Mobility and language learning: A case study on the use of an online platform to learn Chinese as a foreign language

Wing Yee (Jenifer) Ho* – *UCL Institute of Education, UK*

Abstract

Mobile technologies and mobile learners have transformed the way people learn languages. In particular, they give rise to a new form of language learning: the use of online language learning platforms, a kind of virtual learning environment that offers learning opportunities that are mobile, social and multimodal (Jones and Hafner, 2012; Richards, 2015). While existing research has tended to focus either on the benefits of using mobile technologies in the teaching and learning of languages or on how mobile learners, who have different linguistic and cultural backgrounds, harness the benefits of technologies to learn new languages, few studies address both perspectives. This paper reports on a study of self-directed language learning in online platforms. In particular, I explore how mobile technologies such as online language learning platforms shape the learning practices of mobile learners, and how mobile learners take advantage of the affordances of these online platforms to achieve their learning goals, in the context of learning Chinese as a foreign language. Through in-depth analyses of two case studies, I argue that while mobile technologies seem to encourage a clear distinction between online and offline learning, in reality the boundary is less clear-cut as mobile learners bring with them a set of offline learning practices from their own experiences to the online environment. A more critical view therefore has to be taken when researching online and offline learning practices.

Keywords: online language learning; multimodality; mobility

Introduction

The ubiquity of portable devices such as lightweight laptops, smartphones and tablets, together with the ease of accessing information through the internet, have made possible a new form of language learning – the use of online language learning platforms, a kind of virtual learning environment that offers learning opportunities that are mobile, social and multimodal (Jones and Hafner, 2012; Richards, 2015). It has become common to see people using their mobile devices to access information and engage in various kinds of activities that were not possible a decade ago. Language learning is one such kind of activity, and it has increased in popularity in recent years. A search in the App Store or Google Play for language learning apps would yield hundreds and thousands of results. In view of this, there is a need to understand the implications of this change in the language learning landscape. While this is a vast research area, this paper addresses two perspectives related to mobility: (1) mobile technologies and their impact on language learning practices; and (2) mobile learners and their impact on language learning practices, addressed with the help of social semiotics.

A multimodal approach to language learning

The theoretical framework of this study is informed by a social semiotic approach to multimodality that emphasizes the interest and agency of sign-makers in selecting apt resources to make meaning (Kress, 2010). It is based on the assumption that signs are motivated, meaning that signs are always meaningful and all forms of meaning-making should be taken seriously, be they in the mode of writing, speech, images or page layout, to name just a few. In other words, learning is always multimodal, and the advancement of technology has made the effective use of modes in addition to language more readily possible than ever before. This wider access to technology has broadened language teaching and learning from a former linguistic focus to a wider attention to multimodal representations. A multimodal approach to language learning is particularly relevant in an era of mobility in which people are often engaged in situations where they share few linguistic resources with other people (Adami, 2017).

Mobility and language learning

In recent years, increased attention has been paid to superdiversity and mobility in Applied Linguistics research. As a result of this, mobile-assisted language learning (MALL) has concurrently gained attention. Put simply, the focus of MALL research has been on the use of mobile devices to assist language teaching and learning. In the MALL context, 'mobile' refers generally to mobile devices such as smartphones and tablets. Laptops are not often considered as a mobile device. However, in this paper, I see mobility as a broader concept, something that allows learners to learn in 'brief episodes' that can occur 'in the background' of learners' lives (Pegrum, 2014), and consequently take the view that mobile device is something that has the ability to penetrate into people's everyday lives (Pachler *et al*., 2010). I made the decision to include laptop computers in the study for this reason, as well as due to some methodological constraints, which are discussed later in this paper.

Some research has focused on the technologies used in mobile learning. One such example of language learning technologies is language learning apps. For instance, Kim and Kwon's (2012) study of ESL mobile apps found that the major focus of these apps was on vocabulary building, followed by reading, grammar, listening, speaking and writing. This can be seen as related to the affordances of mobile phones, as they are an apt medium for showing short, bite-sized input, such as isolated vocabulary items and grammar exercises. On the other hand, mobile phones are unfit for showing long passages or complicated tasks due to the size of the screen. In another study, Chik (2015) analysed 124 'app descriptions' for English language learning apps, finding that a significant number of apps examined advertised themselves as 'fun'. This can be seen as the result of a behaviourist approach to vocabulary learning: repeated drilling by means of games that can be fitted easily onto a phone screen.

Nonetheless, the majority of studies on the use of technology in language teaching and learning have been conducted in school settings. It is important to investigate also how learners approach language learning as individuals, outside institutions, with the help of technology. Mobile technologies enable learners to engage in self-directed learning using online platforms such as Massive Open Online Courses (MOOCs), or online language learning platforms, the focus of this paper. The rise in popularity of these mobile learning sites allows learners to use and adapt learning resources in their own way, to fit their self-designated learning goals and objectives, as is discussed in the following sections. The use of digital, mobile learning platforms also allows learners to

create new sign-making practices, such as through 'forwarding, sharing, assemblage and editing of previously existing texts' (Adami, 2015: 186).

Self-directed language learning has not received a great deal of attention in the applied linguistics literature until recently. For instance, Chik and Ho (2017) investigated how three learners made learning decisions when learning new languages beyond the classroom, using only free resources available on the internet. They found that at beginner level, even when learners were given the resources to communicate with (native) speakers in the wider community, they were not interested in doing so. Instead, they preferred to 'create their own language classrooms and had learned in isolation, with only graded materials and popular cultural texts as resources' (Chik and Ho, 2017: 170). This is an example of how learners studying in a language class and learners studying in isolation are different, and how technology afforded them the opportunity to be selective in their choice of learning resources. Another study that involves self-directed language learning is an autoethnographic study conducted by Jenks (2015). He critically reflected on his own practices of learning Korean and investigated how he transformed his home environment into an informal learning space. He also demonstrated in his study how his Korean learning was shaped by the semiotic resources that he found, as well as by environmental affordances.

There are many reasons why this kind of self-directed language learning has seldom been discussed in the literature. I here offer a few speculations, the first being that self-directed language learning has been seen as lacking generalizable pedagogical implications applicable in 'mainstream' language classrooms. Viewing the literature from the last decade, it can be seen that most research focuses on what happens within or around the language classroom. Even where out-of-class learning has been researched, this has still been closely tied to a classroom context. It was unthinkable in the past that learning could occur as an isolated activity detached from the classroom, so only scant attention was paid to this area. Another speculation of mine is that researchers who wanted to research self-directed, out-of-class language learning were faced with methodological challenges to collect data from individual learners. However, things are starting to change because mobile technologies are now available. Learners are now using technologies in unprecedented ways to fit language learning into their busy lives. In this paper I explain how I made use of different kinds of technologies to assist in the data-collection process.

Self-directed language learning allows learners to travel from one space to another, for instance between in-class and out-of-class environments, or between online and offline learning spaces. In his study of undergraduate students at a Hong Kong university, Lai (2015) shows that 'learners perceived in-class and out-of-class language learning contexts as affording different functions, and they acted on the affordances of the two contexts to create complementary and synergetic learning experiences across the two' (265). In particular, he found that students' learning beyond the classroom is shaped by their in-class experiences. It can be argued that the reverse is also true, meaning that students bring out-of-class learning experiences into the language classroom.

Few studies have explored language learning from both perspectives. In order to add to this area of research, this paper seeks to answer the following research questions:

1. How do mobile technologies such as online language learning platforms shape the learning practices of mobile learners?

2. How do mobile learners who have different linguistic and cultural backgrounds harness the benefits of technologies to learn new languages by traversing between online and offline learning spaces?

Methodology

This study is part of a larger project (see Ho, 2018) that included observation of the online learning practices of 11 learners of Chinese. This paper reports on the cases of two learners. All the learners were volunteers who were recruited through online channels. This added diversity to the research as it provided a much wider reach to learners from many different parts of the world, with a wider range of backgrounds and experiences.

The two learners reported in this paper, Valerie and Liz (pseudonyms), came from Germany and the USA respectively. They agreed to be observed via screen recording and subsequently participated in two separate semi-structured interviews via Skype during the four-week research period. The data reported in this paper came from these two sources.

Observation mediated with screen-recording was the predominant source of data. This was because the two research participants were located in separate countries from the researcher, meaning it was not feasible to carry out face-to-face observations. The solution was to invite the participants to install free screen-recording software on their computers, which recorded their learning activities at their leisure and without the researcher's presence. Whenever the participants decided to start learning online, they only had to turn on the screen-recording software so that their screens, facial expressions and commentaries during learning were recorded. They then uploaded their recordings to a designated password-protected Dropbox every week. The use of screen recording as a data collection tool allowed the researcher to keep a record of the data so that it could be viewed repeatedly.

The learning episodes reported in this paper were selected from the screen recordings submitted by the learners after their learning sessions each week. The two learners submitted almost four hours of recording in total, and after close examination of the footage, the act of learning to write Chinese characters was isolated to analyse in greater detail. The selection was inspired by the Moment Analysis used in Li Wei's (2011) research on translanguaging among Chinese youths in Britain. In his paper, he defined a moment as 'a point in or a period of time which has outstanding significance. It is characterized by its distinctiveness and impact on subsequent events or developments' (Li, 2011: 1224).

A lot of research in applied linguistics has been rooted in investigating frequently occurring patterns, but Li (2011: 1224) argued for a need to explore 'spontaneous, impromptu, and momentary actions and performances of the individual' so that 'critical and creative moments of individuals' actions' could receive the attention they deserved. The selected moments were then analysed based on the social semiotic approach to multimodality in an attempt to make visible the signs of learning shown by the learners (Bezemer and Kress, 2016). This is mainly done through a comparison of the original pedagogic materials displayed on the online platform and the artifacts created by the learners.

The journey of learning to write Chinese characters

Two learners featured in this paper illustrated how the divide between online and offline learning practices is indeed imaginary. Valerie and Liz were both learners

of Chinese. Valerie was a university student in Germany majoring in multilingual communication, and Liz was a substitute teacher and a freelance book narrator based in the United States. Both of them had rich language learning experiences in terms of taking language classes and self-directed language learning using online tools. Before the study started, Valerie and Liz had already learnt five other languages in addition to their first languages. They are experienced language learners, and it can be assumed that they were also relatively autonomous learners who were able to make learning decisions by themselves (Peek, 2016). Their autonomy in learning is manifested in the way they select apt resources for their learning.

People learn to write in different ways. To start with, both Valerie and Liz were using an online language learning platform called Memrise to learn Chinese. Memrise, like many other platforms on the internet, focuses on building vocabulary. A lot of the exercises included matching the vocabulary shown in the target language to their corresponding meanings or forms. This kind of matching exercise is designed to make learners feel that they are playing a game, which could possibly increase their motivation to learn (Reinders, 2012; Gee, 2013). Memrise also uses crowdsourced materials from members of the site to offer a wide variety of courses and learning materials that serve learners' practical needs, for instance, ordering Chinese food in a Chinese restaurant. Nonetheless, based on the way it is designed, it could be said that Memrise offers a structured curriculum for learning Chinese. Valerie and Liz did not want simply to recognize Chinese characters; they wanted to go one step further and learn how to write Chinese characters. The ways the two achieved this were not exactly the same.

Learning to write characters is an area seldom addressed in online language learning. My speculation is that as most languages being taught in these online platforms are European languages that use an alphabet-based system, most learners did not have the need to learn the writing system from scratch, as most would have had some knowledge of most of the alphabets, notwithstanding perhaps slight variations between different languages. This caused online language learning platforms to focus on speaking, listening and even reading competencies, but not on writing. Speaking and listening skills are the main foci of online language learning because these are the skills deemed important if someone is to survive in a new country, or engage in social interactions in a new country. Writing is usually excluded or seen as marginal in these contexts. I do recall from my own recent travels to Seoul, South Korea, that I learnt a few basic phrases for shopping. Although I did use those phrases when I went shopping, I did not have the need to actually write the characters. Nonetheless, I could recognize the characters when I was looking for the correct exit in the underground.

It was in part this lack of attention to writing that motivated me to look at this learning practice in greater detail. While Memrise offered the affordances to help learners read and recognize Chinese characters and make the connection between form, meaning and/or pronunciation, learning to write requires a different set of epistemological commitments, for instance, knowing the proportion of the different radicals, the lengths of the strokes, the stroke order, and so on (see Kress (2010) for a discussion on epistemological commitments, and Kenner and Kress (2002) for a discussion of the epistemological commitments required in learning a new writing system).

In addition to this theoretical motivation for investigating learning-to-write practices in an online context, my reasons for selecting these two learners are as follows:

- they chose to learn to write Chinese characters
- their experiences demonstrated the complexity of online learning practices
- they are experienced language learners.

The above three reasons made the learners' learning-to-write episodes 'a moment', as termed by Li (2011). As a researcher, these 'moments' have 'outstanding significance' theoretically and empirically. They are also 'distinctive' in the sense that learning to write is a seldom explored area in online language learning. The decision to focus on writing set these two learners apart from the other learners who chose to focus on speaking and listening.

Learning to write Chinese characters is challenging for people who are not accustomed to a character-based writing system. Character is a basic unit of writing in the Chinese language. It is a logographic language, and is orthographically opaque (Li, 2017). The complexity of the graphic configuration of Chinese characters, as well as the lack of sound-script correspondence (due to the script's logographic nature and orthographic depth) makes learning to write Chinese characters particularly difficult for learners (Li, 2017; Shen, 2005; Xing, 2006).

Put simply, learning to write Chinese characters involves a lot of embodied practice, which is why both Valerie and Liz agreed that writing things down was the best way to learn Chinese, as shown in the following excerpts from the semi-structured interviews:

> I can only remember things when I've written them down…I have a little book where I write down the characters and meaning and the stroke order, so I remember them, also how to write them (Valerie, interview 1).

> Physically writing the characters as opposed to clicking on them is helpful (Liz, interview 2).

Even though advancements in technology have seemingly reduced the need for people to write with pen and paper, both learners understood that physically writing a character is different from selecting it on a phone, or typing it using the pinyin system. In other words, they had an understanding of the different epistemological commitments required of them when they learnt to write Chinese characters. With this understanding in mind, both learners had started to practise writing characters by hand, a common way to learn Chinese characters used by schools in many parts of the world, including in predominantly Chinese-speaking regions. I recall spending my childhood practising complex characters by hand to familiarize myself with the size and proportion of the different parts (radicals) within a character and the stroke order of each character on a special exercise book with grids. Figure 1 shows an example of the kind of input that Valerie and Liz were given on Memrise, which includes the meaning of the target character, the form of the character (how it is written in Chinese), the pinyin (a phonetic transcription system to transcribe Chinese characters based on Mandarin pronunciation), as well as the grammatical category of the character.

Definition: People; resident
Word: 民
Pinyin: min2
Attributes: noun

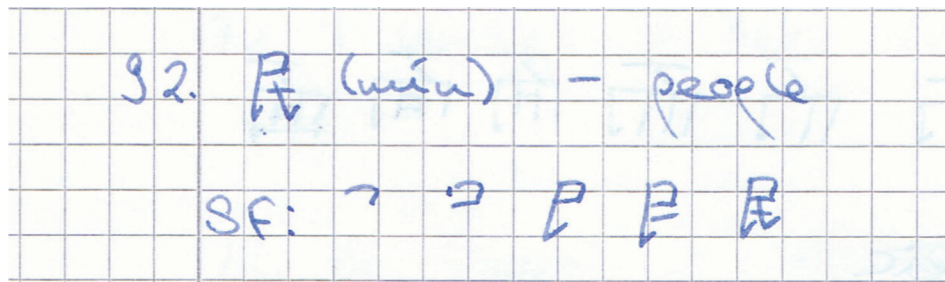**Figure 1: Valerie's original pedagogic material from Memrise**

Figure 2: Valerie's handwritten notes

The handwritten work that Valerie and Liz did (Figures 2 and 3) reflected, at first glance, standard practices of learning to write Chinese characters, and nothing seemed out of the ordinary. However, a close examination using the framework of multimodality would unpack a lot of behind-the-scenes goings-on and decision-making that the learners had to undertake in order to successfully complete their tasks.

To begin with, the notebook that Valerie used had grids on it. She chose this kind of notebook because she could 'determine the spacing between the written lines better' (Valerie, email correspondence). The page was divided into two parts (left and right) by a bold, grey line. The left column on the page occupied less space than the right. The left column indicated the number of items: in the case in Figure 2 the target character was the 32nd item on the page. As for the right-hand column, it was divided into two rows. The first row showed the form of the character, its pinyin, and its meaning in English, whereas the second row showed the stroke order (*strichfolgen* in German, or 'SF' as indicated in the handwritten text). It was copied from an online dictionary.

Figure 3: Liz's handwritten notes

A closer examination of the handwritten note suggested that Valerie used a pen, not a pencil, to write the character. This was a motivated choice, as she explained in the following excerpt:

> At a certain age in school it was not acceptable anymore to write with pencils so it became a habit to use pencils only for sidenotes. And since the pen I used wrote with ink it was still erasable (Valerie, email correspondence).

From this it can be seen that Valerie brought offline classroom practices with her to the online learning environment. She chose not to use a pencil because her experience at school had shaped her thinking that a pencil was only used for making 'side notes' and was not acceptable for the main content. At the same time, she also realized that, practically, it would be better if she could erase what she had written if she made a mistake. In order to strike a balance between the habit formed in school and her practical needs, she chose to use a pen with erasable ink. In addition to this, one could also argue that the use of a computer to learn enables learners to do away with pen and paper; some even say that writing could soon become obsolete. However, a different conclusion is suggested in this learning context. Here we can see how Valerie actively selected apt resources for different tasks to achieve her learning goal. This is also an example of how offline learning practices and experiences have 'crossed over' to the online environment, and vice versa, allowing Valerie to maximize her learning.

The other learner, Liz, also used a notebook to write things down, but the one that she used was of a different type, with lined paper and a red margin on the left dividing the page into two parts. This is a typical kind of exercise book for writing in a language with an alphabet system. Although one could also use a lined notebook to write Chinese characters, it is not a typical arrangement for beginners. For beginners, a grid notebook with four small grids enclosed in one big grid is normally used so that learners can determine the size and proportion of the characters. A lined notebook is often for advanced students who are already familiar with the spatial arrangement of Chinese characters. Liz's choice of notebook could be a matter of choice, or it could just reflect the unavailability of grid notebooks.

As seen in Figure 3, Liz divided the page into four columns, as explained in the following interview excerpt:

> I copied down all the words I learnt in my Memrise course. The first column has the stroke order (if it wasn't obvious to me); the second column has the word in Chinese and the pinyin; and the third column has the English translation. I fill in the last column 2–3 weeks later. I cover up everything but the English, and then try to write out the character and pinyin. Then I go back and check my work and highlight anything I got wrong in yellow (Liz, email correspondence).

With the content from Memrise as an input, Liz attempted to create her own quiz on paper. It has to be mentioned that Memrise has a flashcard function, which could generate flashcards in random order for people to practise vocabulary. However, Liz still decided to create her own quiz on paper by covering up the characters and practising writing them again after two to three weeks. It is apparent that Liz understood the affordances of pen and paper to practise writing, and it was a motivated choice that she decided to incorporate offline learning practices to online learning.

In contrast to Valerie, Liz used a pencil to practise writing. This is a practice typical of beginners, as it is easier to correct a mistake. Indeed, upon close examination, eraser

marks were seen in Liz's notebook. This reason for using a pencil rather than a pen was also confirmed in email correspondence with Liz.

Discussion

There is no doubt that Valerie and Liz were engaged in online learning. Their learning materials were retrieved from an online platform, and most of their input was obtained online. Nonetheless, most people would associate online learning with an image of people tapping on their phones or sipping coffee with a laptop on their laps, learning effortlessly in the comfort of their homes. The fact that they had started writing things down and practising writing the characters using pen/pencil and paper suggested a learning practice that is typical of offline learning. It is the standard practice of language classrooms that students are required to write characters by hand. In other words, there is a 'crossover' between the online and offline learning practices. It could then be argued that the online world and the offline world should not be seen as entirely separate spaces, but rather as interconnected environments (Warschauer, 2000). Research suggests that while learners are engaged in online learning, many still show a preference for more 'traditional' means of learning – for instance, the embrace of more explicit instruction, limited tendency to communicate with 'native speakers' in online platforms and a preference for a structured curriculum (Umino, 1999; Deepwell and Malik, 2008; Stevenson and Liu, 2010; Brick, 2011; Chik and Ho, 2017).

The above two instances of learning to write Chinese characters have shed light on the relationship between mobile technologies, mobile learners and learning. Mobile technologies such as online language learning platforms have created new possibilities for language learning. The affordances of mobile technologies have created new sign-making practices, such as the availability of user-generated contents that allow learners to forward, share, assemble and edit previously existing texts (Adami, 2015). Mobile technologies provide learners with language input that they can use as they choose. Learners have the flexibility to use and adapt learning materials to fit their learning goals and objectives, and fit learning into their lives.

It can be seen that Valerie and Liz both used online and offline resources to learn to write Chinese characters, albeit that both of them were engaged in a 'typical' online learning episode. In particular, physically writing things down was an important resource. As was discussed in the previous section, writing by hand is an embodied practice, which requires the knowledge of stroke order, the angle, curvature and directionality of the strokes, as well as the spatiality of the different elements of the character, etc. It requires very different epistemological commitments from selecting the correct character or typing in the pinyin symbols using the touchscreen of the phone.

The way that Valerie learnt to write could be compared with young children copying letters from alphabet charts, except that this time she copied the character stroke by stroke. Copying by hand is a kind of repeated drilling that aims to help young learners master the way in which an alphabet or a character is written, how it 'feels' writing it by hand. Arguably, this is something that online learning platforms cannot offer, and the only way to experience and learn this is through embodied practice – writing things down – a typical 'offline' learning practice.

Conclusion

In a contemporary society that is characterized by heterogeneity, complexity and mobility, the language learning landscape has been transformed, and it is crucial to

understand the implications of language learning in a mobile context. This paper reported how two learners who were located in different parts of the world engaged in self-directed, online learning of Chinese. Through screen-mediated observations and semi-structured interviews, it was found that these learners are autonomous and able to select apt resources to achieve their learning goals. Although the learners were engaged in online language learning, the tools that they selected, as well as the kind of learning practices that they exhibited, indicate the constant traversal between the online and offline learning environments. As a result of this, a dichotomy between online and offline learning may need to be reconsidered, and I suggest that they should be seen as a continuum, not as a clear-cut dichotomy.

Theoretically, this study uses a social semiotic approach to multimodality, which focuses on the interest and agency of learners. Under the assumption that all signs are motivated, it is possible to unpack some learning practices that are outside the realm of language, such as the way in which the two learners select apt tools and resources for learning, and how they try to engage in the embodied practice of writing. This study demonstrates that in language learning, although the focus is on the learning of the language, non-linguistic modes play an equally important part to that played by language in the learning process: language should not be seen as superior to other modes. Methodologically, this study makes use of screen-mediated observations and semi-structured interviews, both of which were conducted online without any physical meeting between the researcher and the participants. Online data collection is gaining in importance because it is a more practical way to collect data when the researcher and their subjects are located in different parts of the world. This study offers a glimpse into how this kind of online research could possibly be done.

Notes on the contributor

Wing Yee (Jenifer) Ho is a Teaching Fellow at the English Language Centre of the University of Macau, China. She is also a PhD student at the UCL Institute of Education, UK, researching translanguaging in online, self-directed language learning in the context of learning Chinese as a foreign language. She is particularly interested in the use of multimodal methods in applied linguistics research.

References

Adami, E. (2015) 'A social semiotic perspective on digital mobility'. *Media Education*, 6 (2), 184–207.

Adami, E. (2017) *Multimodality and Superdiversity: Evidence for a research agenda*. (Tilburg Papers in Culture Studies 177). Tilburg: Babylon Center for the Study of Superdiversity.

Bezemer, J. and Kress, G. (2016) *Multimodality, Learning and Communication: A social semiotic frame*. London: Routledge.

Brick, B. (2011) 'Social networking sites and language learning'. *International Journal of Virtual and Personal Learning Environments*, 2 (3), 18–31.

Chik, A. (2015) 'English language teaching apps: Reconceptualizing learners, parents, and teachers'. In Dixon, E. and Michael, T. (eds) *Researching Language Learner Interactions Online: From social media to MOOCs* (CALICO Monograph Series 13). San Marcos, TX: Computer Assisted Language Instruction Consortium, 29–44.

Chik, A. and Ho, J. (2017) 'Learn a language for free: Recreational learning among adults'. *System*, 69, 162–71.

Deepwell, F. and Malik, S. (2008) 'On campus, but out of class: An investigation into students' experiences of learning technologies in their self-directed study'. *ALT-J: Research in Learning Technology*, 16 (1), 5–14.

Gee, J.P. (2013) *Good Video Games and Good Learning: Collected essays on video games, learning and literacy*. 2nd ed. New York: Peter Lang.

Ho, W.Y. (2018). 'Translanguaging in Online Language Learning: Case studies of self-directed Chinese learning of multilingual adults'. Unpublished PhD thesis. Institute of Education, University College London.

Jenks, C.J. (2015) 'The semiotics of learning Korean at home: An ecological autoethnographic perspective'. *International Journal of Bilingual Education and Bilingualism*, 20 (6), 688–703.

Jones, R.H. and Hafner, C.A. (2012) *Understanding Digital Literacies: A practical introduction*. London: Routledge.

Kenner, C. and Kress, G. (2002) *Signs of Difference: How children learn to write in different script systems* (ESRC End of Award Report). London: School of Culture, Language and Communication.

Kim, H. and Kwon, Y. (2012) 'Exploring smartphone applications for effective mobile-assisted language learning'. *Multimedia-Assisted Language Learning*, 15 (1), 31–57.

Kress, G. (2010) *Multimodality: A social semiotic approach to contemporary communication*. London: Routledge.

Lai, C. (2015) 'Perceiving and traversing in-class and out-of-class learning: Accounts from foreign language learners in Hong Kong'. *Innovation in Language Learning and Teaching*, 9 (3), 265–84.

Li, D.C.S. (2017) *Multilingual Hong Kong: Languages, literacies and identities* (Multilingual Education 19). Cham: Springer.

Li, W. (2011) 'Moment analysis and translanguaging space: Discursive construction of identities by multilingual Chinese youth in Britain'. *Journal of Pragmatics*, 43 (5), 1222–35.

Pachler, N., Bachmair, B. and Cook, J. (2010) *Mobile Learning: Structures, agency, practices*. New York: Springer.

Peek, R. (2016) 'Exploring learner autonomy: Language learning locus of control in multilinguals'. *International Journal of Multilingualism*, 13 (2), 230–48.

Pegrum, M. (2014) *Mobile Learning: Languages, literacities and cultures*. Basingstoke: Palgrave Macmillan.

Reinders, H. (ed.) (2012) *Digital Games in Language Learning and Teaching*. Basingstoke: Palgrave Macmillan.

Richards, J.C. (2015) 'The changing face of language learning: Learning beyond the classroom'. *RELC Journal*, 46 (1), 5–22.

Shen, H.H. (2005) 'An investigation of Chinese-character learning strategies among non-native speakers of Chinese'. *System*, 33 (1), 49–68.

Stevenson, M.P. and Liu, M. (2010) 'Learning a language with Web 2.0: Exploring the use of social networking features of foreign language learning websites'. *CALICO Journal*, 27 (2), 233–59.

Umino, T. (1999) 'The use of self-instructional broadcast materials for second language learning: An investigation in the Japanese context'. *System*, 27 (3), 309–27.

Warschauer, M. (2000) 'The death of cyberspace and the rebirth of CALL'. *English Teachers' Journal*, 53, 61–7.

Xing, J.Z. (2006) *Teaching and Learning Chinese as a Foreign Language: A pedagogical grammar*. Hong Kong: Hong Kong University Press.