

Improving College Students English Learning with Dr. Eye Android Mid

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ABSTRACT

This paper investigates college students' English language learning through use of Dr. Eye Android handheld mobile Internet device (MID). Compared to related studies, students' English learning using MIDs has not been evaluated and fully understood in the field of higher education. Quantitatively, the researchers used TOEIC pretest and posttest to collect and analyze students' English performance; qualitatively, semi-structured group interviews were used to investigate student perspectives on using MIDs in learning English. Thirty-three participants completed a three-month intensive English course aiming to improve their English proficiency. The context of the tasks included collaborative development, general business, entertainment, finance and budgeting, manufacturing, and purchasing. Each task needed to be completed using the MID in class with instructions. Finally, ten participants participated in the semi-structured group interview. Results indicated that learning with an appropriate context designed in combination with the use of an MID yielded a significant improvement. The result showed that the educational background and teaching experience of the instructor was also a significant factor, as the quality of the instruction had a significant influence on student learning outcomes. This paper ends with further focus on the importance of using Bring Your Own Device activities (BYOD) in language learning and teaching.

Keywords: Dr. Eye Android MID, mobile learning, Learning Performance

INTRODUCTION

Line, blog, and Facebook are the top three ways of sharing information for college students. When teachers teach lessons in the classroom, a few students are capable of looking for further information for teachers' assignments, texting messages, browsing the Internet, tagging them on Facebook, or checking emails according to their needs. While doing so, students need the latest mobile devices that have access to the Internet. And the phrase "Shake-Shake your cell phone" refers to how young people use this Line function to look for their friends and share information they find. As a result, these latest mobile devices are accepted and infiltrated by college students as a common tool of daily activities (Dennen & Hao, 2014; Yakin, Turkey, Tinmaz, Turkey, 2013). Hence, mobile devices have a significant impact on students' lives, not only for building social relationships with others, but also enhancing academic learning. According to an Executive Yuan project in the year of 2011 which investigated "the Opportunities of Using the Handheld Mobile Phones in Taiwan," almost 90.7% of the population, particularly those who have earned college degrees, use handheld mobile devices to browse the Internet or search for information, 78.5% use the map functions of these devices, 77.1% access social networks or MSN via mobile devices, 68.6% use mobile devices to send pictures or files, and 59.4% use mobile devices to check their email (Executive Yuan, 2011). This result shows there are strong reasons behind utilizing mobile devices to facilitate the information obtaining and learning in daily life. With the advance of technology, mobile devices allow people to learn "what, when, where, and how they want" (Sandgern, Maris, & de Geus, 2011, p.1134). Moreover, more teachers have shown great enthusiasm for incorporating "bring your own device" (BYOD) activities in the classroom as a part of teaching and learning (Shroff, Deneen & Ng, 2011, Lim, Zhao, Tondeur, Chai, & Tsai, 2013). According to Education First (2013), the overall English proficiency of Taiwan's population is much lower than other countries, such as India, Hong Kong, Japan, Korea, and Vietnam. In fact, referring back to higher education in Taiwan, the amount of time for learning English is extremely limited. If college students who are not English majors, their English instruction time will normally be two hours a week. For teachers, it is a great challenge to improve students' English in such a short time. Thus, in order to make learning and teaching more effectively and overcome these time constraints, many universities in Taiwan have started to use the latest technological devices to solve the problems. Meanwhile, Kim, Rueckert, Kim, & Seo (2013) indicated that mobile technologies could help learners to learn class content and join classroom activities in a collaborative way. Integrating mobile devices with course content can "create a virtual learning environment that offers not only content management and but also an innovative teaching method that can increase the active role of the student in the classroom" (Dogoriti & Pange, 2012, p.25). However, studies about the use of MID in higher education are limited. Therefore, Dr. eye was chosen to be used in this study to examine to what extent

the handheld mobile device can be used for improving Taiwan’s college students’ English. At the same time, researchers wish to understand students’ perspectives regarding the use of Dr.eye handheld mobile device for language learning and learning English with native speakers who do not use Mandarin at all.

THEORETICAL BACKGROUND

Mobile Device Use in Higher Education

Nowadays, accompanied with the latest technological innovations, language learning and teaching methods have changed dramatically, particularly by adding mobile devices into the classroom. Undoubtedly, it is becoming increasingly clear that mobile devices have played an important role enhancing teaching and learning outcomes in higher education (Chang *et al.*, 2003, Ting, 2005, Kuo & Wu, 2013). Hence, more and more APPs that can be used on mobile devices, such as laptops, smartphones, PDAs, mobile phones, and hand-held devices have been developed for educational usage (Mcconatha, Prual, & Lynch, 2008). In addition, according to Lim, Zhao, Tondeur, Chai, & Tsai (2013) “technology-mediated learning environments provide opportunities for students to search for and analyze information, solve problems, communicate, and collaborate” (p.59). Mobile devices have changed and improved personal contact, learning behaviors, classroom practices and learning processes in 28 countries in Asia, Africa, Europe, North America, and South America (Law, Pelgrum, & Plomp, 2008). They also help learners to learn wherever and whatever they want (Sandberg, Maris, de Geus, 2011, p.1334) and create opportunities for learners with mobile devices to practice anytime and anywhere (Demouy & Kukulka-Hulme, 2010). Kukulka-Hulme (2009) mentioned “mobile technology can assist learners at the point of need and in ways that fit in with their mobile lifestyles” (p.162). To sum up, to create an authentic language environment, technology can play an important role (Chen, Yang, 2014). Table 1 states some relevant researches on how mobile devices can support English learning in higher education according to the needs and interests of students according to the chronological order.

Table 1: Relevant Researches in Usage of Mobile Devices in Higher Education

Authors	Related Researches	Sources
Cheverst, Davies, Mitchell, & Friday (2000)	Experiences of developing and deploying a context-aware tourist guide: the GUIDE project	Lancaster University
Thornton & Houser (2005)	Using mobile phones in English Education in Japan	Journal of Computer Assisted Learning
Al-Fahad (2009)	Students’ attitudes and perceptions toward the effectiveness of mobile learning in King Saud University	The Turkish Online Journal of Educational Technology
Liu (2009)	A context-aware ubiquitous learning environment for language listening and speaking	Journal of Computer Assisted Learning
Liaw, Hatala & Huang (2010)	Investigating acceptance toward mobile learning to assist individual knowledge management: based on activity theory approach	Computers & Education
Huang, Hwang, & Chang (2010)	Innovations in Designing Mobile Learning Applications	Educational Technology & Society
Chen & Lin (2010)	Personalized context-aware ubiquitous learning system for supporting effective English vocabulary learning	Interactive Learning Environments
Kuo (2012)	Research of Fitness English Learning in a Situational Ubiquitous Learning Environment with a Focus on Reading Comprehension	National Cheng Kung University

Social Constructivist Learning Theory in Language Learning

Social constructivist learning theory states that “positive social interaction can instigate intellectual growth” among instructors, learners, learning environments, course content, and activities (Piaget, 1965). Learning also should take place in a real context where students get involved with others. The role of the instructors should be the facilitator in classroom teaching, while students are able to construct their previous knowledge and integrate the new knowledge with the proper assistance of instructors. Meanwhile, based on Dewey (1916), it is stated that there are three factors in the design of classroom materials: learners, society, and knowledge. A meaningful material design should meet instructors’ knowledge, students’ needs, and industry expectations in the real workplace. Because of this, social constructivist theory has been popularly used in language learning. Williams and Burden (1997) emphasize three factors: (1) Learners should have a sense of constructing the language meaning and process the knowledge with the help of the instructors, (2) language learning aims to develop learners’ thought processes and relationship-building through utilizing the target language, and (3) learners are capable of completing any new tasks with the appropriate cognitive levels.

METHODOLOGY

Research Design

This study employed a mixed research method and explanatory design to examine college students’ English learning performance. Quantitative data were gathered from the pretest and posttest using the formal TOEIC examination; the qualitative data were obtained from semi-structured group interviews with 10 students, the TOEIC Learning Achievement Platform, and classroom observation. The TOEIC Learning Achievement Platform recorded the teaching time of every class, and data was collected to aid in the explanations of the quantitative data results.

Research Questions

The study was designed to focus on the following research questions

1. Does the use of Dr.eye Android Mobile Internet Device in intensive English learning create greater improvement on specific TOEIC materials?
2. What are students’ perspectives about using Dr.eye Android Mobile Device in English learning?
3. What are students’ perspectives about learning English with a native speaker?

Participants

As shown in Table 2, participants included 33 college students (9 males and 24 females) from various departments in different colleges of Kainan University, Taiwan. They were from the same first language background: Traditional Chinese or Mandarin. Their ages ranged from 20 to 32 with an average mean of 22. The majority of participants have studied in this university for more than two years. 31 participants have used their phones to learn English and five participants have heard of Dr. eye MID (See Table 3). 18 participants volunteered to take this intensive course because they wanted to improve their English (See Table 4). This course was called ‘TOEIC Talent 990’ and all participants must have reached a TOEIC score of at least 400 before they applied for this course. The design of this class emphasized quality rather than quantity. The researchers hope to provide the well-quality learning environment to students. That is the reason why the TOEIC score standard was set for students to attend this class.

Table 2: Majors and Genders of the Participants

Majors	AE	L	T&HM	IB	PA&M	Total
Male	4	0	1	3	1	9
Female	10	6	5	1	2	24
Total	14	6	6	4	3	33

Note: AE stands for Applied English; L is Law; T&HM Tourism and Hospitality Management; IB is International Business; and PA&M is Public Affairs and Management

Table 3: Experience Using Mobile Devices to Learn English

Questions	Responses of Learners		
	Yes	No	Others
7. Have you ever used any mobile device/smartphone to learn English?	31	2	0
8. Have you ever heard about Dr.eye?	5	28	0

Table 4: Reasons for Attending this Course

Questions	Responses of Learners		
	Free course	Free Phone	Improve English
9. Why do you want to this Intensive English course? (Pick only one answer)	9	6	18

Subject Teacher, Language Teacher & Industry

The teaching staff of this intensive course included two researchers who are subject teachers (ST) in a business administration-related field and linguistic field and a language teacher (LT) who has a background in Teachers of English to Speakers of Other Languages (TESOL) from Australia. All of them mainly offered ESP courses for students of business, tourism, science, and languages. Moreover, it should be mentioned that ESP courses in Taiwan are mainly taught by subject teachers, while language teachers only focus on language training courses. Furthermore, ESP courses are usually not tailor made for industry needs. However, in this study, Chun Shin representatives (CSR) joined the regular meetings with subject teachers and the language teacher (See Table 5). In order to make the teaching materials and activities more pragmatic, the three parties worked together to decide on the teaching methodology, supplemental materials, classroom tasks, and evaluation for students.

Table 5: Demographic Background Information

Title	Gender	Major	Degree	Teaching ESP
ST1	F	TESOL Business	E.d.D. M.A.	General Business/ International Trade Business/ Tourism
ST2	F	Linguistics	Ph.D.	Business English/Culture & Tourism
LT	M	TESOL	M.A.	Tourism/ TOEIC
CSR 1	M	English	M.A.	TOEIC/Technology
CSR 2	F	Information	M.A.	Technology

Data Collection & Procedures

TOEIC Talent 990 was arranged for one semester. The researchers spent three months promoting this intensive course for all Kainan students. It was a cross-disciplinary research project involving Kainan University, Inventec Cooperation, and Chun Shin Limited. The data collection took place from the months of March to May 2011. This study aimed to allow schools, businesses, and test examination companies to understand how technology is involved in English learning. Students were required to take the pretest and posttest to examine their English performance. All participants were given a free Dr. eye MID at the beginning of this intensive course. The processes of data collection were planned as follows: the pretest was given in March at the beginning of the course along with the background information questionnaire- for all participants. The posttest was given at the end of the course on May 31, 2011. And students’ group interviews were conducted at the end of the course in June 2011. The pretest and posttest were provided by the official ETS examination company, Chun Shin Limited. In addition, the researchers randomly selected 10 students and divided them into two groups. The first interview process took one hour and twenty-five minutes and the second took one hour and ten minutes. The average interview time of this study was seventy-eight minutes. The reason for conducting students’ group interviews was to allow for a better understanding of how students with various proficiency levels use Dr. eye MID in English learning. Most of participants (N=31) have had experience using mobile devices for learning English, thus it wasn’t difficult for participants to use Dr. eye. Additionally, the company also held a training session for teachers and students to learn how to use this device.

The Materials

In order to improve students’ learning performance, the course materials were developed by the STs, LT, and CSRs. The course materials were divided into two types: paper-based content and Dr. eye MID content (see Table 6). The teaching materials were adapted from the textbooks *Complete Guide to the TOEIC TEST* (3rd Edition) by Bruce Rogers, *New TOEIC (Focus on Grammar)* by a team from Ivy Company, and self-developed sheets (activities, quiz, assignments, and extra reading materials), which were designed by the researchers and instructors. The details of the course materials were categorized by twelve items based on the ETS examination website (see Table 7). Additionally, the followings are installed in Dr. eye MID: three official TOEIC examinations provided free of charge by Chun Shin Limited, TOEIC frequency vocabulary practices, Wi-Fi wireless Internet, the Oxford Chinese/English Dictionary, and E-books/ games were developed by the Inventec Corporation.

Table 6: Types of Course Materials

Types	Paper-based	Dr. eye MID
Contents	Skill building exercises Grammar skill building Self-developed sheets (activities, quizzes, assignments, and extra reading materials) created by the researchers and instructors	Three official TOEIC examinations TOEIC frequency vocabulary exercises Wi-Fi wireless Internet Oxford Chinese/English Dictionary Learning Platform E-books/ games

Table 7: Twelve Items for Course Materials Contexts

Guideline of Material Contents Design for TOEIC Examination	
Dining out	Health
Entertainment	Housing/Corporate property
Finance & Budgeting	Manufacturing
Offices & Facilities	Personnel
Purchasing	Technical Areas
Travel	Planning

Instruments

The main instrument that is used in this study is Dr.eye Android Mobile Internet Device (MID). It is also called Dr.eye handheld Mobile Internet Terminal. It was developed by the Inventec Cooperation in 2009 with a QWERTY keyboard, a 4.8-inch VGA touchscreen, 3G, Wi-Fi, and a front-facing webcam (Stevens, 2010). Learners could do the installed TOEIC exercises by using this handheld mobile Internet device anytime and anywhere.

Official TOEIC Examination Pretest and Posttest

The TOEIC test is a two-hour multiple-choice test that consists of 200 questions divided into two sections: Listening and Reading. The Listening section tests how well testees understand spoken English. It consists of four parts with 100 questions. Students will be asked to answer questions based on a variety of statements, questions, conversations, and talks recorded in English. The Reading section includes three parts, testing how well testees understand written English. Students will read a variety of materials and respond to 100 questions based on the content of the materials (ETS, 2013).

TOEIC Learning Achievement Platform

Via TOEIC Learning Achievement Platform, the researchers, and the instructor could track students' individual learning progress such as the times they logged into the system, their exercise scores, and the test results.

Semi-structured Group Interview

The semi-structured group interview was conducted by the STs. The reason for using the group interview was to provide the students with a comfortable environment and space to talk freely about their viewpoints on using Dr.eye in the intensive TOEIC class. Specifically, researchers were interested in understanding students' perspectives in learning English using MID from different angles. Since students are from different departments, they may not be familiar with the subject teachers. Thus, compared with one-on-one interviews, the group interview could help them avoid the pressure of answering questions or directly confronting the interviewers. Interviewees were divided into two small groups (five students each) with students ranging in age from 20-32 years old. The groups differed in terms of major, language background, academic performance, and personal interest. These two groups of students are mixed up selection from all students. To avoid any misunderstandings between STs and interviewees, all questions were asked in Mandarin, the students' first language. Students could answer freely in either Mandarin or English.

Data Analysis

For analyzing the quantitative data, the paired-sample t-tests were adopted to see whether there was a significant improvement between the pretest scores and posttest scores in terms of using Dr.eye MID in students' language learning. Descriptive statistics method was used to analyze the background information. Moreover, for the qualitative data, the participants were asked open-ended questions by the researchers. The data was then coded by the following four theme based items: self-examination for Dr.eye MID, English learning with Dr.eye MID, and practice outside of the class with Dr.eye MID, and suggestions for this course.

RESULTS

Students' learning performance was analyzed by using the TOEIC official examination, and interview data was used to understand student motivations for using Dr.eye Android MID in English learning.

Results of Research Question 1: Does the use of Dr.eye Android Mobile Internet Device in intensive English learning create greater improvement on specific TOEIC materials?

A paired-samples t-test was conducted to understand whether there was significant improvement after receiving the specific intensive English course training using the Dr.eye MID (see Table 8). The results found that there was a significant improvement in the scores on the pretest ($M=498.33$, $SD= 95.90$) and posttest ($M= 545.90$, $SD= 124.85$); ($t(32) = -5.716$, $P=.000$, see Table 8), respectively. Table 9 compares scores across various departments. All 33 students improved their TOEIC scores shown on their posttest, of which males improved their scores from 538 to 618 and females from 483 to 518. Specifically, the male students scored higher in posttest than female students in all five departments: English, Law, Tourism and Hospitality Management, International Business, and Public Affairs and Management (see Table 9). This result challenges the idea that female students usually perform better than male students in language learning. Regardless, it is clear that appropriate course materials design along with the aid of mobile devices truly facilitated students' English learning.

Table 8: Paired Samples Statistical Information

	Mean	N	Std. Deviation	Std. Error Mean
Pretest	498.333	33	95.90577	16.69505
Posttest	545.9091	33	124.85901	21.73516

Table 9: Results of Paired Samples t-Test for pretest and posttest scores

	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pretest-Posttest	-47.57576	47.81346	8.32325	-5.716	32	.000

P<.05*

Table 10: Learning Performance by Department and Gender (N=33)

Departments	Genders	Mean	Pretest	Posttest
English		Mean	514.00	636.25
		N	4	4
		SD	90.55385	170.458
	Female	Mean	500.50	545.50
		N	10	10
		SD	116.367	119.034
	Total	Mean	511.785	571.428
		N	14	14
		SD	107.749	135.368
Law	Female	Mean	465.00	490.00
		N	6	6
		SD	30.822	39.242
	Total	Mean	465.00	490.00
		N	6	6
		SD	30.822	39.242
T&HM	Male	Mean	420.00	501.00
		N	1	1
		SD		
	Female	Mean	472.00	501.00
		N	5	5
		SD	67.878	56.612
	Total	Mean	463.333	488.33
		N	6	6
		SD	64.316	59.385
IB	Male	Mean	610.00	700.00
		N	3	3
		SD	151.575	227.870
	Female	Mean	575.00	585.00
		N	1	1
		SD		
	Total	Mean	601.250	671.25
		N	4	4
		SD	124.991	194.738
PA&M	Male	Mean	440.00	495.00
		N	1	1
		SD		
	Female	Mean	432.500	482.500
		N	2	2
		SD	10.606	17.677
	Total	Mean	435.500	486.666
		N	3	3
		SD	8.660	14.433
Total	Male	Mean	538.888	618.333
		N	9	9
		SD	117.067	181.968
	Female	Mean	483.125	518.750
		N		
		SD		

	N	24	24
	SD	84.529	85.735
Total	Mean	498.333	545.909
	N	33	33
	SD	95.90577	124.859

Results of Research Question 2: What are students’ perspectives about using Dr.eye Android Mobile Device in English learning?

Twenty open-ended questions were included in the semi-structured group interview to gain the in-depth insight into student viewpoints about using Dr.eye in the classroom practices and content module practices. There are four main categories listed as the following: (1) self-evaluation of the use of MID, (2) English learning with Dr.eye MID, (3) practice outside of class with Dr.eye MID, and (4) suggestions for the course (See Table 11).

Table 11: Summary of Students’ Perspectives about Using Dr.eye MID

Category	Students Perspectives
Self- Evaluation	“I can practice TOEIC with my classmates instead of alone” “It is a useful tool for managing our own learning schedule” “I felt satisfied with checking my learning process” “It is meaningful to record the learning between classmates and myself” “‘Awareness’ is an important factor for language learning” “Although I got a 500 on the TOEIC, I still need more practice” “From this three month intensive training, I realize that practice makes perfect”
English Learning	“I use Dr.eye to record their learning, and help them to solve problems” “Various resources, high frequency vocabulary words, grammar, and TOEIC model questions are built in Dr.eye MID” “Model questions are the most useful function for students” (7 students responded); “Special Training Vocabulary is the most useful function for students” (3 students responded) “Daily Words with Japanese is the least useful function for students” (9 students responded) “This device is a good tool for learning English” “It is a valuable way for me to learn and experience a different way of learning English” “It improved my vocabulary. I can practice vocabulary when I am free” “The teachers add extra grammar exercises that are related to the business field” “The instructor integrates movies and MIDs into his teaching materials” All students will keep using Dr.eye to learn English
Practice Outside of Class with Dr.eye MID	“I am more willing to practice for TOEIC using Dr.eye MID” “It is easier to use the same device as other classmates” “The disadvantage of using Dr.eye MID outside the classroom was the Internet connection” “ Learning styles are quite differences between inside and outside the classroom” “I hope I could update what I like into Dr.eye MID” “I am not frustrated with the new technology” The average time spent using Dr.eye MID was 95 minutes a day and seven days a week. Normally, they will use it when they are free.
Suggestions for Using Dr.eye MID	“In the mobile device learning industry, it should be designed and developed like smart-phones” “Learning materials should update faster” “ I didn’t need to worry about the device cost or the service fees” “Honestly, I am not comfortable using Dr.eye MID. I am used to practicing with paper-based quizzes” 8 students would spend the money to buy Dr.eye MID if they could get an extra discount. 10 students would recommend this device to classmates if they could get the free trial.

Results of Research Question 3: What are students’ perspectives about learning English with a native speaker? The questions regarding learning English with native speakers were used to understand students’ feelings, motivation, and recommendations in this aspect. Most learners agreed that a native speaker provided a helpful learning environment for learning English. Overall, the suggestions represented students’ positive attitudes

toward learning English with a native speaker. Table 12 below shows quotes from students regarding learning English with a native speaker.

Table 12: Participant Perspectives of Learning English with a Native Speaker

Native Instructor	<p>“In this class, the instructor only speaks English. It really helps my listening a lot”</p> <p>“I like the instructor’s accent”</p> <p>“It is a great opportunity to learn TOEIC listening with various teachers”</p> <p>“At the beginning, I was not used to speaking only English in class. After three classes with James, I really love his teaching style”</p> <p>“He can’t explain grammar the Asian way”</p> <p>“He seldom pushed us to memorize the vocabulary”</p> <p>“His teaching style is just like when I was an exchange student at MIT”</p> <p>“He knows how to use easy words to explain hard words”</p> <p>“The instructor is patient, energetic, and energetic”</p> <p>“I think he has diverse teaching experience. He knows how to teach Asian students grammar exercises and vocabulary words”</p> <p>“The instructor frequently used the model questions in class” (10 students responded)</p> <p>“Normally, the instructor spent 15 minutes in class” (9 students responded regarding the average time spent using Dr.eye)</p> <p>“ The instructor seldom used the daily words function in class” (6 students responded; 4 students said daily phrase)</p>
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CONCLUSIONS

This study shows how the integration of mobile devices and a native instructor in English learning can make students’ learning more effective and interesting. Learners expressed the feeling that they were not learning alone when using mobile devices. Cultivating a partnership relationship helps learners to get networking experience. At the same time, providing multiple ways of learning English triggers students’ learning motivation. Learners practice for TOEIC in their free time and thus learn time management skills on their own. Because functions in Dr. eye are in three languages, namely, Mandarin, English and Japanese, learners were naturally exposed to a diverse language learning environment. In addition, students mentioned learning with a native speaker really improved their listening and speaking skills, particularly listening skills. One of the students who scored 860 said his listening improved by more than 130 points during the three-month intensive training. He suggested that listening or speaking courses should be assigned to native teachers or at least to instructors use English only in class. Learning English with mobile devices and a native speaker had a significant positive improvement on students’ performance. In addition, during the process of designing materials and activities, CRS offered regular teacher trainings to STs and LT once a month. It helped STs and LT to check their teaching process of TOEIC examination instruction, so they would not only focus on linguistic skills, but also business related knowledge. CRS shared the ideas when designing TOEIC classroom practices, drills and quizzes, hence skills that are business related such as writing a memo, response emails, meetings, discussions, express personnel opinions, gather and solving problems, making an official phone calls were emphasized in the worksheets. The result proved that this collaboration with CRS being effective in English learning These pragmatically combined factors, namely mobile devices and collaboration among subject teachers, one language teacher, and two industry managers, indicate that mobile devices with the appropriate cross-disciplinary cooperation did improve language learning and teaching. Outcomes showed that students not only increased the amount of interaction with teachers, but also practiced more often using an MID than paper-based assignments. If learners desire to learn English, using an MID will have a cumulative benefit for their future learning as well as for self-examination exercises and learning engagement.

Additional Findings

The TOEIC Learning Achievement Platform helped to record the practice times and attendance of students. Since students of this intensive course are from various colleges and departments, this simply showed a high demand of learning and improving English among students. Among them, one student improved his score from 650 to 850, an improvement of 200 points in only three months. This student majored in Applied English and was interviewed by the media, where he shared how he improved his language learning using MIDs. Hence, through the technology-assisted language learning, learning can be more practical and convenient.

DISCUSSIONS

Because of the positive results of this study, the President of Kainan University has announced that all College of Tourism and Hospitality students are required to join this TOEIC program. This includes students from Department of Logistics and Shipping Management, Department of Air Transportation, Department of

Transportation Technology and management, Department of Tourism and Hospitality, Department of Leisure and Recreation Management. The total student number would be 1050, with the freshmen divided into 14 classes and the sophomores divided into 16 classes—a total of 30 classes. The 30 classes will follow the model of this intensive course described in this study with the hope to replicate the possible result. Hopefully, a much larger quantity of data will provide more proof to the effectiveness of this teaching method.

REFERENCES

- Chang, C.Y., Sheu, J. P., & Chen, T.K. (2003). Concept and Design for Ad Hoc and Mobile Classrooms. *Journal of Computer Assisted Learning*, 19 (3), 336-346.
- Chen, C.M., & Hsu, S.H. (2008). Personalized Intelligent Mobile Learning System for Supporting Effective English Learning. *Educational Technology & Society*, 11(3), 153-180.
- Chen, J.J., & Yang, S.C. (2014). FOSTERING FOREIGN LANGUAGE LEARNING THROUGH TECHNOLOGY-ENHANCED INTERCULTURAL PROJECTS. *Language learning & Technology*, 18 (1), 57-75.
- Demouy, V. & Kukulska-Hulme, A (2010). On the Spot: Using mobile devices for listening and speaking practices on a French language programme. *Open Learning*, 25 (3), 217-232.
- Dennen, V. P. & Hao, S. (2014). Intentionally mobile pedagogy: the M-COPE framework for mobile learning in higher education. *Technology, Pedagogy, and Education*, 23 (3), 397-419.
- Dewey, J. (1916). *Democracy and education*. New York: Macmillan.
- Dogoriti, E., & Pange, J. (2012). Teaching ESP with ICT in Higher Education: Foreign Language Teachers' Perspectives and Expectations of Computer Technology Use in Foreign Language Learning and Teaching, ICICTE 2012 Proceedings, 24-34.
- Education First (2013). 2013 EF English Proficiency Index. Retrieved on June 01, 2014 from: <http://www.npf.org.tw/post/1/12933>
- Kuo, Y.C., & Wu, Z, Y. (2013). An online Peer-Tutoring Platform for programming Languages based on Learning Achievement and Teaching Skill. *International Journal of Information Technology & Computer Science*, 7(4), 65-70.
- Kim, D., Ruechert, D., Kim, D.J., & Seo, D. (2013). STUDENTS' PERCEPTIONS AND EXPERIENCES OF MOBILE LEARNING. *Language Learning & Technology*, 17 (3), 52-73.
- Kukulska-Hulme, A. (2009) Will mobile learning change language learning? *ReCALL*, 21(2), 157-165.
- Law, N. Pelgrum, W.J. & Plomp, T. (Eds.). (2008). *Pedagogy and ICT use in schools around the world: Findings from the IEA SITES 2006 study*. Honk Kong: Comparative Education Research Centre.
- Lim, C.P., Zhao, Y., Tondeur, J., Chai, C.S., & Tsai, C.C. (2013). Bridging the Gap: Technology Trends and Use of Technology in Schools. *Educational Technology & Society*, 16 (2), 59-68.
- Mcconatha, D., Prual, M., & Lynch, M.J. (2008). MOBILE LEARNING IN HIGHER EDUCATION: AN EMPIRICAL ASSESSMENT OF A NEW EDUCATIONAL TOOL, *The Turkish Online Journal of Educational Technology*, 7 (3), 15-21.
- Sandberg, J., Maris, M., & deomeus, K. (2011). Mobile English Learning: An evidence-based study with fifth graders. *Computers & Education*, 57, 1334-1347.
- Stevens, T. (2010). Inventec's Dr. Eye puts Android in a pocket-sized laptop. Engadget. Retrieved from: <http://www.engadget.com/2010/06/03/inventecs-dr-eye-puts-android-in-a-pocket-sized-laptop/>
- Ting, Y.L. (2005). Mobile Learning: Current Trend and Future Challenges. Paper presented at the Fifth IEEE International Conference on Advanced Learning Technology, July 5-8, 2005, Kaohsiung, Taiwan.
- Thornton, P. & Houser, C. (2005). Using mobile phones in English education in Japan, *Journal of Computer Assisted learning*, 21, 217-228.
- William, M. & Burden, L. (1997). *Psychology for language teachers: A social constructivist approach*. Cambridge: Cambridge University Press.
- Yakin, I., Turkey, M., Tinmaz, H., & Turkey, I. (2013). USING TWITTER AS AN INSTRUCTIONAL TOOL: A CASE STUDY IN HIGHER EDUCATION, *The Turkish Online Journal of Educational Technology*, 12 (4), 209-218

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