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Enhancing Interactions with Mobile Devices in Language Classrooms

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Abstract

With the rise of mobile devices, smart phones and tablets are playing an indispensable role in our daily lives. Tablets, in particular, have been found to have great potential in the field of education. To explore the usefulness of tablets in language education, the Center for Language Education at The Hong Kong University of Science and Technology (HKUST) started an iPad-based Language Project named "Enhancing Task-Based Language Learning and Teaching with Mobile Devices" in early January 2012. The project aims to develop, implement and test task-based language and teaching (TBLT) methodology with mobile devices connected to the HKUST network and classroom computer terminals. Based on the rationale, the project team decided to investigate the following research question: How does the use of iPads affect interactions between students, teachers and contents in different phases of TBLT-based cycles (pre-task, task, language focus and post-task)? This main question is followed by a sub-question: In what ways does the feedback generated from teachers to students differ when using iPads? Participants in this action research include three English instructors and 52 undergraduates enrolled in the English language LANG1001 course at HKUST in 2012. The students worked on tasks during face-to-face lessons with iPad apps selected by the research team, and the instructors facilitated to provide guidance. On-site observations were conducted throughout the course; an online survey for the student participants and an in-depth interview for the instructor participants were carried out at the end of the course. The results suggest that interactions between students, teachers, and contents change positively when using appropriate iPad apps for a task. In some cases, we found that these interactions were further enhanced after adding additional tools, such as cloud-based social networks and Web 2.0 applications. We also found that, by combining the use of the iPad with other digital media tools during the feedback process, both the content and type of student-teacher interactions change.

1. Introduction

There has been an increase in the number of university students who are using either smartphones or tablets, providing convenient methods for online social networking, informal reading and research, and entertainment. And as mobile devices increasingly become part of university students' daily lives, many educators and researchers are beginning to wonder whether there is any potential in using them for teaching and learning. Recent research points out that mobile apps and tablets are the two key technologies merging into the mainstream of education [1].

The Center for Language Education (CLE) at The Hong Kong University of Science and Technology (HKUST) was recently awarded a Teaching Development Grant to explore possible uses of mobile devices in language education. With this grant, the CLE introduced the use of iPads in the classroom within a task-based language learning and teaching (TBLT) methodology; the purpose was to investigate what (if any) effects mobile devices have on language teaching and learning in the classroom. Based on the rationale, the project team decided to investigate the following research question: How does the use of iPads affect interactions between students, teachers and contents in different phases of TBLT-based cycles (pre-task, task, language focus and post-task)? This main question is followed by a sub-question: In what ways does the feedback generated from teachers to students differ when using iPads? The purpose of the research is to identify how the use of iPads affords the interactions in the language task cycles and to find out how mobile devices and applications could better facilitate student-centered language study in higher education.

2. A Review of Literature

Educators have begun researching how mobile devices, web 2.0 tools, and cloud-based learning platforms can establish a flexible virtual learning environment (VLE) with rich resources, high interactivity, and simple accessibility to assist lifelong learning anywhere and anytime. Previous

studies indicate that technologies enrich open-ended constructivist learning environments in which learners build knowledge and develop metacognitive skills through authenticated language contents and stimulated learning processes [2]. Construction tools such as blogs, wikis and learning management systems have been taken into account for improving learners' language skills in content-based and problem-based learning.

With regards to second language acquisition, TBLT has been widely recognized. Research suggests that TBLT provides learners with meaning-based activities to communicate and collaborate with peers, to solve problems, and to achieve final learning goals in an authentic learning environment [3, 4]. Generally, a task-based language course consists of several task cycles within difference phases. A typical task cycle includes a pre-task phase for introducing the topic and themes; a task to let students collaborate, plan and report; a language focus phase encouraging students to do self-examination; a post-task for reflection and revision.

Researchers posit that different phases of TBLT can be enhanced with the implementation of technologies [4, 5, 6, 7]. However, very little has been written about the use of mobile devices in TBLT. Thus, we are convinced that it is worthwhile to examine the usefulness of iPads in TBLT classes in higher education. We believe that mobile learning will bring students more comprehensible information, prompt feedback, and opportunities to modify production so that interactions will be fostered during learning process [8].

3. Teaching and learning grant

CLE's iPad project is sponsored by the Teaching Development Grant, a program held by the Center for Enhanced Learning and Teaching to support HKUST faculty who are interested in enriching pedagogy and helping students improve learning experiences through innovative teaching and learning approaches.

3.1 E-learning Vision

Our research rationale was built upon a vision of e-learning, which is the core of ICT support for CLE language course development. According to the vision, CLE aims to equip students with lifelong learning skills through an approach of blended learning which allows learners to access language learning through face-to-face interactions, real time resources online, social networking tools and collaboration technologies.

Seven practices have been considered when incorporating technologies into the language curriculum for the following purposes: (1) to provide constructive language learning activities; (2) to enhance feedback and peer review during learning process; (3) to encourage collaboration and idea exchange; (4) to stimulate learning experience; (5) to encourage reflection and metacognition; (6) to develop cognitive apprenticeship with scaffolding; (7) to provide process-based evaluation [4, 9]. In this way, CLE will be able to take advantage of teachers' knowledge of content, pedagogy and technology all together, whereas students will be able to gain more learning opportunities to improve language skills for both daily communication and academic studies in real-world scenarios.

3.2 Pedagogical Paradigm

The e-learning vision also guided us in how to maintain an iPad app library and incorporate it or combine it with the use of CLE's VLE: http://discuss.ust.hk/bp when designing tasks. The app library was developed to outline and define key features and approaches teachers might take with using the iPads in their course. The VLE was built using Buddypress, a WordPress plugin that creates an online social network, to allow users to create online communities and group blogging spaces for teaching and learning. For example, for the purpose of our project, each class section could build their own blog in the VLE to share learning experiences and completed projects. This might include student-produced videos created with iMovie on the iPads, which is documented in our iPad app library. By combining the recommended apps in the VLE, participating students are able to complete different phases of a task cycle (i.e. pre-task, task, language focus, post-task), whether on iPads, inside classrooms or out-of-class, and review their work within the VLE anytime and anywhere.

4. Method

This project began in the spring semester of 2012, and included three teaching faculty members and 52 first- and second-year-students from Science and Engineering departments enrolled in a one-semester English language course. Three sections of the course were chosen to pilot the use of iPads

in the classroom. Each section met twice a week for 1.5 hours each time for a total of 42 hours over 14 weeks. All tasks with the iPads were designed using a TBLT methodology. Throughout the pilot, students worked in small groups using iPad apps, such as Explain Everything, iMovie, gFlash Pro, for a variety of tasks. For example, students worked in groups to make a two-minute documentary comparing and contrasting different generations with iMovie video editing application.

On-site observations were conducted from the beginning to the end of the semester. The observations focused on the interactivities of iPad-based tasks in order to answer the following questions:
- How does the use of iPads affect interactions between students, teachers and contents in different phases of TBLT-based cycles (pre-task, task, language focus and post-task)?
- In what ways does the feedback generated from teachers to students differ when using iPads?

Detailed observation reports were compiled for reflection and task redesign. At the end of the semester, student participants completed an online survey which collected their opinions of using iPads for English language learning. An interview with instructor participants was carried out at the end of the course to gather their experiences and ideas on how the use of iPads affected the process of language learning.

5. Findings

5.1 The use of iPads prompts collaborative peer feedback.

According to the results of the survey and instructor interview, instructors found that students' motivation increased and more interactions among students occurred in iPad-based tasks. As a result, learners obtained more opportunities to learn from each other in a student-centered mode of teaching. The following comment is from one of the participating instructors:

I think it makes the whole learning environment more stimulating and more interactive. Of course, students have to interact with the iPads, and also there were a lot of interactions among themselves.

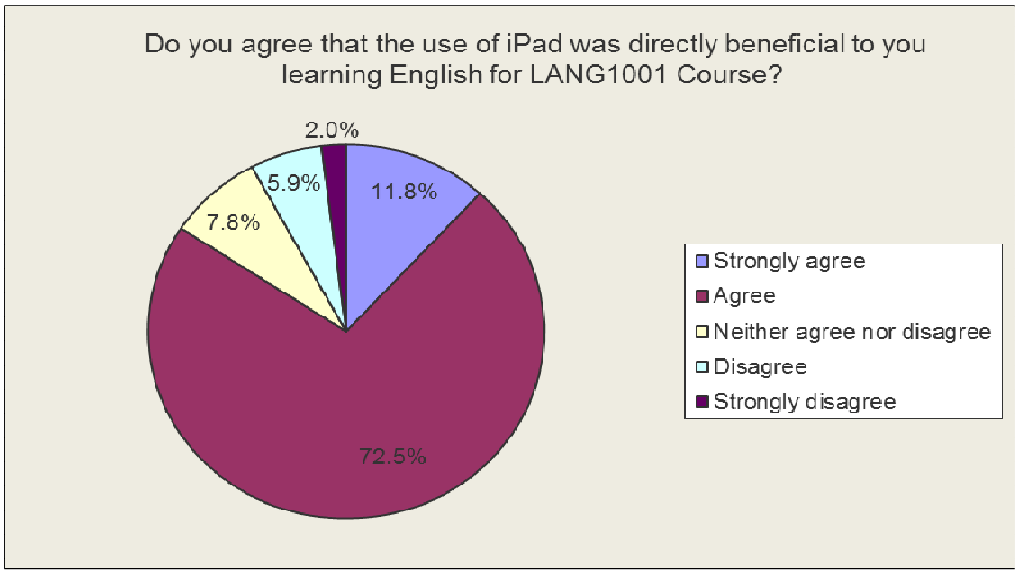

Chart 1. iPad-Based Language Teaching and Learning Project Survey Result

According to the student online survey, 84.3% of students either agree or strongly agree that the use of iPads was directly beneficial to them learning English (see Chart 1). Students believe that using iPads to learn was fun and useful, and helped them pay more attention during a lesson. Students also noted that the use of iPads helped stimulate more interactions through immediate peer feedback. For example, 51% of the respondents believe that Explain Everything motivated them to learn English, helped them understand tasks goals and clarify their ideas through peer review. 50% of the students also think that iMovie encouraged them to collaborate and interact with classmates in English.

When using Explain Everything, the research team observed that students expressed their ideas clearly in recording since converted text files motivated students to synthesize shared ideas during input, while annotation tools helped them clarify opinions during output.

5.2 The use of iPads enriches the effective negotiation of meaning.

In a task cycle, the effectiveness of meaning negotiation may influence how well students exchange required information during learning processes as well as their learning outcomes [8]. When collaborating and negotiating with others, students were more actively engaged as iPad-intergrated tasks brought clear learning objectives from the very beginning of a lesson. The instructors showed their agreement on how iPads enriched the meaning negotiation among students.

They were relatively more conscious about the language they used; because they know what they are going to produce will be viewed by others.

I'm thinking of that paragraph that the group had to sit down and they had to analyze the paragraph, and then, they used Explain Everything to annotate it while they were recording and they swapped with another group. What I noticed was that they were really focused, they rehearsed.

By observing the iMovie tasks, the research team found that the students collaborated in planning, movie shooting, and reviewing procedures, which led them to improve their negotiation skills. Additionally, students' preparations with iPads contained two phases. In the first phase, they brainstormed by following the guidance from teachers and course resources. Next, they started testing the relevant app and then had another discussion to finalize what they would achieve with the manageable app features. As a result, students spent some time planning what to say in their videos and rehearsing a few more times before recording. A good connection between planning and production was made with iPads in that students had additional opportunities to produce meaning in the target language in comparison to traditional classes where students may only have brainstorming and face-to-face practice. By combining mobile learning with online collaborative learning, students were also able to access to their course blogs and receive prompt feedback from peers and the instructors during and after class.

5.3 The use of iPads provides teachers with more options to give feedback to students.

Instructors mentioned in the interview that using iPads gave more opportunities to provide students with feedback. One instructor gave the following comments regarding the feedback generation.

In terms of giving feedback, it was good to be able to screen one or two of theirs [students' videos], actually have the class help you to give feedback. So that was more about collaborative effort in feedback. You could set it up so that they had to give feedback. And it is collaborative with you. So maybe it opens up different possibilities.

Students' comments on the online survey also supported our ideas of providing prompt feedback with mobile device integration. They believe that iPads allowed them to review their performances, and to receive suggestions and advice from both their classmates and the instructors immediately in class. Using iPads provided them with online accessibility to revisit completed projects out of class anywhere and anytime by easily exporting their works from iPads to their class blogs.

In a writing task, an instructor used Explain Everything to record feedback videos on students' writing with both oral and written comments. Compared with tradition paper-based writing feedback, the iPad-based feedback videos afford more face-to-face like communication between teachers and students. In addition, once students' works were converted into an e-format, the teacher was able to complete reviewing and commenting anywhere and anytime with an iPad. Furthermore, students were able to constantly review the feedback videos by visiting their course blogs.

6. Conclusion and implication

Compared with other mobile devices, an iPad, or any other tablet, has a suitable sized screen with high-resolution interface, allowing students to communicate in collaborative learning environments [1, 10]. Due to the embedded multiple functions, iPads enable active and collaborative learning which tightly link to online resources and social media networks. Within the experimented iPad-based tasks, students were encouraged to actively give peer feedback; their group collaboration for task planning extended where a complex of learning process occurred through generating ideas, organizing thoughts and converging shared knowledge for final presenting [2]; furthermore, when planning for an iPad-based lesson, the instructors prepared not only differently but also more scrupulously to achieve learning objectives smoothly.

The iPad implementation in a TBLT classroom had positive outcomes; however, we understand that the role of this technology is a learning assistant tool rather than the core of face-to-face classes [11]. Further research should be conducted to evaluate impacts mobile devices have on communicative fluency, accuracy and complexity of language produced by students during interactions. For CLE language teaching and learning development, the integration of mobile devices should be further expanded to a larger number of language courses to meet diversified learners' needs.

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