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Learning English Playfully with GPS-E

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Abstract: In this paper, a game-based English learning system (GPS-E) was introduced and evaluated. The effectiveness of the first year experiment was concluded based on the results of a within-subject t-test study. The study was conducted in a university setting in Taiwan. Ten classes of university freshmen (first-year students) were invited for this study. Results indicated that most learners who tried the system have improved more in English than the ones who did not.

Keywords: playful learning, GPS-E (**G**ame-based **P**ilot **S**ystem for **E**nglish learning), game-based learning, CALL (Computer Assisted Language Learning)

Introduction

In Taiwan, English is core requirement at all schools, from primary schools to college-level schools and universities. Hence, Taiwanese students have been "forced" to learn English and "strongly demanded" for "expected academic achievement"—the higher grades, the better, not considering whether or not they could use English in real life. Research results revealed that most of the Taiwanese college students had either fear or unpleasant feelings about their English learning experiences. Plus, the less pleasant they felt about learning English, the worse grades they obtained. (Lin & Warden, 1998) In order to avoid the vicious circle, integrating play into learning seems to be a possible solution.

Ancient philosopher Plato advocated the role of "play" in education by saying that: "Do not… keep children to their studies by compulsion but by play" (Field, 1956) He even suggested: "The most effective kind of education is that a child should play amongst lovely things." According to a play theorist, Sutton-Smith (1997), any useful definition of play must apply to both adults and children. In spite of different perceptions and learning behaviors influenced by ages, cultures, education process, etc., there are still many key themes of applying playful learning for children relevant to adult learning. Therefore, if the word "child" in the abovementioned Plato's quotes were substituted by other words, such as "student," "learner," "person" and the like, the concept should keep unchanged.

Many educators and researchers confirmed that playful learning methods with its CALL-related approaches did reinforce learning process and even improved learning achievement regardless the age differences. (Warschauer, 1996; Sutton-Smith, 1997; Healey, 1999; Resnick, 2004 & Rice, 2009) According to Rice (2009): "Play can be a powerful learning process for adults in higher education, and is embedded in a constructivist theory of learning, and requires experience and reflection as part of that process."

Therefore, grounded in the belief that playful learning can elicit students' intrinsic motivation, and subsequently improve students' achievement, the GPS-E (**G**ame-based **P**ilot **S**ystem for **E**nglish learning) was created in order to lead low-motivation English learners into a playful learning world. They will be encouraged to envision how play contributes to learning by physically applying the system. To better present the system, this paper aims to examine the effectiveness of incorporating playful CALL (in this case: GPS-E) into low-achievement English learning classes.

The GPS-E System

The name of this system GPS (Game-based Pilot System for English learning) is the equivoque on the name of the electronic device--Globe Positioning System. The idea was initially generated based on the target users. They were randomly distributed in ten classes which were labeled "Pilot English Classes." The label indicates that the students got lower than acceptable scores in English, so that they are deeply in need of pilots to guide their directions toward more successful English learning. As to the name of the system, the general objective aims to provide a practical guide (as an experienced and humorous "pilot") to invite students into a joyful journey of learning English. Moreover, the system does provide a GPS-like function for players to locate their current position and to look for desired destinations. Figure 1 presents the model of the system.

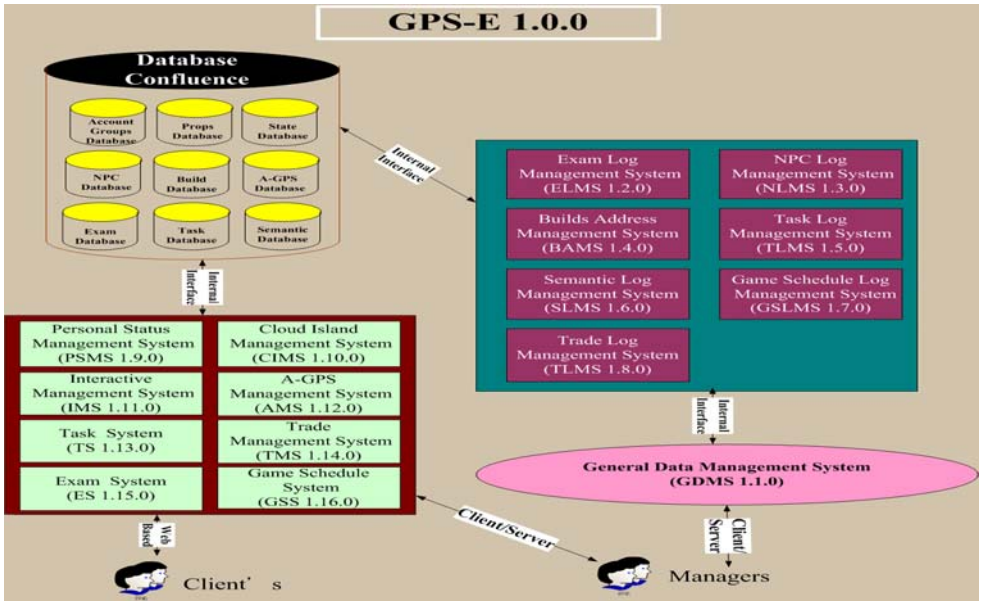

Figure 1: GPS-E Model

The system uses relational database to store learners' status, learning corpus, and gaming information. Through the game-based interfaces, GPS-E creates an on-line virtual world for multiple users to play, interact, and learn virtually in the game. In the mean time, teachers can track the status of learners, set up learning objects and interact with student in the virtual world through management modules.

In order to improve target learners' basic skills in English reading proficiency, the GPS-E system provides an English-rich environment that invites students to play around and learn English simultaneously. In addition, for decreasing some students' anxiety about facing foreign language, necessary instructions, hints, clues, and assisting descriptions in learners' mother language (Chinese Mandarin) are also provided. Figure 2 shows the portal island for the game.

Figure 2: GPS-E interface

First-time users will start with this island after logging in. Players can earn "cloud dollars" by viewing online English classes playing games, and competing with other players. The "cloud dollars" can be used to purchase items in the system, including tickets to visit other islands. Four different types of room are spread amongst islands: system rooms (including registration, student, teacher, and ranking rooms), learning classrooms, gaming rooms, and social rooms (dormitory, church, shop, airport, etc.)

Methodology

At the beginning, a survey was distributed for understanding the students' knowledge about English learning and computer usages to tailor a fitting system for the target users. Thereafter, a within subject t-test method was conducted for investigating the effectiveness of applying this system.

Sample and Setting

Students from ten freshman English classes in a northern university in Taiwan were recruited for this study during the school year of 2009. The ten classes were chosen based on their English proficiency (low in English subject of The General Scholastic Ability Test). As mentioned in the previous section, these students are fall-behind English learners who need "pilot" guidance.

There were six instructors who taught these ten classes during that time. Two teachers taught two classes and one teacher taught three classes while the rest three teachers taught one class respectfully. Even though all six instructors were invited to attend the GPS-E workshop, two instructors opted out of the opportunity for using the GPS-E system in their classes (three classes) based on their personal decision . Therefore, seven classes turned into the experiment group while the three classes became the control group.

Procedure

A 39-item questionnaire was applied for this study with the intention of exploring students' background, attitude toward English learning and learning English through playing digital games. The result reveals that 96.8 % participants are willingly to learn English through

digital games. The finding supports the idea of implementing the GPS-E system in English learning. More detailed results from the questionnaire can be found in previous research paper (Li, Chen, Heh, Wang, Yeh & Huang, 2009). Furthermore, each student was asked to take the pre/post tests regarding English reading proficiency at the beginning and the end of the school year respectively.

Findings and Discussions

The results presented here are mainly about the pre-post tests outcome, as Figure 3 shows the noticeable growth on students' English proficiency between the pretest and the posttest. One class even raised 40 marks in average while the smallest growth is 13 marks.

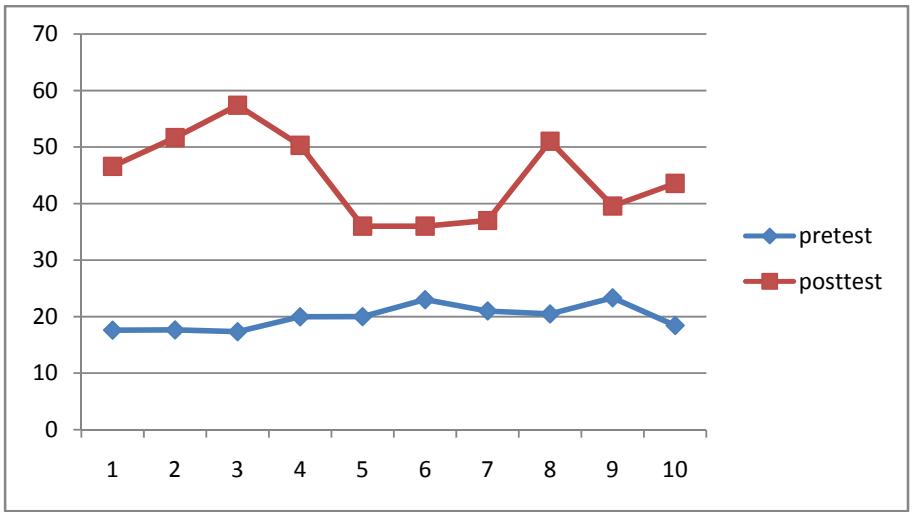

Figure 3: The line chart showing the differences between pre- and post- tests

Students from both control and experiment groups showed improvement in their English skills after one-year English instruction. Based on the scored shown in Table 1, the difference is significant, because the absolute value of the calculated value 2.94 exceeds the critical value of 2.262 (with df= N-1= 9; critical value of *t* at α= .05 is 2.262). However, students from control group did not improve significantly whereas students from experiment group performed significantly better than the control group (at α= .01, with df = 6 and 2 respectfully).

Vygotsky (1978) stated that "In play a child always behaves beyond his average age, above his daily behavior. In play it is as though he were a head taller than himself." As shown in Table 1, the results of this study indicated that players of GPS-E performed better than non-players.

Class	1	2	3	4	5	6	7	8	7	10	Ave.
Pretest	17.61	20	17.66	20.48	23	23.33	19.97	21	18.43	17.35	19.883
Posttest	46.57	36	51.66	51.03	36	39.56	50.31	37	43.57	57.39	44.909
Gain	28.96	16	34	30.55	13	16.23	30.34	16	25.14	40.04	25.026
GPS-E	21089	250	7214	0	136	0	509	61	0	588	

Table 1: The results

Conclusion

The GPS-E system provides a colorful, interesting virtual environment to invite students to explore the islands as well as learning English at the same time. It aims to encourage students to have playful spirit instead of dreary study attitude. The quantitative results not only confirm the value of play, but also provide the basis for further investigation.

In addition, informal interviews with the instructors during the process indicate that students learned a great deal through playing online games on GPS-E. Because play and learning are fully integrated, students were driven by intrinsic motivation instead of external rewards. To sum up, the system provides great opportunities for students to learn important English language concepts—and learn them in a much more meaningful and motivating context than in traditional classroom.

Unfortunately, regardless the proven benefits of playful learning, many schools still possess resistant attitude toward incorporating playful learning into school curriculum. As Buscaglia (1984) argued: "It is paradoxical that many educators and parents still differentiate between a time for learning a time for play without seeing the vital connection between them. Teachers and administrators are often skeptical of playful-learning activities, seeing them as "just play." Hence, the role of the instructor is extremely important for guiding student to learn through play.

In addition to the advantages of employing games and toys-like instructional instruments, Resnick (2004) reminded all educators that do not put a sugar coating for academic purposes in students' playful experiences. This is also another goal for the GPS-E project. This project not only aims to help a small group of college students, but also provide a framework for educators to apply and modify. Ultimately, English language learners around the world could all be able to experience the joys and benefits of playful learning, and consequently cultivate life-long learning habits.

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