Mobile Support for Task-based English-language Learning Approach Outside the Classroom

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Abstract: The study presents the design of a mobile task-based learning activity (called MTBL) for English- as- foreign- language learners (EFL) to investigate how MTBL teaching approach affects the learning achievement through an exploration fieldwork supported by mobile devices. The design of learning tasks is tailored to engage learners in exploration tasks in light of TBL theoretical basis. Learners are expected to be situated in both real and virtual worlds language learning environment and exposed to a pragmatic language input offered by mobile devices with pre-designed resources to facilitate their language learning. The research aims to understand how MTBL affects English-learning gain and whether mobile devices could scaffold learning, and further discuss which group of learners in language proficiency might benefit most from the teaching strategy on overall MTBL implementation in the aspects of learning achievement, learning process and satisfaction based on this specific learning task.

Keywords: mobile learning, task-base learning approach, learning achievement, exploration task

1. Introduction

Mobile technology has attracted lots of attention of educators who integrate both traditional and innovative ways of teaching and learning into curriculum, presenting the adaptability and utility across a wide range of educational learning activities in the diverse learning subjects [6, 13]. Language learning, like other subjects, has widely applied mobile or other portable devices that enable learners to access learning resources to gain the benefit of educational experiences anytime, anywhere and without any boundaries. The development of mobile applications has adhered to pedagogical approaches, from content delivery technique (behaviorist) [13, 15] to interactivism and constructivism [2, 1]; yet, this surely is not mobile technology that could support. Built on the server-based systems with exploiting situated learning theory or adopting global positioning system and other context-aware ubiquitous applications have also been applied in delivering content and physical location learning, seeking more personalized language learning. For example, Shih et al., [14] have exploited the technology applications by integrating wireless, mobile, and context-awareness techniques to support elementary students in learning campus vegetation, while Liu et al., [8] uses context-awareness ubiquitous technology to design a game-based learning activity, called HELLO system, to facilitate elementary students' English listening and speaking learning. Both researches exploit the mobility of learners and take locations into account, they yet all provide a comprehensive picture of elementary students' participation. However, the current study aims to investigate freshman university students in EFL classes and understand how students learning might

be affected when engaging in real situations with mobile technology support. A task-based learning theory (TBL) serves as theoretical foundation for the course design, because it emphasizes the meaningful task completion using target language. Hence, the research proposes an innovative teaching method (called Mobile task-based learning, MTBL) by using mobile and wireless technologies to support TBL curriculum design for formal language education. It sets up to understand how this method influences learning achievement, whether mobile devices can provide students with learning scaffolds to enhance learning when engaging in exploration tasks and further to examine whether MTBL can be integrated into formal English-language learning syllabus for technical students in Taiwan.

A mobile exploration task will be established combining the development of problem-solving and decision-making skills for freshman university students in EFL classes to inquire a location-based cultural park (Confucius Temple) with digital support from mobile devices. In light of TBL learning sequences, three stages of task design will be tailored. Each stage plays a significant role in facilitating students learning. The features of MTBL in this study are as follow: learners will be (a) situated in a real-world language learning environment and exposed to a pragmatic language input offered by mobile devices to facilitate their fieldwork exploration. (b) Owing to content mobility supplied by mobile devices, learning context can move from a traditional classroom-based task implementation to a real world field exploration. Learning takes place by real physical accessing (seeing, touching or doing) which is not a passive retention by rote from textbooks rather an active and vivid way to acquire target language meanings in the real context. (c) Mobile and wireless technologies can also be practiced to supply scaffold for learners in an authentic learning context, serving multiple roles: as a tool, tutor and stimulator. This, yet, can potentially develop students' self-initiated learning. (d) In other words, through the arrangement of exploration task implementation, learning mode is expected to develop a shift from a traditional teacher dominant mode to a more student-centered mode. (e) Lastly, the findings will be examined on which group of language proficiency of learners (e.g., higher-level; intermediate-level; lower-level) will benefit the most in terms of learning achievement, learning process (attitudes, peer interaction, task completion), and satisfaction.

2. Literature Review

Task-based Learning Approach

Task-based language (TBL) teaching is a concept of using a task as a basic unit for learners to use the target language for understanding, processing, generating and attaining the target language by focusing on language meanings rather than language forms [11]. Although TBL has been known for more than two decades , many teachers are still willing to utilize this methodology because it provides plenty of language output opportunities for learners to practice the target language [7, 3],. The main features of TBL are authenticity, interactivity, process of learning combined with the learner's personal experience, active participation and the relevance of other-curricular use of language. Ellis [3] offers a definition of TBL: 'A task seeks to engage learners in using language pragmatically rather than displaying language. It seeks to develop L2 proficiency through communicating. Thus it requires a primary focus on meaning. …. the work-plan of tasks that requires learners to process language pragmatically in order to achieve an outcome that can be evaluated in terms of whether the correct or appropriate propositional content has been conveyed (p.10)'. Nunan [10] lists several principles and practices of performing TBL:

- content selection is based on a needs-based approach
- learning to communicate is emphasized via interaction in the target language
- the authentic texts is involved in learning situation
- learning process and learning performance are all stressed
- learner's own personal experiences as crucial contributing elements to learning
- a link between classroom language learning and language use outside the classroom.

Another key aspect is TBL sequencing. Task sequencing is main factors involved in task design that would affect students' task performance. It yet has been constantly developing and improving. Nunan [9] argues that task design should inspire students' motivation to complete the tasks and highlight linguistic forms after completing meaningful tasks. Willis [17] designs a task framework with the three phases: pre-task, while-task and post-task, whereas Nunan [10] offers a 'systematic framework' to 'provide a social perspective on interaction' (p. 65). The similarity of both lies in stimulating learners' actual language use. Yet, the differences are that Willis [17] emphasizes post-task phase as a way to reinforce language ability and evaluate students' task performance, whereas Nunan [10] highlights a systematic monitoring of learners' progress by the teacher. The study will take Willis's model to design a task (see table 1) because it is more beneficial in this specific learning context for students to communicate via interaction in the target language.

Table 1: Willis's TBL framework

Stage	Key issues
Pre-task (preparation)	Two functions are included : 1.Introducing and motivating students' interest to participate in the task with a pre-set topic. 2.Establishing target language and reducing cognitive load by helping students to understand useful words, phrases and sentences and practice in a real-world learning situation related to the theme.
During-task (task performance)	Providing the students with opportunities to achieve goals by helping them organize the plan and present the task outcomes of spoken or written reports.
Post-task (language focus)	Emphasizing the use of language: 1.Allowing students to perform form-focused work. 2.Teachers deliver form-focused instruction. By drawing forth vocabulary or grammatical rules from teachers, students would be able to examine words or phrases from learning task.

Mobile Assisted Language Learning (MALL)

The advent of the mobile technology has stimulated language educators to get closer to understanding how mobile devices can assist language learners and in what ways of assistance it can improve student achievement, support the differentiation of learning needs or provide students with different learning experience by participating in digital learning environment. Stockwell [16] builds a platform accessible to learners to increase their vocabulary knowledge, while Song and Fox [15] discover the number of vocabulary learners' built up by tracking advanced learners in using mobile device to support their learning. Both researches make use of mobile phones in content delivery and learner input with an implicit framework of teacher-centered model. And as a result the number of vocabulary acquired by learners has increased prominently, although Song and Fox [15] claim to extend students' learning in self-directed ways as well. 'Anytime, anywhere' convenience is most often quoted by these researchers in mobile practice. Apart from behaviorist model, mobile tutorial applications with providing feedback and monitoring have proven to be an effective means of language learning. For example, in Demouy and

Kukulska-Hulme's French learning program [2], a mobile learning environment supports a two-way interaction between learners and instructors , aids learner listening and speaking practice. A positive result has been demonstrated that students benefit from teachers' correction and commenting on a server-based system for students retrieval, although it requires vast technical and human resources. In addition, learner-centered paradigm is also supported by mobile learning. Cui and Bull's TenseITS project [1] allows students to receive different level of complexity and duration of instruction as well as to log on the program whenever and wherever is convenient.

From these examples, we could perceive educators to use different instructional strategies to integrate mobile devices into language learning and exploit mobile technology for moving from teacher-centered norms to more learner-centered models. For example, Shao [12] creates group blogs accessible from mobile devices to support identity and a sense of community of study-abroad students in a home-stay country promoting collaborative learner-learner interactions and perspectives of learner-generated content. Hence, the current study would also like to propose an innovative teaching method by integrating mobile devices into TBL approach, highlighting the benefit of learners' mobility to facilitate mobile exploration tasks as well as learner-learner collaboration.

3. Research Method

Before implementing a pilot study, the following section will first, state the research method, second, introduce the MTBL constructs and finally, explain the system design of mobile devices. Around 48 freshman university students in EFL classes will be expected to take part in the study randomly assigned to either the experimental or the control group. Each group is planned to have 6 teams of 4 members. A set of learning activities and content in both groups are the same but with the different treatment. The control group will stay in the classroom to complete a set of learning activities with teacher handout guidance in the TBL learning framework, while the experimental group will conduct field inquiry to complete learning activities with mobile assistance in real world. Before conducting the field inquiry the experimental group will be trained with warm-up mobile orientation, and given mobile exploration tasks.

Two tasks are to be completed by both groups: one is speaking task that requires students to choose one specific theme from their exploration inquiry to give a brief oral report. The purpose is to ask students to carefully observe the target Confucius Temple and collaboratively and creatively report their work. The other task is a hands-on card-creation writing work. By guiding the groups of students to observe decorations, appearances or specificities of Temple, they are asked to design an invitation card with a brief appreciation of Temple based on data obtained (with their photos inside), in order to invite international students to visit the sight.

Through the MTBL teaching strategy practices, students' learning process and effectiveness can be evaluated. By analyzing quantitative and qualitative data from pre- and post-tests, retrieved logs, questionnaires and interviews, the research questions can be answered and MTBL implementation can be examined. Possible limitations and whether MTBL is worthy of integration to formal language education can be considered. First, pre-test and post-test will be used for both groups in order to assess their knowledge of certain target language structures chosen from learning content and to analyze their learning gains to further examine MTBL teaching strategy. Second, logs, observation and questionnaire information will be collected to understand students' learning processes, such as exploration inquiry process, interaction with peers and scrutinizing inquiry results obtained from retrieved mobile-device data. Then, interviews will be conducted to find out

students' refections toward the MTBL practice or other comments. The generation of application principles and strategies are expected to serve as a reference for other projects.

4. Mobile Task-based Learning Constructs

For MTBL constructs, we need to clarify learning content and task design, and design of application mode from mobile device. Firstly, the learning content we choose is Confucius Temple. Due to the 'urban marketing' advocated by the Tourism Bureau of Taiwan, creating a friendly and warm travel environment for travelers or overseas students to visit Taiwan is crucial to advance the competition of Taiwan internationally as well as to boost tourism economy effectively [4]. Given this trend, it is beneficial to choose Confucius Temple as the learning content, not only fitting in the Taiwan marketing promotion strategy but also enabling students to appreciate the beauty of local Confucius Temple culture (see table 2 for the outline of whole scenario of learning content).

Table 2: the design of whole scenario

Theme	Related cultural knowledge	MTBL learning outline
No. 1 Entrance	1. Understanding the relevance of temple and school in the ancient time. 2. The characteristics of architecture and gate for the entrance to the school in Pan Gao stone. 3. The meaning of wooden tablet (The first School) shown on East Ta Cheng Arch. 4. The story of Pan Pond.	1. Understanding cultural vocabulary and terms (e.g. gracefully, dragon, decorate, roof, figurine, gourd, stand out, etc.) 2. Learning grammatical points: the past tense, the present perfect progressive tense, passive forms (be decorated with)/ 3. A brief reading: a. a brief introduction to Pan Gao stone. b. a brief introduction to East Ta Cheng Arch. c. a brief introduction to Pan Pond and its story d. a brief introduction to Cheng Gate and its decoration e. a story of Chung Sheng Shrine and its symbolism. f. a story and history of Morality Training g. the meanings of Hall of Edification h. an establishment and symbolism of Hall of Edification. 4. Visiting and inquiring about the local culture. 5. Getting in touch with physical environment to arouse learning motivation. 6. Talking to local people or elders working in Temple to get further information and knowledge. 7. Understanding the culture of Temple of Confucius and its influence on people's life. 8. Understanding and appreciating the beauty of local culture, people's thoughts and behaviors. 9. Enabling students to introduce the culture of Temple of Confucius to overseas students or foreign visitors. 10. By working collaboratively in groups, inquiring, exploring and observing learning materials in a real field, students will have different learning experiences in knowing, understanding and appreciating Confucius culture for further learning to express and share the beauty of Temple of Confucius.
No. 2 Learning Space	1. The decoration of the Ta Cheng Gate and its special panel design. 2. The establishment and importance of Chung Sheng Shrine.	
No. 3 School Space	1. The story of Morality Training: students go through it implying to become virtuous. 2. The hall of Edification : understanding its symbol as norm of 'ritual' 3.The building of spiritual center for intellectuals to worship	

For the task design, we need to clarify why exploration task is chosen and MTBL is implemented There are two constructs which are central to the research: the first one is concept of 'creating an environment for appealing students to interact with target language' that would arouse their willingness to learn and to communicate. Second one is learners involvement in 'authenticity' being that classroom language learning could correspond with language use outside the classroom. Therefore, an exploration task fits in the two

constructs, where it enables learners to get in touch with authentic situations, explore, make decisions and solve problems in relation to real life. Through observation and exploration toward the target objects (Temple), students are engaged in more rigorous social interaction with plenty of peer-interaction opportunities and language production. Hence, the sequence of MTBL constructs in light of Willis's TBL framework is given below in Table 3.

Table 3: The sequencing of MTBL framework

Stage	Key issues
Pre-task (preparation)	1.Orientation: introducing and motivating students' interest to participate in the task with a pre-set topic. 2. Pre-instruction: listing numbers of useful vocabulary, phrases and sentences or terms presented in the study of Confucius Temple to pre-instruct their meanings and to practice in the classroom for preparation to the later real-world learning situation. 3. Mobile application design: pre-design themes and hints of learning tasks for technician to be embedded into mobile system.
During-task (task performance)	1. Three themes inquiry: Entrance, Temple space and School space. 1. Learning Scaffold from mobile application.
Post-task (language focus)	1. Language form reinforcement: form-focused assistance or instruction, helping students with form-focused work. 2. Student-led performance: task performance and language output. 3. Evaluation: accepting diverse perspectives of learning outcomes.

In the pre-task stage, three things are required to be established first: orientation, pre-instruction and mobile application design. Teachers are expected to not only initiate an orientation of mobile inquiry tasks to stimulate and arouse students' motivation providing positive attitude for the following Confucius Temple inquiry, but also pre-teach some useful vocabulary or terms decided by teachers in order to help students to build target language and reduce cognitive load when doing the tasks. For mobile system support, themes and hints are also to be uploaded into mobile application model.

For the fieldtrip of during-task stage, students work in groups with mobile devices in hand to inquire about Confucius Temple. Three themes are arranged for students to inquire: Entrance, Temple space and School space. Mobile application with pre-arranged hints will guide students to locate the specific spots or positions to observe them or interview Temple managers to obtain the answers asked from tutorial mobile application. With wireless technology, students could link up to the Internet if their group finds it interesting to get more information which may not be taught in class or even go beyond a whole scenario of the learning. In other words, by organizing mobile devices as learning scaffold, students are anticipated to achieve goals of completing the tasks successfully.

In the post-task stage, students organize their data obtained from inquiry to complete two tasks. In this stage, language use is emphasized with relation to vocabulary or grammatical rules. The teacher acts as a facilitator to reinforce students form use or give instructions of accurate vocabulary use and grammatical points while students construct their reports. Besides, multiple perspectives of students' task completions will be accepted that allows diverse interpretations of oral and writing reports.

5. System Support

Mobile application will be designed according to the exploration task design in which learners are involved in open-ended knowledge exploration with hand-on activities. In other words, knowledge gains from students' inquiry are dynamic and it is not a systematically given straightforward questions and yes or no answers mobile application

should support. Rather, the system would guide learners to observe the real objects, places, people or things in relation to the instructional content. Thus, in this task, the role of mobile application is multiple. It serves (1) as a facilitator by supporting knowledge exploration, (2) as a tutor by giving inquiry directions and providing target language interaction, and (3) as a tool by presenting vocabulary look-up mode. Therefore, 'hint' shown on each question is the key aspect for design of the mobile application (Figure 1 & 2).

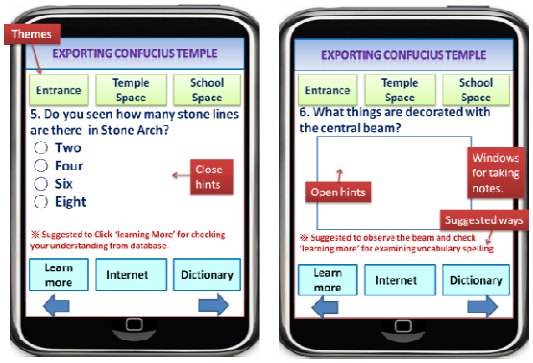

Figure 1. Mobile application interface for exploration tasks

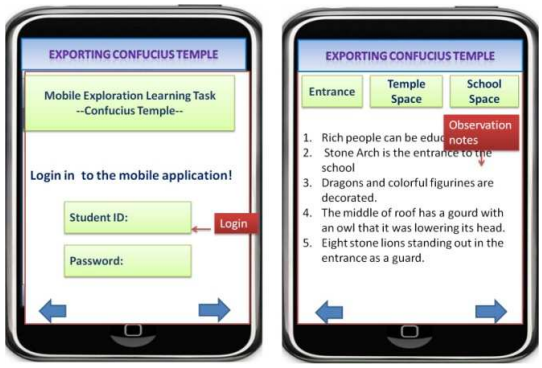

Figure 2. Mobile application interface for observation notes

Hints are organized in two types of questions, open and close, and prompted consecutively and progressively (as previously discussed three themes are planned for student to complete two tasks). Each theme consists of a few hints. Students, according to the hints, observe Confucius Temple: open hint questions require students to write down their observation notes while close hint questions would offer suggested answers but asking students to observe physical objects and look up information from the database or the Internet. In addition, students can save target vocabulary into database whenever they encounter a new word during their inquiry process or Internet access in order to use them later in the following post-task stage review and two reports.

6. Conclusion

We expect that the mobile exploration task with TBL teaching approach supported by mobile technology could provide a new innovative way of integrating mobile technology into English language classroom. Students are involved in both real learning situation and the virtual world to get plenty of exposure in the target language environment to gain language input, language output and task performance. The role of mobile devices in MTBL constructs can also be identified whether it could provide students with learning scaffold in fieldwork exploration tasks as well as support in collaborative peer-interaction within a constructivist paradigm. Then, the research would further discuss whether learners of higher language proficiency or other groups can gain most benefits from the MTBL teaching strategy based on aspects of learning achievement, learning process, peer interaction and satisfaction in this specific learning task. In addition, due to the government's policy and promotion, a number of international students studying in technological universities has grown quickly in recent years. To incorporate Confucius Temple learning content into MTBL constructs may be beneficial, because it not only fulfills the slogan of 'marketing Taiwan' but also creates opportunities of English language practices for the students to introduce the beauty of the Temple of Confucius if they are getting ready to present its culture in English.

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