Bryan, A., & Hegelheimer, V., (2007). Integrating CALL into the classroom: The role of podcasting in an ESL listening strategies course. *ReCALL 19(2)*, 162-180.

Schmenk, B., (2005). Globalizing Learner Autonomy. *TESOL Quarterly 39(1)*, 107-118.

Seliger, H., & Shohamy, E., (1989). *Second language research methods.* Cambridge: Cambridge University Press.

Siemens, G., (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology & Distance Learning 2(1).*

Stern, H., 1983. Fundamental concepts of language teaching. Oxford: Oxford University Press.

Thomas, M., & Reinders, H., (2010). (Eds.), *Task-based language learning and teaching with technology*. London: Contiuum.

Thorne, S., & Smith, B., (2011). Second language development theories and technology-mediated language learning. *CALICO Journal, 28*(2), 268-277.

Vygotsky, L., (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Warschauer, M., & Kern, R., (Eds.). (2000). *Network-based language teaching: Concepts and practice*. NY: Cambridge University Press.

White, D., & Cornu, A., (2011). Visitors and residents: A new typology for online engagement. *First Monday*. 16/9.

Appendix 1- Questionnaire with collected data

Notes

(1) This document is amended for data presentation purposes from the original questionnaire which was distributed to participants. We have excluded the pre-amble consent page, together with the section indicating whether participants were agreeable to participate in interviews and the thank you at the end.

(2) All the data is presented in percentages (%). The total number of each response is also shown in brackets (N=56, where applicable).

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1. What are you studying?

English on pre-sessional summer courses = 32
Currently on an undergraduate or postgraduate courses at the University = 24

Where are you from?

Country	total	Country	Total
Saudi Arabia	25% (14)	Poland	5.4% (5)
China	23.2% (13)	Pakistan	5.4% (5)
Iraq	10.7% (6)	Syria	5.4% (5)
Cyprus	8.9% (5)	Jordan	3.6% (2)
Tunisia	5.4% (5)	Spain	1.8% (1)
Greece	5.4% (5)		

Use of computers and other devices

2.1 Do you usually use a desktop computer?

Yes = 23.2% (13) – continue to 2.2 and then 2.3

No = 76.8% (43) – skip 2.2 go to 2.3

2.2 How often do you use it? (tick only one answer)

Everyday   Most days   2 or 3 times a week Hardly ever Never

84.6% (11/13) 15.4% (2/13) 0% (0)   0% (0)   0% (0)

2.3 Do you usually use a laptop?

Yes = 76.8% (43) – continue to 2.4 and then 2.5

No = 32.2% (13) – skip 2.4 go to 2.5

2.4 How often do you use it (tick only one answer)

Everyday	Most days	2 or 3 times a week	Hardly ever	Never
90.7% (39/43)	16.3% (8/49)	0% (0)	0% (0)	0% (0)

2.5 Do you use any other mobile devices? (smartphones, tablet computers, ipads, iphones, ipods, netbook, notebook, digital pocket dictionaries)

Yes = 87.5% (49) – continue to 2.4 and then 2.7

No = 12.5% (7) – skip 2.6 go to 2.7

2.6 How often do you use them? (tick only one answer)

Everyday	Most days	2 or 3 times a week	Hardly ever	Never
83.7% (41/49)	16.3% (8/49)	0% (0)	0% (0)	0% (0)

2.7 Do you consider the use of computers and other digital mobile as an essential tool in your everyday life?

Yes = 100% (57) – continue to add reasons and then on to 3

No = 0% (0) – please give reasons and then return the questionnaire. There are no further questions. Thank you for providing this information.

Some commonly noted reasons included: daily living relies on them; it is easy to find information about everything very quickly; it connects me to the whole world because everything now is done with computers; it helps me in my studies; reading news; to keep in touch with my family and friends; it makes my life easier; to increase knowledge; the most convenient way to find information; to make friend through social networks.

Language – computers and other devices

3. The following section is divided into two parts, follow the instructions and complete the table below.

3.1 Which electronic devices do you use for the purposes listed in the table below
Please tick ✓ the box if you use electronic devices for this purpose or ✗ if you do not use them for this purpose.

3.2 Which language do you use when using electronic devices? tick ✓ only *one* answer (A, B, C or D) for this
A = Only your first language
B = Mainly your first language and some English
C = Mainly English and some of your first language
D = Only English

Applications	Computer desktop	Laptop	Other mobile devices	A	B	C	D
	Please fill in all boxes in this section Either ✓ or cross ✗ each box			Please tick ✓ only one box			
access the WWW (internet) for personal information *(my interests)*	☑ 23.2% (13)	☑ 76.8% (43)	☑80.4 % (45)	3.6% (2)	48.2% (27)	41.1% (23)	7.1% (4)
	⊠ 76.8% (43)	⊠23.2% (13)	⊠19.6% (11)	*A total of 56 participants use electronic devices for this purpose*			
access the WWW (internet) for academic information *(information for my studies)*	☑ 23.2% (13)	☑76.8% (43)	☑21.4% (12)	5.4% (3)	16.1% (9)	46.4% (26)	32.1% (18)
	⊠ 76.8% (43)	⊠23.2% (13)	⊠78.6%(44)	*A total of 56 participants use electronic devices for this purpose*			
read e-books	☑ 8.9% (5)	☑ 26.8% (15)	☑28.6%(16)	0% (0)	10% (2)	60% (12)	30% (6)
	⊠ 91.1% (51)	⊠73.2% (41)	⊠71.4%(40)	*A total of 20 participants use electronic devices for this purpose*			
access social networking sites *(Facebook, Twitter, Myspace, etc.)*	☑ 19.6% (11)	☑ 71.4% (40)	☑67.9%(38)	5.8% (3)	21.5% (11)	41.1% (21)	31.3% (16)
	⊠ 80.4% (45)	⊠28.6% (16)	⊠32.1%(18)	*A total of 51 participants use electronic devices for this purpose*			
Entertainment *(games, You Tube, films, music etc.)*	☑ 23.2% (13)	☑ 76.8%(43)	☑84% (47)	3.6% (2)	39.3% (22)	33.9% (21)	19.6% (11)
	⊠76.8% (43)	⊠23.2% (13)	⊠16% (9)	*A total of 56 participants use electronic devices for this purpose*			

E- mail	☑ 23.2% (13)	☑ 76.8%(43)	☑41.1%(23)	0% (0)	37.5% (21)	42.9% (24)	19.6% (11)
	⊠76.8% (43)	⊠23.2% (13)	⊠58.9%(33)	*A total of 56 participants use electronic devices for this purpose*			
online Dictionaries	☑ 21.4 (12)	☑75% (42)	☑92.9%(52)	N/A			
	⊠ 78.6% (44)	⊠25% (14)	⊠7.1%(4)				
Internet sites with English practice exercises	☑ 14.3% (8)	☑58.9% (33)	☑26.8% (15)	N/A			
	⊠ 85.7% (48)	⊠41.1%(23)	⊠73.2% (41)				

4. Think about the reasons for which you use English when using electronic devices, and tick ☑ or ⊠ the appropriate boxes (you can or more than one statement)

	☑	⊠
A: Most information available on the internet is in English	85.7% (48)	14.3% (8)
B: I use English because it is a way to practice and improve my language skills	91.1% (51)	8.9% (5)
C: I use English to communicate with other people because it is a language used by many people	69.6% (39)	30.4% (17)
D: I have to use English because I am studying in the UK, if I were in my home country I would use my native language	16.1% (9)	83.9% (47)

Some commonly noted reasons included: I like using English; it is easier to write in English for example on social networking sites; it is difficult to find a lot of information about everything in my first language; I have friends that do not speak my first language.

5. Further information

5.1 I believe that using English for various purposes through electronic devices helps me practice and/or learn English. (tick ✓ only one answer)

Strongly Agree Agree   Disagree Strongly Disagree

60.7% (34)   30.4% (17) 8.9 % (5) 0% (0)

5.2 I used English in the same way before coming to study in the UK. (tick ✓ only one answer)

Strongly Agree Agree   Disagree Strongly Disagree

28.6% (16)   57.1% (32) 8.9% (5) 5.4% (3)

5.3 Between A and B indicate which you believe helps you more with your language learning

A: Using Web pages that are designed for English language learning (http://www.onestopenglish.com/, www.englishpractice.com, www.manythings.org)	28.6% (16)
B: Doing various other things but using the English language to do so (such as accessing information on the WWW, communicating with friends/family,listening to music etc.)	71.4% (40)

Some commonly noted reasons included: For A: "on the internet when communicating we use other English, not correct English"; "using web pages with exercises gives you answer if correct or not what you use." For B: "doing different things helps you see and use real language"; "many times to know only grammar but don't use does not help."

6. Please indicate whether the following are true or not true for you (✓ true or ✗ for not true)

	☑ True	☒ Not true
A: I think that mobile devices are convenient because I can have them with me all the time and use them in the same way as my computer	85.7% (48)	14.3% (8)
B: I prefer using books to search for information rather than the internet	5.4% (3)	94.6% (53)
C: I communicate through social networking sites (Facebook, Twitter etc.) with people whose first language is English.	78.6% (44)	21.4% (12)
D: If I don't know something the first thing I will do is search it on the internet	91.1% (51)	8.9% (5)
E: When using electronic devices I use more than one application at the	87.5%	12.5%

same time. (ex: listen to music, search the WWW, chat on social networking sites)	(49)	(7)
F: When I do not understand a word or phrase I look it up in online dictionary	92.9% (52)	7.1% (4)
G: If I have a small portable device with me at different times I have more chances of using the English language in various ways rather than only using my computer.	87.5% (49)	12.5% (7)
H: Using new technologies in English helps me with my language learning	91.1% (51)	8.9% (5)
I: I did *not* use the English language when using technology before coming to study in the UK	14.3% (8)	85.7% (48)

Thank you for completing this questionnaire.