

Roles of mobile devices supporting international students to overcome intercultural difficulties

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Abstract. Sociocultural theory emphasises the mediational role of tools in learning. International students usually find themselves in a vicious cycle, experiencing difficulties when engaging with local people and culture which might provide the mediation necessary to develop their intercultural communicative competence. Yang (2016) further points out that “mobile technologies provide alternative mediational tools that might help students to break this cycle” (p. 2). This paper, developed from Yang’s (2016) doctoral research, examines the roles of mobile devices in overcoming international students’ intercultural difficulties during study abroad. Eight international students participated in the study and were asked to keep diaries and attend interviews for four weeks. A content analysis approach was applied to examine the students’ use of mobile devices and situations. The findings revealed that for overcoming intercultural difficulties, the international students utilised mobile devices as search tools, social tools, service providers, presentation tools, and capture tools. Although the students showed some awareness of mobile devices as mediational tools, the problems that require the ability to analyse sociocultural contexts need further support from educators and technologies.

Keywords: intercultural difficulties, mobile devices, mediational tools, diary-and-interview methods.

1. Introduction

International students are usually neither native speakers of the target language nor members of the local culture. They need to develop their Intercultural Communicative Competence (ICC) to adapt to the study-abroad life. As discussed in Yang (2016, p. 37), ICC refers to the knowledge, skills and attitudes of another

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language and culture to communicate effectively and appropriately in intercultural situations (Byram, 1997; Deardorff, 2012). Sociocultural Theory (SCT) suggests that individual mental functioning is mediated by cultural artefacts, activities, and concepts in social interactions (Lantolf & Thorne, 2006). Mediation is the process through which mediational tools are employed to master the physical, psychological, and social world (Lantolf & Thorne, 2006). Therefore, international students are suggested to immerse into intercultural contexts for learning another language and culture and eventually develop ICC. Nevertheless, international students usually fall into a vicious cycle, experiencing difficulties in intercultural communication with people and surroundings (Lin & Scherz, 2014; Spencer-Oatey & Xiong, 2006) which might provide the mediation necessary to enhance their ICC. Mobile technologies provide alternative mediational tools that might facilitate students breaking this cycle. The devices could support ubiquitous learning with information from databases, more experienced people, and the surroundings to fulfil the user's specific needs.

This study, as Yang's (2016) doctoral research, aims to explore international students' use of mobile technology to mediate intercultural difficulties for ICC development during study abroad. This paper highlights one of the three research questions in the study, namely: what role do mobile devices play in dealing with intercultural difficulties?

2. Method

This research is a qualitative multiple case study focussing on the critical period of intercultural adjustment, namely the first few months after arrival into a new country. Diary-and-interview method was employed to collect descriptive data about the students' everyday life for four weeks, including their difficulties, situations, solutions, and use of tools. The students were interviewed every week to examine the diary-reported issues profoundly and check the researcher's interpretation of the data.

Eight Chinese international students participated in the study. They were doing one-year taught masters' courses in a UK university. It was their first time in the UK. Each student had at least one mobile device. All in all, the students contributed 192 records to the study, including 160 diary entries, and 32 interview transcripts.

The content analysis approach was adopted, which refers to data analysis via seeking items that fall into predetermined categories of a systematic framework or categories

from the literature (Krippendorff, 2013). The schedule and coding manuals are the main tools for the approach. The coding schedule was structured according to elements in SCT and the research questions (see Table 1). As for coding manuals, for example, the manual for *role of the tool*, the focus of the present paper, included search tools, social tools, service providers, presentation tools, and capture tools based on previous studies on technologies as mediational and cognitive tools (e.g. Churchill & Churchill, 2008; Clough, Jones, McAndrew, & Scanlon, 2008) and the patterns of the data from the present study.

Table 1. Coding schedule (Yang, 2016, p. 101)

Student	Issue No.	Nature of difficulty	Difficulty in ICC	Situation	Solution	Devices	Role of the tool	Note

3. Results

The present study identified 167 issues caused by difficulties in ICC. The students attempted to solve 134 (80%) of them. 71 (43%) of the solutions involved mobile devices for mediating the problem-solving. Mobile devices were used as search tools, social tools, service providers, presentation tools and capture tools (see Table 2).

Table 2. The roles of the tools (Yang, 2016, p. 171)

Role of the tools	Frequency
Search tools	35
Social tools	20
Service providers	12
Presentation tools	4
Capture tools	4
Total	71

Search tools mainly consisted of search engines, dictionary apps and online databases. When the students encountered difficulties, their first intentions to use mobile devices were to find references, such as looking up words and searching for explanations online and in apps. The search function was applied in about half of the situations involving mobile technologies for solving problems (see Table 2). It revealed that the students were familiar with the role of mobile devices

as search tools. Difficulties in linguistic and cultural knowledge associated with collective memory (i.e. big ‘C’ culture) were most likely solved with search tools. However, the difficulties involving small ‘c’ culture, namely the practices of a culture hidden behind thoughts and behaviours, were not solved thoroughly with mobile technologies. The students’ reports indicated that the efficiency of search tools depended on the students’ abilities to understand the sociocultural contexts and precision of keywords to describe the situations for searching.

Mobile devices as social tools were utilised to contact the more experienced individuals, so that the students could ask for help or advice. The students utilised emails, social networks, visual and audio calls, and text and voice messages through apps (e.g. iMessage, Facebook, and WeChat). The social tools enhanced the problem-solving by engaging the more capable people who were physically out of the contexts to help with the challenging situations. According to the students’ reports, the success of solutions was usually decided by the student’s unbiased interpretation of their situations and their selection of more experienced people who were able to reply in time.

Service providers sought by the students often referred to apps and websites that offered particular services such as navigations, online stores, and music players. The apps simplified intercultural communication as they avoided the face-to-face interaction with other people. The students could use the apps in L1, and had abundant time to figure out the meanings of L2 on the screen.

The students also reported that they used presentation tools, such as PowerPoint and photos, to present their ideas for explanation and knowledge exchange, while capture tools, such as the camera and the recording functions of mobile devices, to seize the instant containing crucial information concerning their difficulties. Presentation and capture tools were usually exploited to mediate issues in academic situations, such as reading papers, explaining ideas and recording academic activities.

4. Discussion and conclusions

The international students of this study already realised the mediational roles of mobile devices for overcoming their difficulties during study abroad, especially search tools and social tools. They usually exploited the devices ubiquitously when they encountered troubles without helpers or supports from the situations. The students observed and interpreted the surroundings to search online or consult more experienced people via mobile devices, and received some useful information

for solving problems. Thus, mobile devices as the above five types of mediational tools could mediate the exchange of knowledge and some practical skills. However, the unsolved and partially solved difficulties demonstrated that the capacity of mobile devices to allocate ICC skills was limited. The skills contain the abilities to discover, interpret, and practise new cultural knowledge and practices from everyday interactions (Byram, 1997; Deardorff, 2012). Therefore, international students usually have to analyse and react to the situations with their ICC skills but no technical support. It implicates that educators could provide ICC training to international students with a focus on discovery, interpreting, and interaction skills, as well as let the students realise the roles of mobile devices for ICC development. Also, this study points out that educational technologies and app designers need to explore and apply the functions of mobile devices for mediating thinking and behaviours in sociocultural contexts that might mean applying artificial intelligence for ICC development.

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