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Mobile, Open and Social Language Learning Designs and Architectures

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Abstract: The emerging paradigm of mobile open social learning for languages (MOSL4L) integrates the three elements of mobile, open and social, and in so doing it creates the idea of a conceptually different language learning space. It is a space full of opportunity and challenge, relevant to a post-pandemic world in which we are looking for ways to build back better. The paper discusses tensions between formal and informal language learning and the nature of learning outcomes in MOSL4L. It focuses on the needs of individuals while also considering the characteristics of the virtual spaces in which they participate. It highlights the potential of micro experiences and learning moments as structures that are well aligned with MOSL4L. It suggests developments in language curricula to take account of communication challenges being identified in the contemporary world. Many more new learning designs and software architectures will have to be developed to match the possibilities generated by the MOSL4L space.

1 Introduction: Orientating the Emerging MOSL4L Language Learning Paradigm Toward a Better World

The call to "build back better" after disasters [United Nations, 15] is now relevant to our post-pandemic world in which we may not universally go back to our former ways of doing things. Across the world, people are living at a time of heightened reflection on what we previously took for granted in our lives, in work and in education, and how we can shape the future. Technology-based solutions that previously offered interesting but perhaps optional advantages are now pressed into service to solve urgent problems

such as enabling wider access to education and supporting cross-national communication to advance vital fields of knowledge. Technology-enabled practices, including mobile learning, open education and social learning, many of which take advantage of freely available digital platforms, have a vital role to play in shaping a new landscape of educational opportunity and communication enhancement at a turbulent time that is also characterised by optimism for the future.

How will language learning fare in the new landscape of global challenge and opportunity? Since the turn of the century, an abundance of technologies, media and tools have been continually expanding the range of options available to second language (L2) learners to practise communicating with others and to acquire knowledge about the L2 and associated skills. Language learning has gradually moved from being largely confined to classrooms, textbooks and multimedia resources, to being complemented, and sometimes supplanted, by non-formal and informal language learning that takes advantage of the growing penetration of mobile devices and online social platforms as well as access to apps and open learning resources. However, expansion in informal language learning [Dressman and Sadler, 20] has remained largely separate from teaching and learning developments within formal education. These two separate 'worlds' are on a collision course that needs to be recognized and turned into a positive development.

The aim of this paper is to highlight some concepts and promising ideas that can be brought together and utilised for the onward development of learning designs and architectures for the emerging paradigm of mobile open social learning for languages (MOSL4L – sometimes abbreviated as MOSLL [Traxler et al., 18]). MOSL4L integrates the three elements of mobile, open and social, and in so doing it creates the idea of a conceptually different language learning space. In theory, and often in practice, the MOSL4L space is more accepting of heterogeneous and plurilingual learners, it is a resource for creativity, welcomes idiosyncrasies and adapts to learner's schedules. But within that dynamic and boundless space, learners must find a foothold and a compass so that they are able to find their way around and make progress in their learning. That poses a real challenge for many learners and for the educators who are helping learners navigate this space. Many more new learning designs and software architectures will need to be developed to match the possibilities generated by the MOSL4L space.

2   Reinventing education and language learning

What might 'build back better' mean for language learning in the third decade of the 21st century, and can MOSL4L play a part in that? This question should be considered against the background of changes taking place in the use of technologies in education, the opening up of classrooms to the digital world and the transformation of societies. Two decades ago, Sharples [02, p.506] predicted that mobile technology would disrupt the carefully managed "sealed environment" of the classroom, and this has indeed been happening. Ott [17, p.76] showed that mobile phones in schools were moving from being perceived as "disturbing objects" to becoming an infrastructure for learning, simply due to teachers allowing their students to use them, especially social sciences and language teachers. Mobile devices have become a key technology in education, adopted in multiple contexts and raising context-awareness in the process of learning

[Traxler and Kukulska-Hulme, 16] as well as becoming a means of breaking down generational and cultural barriers [Morgana and Kukulska-Hulme, 21]. Learning spaces have also been changing and the current pandemic is precipitating such change: "We can expect to increasingly have hybrid forms of teaching and learning, in different spaces, inside and outside the school, at different times, synchronous and asynchronous, using a multiplicity of means and methods" [UNESCO, 20, p.15]. To support these developments, we must develop "an understanding of the ways that learning is broadly diffused across contemporary societies" (ibid, p.16). Learning belongs to everyone, and digital social media, open publication and open sharing practices have made learning more visible and democratic.

These considerations raise both challenges and opportunities for learning designs in the context of MOSL4L. In the third edition of their volume on *Rethinking Pedagogy for a Digital Age*, Beetham and Sharpe [19] suggest that "Education is having a tumultuous time in its relationship to digital technology" (p.3) since it is criticized for being both too slow and too quick to adopt new technologies. In this no-win situation, they propose a way forward by focusing on general principles developed from theories of how people learn, for example learning through interaction with others. Learning theories provide good foundations for learning designs based on key processes such as interaction, collaboration, consolidation and feedback. Since the theories focus on how people learn, they have less to tell us about learning outcomes. Outcomes have traditionally been determined by educators and specify some skills that learners will have developed or knowledge and understanding that they will have acquired after completing a learning task. More open-ended outcomes are not usually foreseen or considered relevant, but that may change with the advent of MOSL4L. Kukulska-Hulme and Traxler's [19] design principles for learning with mobile devices recognize the centrality of learners with their personal technologies and their preferences, experiences and expectations, and they emphasize that mobile learning is synonymous with unpredictability and change. One of the design principles states that designed learning activities will be played out differently as learners engage with them outside the classroom and the campus where environmental factors will play a part and there might be unexpected learning outcomes. Kukulska-Hulme, Norris and Donohue's framework [15] for mobile assisted language teaching and learning discusses learning outcomes both in terms of those that can be predicted and other outcomes that may arise as an unpredictable by-product of participating in a language learning activity. The dynamic nature of language (e.g. new words and expressions appearing, people choosing to use multiple languages) and the unforeseeable content encountered on contemporary communications platforms mean that outcomes might be less predictable, and learners need to be prepared for that.

More than 20 years ago, researchers were already asking themselves how learning outcomes might be affected by language learners using the internet; Conacher and Royall [98, p.39] advised teachers to think about "whether students have consciously learned more about the language/culture they are studying", and in order to evaluate that, they advised that teachers should consider how learning might be monitored, how feedback would be provided and how support would be given to students. Even today this solid advice can be applied.

When envisioning the future of education, it is apposite to consider not only how education will be conducted, but also the development of curricula and extended learning opportunities to match contemporary needs. The sentiment that "learning a

foreign language is a liberation from insularity and provides an opening to other cultures" [Department for Education, 13] is laudable but can be difficult to translate into practice when teaching is confined to a class and is strongly oriented towards passing exams. Formal classrooms are also not conducive to students revealing their personal interests, authentic needs, requirements and preferences around learning to communicate in, or comprehend, another language. Formal curricula are essentially centripetal in that they tend to assume a central common core of topics, vocabularies and language structures that learners will be drawn to and that will satisfy their needs. The emerging paradigm of mobile open social language learning challenges this state of affairs and highlights both the fluidity and fragmentation of language across a multiplicity of channels and the desire for more personal and socially relevant learning in the age of social media and personal technologies [Traxler et al. 18]. In her work on language learning motivation, Ushioda [20, p. 42] reminds us that we should see learners as "uniquely individual people, with all their complex micro-diversity and macro-diversity, who are engaging with the world with multiple motivations across multiple areas of learning". They should not be regarded as language learners, she adds, but as people who happen to be learning a language. That certainly represents a new challenge for language learning structures and designs, but a challenge that fits well with the world view of MOSL4L.

3   Learning in the moment: the future of language learning?

A strong and persistent theme that can be found within research on mobile, open and social learning is the notion of 'micro' experiences and associated microlearning designs (small units of learning, short activities). Identified as a new pedagogical challenge and opportunity many years ago [Dowis, 91; Hug, 07], microlearning in its various forms continues to generate interest and new terminology: in recent years researchers and teachers have reported using micro-lectures [Liang, Cao and Zhang, 13] and micro-lessons [Erwen and Wenming, 17], different in their purposes and designs yet all providing some evidence that smaller can be better. The trend is expressed in the idea of microlearning on mobiles [Nikou and Economides, 18], in combinations bringing together microlearning with Open Educational Resources [Sun et al., 20], and in social microlearning, for example on a platform for students creating and sharing learning activities [Göschlberger, 16]. Despite some debate around the desirability or otherwise of what has also been called 'bite-sized' learning [e.g., Morrison, 05], the micro approach has undoubtedly gained traction and continues to be explored across diverse academic and professional learning domains [Manning et al., 21; Egan et al., 20]. It is also relevant to the adoption of MOOCs within education [Sammour, Al-Zoubi and Schreurs, 20] and to the design of learning conversations with chatbots [Yin et al., 21]. Most recently, Corbeil, Khan and Corbeil [21] describe microlearning as 'learning in snippets'.

In parallel with the trend of microlearning, communication on microblogging platforms and social media more generally is characterized by short form writing and encounters with snippets of language that are often specific to informal, spontaneous online chatting. Such platforms and media offer a form of language immersion, especially for more commonly used languages. Many emotions are expressed on Twitter [Kumar, Khan and Kalra, 20] and these could be informative examples of

emotion expression for language learners and teachers, although currently Twitter users not skilled in the techniques of sentiment analysis would not be able to find such examples in a systematic way, only through following hashtags. Deriving or extracting useful teaching and learning content from social platforms is still in the domain of specialists. Great advances made in corpus-based learning, including making it more accessible to teachers and learners [e.g. Ma, Tang and Lin, 21] can serve as a guide to how such resources could be used more productively.

Overall, a fusion of microlearning with short-form utterances or written comments could be a winning combination — or it might lead to a depreciation of thought and argument. In any case, the short form has great appeal. Like sweets, Lego bricks or pebbles, it may please our aesthetic or playful sense as well as satisfying our desires to receive or deliver a happy learning experience. The idea of 'best learning moments' [in Kukulska-Hulme et al., 21] is pertinent to our deliberations here. It builds on the psychological concept of cognitive absorption, defined as deep immersion in an activity or task, often accompanied by feelings of enjoyment. Best learning moments, also known as 'optimal learning moments' [Schneider et al., 16] can result in deep learning and high levels of satisfaction, and they may also be particularly memorable. People universally experience these mental states and these feelings when engaged in an activity that is appropriately challenging to their skill level, resulting in full concentration and focus. Best learning moments may occur in situations involving hands-on activity and participation, such as developing a manual skill or making something together with others. The idea fits in well with learner-centred approaches that take individual differences in learning into account. Advice for creating best learning moments includes talking about students' interests, asking challenging questions and accepting that all students are different.

As has been demonstrated through many projects, technology-enhanced learning environments can be designed to create opportunities for best learning moments — for example, through use of mobile devices, games-based learning, immersive experiences, and through using data from learning analytics. A related concept is that of 'opportune moments', which could be when the learner decides that an opportunity has arisen, either unexpectedly or as part of a habitual use of time. Dingler et al. [17] describe such moments and the design of microlearning sessions for language learning on the go. Diverse ways of capturing best learning moments, for example through journaling, experience sampling or use of sensors to detect emotional states, could also support learning designs where reflection on learning is built in and the process may be used to improve the learning design. Facial analysis of our micro-expressions [Hurley, 12] might be another way in which our experiences will be monitored in future. Last but not least, we can make an association between best learning moments and learning 'in the moment', understood as a state of readiness that itself may be linked to a state of happiness or wellbeing. Being ready to learn supports better learning outcomes. Designing for more of such learning moments would be a good direction of travel.

4 Interpersonal communication for a better world

As Beetham [19, p.38] argues, "digital futures demand new purposes, not just the same learning activities with new digital tools". In language learning, the new purposes have not yet been very well defined, but there has been some relevant work in relation to

particular technologies and apps [e.g. Rosell Aguilar, 21], languages for specific purposes [e.g. Slim and Hafedh, 19], and in general new purposes may be implicit in many innovative technology-mediated language learning projects. Communication on social media, in games and in virtual environments demands a range of language competencies that are not usually learnt in the classroom. Learners tend to pick those up through their engagement in those activities.

Language learning curricula within formal education, designed for class-based learning, are perhaps geared towards strengthening the civilizing effects of education and they rarely stray into areas of life where conversations could be sensitive, fraught or difficult. While such conversations may require more advanced knowledge of a language, it is unfortunately true that many people without such knowledge find themselves in the midst of such challenging conversations, for instance in their jobs, when dealing with unexpected emergencies, or in encounters on social media. As the science of communication moves ahead, and as societies become more aware of communication problems faced by minority or ostracized populations, language learning curricula could leave some space open for incorporating fast-moving developments. There is a growing literature on difficult conversations [Patton, Stone and Heen, 21; Holstead and Robinson, 20; Chen and Lawless, 18] that language learners could engage with, and an emergent literature on sensitive topics such as microaggressions (Foste and Ng, 21; Harrison and Tanner, 18; Platt and Lenzen, 13].

Communication challenges are a key feature of an interconnected world that is struggling to turn difference into advantage. Experiences within mobile open social language learning may sometimes expose learners to more challenging aspects of communication or risky topics, but by drawing attention to these challenges, it is hoped that they may be addressed head-on and discussed more widely. On the other hand, MOSL4L also offers unprecedented opportunity to observe and imitate excellent communication, and it gives language learners greater access to see how language is used in usually private areas of life such as family celebrations and bereavements.

5   Conclusions

Mobile devices, open practices and social media have gradually crept into language learning rather than being consciously adopted from the start, and there is still much that needs to be understood about how to use them as resources separately and in combination, as well as how to do good research at the intersection of these areas. The theory and practice of informal language learning is "a new and very vibrant subfield within applied linguistics" [Dressman, 20], and while MOSL4L is not synonymous with informal language learning — since the latter does not always imply a new mindset or even new practices — MOSL4L is from the same stable of largely learner-driven activity and openness to a diversity of resources. It will expand our understanding of informal learning motivations, processes and outcomes. Fortunati and Taipale's [17] four-level model of mobilities (macro-mobilities, micro-mobilities, media mobility and disembodied mobilities) could be a useful reference point for future designs. It explores mobility from all angles while reminding us that mobility is not just movement and abstraction but also embodied experience. At the micro level there is "small-scale mobility, including bodily movements and emotions, which are the impalpable movements of the soul" [p.561]. While MOSL4L paints a 'big picture' of openness and

possibility, constructing convivial and effective language learning experiences that are responsive to emotions will require new models, frameworks and structures that will help us to harness these possibilities.

6   Papers in this Special Issue

The need for new models, frameworks and structures adapted to the new learning requirements, while presenting important challenges, opens up a number of research avenues. In that light, a number of questions related to MOSL4L can be identified which the papers in this Special Issue will seek to address in different ways:

1)   What kind of environments and/or materials can be created for interactive and collaborative MOSL4L?

2)   What kind of mobile, social and open technology is suitable for MOSL4L and/or for language teacher training?

3)   What are the best assessment techniques, practices, evaluation, certification, accreditation, and recognition for MOSL4L?

Several of the questions formulated above are addressed in the paper Mobile Open Social Learning for Languages (MOSL4L), by Timothy Read, Agnes Kukulska-Hulme, Elena Bárcena and John Traxler. This paper lays the foundations for MOSL4L by combining mobile, open and social learning into a single learning framework. Their proposal uses Activity Theory Model to characterize the MOSL4L framework, and in their paper the authors make some suggestions for establishing a rubric that could enable language learning scenarios to be analyzed in terms of the constituent parts that define their nature and enable the causal relations with learning to be highlighted. The MOSL4L proposal presented in this paper does not intend to provide definite answers to how language learning can be potentiated, rather the authors present the MOSL4L paradigm as one that can be extended, putting forward a number of questions which open up several research avenues for the near future.

Inclusive Language MOOCs, by Timothy Read, Beatriz Sedano and Elena Bárcena, also addresses several of the general research questions posed in this editorial. These authors discuss the application of MOOCs for refugees and migrants in order to help them develop the language competences and transverse skills which they require to improve their level of social inclusion and possibilities in the labour market, and/or access higher education in the country in which they find themselves or plan to go. Specifically, they focus on the way in which Language MOOCs can best be deployed on mobile devices so as to be effectively and advantageously used by displaced people. Their study reported here outlines the design of two LMOOCs of Spanish for immediate needs, based on a previous needs analysis, developed by the ATLAS research group in collaboration with NGOs and refugee support associations in Spain. After presenting key aspects for the design, development and deployment of inclusive LMOOCs, the authors conclude that the success of the Spanish LMOOCs developed in the context of the MOONLITE project lies in the extensive collaboration of all the parties involved: the end users and stakeholders (higher educational institutions, NGOs, and support associations).

Looking at integration from primarily the social context, the paper "Designing Telecollaborative Projects for Professional Communication and User Experience", co-authored by Elisabet Arnó-Macià, Mary McCall, Daniel Kenzie, Suvi Isohella and Bruce Maylath, deals with the integration of graduates into the globalized workplace. For the transmission of the necessary skills leading to such integration, the authors draw on collaborations using Telecollaborative practices to show how students in already-existing technical communication classes can join other classes in realistic transnational projects through ICT. After describing the phases of implementation of the reported collaboration, the chapter moves on to explain the realistic scenarios in which learning takes place, the roles students take on and the different types of outcomes resulting from the projects. The authors conclude that because project management skills are a key demand on today's professionals, exposing students to complex, multilateral projects improves their skills in all areas pertinent to project management practice.

The mobile component of MOSL4L is exploited in the paper "A Comparative Analysis of a Mobile App to Practise Oral Skills: in Classroom or Self-directed use?", by Ana Ibáñez Moreno and Anna Vermeulen. The authors present their findings on analyzing two different uses of a mobile application, VISP (VIdeos-for-SPeaking), designed to promote oral skills based on audio description: one of them integrated in the classroom, the other one self-directed. The results of their study show that, regarding language practice, VISP is equally effective as a support tool in the classroom and as an independent app. Conversely, from the point of view of motivation, students who used the app as part of the classroom activities were more motivated about the app uses and benefits than the ones who used the app in a self-directed way. From these results, Ibáñez and Vermeulen conclude that the limited engagement of self-directed students may have to do with the technological constraints of the app and the tempo-spatial context of its use, which leads the authors to commit themselves to a future launch of an updated version of the app which takes into account three important learning dimensions of MALL apps, i.e. personalization, authenticity and connectivity factors of learning, as well as introducing a gaming component.

Also focusing on the Mobile component of MOSL4L is Maria Lebedeva's paper "Instructional Design of Skill-Balanced LMOOC: a Case of the Russian Language MOOC for Beginners". This paper addresses the issue of MOOC design, presenting a skill-balanced A0-A1 Russian-as-a-Foreign-Language course, describing its objectives and characterizing the features of its target audience and methodological guidelines. Likewise, the paper deals with the course scenario, peculiarities of course design and pedagogy, well as with the relationship between the development of language competencies and types of activities, communication methods and toolset. After describing the course in detail, Lebedeva concludes that the virtual environment of LMOOCs allows redesigning educational texts, implementing them into digital communication interfaces, such as instant voice or text messages, social media posts, etc. The LMOOC described in this paper, the author claims, achieves the authenticity of the content and nativity of its presentation by using genres and features suitable to digital communication.

Mobile learning is also what relates the last two papers in this special issue to the concept of MOSL4L. In "The effect of mobile and information technologies on the language development design of preschool children: a meta-analysis and meta-synthesis study", Duygu Mavi and Filiz Erbay look at several studies on preschool education and the use of mobile and IT to analyze the effect of mobile- and IT-

supported education in different cultures in the preschool period, on the language development design of children. The authors apply both meta-analysis and meta-synthesis methods to process the information extracted from the review of studies, which allows them to draw a number of conclusions ultimately leading to the enunciation of a series of suggestions for preschool teachers, teacher trainers and institutions. These suggestions revolve around the need for preschool teacher training on the use of mobile- and IT-supported practices so that these can then be more successfully applied in teaching contexts.

In "The Effect of Visual Design Self-Efficacy of Language Teachers on Mobile Learning Attitudes During the Pandemic Period", Çağla Terzioğlu Öz, Zehra Ozcinar and Huseyin Uzunboylu examine the relationship between language teachers' self-efficacy perceptions towards graphic development and their mobile education attitudes during the pandemic period. To that end, they carry out a study with 307 language teachers where several personal and professional parameters are taken into account. An added value of this paper is that, as its title suggests, it focuses on the Pandemic Period, which has greatly affected education systems around the world, creating, among other things, a shift towards remote and mobile learning models. The authors use a relational survey model to carry out their study, from which they conclude that the attitude level of language teachers towards distance education is at a medium level, and their level of self-efficacy for graphic development is low in general, both levels being positively low during the Pandemic Period. As a possible reason for the low self-efficacy of individuals to improve visuality, the authors adduce the inexperience in the creation and use of visual elements in teaching materials, as well as the lack of positive attitudes towards mobile education. An important recommendation stemming from the results of the study is to focus on the visual development of language teachers.

Together, these seven papers contribute to create a global picture of MOSL4L-related issues, whether specifically focusing on some of its components, e.g. the mobile component or the social component – or more generally on all of them. We hope that the research avenues opened by these papers can serve as inspiration to researchers interested in language learning, mobile learning, open and social learning or MOSL4L as a whole.

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