

Mobile assisted language learning: Scope, praxis and theory

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Received: 1 June 2021 / Accepted: 22 January 2022

DOI: 10.30827/portalin.vi.21424

ISSN paper edition: 1697-7467, ISSN digital edition: 2695-8244

ABSTRACT: Mobile assisted language learning (MALL) research has been characterized by an overemphasis on technology, while the wide variety of approaches to the uses of mobiles has painted an atomized picture of L2 instruction. This paper discusses various conceptualizations of MALL that favour areas of language learning that are anchored on different theories of learning and language learning. Drawing on the seminal work by Traxler (2018, 2019), as well as on research that has examined self-directed uses, the use of apps and Augmented Reality (AR) in MALL, the authors contend that it is essential to shift our focus away from device-oriented pedagogies to more socially situated practices that take stock of new ecologies of language use. We contend that the research field is in search of a wider theoretical perspective in the context of SLA and language education that explores what we label here as socially contextualized MALL.

Key words: MALL, language learning, socially contextualized MALL, self-directed language learning, technology

Aprendizaje de idiomas asistido por dispositivos móviles: alcance, praxis y teoría

RESUMEN: La investigación sobre el aprendizaje de idiomas asistido por dispositivos móviles (MALL) se ha caracterizado por un énfasis excesivo en los aspectos más íntimamente relacionados con la tecnología y la gran variedad de enfoques sobre los usos de los dispositivos móviles ha contribuido a generar una visión atomizada de la enseñanza de segundas lenguas. En este artículo se analizan diversas conceptualizaciones sobre MALL que, en diferente medida, favorecen áreas del aprendizaje de lenguas vinculadas a teorías sobre el aprendizaje y el aprendizaje de lenguas. Basándonos en las contribuciones de Traxler (2018, 2019), así como en la investigación que ha examinado el aprendizaje autodirigido, el uso de apps y la Realidad Aumentada (RA) en MALL, los autores sostienen que es esencial cambiar nuestro enfoque de pedagogías orientadas a los dispositivos a prácticas situadas en contextos sociales de uso, las cuales se encuentran mejor equipadas para acoger y explicar las nuevas ecologías sobre el uso del lenguaje. En este trabajo sostenemos que este ámbito de la investigación está en

busca de una perspectiva teórica más amplia que explore lo que en este artículo hemos denominado MALL socialmente contextualizado.

Palabras clave: MALL, aprendizaje de idiomas, MALL socialmente contextualizado, aprendizaje de idiomas autodirigido, tecnología

1. INTRODUCTION¹

Mobile assisted language learning (MALL) has become a popular field in computer assisted language learning (CALL) research over the last twenty years. Different areas of application for mobile devices in language learning have been suggested (Sung et al., 2015), including mobility and portability, social connectivity and interaction, context sensitivity in terms of learning across settings, and, lastly, personalized learning experiences. Admittedly, not all of these have received similar attention. As a result, there is an imbalance between the scope of possible applications and the actual uses documented in the specialised literature.

While early MALL practitioners glossed its many affordances, the use of MALL in instructed classroom settings presents challenges of their own (Conole & Pérez-Paredes, 2017; Kukulska-Hulme & Shield, 2008; Ma, 2016; Pérez-Paredes et al., 2018; Zhang & Pérez-Paredes, 2019) that, we argue, have not been successfully defined in CALL research and classroom settings. Despite the wide application of technology in language learning (Gillispie, 2020), some relevant metaanalyses have thrown cold water on the expectations about its role in language education (Golonka et al., 2014; Grgurović et al., 2013). For example, the meta-analysis by Chwo et al. (2018) revealed that MALL is characterised by an overemphasis on the technological aspects of CALL as well as a disappointing lack of rigour in the research designs examined. Sung et al. (2015) noted that mobile devices are not sufficient for positive language learning effects. They contended that, despite the wide range of possible uses of mobile devices in language learning, language researchers must decide on the specific features of mobile devices to be embedded into different teaching scenarios.

In this paper, we hold that the research field is in search of a new framework that, situated in the context of SLA and language education, informs instructed language learning praxis. We will discuss different conceptualizations of MALL that emphasize different areas of language learning. For reasons of space, we will mainly draw on self-directed uses of MALL and the use of apps as well as new mobile technologies such as Augmented Reality (AR) in language classrooms. Ultimately, we will consider a conceptual framework that situates MALL more critically in the context of existing and future practices of instructed and self-directed language learning (Traxler, 2018, 2019; Trinder, 2017). We contend that it is necessary to move away from device-oriented pedagogies to a new paradigm where the processes, skills and knowledge afforded by connected societies are at the centre of the reflection of language teaching professionals and researchers.

¹ This article is based on a keynote at the XXI Congreso Internacional de la Sociedad Española de Didáctica de la Lengua y la Literatura, SEDLL, held at the Public University of Navarra, 25-27 November 2020.

2. CALL AND MALL

Interest in CALL has gained traction over the last four decades (Gillispie, 2020). The widespread availability of connected mobile devices is behind this interest. Levy et al. (2016) noted, however, that the emergence and pervasiveness of technology must never justify the use of the “latest trend” (p.2) just because of their novelty. What the evidence suggests is that we need further studies that analyse the integration of technology across curricula (Bax, 2003) and a more profound understanding of the role of technology in language learning (Gillispie, 2020) in modern societies (Gee & Hayes, 2011).

The meta-analyses discussed in this section paint a complex picture of the field, which understandingly, may seem daunting to language teachers. Despite the emphasis on measuring outcomes that has characterised much of the CALL research in previous decades (Ma, 2016; Pérez-Paredes, 2019a), researchers have not shown CALL to be superior to other technology-free alternatives in the language classroom systematically. The meta-analyses by Grgurović et al. (2013) and Golonka et al. (2014) showed that only a few well-designed empirical studies support CALL efficacy for improving foreign language learning outcomes. The former indicated that just a small group of rigorous designs yielded positive results, although the effect sizes remained low (0.2). The latter concluded that it is not clear to what extent the activities supported by technology, or the potential increased motivation attributed to them, actually increase students’ learning. In fact, research that has tried to establish a link between motivation to use technology and the actual use of technology for language learning under the technology acceptance model (TAM) is based on the learners’ perceived usefulness defined as “the degree to which a person believes that use of technology will produce better outcomes” (Abdul, 2018, p. 41). Furthermore, the author theoretically combined usefulness with ease of use:

Perceived ease of use elaborates the user’s perception towards the particular amount of energy used by the student to learn through any technology or any student who believes that giving that much time will be effortless. (p. 41).

Regarding the use of mobile devices, despite the TAM claims that perceptions of ease of use and usefulness determine attitude and intended usage behavior, researchers have not been able to produce conclusive evidence about the impact of MALL on performance. Among other factors, this lack of evidence can be explained by the co-existence of multiple research design issues and, most significantly, by the facets of MALL being analyzed across the board. Sung et al. (2015) suggested that the different facets behind MALL can be best understood using activity theory (AT) (Engestrom, 1999) rather than TAM. For these authors, MALL needs to investigate and analyze (1) the role of the students learning languages through mobile devices when pursuing (2) the objects of the activity; (3) the tools, artefacts and resources of the activity; (4) the rules and regulations that circumscribe the MALL activity; (5) the context of the activity, physical or social, as well as the (6) method of interaction afforded by the use of mobile devices. AT, therefore, seems to offer a high degree of integration for many of the areas involved in the analysis of mobile device uses to learn languages. However, thanks to the metaanalysis in MALL, we know that a substantial part of the research (20%) has exclusively examined access to mobile devices

and curriculum (Chwo et al., 2018). Using AT, Sung et al. (2015) studied 44 research papers and unpublished theses across 20 years (1993-2013) and concluded that the “features of mobile devices are not sufficient for positive language learning effects” (p. 80). While their metaanalysis found that on average MALL yielded medium effect sizes (0.5), the authors suggested that the combined use of mixed language skills instead of a single skill is likely to produce better results. One interesting area that needs further analysis is portability, which does not produce an overall positive effect in the outdoor setting only.

However, a different metaanalysis published in the same year questions some of their results. Burston (2015) voiced his concerns that MALL studies are characterised by a paucity of statistically reliable learning outcomes data, the short duration of the projects analysed and the small number of students involved. His meta-analysis included only 19 research articles out of a pool of 291, as very few research designs met a set of minimal conditions in duration and sample size. For example, almost 25% of the research examined involved up to 3 hours of experimental treatment, with only 19% with a duration of r up to a term. Despite these limitations, Burston (2015) concluded that research on reading, listening and speaking showed a MALL application advantage, while studies on vocabulary reported no significant differences between MALL and non-MALL conditions. The picture that emerged from this research is one of an atomized field² that needs to reframe the use of mobiles for language learning.

Chwo et al. (2018)’s metaanalysis of MALL research confirms some of the findings about the design problems discussed in Burston (2015). They argued that short-term MALL tests may result in confounding variables and produce findings that question the validity of research designs. They suggested that MALL studies should include at least eight weeks of relatively continual use of any given MALL system. What is perhaps more relevant in their study is their criticism of the common belief that “with MALL, learning can take place at any time or place” (p.70) noting that this is not how students conceptualize their learning as, according to their findings, learners prefer specific places and times for study. The authors argue that there are disconnects between learners’ pre-existing habits of use and those designed for the MALL activities surveyed in their study. They also emphasize the fact that the functionality of the MALL system should rely on a profound analysis of the affordances so that positive student motivation is secured and the effectiveness of learning increases.

The complexity of MALL reflects a field that is still in the making and that is trying to negotiate the best research methods and the best classroom practices in order to make sense of the impact of mobile devices in language education (see Pérez-Paredes, 2019b) for a discussion of the epistemological diversity in second language acquisition research). According to Traxler et al. (2019), “sociality has changed and digitality is now a major factor or ingredient; mobility and connectedness are ever increasing determinants of social life [...] rather than geographical proximity and traditional groupings” (p. 91). We contend that the use of TAM in research may lack significance in the present context where, given the widespread

² There are even meta-analyses such as Hassan et al. (2016) that claim a medium effect size (0.4) for MALL efficacy in ELT. When scrutinized in detail, we find that the study includes only 13 research papers that examine, for the most part, SMS for vocabulary learning. The journal where this study was published is included in the Cabell ’s predatory reports, so the validity of studies like this one is seriously compromised.

use of technology and mobile learning, one can no longer assume that computer mediated communication needs to be *mediated* so that its use facilitates the adoption of new forms of learning. In fact, we see it differently. Modern mobile devices facilitate enormously access to information, communication and learning. However, mobile devices in instructed contexts are often seen as an intruder despite the emerging sociality of mobility and connectedness:

The mobile phone has become an essential component or presence of every face-to-face social and inter-personal interaction [...] and these interactions change and the rules evolve [...] consensually or conflictedly. Educators must work with and within a society where the private and social online spaces of music, community and interaction intrude to the physical and self-proclaimed educational spaces and where for example phone calls interrupt conversations, classes and concerts. (Traxler, 2018, p.304).

We contend that the unbounded dimension of mobile devices, and smartphones in particular, has not currently been appropriately addressed in MALL research. In the following sections, we will discuss two areas that have received considerable attention in the last decade: self-access and emerging technologies for language learning.

3. SELF-DIRECTED USES OF MOBILE ASSISTED LANGUAGE LEARNING, APPS AND TECHNOLOGIES

3.1. Self-directed MALL

Out-of-class learning is an important context for learners' L2 development. The widespread use of mobile devices and the availability of resources has greatly boosted the exploration of learners' self-directed language learning. Lai and Zheng (2017, p.300) claim that mobile learning rests "on learner agency and ability to utilize the enhanced mobility to construct learning experiences across time and space". While the analysis in this section of self-directed uses will provide the opportunity to comprehend how learner agency is afforded (or not) by the use of mobile devices, an analysis of AR in language learning will illustrate how future MALL-related ecologies are imagined by language teachers.

Lai and Zheng's (2018) exploratory factor analysis of a sample of Hong Kong undergraduate language learners (n=256) yielded a 3-factor solution that sought to explain MALL self-directed uses in terms of (1) personalization and autonomous, customized learning; (2) mobile devices used to engage in authentic learning experiences; and (3) connectivity, where learners used mobile devices to connect with speakers of the L2. In their study, facilitating anytime-anywhere learning was the key affordance of mobile devices for out-of-class language learning. In the first dimension, the authors found that the use of dictionaries and vocabulary learning services was central to the learners' uses of smartphones. This study accounts for the limited use of mobile devices as it regards authenticity and connectivity in terms of the constraining features of mobile devices and the varying learners' language proficiency. The learners reported "limited engagement in activities in the authenticity

dimension” (p. 311). Here, we witness bounded and episodic uses of MALL that reconfigure the “real” digital social dimension and try to uphold institutional ecologies of reading and writing (Gee & Hayes, 2016). A divide exists between perceptions of authenticity and the actual use of learning apps as evaluated in MALL research in this section, as if these two inhabited separate spaces and embodied different conceptions of learning and communication.

The self-directed uses most widely researched are conceptualized as an extension of institutional learning episodes. Lai et al. (2018) examined learners’ out-of-class MALL and corroborated Lai and Zheng’s (2018) findings stating that mobile devices were used mainly in instruction-oriented experiences, although entertainment-information-oriented and social-oriented uses were also present. Following TAM, their study showed that learners’ instruction-oriented experiences were largely affected by learners’ perception of the usefulness of technology. According to the authors, the learners’ language proficiency level was a key factor that influenced their experiences in using technologies. They argue that it is necessary to support the learners’ so-called *technological* experiences, particularly for those less advanced learners. As in Lai and Zheng (2018), we find here again both bounded and episodic uses of MALL that not only reconfigure the digital social dimension, but try to explain lower proficiency learners’ lack of engagement in terms of their lack of competence. We are tempted to suggest that, given the emphasis on competence, learners’ quantified communicative competence is one of the last loci where institutions can exercise some form of standardized control over emerging ecologies of learning. An overemphasis on quantifying competence is likely to trigger and institutionalize “reductionist and static idealizations [which] are at best partial representations of social reality [as] the ‘social’ is far more complex than what is normally projected in CLT teaching literature” (Leung, 2005, p.137).

Together with learners’ competence, the language learning context is also essential in MALL. Zhang and Pérez-Paredes (2019) found that graduate students used MALL mainly for vocabulary learning. In mainland China, improving exam scores is fundamental as high exam scores are golden keys to access future education and job opportunities. The Chinese exam-driven culture results in the over-dependence of traditional textbooks in the English language education system, which has led to the under use of digital tools such as mobile English learning resources. Despite the preference for printed review materials, online dictionaries and vocabulary learning apps have become Chinese EFL learners’ favourite type of mobile English learning resource. Ma’s (2016) study reveals similar results. Her students were undergraduate Hong Kong English language learners that fundamentally used dictionary apps in outside-classroom contexts. Situated in the lived experiences of university students in mainland China and Hong Kong, these two studies lend evidence to the presence of new literacies and the need for language teachers to prepare students when interacting with such resources (Chun et al., 2016).

Our understanding of self-access MALL is largely mediated by insights from Higher Education (HE) institutions that, for obvious reasons, tend to see learners’ private spaces as an extension of the institutional public and social spaces. As we will see below, apps and emerging technologies have the potential to disrupt this notion.

3.2. Apps and emerging technologies

Current mobile apps and future AR applications are reshaping how educators approach the role of mobility in education and how language learners are increasingly embracing learning

in the wild (Wagner, 2019). In this context, participation in the life world is becoming more and more at the fingertips of learners as a growing number of L2 classrooms feed on the everyday practices that support students to establish life world relations (Wagner, 2019).

Apps have revolutionised a language learning market traditionally dominated by major publishing companies (Traxler et al., 2019). Independent developers and companies have responded to the growing interest in language learning apps, and it is not unusual to find language apps that are amongst the most popular apps in digital app stores. This trend is on the rise according to a recent study that forecasts that the online language learning market is expected to be worth \$21.2 billion by 2027. According to this survey, his growing adoption of online language learning apps and [the] drop in internet data costs explain this phenomenon. While language learning apps have become pervasive (500 million people are believed to have downloaded Duolingo until 2020), AR is a type of mobile learning that, built on a local physical context supplemented by an audio or video overlay, will probably shortly make an impact on the way we teach and learn languages.

We can see language learning apps as the epitome of the “transformation of mobile technology from scarce, obscure, fragile, expensive, and impersonal to universal, robust, easy, obvious [and] cheap” (Traxler, 2018, p. 296). Ten years ago, Godwin-Jones (2011) already predicted the growing use of apps for language learning. A year later, Steel (2012) realized that the use of language learning apps needed more attention. The students (n=590) in Steel (2012), undergraduates learning languages in an Australian university, praised, more than any other affordances, the flexibility and convenience of mobile apps. These learners embraced apps particularly because of their low cost and the many personalisation affordances. As their Chinese peers in Zhang and Pérez-Paredes (2019), they used apps mainly for vocabulary learning. This is a trend that has remained steady over the last decade, partly, we argue, because of the interest of language developers in the exploitation of discrete lexical features through drills and cloze-like activities, easy to implement and with a high symbolic value in language learning. For Traxler (2018), there is a shift in ethos that is supported, among others, by “the emergence of an apps economy” (pp. 302-3) that he linked with the rise of neoliberalism.

If there is one app that has been scrutinised by researchers, that is DUOLINGO. The Guardian has recently reported that the UK is one of Duolingo’s top five countries judging by the number of daily learners (a rise in new learners of 132%). While the COVID-19 pandemic that struck the world during 2020 and 2021 may be responsible for part of this interest in self-access, formal language learning in schools has declined substantially over the last 15 years in the UK, according to The Guardian. Loewen et al. (2019) were interested in investigating the effectiveness of large-scale commercial L2 learning applications. They tracked learners of Turkish for a semester and found that, as in Steel (2012), the students showed positive perceptions of the flexibility afforded by DUOLINGO and praised the inbuilt gamification experience. However, the authors pointed out that the app presented pedagogic shortcomings such as a reliance on decontextualized grammar-translation exercises and audiolingual drills (Loewen et al., 2019). García-Botero et al. (2019) tracked learners’ engagement with the DUOLINGO app and found inconsistencies between the students’ perceptions of this app and their actual engagement. These preliminary analyses of DUOLINGO tend to confirm the evidence of the meta-analyses discussed earlier in this paper in that technology alone does not guarantee language learning.

As new technologies rapidly develop, the L2 education field tries to probe into their usefulness. Recent empirical studies on AR are beginning to burgeon (e.g., Liu, 2009; Liu & Tsai, 2013; Thorne et al., 2015), demonstrating the intended positive effects of new technologies in L2 learning. Zhang et al., (2020) reviewed three widely accepted and adopted language learning theories – constructivism, sociocultural theory and connectivism, and analysed three corresponding cases (i.e., a study on an AR-based mobile English composition learning material by Liu & Tsai, 2013; another on a place-based AR mobile game – *ChronoOps*, by Thorne, et al., 2015; and a paper on an AR-enhanced context-aware ubiquitous learning environment – *HELLO* by Liu, 2009) in the English language education contexts. Zhang et al., (2020) took into consideration three existing AR design principles from the perspectives of the learner (the potential model for the design of mobile-AR curation exercises in Novak et al. 2012), the designer (the mobilegogy model in Machun et al., 2012), and the technology (the SAMR model in Puentedura, 2006), before proposing an ecological model of AR-enhanced language learning that accounts for the relationship among language teachers, designers, AR technology, as well as the language learner community. It illustrates how teachers and designers collaborate with each other to understand learners' needs, explore the capacities of AR, and then create immersive learning experiences for their students. This model presents advantages over other AR approaches purely based on the affordances of technologies outside the educational arena.

From a different perspective, Zhang and Pérez-Paredes (2021) have conducted a pioneering study, predominantly focusing on teachers' perceptions and expectations about AR technology in the Chinese EFL education context. Findings of this study showed that even though Chinese EFL teachers are largely unfamiliar with this emerging technology, they acknowledge the expected benefits of integrating AR technology into L2 education, especially in enhancing students' language learning experience and motivation, improving their linguistic and non-linguistic skills, enriching L2 learning content, and promoting the development of institutional curricula. The teachers also expressed their willingness to implement AR technology in future language classrooms. Besides, Zhang and Pérez-Paredes (2021) also compared teachers' viewpoints among different education levels and different regions in China, and no significant differences were found among primary, secondary or tertiary teachers and among teachers in different regions in China. As the study argues, more evidence-based approaches that examine the benefits and limitations of this new type of technology should be designed and applied to gain a more nuanced perspective of how new technologies can contribute to language learning. Interestingly, AR was perceived by language teachers in this study as potentially useful in incorporating an outside-the-classroom social space into the institutional curricula.

As previously suggested, apps and AR treasure the potential to contribute to facilitating a reconceptualization of mobility and sociality. While the use of apps in instructed contexts needs further attention, language teachers recognize the potential of technologies that may adapt well to language classroom settings. AR seems to be one of those technologies. In the following section, we argue that institutions, as well as language teachers and researchers, need to understand how MALL can be operationalized in ways that favour new ecologies of communication and knowledge creation and processing.

4. TOWARDS A NEW FRAMEWORK

Despite the enthusiasm of early e-learning and mobile learning projects (Traxler, 2018), researchers have gathered evidence that mobile devices *per se* do not facilitate language learning (Chwo et al., 2018; Sung et al., 2015). The evidence discussed above suggests that MALL has inherited some sense of technocentricity from CALL research (Burston, 2015; Traxler, 2018) driven by a technological paradigm that is now perceived as insufficient (Traxler, 2018, 2019). This device orientation has, perhaps, distracted our attention from more critical uses in MALL. Kukulska-Hulme (2009) claimed that the use of personal, portable devices enabled new ways of learning, and Gee and Hayes (2011) suggested that digital media have brought “flexible, dialogic, interactive interpretation[s] to written language” (p. 125). What this implies is that, while educational institutions in the past were largely responsible for fixing and imposing interpretations of our world that were primarily top down, the irruption of connectedness and the use of new digital media and forms of communication has reshaped forever the private lives and spaces of learners and teachers in ways that the traditional school cannot yet account for. So the question for language teachers and learners in instructed SLA contexts is how have language learners in formal instruction benefited from different approaches to MALL? And, more importantly, what version of MALL is available to language learners? In the following paragraphs, we will build on Traxler (2010, 2016, 2018, 2019) to argue that it is urgent that second language educators shift their gaze from the device to the unbounded roles of mobiles in contemporary societies.

4.1. Restricted MALL vs. socially contextualized MALL

Traxler (2018) noted that early approaches to mobile learning failed to deliver the promise of learning happening anywhere, anytime, just-in-time, just-for-me. Kukulska-Hulme’s (2009) prediction that language learning would become integrated into everyday surroundings is far from a reality for most language learners in primary and secondary schools worldwide. However, the influence of mobile devices in education is massive:

Mobile devices affect the processes by which ideas, images, information and knowledge [...] are produced, stored, evaluated, valorised, distributed, delivered and consumed. They are now part of a system that allows everyone [...] to generate and transmit content for learning - not just passively storing and consuming it (Traxler, 2016, p. 203).

There is a clash between the affordances of mobile technologies as experienced societally and those that can be transferred, or have been transferred so far, to instructed SLA contexts. Traxler et al. (2019) have very rightly suggested that mobile learning is currently adopted by institutions and learning contexts that, rooted in institutional and formal learning, promote language learning that is anchored in social practices, where there is very limited recognition of a shift in the epistemology of learning. Mobility and, importantly, connectedness impact on knowledge by making it relative, local, transient and partial (Traxler, 2016). What counts as mobile across the spectrum of institutions and learners is inconsistent. While mobility is

increasingly seen as social and not just physical, connectedness is mainly seen through a lens that has reduced MALL to access to resources and use of technologies (Traxler, 2018; Zhang & Pérez-Paredes, 2019) and, we argue, favours a conceptualization of MALL as an instrument to reach out to more learners and communities in a more cost-effective way. For Traxler (2018), the early mobile learning paradigm reveals “a narrow bandwidth in terms of methods, theories, formats, settings, objectives and findings, and could indicate a paradigm that was stable or perhaps stagnant” (p. 294). In this light, teaching and learning have revolved around the technologies and not so much around a pedagogy of MALL. These experiences, broadly speaking, have been characterised as expensive, small-scale, short-term, institutional and subsidised (Traxler, 2018). This is consistent with Ma’s (2016) remark that the majority of MALL research has used a control/experimental design to probe into the effectiveness of technology most likely in classrooms and only rarely in out-of-school contexts. The use of such design, we contend, favours small-scale studies that use quantitative methods to test whether technologies offer some sort of superior affordance in terms of learning outcomes. These studies, broadly speaking, are researcher-led and take place in instructed contexts where the learners “do not manage their own language learning” (Ma, 2016, p. 211) and where MALL is only softly embedded in curricula and institutions that do not particularly embrace what we will later describe as socially-contextualized MALL. Traxler (2016) has pointed out that MALL exposure and experiences can be extremely limited in what we call in this paper restricted MALL:

One limitation of many early projects was that their temporal and sometimes spatial aspects were bounded or episodic; not only were the projects themselves fixed-term and often small-scale, but the experience of the individual learner or user was limited to a short time and perhaps to a particular physical location [...]. Outside these bounds of the episode, the experience was either exhausted or curtailed (p. 194)

Restricted MALL is characterised by the use of mobile devices in language education where the device is used as an artefact to deliver/deploy/implement the use of curriculum activities or applications that are more conveniently accessed through the learners’ own devices. Restricted MALL, therefore, complements the official language curriculum by adding extra activities or interaction. This added quality permeates the topics addressed in MALL research, as evidenced in the restricted focus of MALL discussed in Chwo et al. (2018):

Many MALL studies, however, are conducted outside the regular curriculum and most are relatively short-term tests [...] As such, they are subject to criticism that they are not sustainable, i.e. not intended for long-term use [...] and that long term results may differ from the reported short-term tests [...] many studies focus only on the differences resulting from using or not using the MALL technology, as opposed to the affordances that the studied MALL system can provide to curriculum and instructional designers so that they can produce consistent strong learning outcomes. (p. 63)

Curricular integration, we argue, is approached using an institution-driven perspective

(Traxler, 2018), where mobile devices are not sufficiently understood as artifacts entrenched in new forms of digital societal literacy. Rather they are seen as an extension of pre-digital instructional literacies and a focus on technologies:

the studies [...] discussed problems or deficiencies in these areas. [...] each represents likely flaws in the instructional design of the studies, including problems with the content or functioning of the technology, demotivating instructional design and teacher behavior [...] and either curriculum failings or lack of curriculum integration. The logical conclusion is that many MALL studies are not well designed... (Chwo et al., 2018, p. 67)

In contrast to this restricted use of MALL, a new, and more recent, mobile learning paradigm has been suggested, which has been termed socially contextualized MALL, and together with the transformation of our economic, work and leisure lives (Traxler, 2010) challenges the very epistemological foundations of learning. This emerging paradigm is driven by ubiquitous personal mobile digital technologies that are changing how we “generate, discuss, transform, share, discard and store ideas, opinions, identities, images and information, and, in effect, become each other’s teachers” (Traxler, 2018, p. 294). In the education field, it has been suggested that our identities as teachers and learners have been affected by the notions of transience and fragmentation as we make sense of the new virtual and physical spaces that we inhabit. In this paradigm, educational institutions need to interpret and make sense of the shifts “in control, authority and agency represented not by the technologies themselves but by the social changes around them” (Traxler, 2018, p. 305).

The rise of informal language learning online is accompanied by a decrease of the role of formal education (Godwin-Jones, 2019). There is currently a wealth of digital opportunities for autonomous language learning through mobile devices that were just unthinkable two decades ago. These opportunities, however, are presented to learners in fragmented ways, a feature of informal learning in the digital age (Gee & Hayes, 2016), and even advanced language learners will find it challenging to navigate their choice of activities and apps (Zhang & Pérez-Paredes, 2019). This fragmentation is exacerbated by a sense of loss of commonality and polarization across markets, ideologies and social groups. According to Gee and Hayes (2016), digital learning is further characterized by the loss of density and a new ecology of reading and writing, multitasking and the emergence of a new literate social formation, where the interpretation of texts and communication processes is transitioning, very slowly, towards “dialogic interactions [less] subject to the power of institutions to set standards of knowledge, procedure, and truth based on their control of written texts” (p. 125).

In the context of language learning and language education, governments and educational institutions retain almost absolute power when deciding what counts as competence, and institutional ideologies about language learning (Farr & Song, 2011) determine how learners frame their experiences about instructed language learning and how artefacts can possibly mediate the use of technology for language learning. As Rosa and Burdick (2017) have mentioned, language ideologies, and language learning ideologies, “mediate interrelated semiotic processes of communication and identity formation” (p. 111). In restricted MALL, these semiotic processes are governed and embodied in institution-led language learning that, in different ways seek to foster learners’ “ability to navigate competently in locally

contextualized settings, socially and linguistically” (Eskildsen & Theodórsdóttir, 2017, p. 160) However, building these learning spaces to learn in the wild may benefit from a radically different use of mobile technology in the language classroom. For example, Eskildsen and Theodórsdóttir (2017) have argued that, in the context of developing speaking skills in classroom contexts, language instruction needs to break with a “long tradition of teaching language as a decontextualized object”:

A first attempt at resolving this might be to organize free conversation with L1 speaking guests [...] a next step is to ask L2 students to record themselves in naturally occurring interactions and give them feedback [...] or bring the recordings into language classes for further scrutiny [...] This [...] entails a mutually constitutive relationship between L2 speakers’ everyday practices and the classroom which then comes to be a pedagogically enhanced world in which a view of language as situated and locally contextualized is propagated. (pp. 160-1)

Socially contextualized MALL, we argue, will place the learners’ lives and their digital and material experiences as the central point for their language learning (Leung, 2005; Wagner, 2019) and favour a usage-driven and user-centered L2 pedagogy (Eskildsen & Theodórsdóttir, 2017). Chun et al. (2016) have suggested that learners need to move between the conventions of embodied and disembodied language use, moving between ‘real’ and ‘virtual’ operations. Evidence has been shown that in self-directed language learning settings as well as in learners’ interactions with apps and technologies, we have witnessed the emergence of Restricted MALL. Zhang and Pérez-Paredes (2019), for example, have underscored the existence of a dynamic relationship that accounts for the interaction between learners and the learners’ previous, current and future use of mobile language learning resources as bounded by institutional requirements, i.e., high stakes examinations. While their multifaceted model takes account of other stakeholders, including teachers, parents, peers, friends and universities, Socially Contextualized MALL is far from being a priority in these learners’ agendas. Recent research corroborates this finding (Lai & Zheng, 2018; Lai et al., 2018).

5. CONCLUSIONS

The use of new technologies may be particularly helpful in raising learners’ awareness of how real and virtual shifts are manifested in different forms of technologized language use, including those which have become normalized (Chun et al., 2016). While Restricted MALL is likely to continue to be a dominant framework in the forthcoming years, researchers and language teachers need to understand the role that technology could play in language classrooms as well as outside the classroom. Institutions need to recognize the increasing significance of the private and social spaces in digital identities and how they embody our experiences of the world we live in.

Socially contextualized MALL places the learner’s lives and their digital and material experiences as the central point for their language learning (Leung, 2005; Wagner, 2019) and favours a usage-driven and user-centered L2 pedagogy (Eskildsen & Theodórsdóttir,

2017). As for now, we agree with Traxler et al. (2019) in that there is “little evidence that learning itself is changing as the nature of society changes together with its relation to technology within it” (p. 91).

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