Chapter 2
Mobile Language Learning Pedagogy: A Sociocultural Perspective

Abstract This chapter provides a theoretical framework for mobile language learning from a sociocultural perspective. While the advantages of personal computers over previous modes have been discussed in terms of e-learning, m-learning with mobile devices opens up new horizons that can enhance user-centered learning. Characteristics of mobile devices such as ownership and mobility can help to personalize language learning. For instance, generating target language contents from learners' life-worlds can help to develop the autonomy and agency required for effective learning in this era of new technology. This chapter reviews the literature important for mobile language learning with the aim of applying the theoretical framework to pedagogies in local settings as seen in the following chapters.

Introduction

This chapter examines the potential impact of mobile technologies on L2 teaching and learning, particularly from a sociocultural perspective. It emphasizes how the *mobility of the connected learner* can allow for transformative pedagogical approaches as compared with the fixity of computer-based L2 learning. Although this book accepts the shorthand usage of 'MALL' in the disciplinary development of technology-enhanced language learning (TELL), as discussed in Chap. 1, the emphasis in CALL and MALL appears to be on the technologies that assist learning, whereas 'mobile language learning' is closer to emphasizing the mobility of the learner when freed from the constraints of fixed places and times. With regular classrooms, computer labs, or home computers, the flow is toward a fixed location before learning can take place, whereas with Internet-connected mobile devices, the flow can be *through* learning experiences, more fully and immersively, closer to ubiquitous learning (Fig. 2.1).

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Fig. 2.1 The ancient Greeks already used (wax) tablets for education. This figure can thus symbolize mobile pedagogy. (Creative Commons attribution: Photo of Greek art about 500 BC by Douris, by Pottery Fan, 2009, CC BY-SA 3.0)

L2 Learning with Mobile Devices Compared with Personal Computers

Computer-based L2 learning began from a paradigm where fixed contents to be acquired were displayed, and interaction took place in terms of the contents, such as through questions about the material with fixed answers. The learner's role was to access the contents and receive knowledge displayed on the computer screen, then answering the questions generated by computer programs. Kozulin (2003) criticizes this predominant paradigm whereby learners are regarded as containers which should be filled with the knowledge and skills transmitted by their teachers.

Recently, however, mobile devices allow for a broader paradigm, including collaboration with peers, with few restrictions of place or time, incorporating resources from personal experiences, and learning can take place through sharing and discussing the resources all participants bring into a community. Learners can now go beyond classroom-based groups and form mobile communities where they find out things on the go and share their unique contributions with the group through the exchange of messages, questions, comments, with attached files of longer text or media such as photos or videos. That is, Internet-connected mobile devices can serve as a tool to enable and develop online learning communities.

MALL, first of all, has structural differences from CALL, whereby L2 learning was conducted with desktop or laptop PCs inside classrooms or, by extension, elsewhere. Pachler et al. (2010) argue that laptop computers cannot be thought of as mobile devices. In CAI or CALL laboratories, target contents tend to be as fixed as the facilities, with students working in isolation even while sitting in close

proximity to their peers. The physical setting in effect if not intention influences the learning paradigm. The L2 study materials tend to be prepared as computer software or teacher-selected Internet Websites in which target knowledge and skills happen to be approximated. Thus the move from CAI to CALL and beyond has been subject to both the devices available at the time, including CD-ROMs at one stage, and the evolution of Web functionality from simple read-write functions to so-called Web 2.0 and social media. At the beginning of this book Fig. 1.1 illustrated the evolution from past toward future forms of technology-enhanced language learning.

In different countries around the world, however, it is not a bygone practice for learners to be assigned certain tasks using PCs, answering questions or filling in blanks, for instance, with the aim of acquiring fixed knowledge and skills through the materials accessed. CALL technology was taken up in the first place because it offered new approaches that could not be carried out by traditional materials such as books. Computers were seen as a more efficient tool to accomplish unchanged purposes of displaying certain L2 target items or demonstrating skills for students to practice. There is still a tendency for online pedagogical practices to simulate the former classroom paradigm rather than change to a paradigm better suited to the affordances of new media. Despite tasks and contents being presented with new technology, surpassing the possibilities of traditional media like paper-based books, learners might still be reluctant to take full advantage of such materials, mainly because they would get bored doing the tasks alone. It may therefore be no coincidence that pedagogical concerns for learner autonomy, collaboration, and other sociocultural approaches are coming to the fore contemporaneously with the social Web and mobile technologies.

Mobile learning affords the possibility of different styles of learning, as will be seen later in this chapter and in the case studies. First of all, it is not only devices such as computers but also learners themselves that can generate learning contents. Since learners tend to carry their mobile devices always and wherever they go, any kinds of resources such as texts, links, photos, movies, or sound files that they encounter, record or edit, inside or outside of their classrooms, could be utilized as learning resources by uploading them to sites where they connect with others online. Such resources that each learner finds to be of interest would then be shared socially, discussed with other learners, and exploited for L2 acquisition. Such a process is termed *learner-generated context* (Pachler et al. 2010), which is a conceptual expansion of the also very applicable notion of *learner-generated content* (cf. Lee and McLoughlin 2007). In that respect, mobile technologies can offer a platform for communication that is motivating, and where autonomy and collaboration are mutually reinforcing.

The next chapter will present a case in point, utilizing mobile phone group chats, but first the discussion of pedagogy will be grounded in the situation in Japan, briefly illustrating the educational problems for which mobile technologies and sociocultural approaches may offer needed solutions.

Challenges of Learning English as a Foreign Language in Asian Settings

Learning and teaching English as a foreign language (EFL) tends to be challenging in most Asian countries. This is mainly because such EFL countries offer very limited exposure to English not only in daily lives but also in institutions. In Taiwan, for example, the time to use English is limited in language classrooms for most vocational high school students. They have only two to four hours of English classes a week (Lu 2008). Iranian university students also tend to be exposed to English for a limited time: only once a week for 90 min (Derakhshan and Khodabakhshzadeh 2011). In Thailand, as there are few opportunities to use English in their daily settings, the English language competence of Thai learners, as measured by the national tests such as Ordinary National Educational Test and General Aptitude Test, or by the standardized language proficiency tests such as TOEFL® and TOEIC®, is far from satisfactory, according to Khamkhien (2012).

Learning and teaching English as a foreign language in Japan is also challenging in some ways (Shirai 2011). First of all, there are generally few opportunities to use English authentically in daily life. By definition, in an EFL rather than ESL setting, there is no widespread English speech community or domain of daily life where English is necessary. Thus Japanese people generally do not see a need to master English for their daily purposes. Although the potential opportunities to read text and write messages in English have vastly increased with the advent of ICT such as the Web, email and SNS, English is still not widely perceived as an indispensable skill set, especially in terms of listening and speaking.

Second, related to the first factor, motivation for Japanese people to learn English tends to be low, because it does not stem from daily necessity or societal consensus. Shirai (2011) points out that the primary motivator for college students, for example, is to get higher scores in English language proficiency tests such as the TOEIC® test, in order to demonstrate higher L2 competence to companies or other institutions where such scores are linked to career employment or promotion.

Third, as getting higher scores in proficiency tests tends to be a primary motivator, L2 learning seems to be thought of as information acquisition. Learners tend to expect their teachers to provide L2 knowledge such as vocabulary and grammar, and then they try to possess such items, memorizing their meanings and functions, which passes for successful learning on paper tests. The efforts of such students are thus directed toward understanding texts and copying what teachers write on the blackboard, quietly and passively. It is observed that they seldom answer questions voluntarily, and respond only when asked by the teacher (Tanaka 2009). In this respect, the teaching and learning style can be regarded as receptive (Kubota 2002), teacher-fronted or teacher-centered (Tanaka 2009).

In addition, learning tasks and materials are often decontextualized and bear little relation to students' own life-worlds. English is therefore regarded as something they might need for their future, but of hardly any relevance to their present life-worlds. The resources or texts made in Anglophone countries, as Brown (1990)

points out, tend to deal with topics such as international travel and hotels as contexts with English representing a new cosmopolitanism. Yet this kind of content from Anglophone countries might pay insufficient attention to the indigenous contexts in which the texts or resources are used. In sum, among the challenges are the lack of English speech communities, attitudes of teaching and learning as information transmission and acquisition, and decontextualized resources, irrelevant to students' life-worlds, which do not ignite learners' motivation to master English. To tackle such challenges facing English education in Japan and other foreign language situations, the next sections will illustrate pedagogical principles and practices that could bring about more effective L2 learning.

What Is Effective Learning?

Sharples et al. (2005) derive definitions of effective learning from the 1999 US National Research Council recommendations for learner-centered, knowledge-centered, assessment-centered, and community-centered learning. Based on these definitions, Sharples et al. (2005) suggest that learning be a process within the community whereby learners are actively engaged with peers in order to acquire knowledge and skills. Through such a process in communities of practice (Lave and Wenger 1991), which refer to "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (Wenger 2011, p. 1), learners could use the resources from their own life-worlds to bring about the contextualization of the target knowledge and skills. To tackle challenges in foreign language settings such as teaching and learning English in Japan, this book proposes that mobile language learning could facilitate effective learning as defined above.

Advantages of Mobile Learning

The advantages of mobile-based L2 learning tend to be discussed in terms of the technology; that is, technologically advanced devices and functions, accessibility of learning resources that can be obtained anytime and anywhere, and the use of various applications for studying. These technological aspects tend to be stressed in examining the effectiveness of mobile learning. Learners have adopted mobile technological affordances more readily than those of personal computers, because mobile devices have already become such requisite tools for life daily in many countries that students have their own smartphones or other mobile devices.

This chapter, however, pays more attention to sociocultural aspects of mobile learning than technological ones. In this view, L2 learners with mobile devices have the advantage of interacting with peers anytime and anywhere with the resources

they bring from their own everyday life-worlds (Schutz and Luckmann 1973), which can make their L2 learning more contextualized and effective.

Pachler et al. (2010) show that mobile devices have become indispensable tools for daily life because of their portability, the convergence of technologies, and the decreasing cost for the devices and services. Kukulska-Hulme (2009) also points out three advantages of mobile learning: ownership, mobility, and convergence of technologies.

According to a Japan Ministry of Internal Affairs and Communications report on Internet literacy (2015), 88.1 % of high school students had their own smartphone while 52.2 % of them had their own PC (down from 66.7 % owning a PC the year before), and 80 % of them connected to the Internet more from their smartphone than from personal computers. Likewise, the result of questionnaire research about the use of the Internet conducted by Just System, an IT company in Japan, illustrates that Japanese teenagers are more likely to connect to the Internet via smartphones (n = 116.2) than with personal computers (n = 88.2) (FastAsk 2014). Furthermore, according to a 2012 survey by Kindai University, one of the biggest private universities in Japan, all students of the university owned mobile devices. 94 % of them had smartphones, 21 % had other mobile phones (feature phones), and 7 % had tablets (Kindai University 2013). The report pointed out that all students had at least one mobile device, and some had multiple mobile devices. The ratio of smartphones is increasing, and there will be a demand for more powerful portable devices and functions that are developed to help people stay connected with other people.

Such a trend is seen throughout Asia. For example, the leading index to measure the progress of ICT infrastructure, opportunities, and utilization shows eight Asian countries ranked among the top 25: Australia, Hong Kong, Japan, Macao, New Zealand, Singapore, South Korea, and Taiwan (So 2012). By 2004 there were countries where the diffusion rate of mobile phones reached more than 100 % (Lu 2008; for more recent and detailed data see World Bank 2014).

The popularity of mobile devices could accrue to their use for academic purposes. Stockwell and Hubbard (2013) point out that the familiarity of the use of mobile devices could smoothly transfer technological practices for personal uses into those for institutional uses. For example, the following everyday activities of mobile device users can also serve the purposes of learning: sending and receiving messages, taking photos, attaching files, utilizing social networking services, and so on.

Mobility is a crucial tenet of mobile learning, although its full implications have yet to be realized. It can add a new and personal dimension to the learning and teaching environment in the traditional classroom, while expanding the locus of learning beyond the classroom. To Laurillard, “the mobility of digital technologies creates intriguing opportunities for new forms of learning” (2007, p. 153). More specifics need to be filled in, with more focus on the implications of the mobility of the learner. But to follow up on the opportunities alluded to by Laurillard would imply a radical institutional change in ways of thinking and practices. What would be impossible in the traditional classroom-based learning environment would have

to be seen as desirable and subject to experimentation, that is, innovation with all the risks of attempting new pedagogical and technological practices. But it is evident already that learners with their own devices can do such things as to access learning resources and send their feedback or assignments to instructors anytime and anywhere they are. The question is whether students will be left to their own devices or mobile learning will be incorporated into the school philosophy and curriculum.

As in computer-assisted language learning, the representation of L2 with various types of media is also one of the advantages of learning with mobile devices. Many studies support the hypothesis that the convergence of media facilitates learning more effectively than simply written or verbal information. As computers do, contemporary mobile devices can also display any kind of content with several media on one screen (Chun and Plass 1996; Laufer and Hill 2000; Laufer and Hulstijn 2001; Lomicka 1998; Yoshii and Fraitz 2001; Sato and Suzuki 2010, 2012; Sato et al. 2013; Yeh and Wang 2003). Then, of course, insofar as mobile devices are online, their users are connected to a whole world of information and people.

Such onscreen presentation can make lexical items and their linguistic features more salient (Pachler 2001), which is one of the conditions hypothesized for an ideal environment of L2 acquisition (Chapelle 1998), and could therefore lead to more effective learning. Chun and Plass (1996), for example, show that incidental L2 vocabulary acquisition is more effectively enhanced by the combination of text and picture or video glosses along with a reading text than text only. Yoshii and Fraitz (2002) also show that L2 vocabulary learning could be more effectively conducted with a combination of text and picture glosses than with text-only or picture-only glosses.

Moreover, Yeh and Wang (2003) show that a combination of text and picture (or also sound) are more effective glosses than text only. These studies support the hypothesis of a learning advantage in the convergence of media, concluding that multimedia environments, by displaying information in several modes simultaneously, can have positive effects on L2 learning. Compared with displaying target content in fewer dimensions, fuller dimensionality and contextualization can lead to greater understanding. Furthermore, the implementation of technologically advanced functions could enhance L2 learning. Al-Seghayer (2001), for example, shows that animation is a more effective technique than the use of still images for L2 vocabulary learning. Sato et al. (2013) show that time-controlling functions of a mobile-based vocabulary learning application facilitate not only quicker recall of target vocabulary but also more accurate comprehension of the text in which the target vocabulary is embedded.

Despite the fact that MALL also entails disadvantages such as smaller size of screen and the difficulty of inputting texts (Stockwell and Hubbard 2013), not to mention the cost of the device and continuing provider fees, m-learning has been gaining wider recognition, resulting in continuous development and sales of many L2 learning applications for mobile devices in the iTunes Store and Google Play, for reasonable prices or sometimes for free. Mostly unbeknownst to teachers, such applications for L2 study support on mobile devices are being used independently

for learning, and sometimes surreptitiously for school assignments, unconstrained by place or time, events or schedules.

As mentioned above, mobile devices allow for more fully dimensional ways of knowledge representation, leading to longer retention or quicker recall of target content, for example. These advantages, however, have been mostly investigated according to an acquisition metaphor (Sfard 1998), which represents only one, quantitative aspect of learning, in terms of which learning is regarded as an activity to acquire things provided by others such as teachers. Other aspects including qualitative, social, and creative dimensions need to be explored for a fuller picture of pedagogy in m-learning as elsewhere.

New Approaches to L2 Learning

The acquisition metaphor or information transmission model may represent one aspect of formal education that is difficult to entirely replace in a structure where teachers conduct activities with expertly selected target content to be practiced and acquired. New mobile technology, however, offers alternative approaches to the learning process itself. Sharples et al. (2007) show how new technology available on mobile devices can change the way learning takes place. Figure 2.2 shows some salient characteristics of learning with technology as recently conceived, evidently influenced by sociocultural pedagogy as well as possibilities opened up by mobile technologies with a view to ubiquitous learning.

One chart cannot capture all the possible nuances, however. Kukulska-Hulme (2009) describes subtle new ways of learning with mobile devices as "continuity or spontaneity of access and interaction across different contexts of use" (p. 273).

Laurillard (2002, 2007) conceptualizes the process of learning with a focus on the interaction between the learner and a partner such as a teacher or other learner. This learning model is called the Conversational Framework, and it defines the

New Learning	New Technology
Personalized	Personal
Learner centered	User centered
Situated	Mobile
Collaborative	Networked
Ubiquitous	Ubiquitous
Lifelong	Durable

Fig. 2.2 Relationship between new learning approaches and new applications of technology (adapted from The Sage Handbook of Elearning Research, A Theory of Learning for the Mobile Age, 2007, p. 223, Table 1. Mike Sharples, Josie Taylor & Giasemi Vavoula)

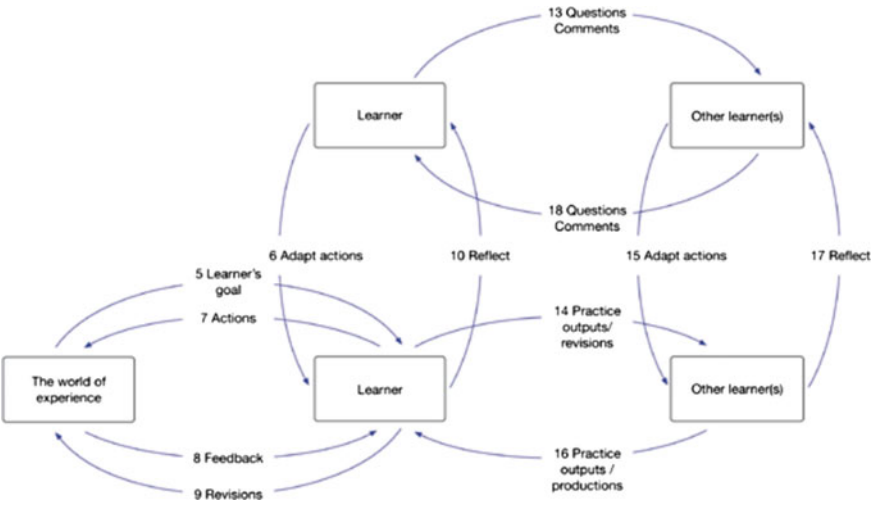

Fig. 2.3 Conversational framework (Reprinted with permission from Diana Laurillard. Mobile Learning: Towards a research agenda, Pedagogical forms for mobile learning: framing research questions, 2007, p. 171, Diana Laurillard, Fig. 6.1)

interaction among the participants on two levels: the discursive level which focuses on theory and conception, and the experiential level which addresses practice and activity. On the discursive level, the interaction occurs in a communicative way, while it is conducted in an adaptive way on the experiential level. For example, on the discursive level, a teacher provides the theory and concept of the task, and the learners inquire or express their own ideas, through which they might reach a full understanding of the task. In an experiential task, on the other hand, the learner attempts to reach the goal of the task based on the conceptual understanding of the task conducted on the discursive level. Figure 2.3 shows a Conversational Framework from Laurillard (2007), which Sharples et al. (2010) find suitable to adapt to mobile learning.

Mobile devices could serve as the media to connect learners with their partners, facilitating the process of coming to know through the conversation (Sharples 2005; Sharples et al. 2007). Laurillard in turn envisions that mobile learning technologies "offer exciting new opportunities for teachers to place learners in challenging active learning environments, making their own contributions, sharing ideas, exploring, investigating, experimenting, discussing" (2007, p. 174).

Pachler et al. (2010) also propose a perspective on mobile learning that is different from the traditional knowledge-transmitting style of learning. They define learning with mobile devices as a sociocultural ecology, with an interrelationship among three key components: (1) sociocultural structures, (2) cultural practices, and (3) the agency of mobile users, which they define as the mobile complex. Seipold and Pachler (2011) flesh out the three components as (1) digital media, technologies and systems, (2) things people do, and (3) human capacity to act in the world. In

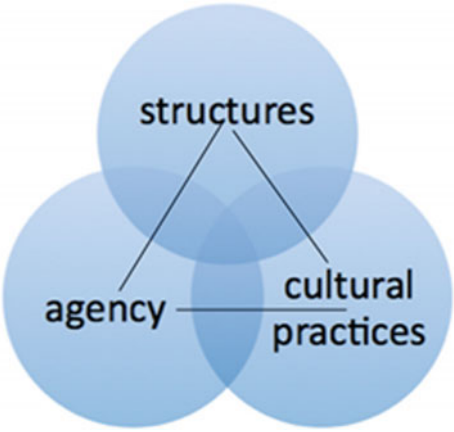

Fig. 2.4 Sociocultural ecology approach to mobile learning (Mobile Learning: Structures, Agency, Practice. Charting the Conceptual Space, 2010, p. 25, Fig. 1.4, Norbert Pachler, Ben Bachmair and John Cook. With permission of Springer)

this ecological framework, illustrated in Fig. 2.4, mobile devices help learners to understand ways to use their everyday life-worlds as learning spaces that everyone can access via their own mobile devices. Learning is conceived by Pachler et al. (2010) as a process of meaning-making or appropriation among these three components, claiming that the appropriation of the three components occurring in an educational context will trigger effective learning.

Figure 2.5 shows a model of L2 learning with mobile devices developed for the purposes of this book based on the approach discussed above. Teachers and learners interact with each other, through their mobile devices, at a place for discussion developed in cyberspace, all of which is regarded as a "community of practice" (Lave and Wenger 1991). Each learner or teacher contributes a context generated by their own life-world and communicates their perspectives with the others by socializing, networking, discussing, and negotiating. Through the interaction in the community of practice, they realize new insights. The affordances of m-learning lead to a form of learning defined by Sharples et al. (2007) as "the processes of coming to know through conversations across multiple contexts among people and personal interactive technologies" (p. 225). Seipold and Pachler (2011) state that the goal of mobile learning is to "be able to operate successfully in and across, new and ever changing contexts and learning spaces" (p. 3). Learners in the community of practice develop their knowledge with help from more skillful peers within the zone of proximal development as in the sociocultural theory pioneered by Vygotsky (1978).

Such interaction among learning community members can also be termed a collaborative dialogue (Swain 2000), a learner-centered dialogue where they are "engaged in problem solving and knowledge building" (p. 102). They can also realize, for instance through L2 communication, gaps in the linguistic knowledge of

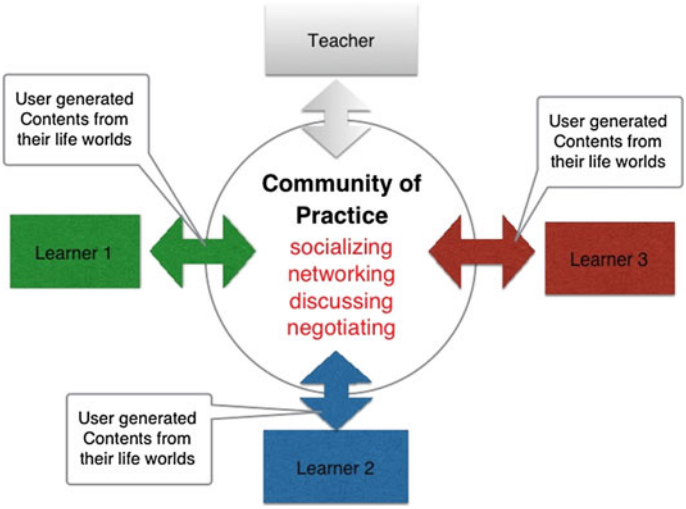

Fig. 2.5 Pedagogical model of mobile language learning

other members, leading to their focus more on their input and output to fill the gaps (Swain and Lapkin 2000). According to Watanabe and Swain (2007), Vygotsky's theory regards output just as a message to be sent to other members, but a collaborative dialogue perspective regards output as "a tool of cognitive activity that mediates L2 learning" (p. 121). That is to say, the meaningful interaction can make a member realize linguistic gaps, which tends to make his or her output more proficient through the effort to fill a gap. By keeping members connected where they would otherwise be separated in different locations, mobile devices can facilitate such collaborative dialogue. Members can act as autonomous agents in the online community of practice, bringing resources from their life-worlds into the community, and interacting with each other freely, at their own pace, which may be more difficult to realize in a classroom with its physical and temporal bounds, institutional culture, and psychosocial inhibitions. In the process of interacting, particularly in their L2, in order to connect with peers, members would need to analyze the input, access their linguistic knowledge, and, as a result, try to make their output linguistically more sophisticated and competent. The next chapter will present two types of case studies where mobile technology was utilized to set up such L2 learning communities. Mobile learning is just beginning to cross over from personal uses by students to being harnessed by educational institutions.

As discussed above, mobile learning pedagogy should pay more attention to its network function to connect learners with each other online. In L2 education it seems inevitable to focus not only on interaction but also on language itself, so as to validate the effectiveness of a certain way of learning. This is because the L2 improvement tends to be measured by language competence such as the amount of vocabulary, with the seemingly inarguable verdict rendered by standardized tests. In

the next chapter, nevertheless, experiments harnessing the ubiquitous mobile phones carried by students will be shown, focusing on the interaction with peers. The results will test the hypothesis developed in this chapter that L2 interaction focusing mainly on meaning-making can enhance English language competence even as expressed by scores on TOEIC® tests and the quality of essay writing. Does there always need to be a focus on the form of language or teaching explicit items when L2 is the very medium through which learners overcome their physical separation and connect with peers, which inter alia is both a motive and a goal?

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