Exploring the Innovative Multimedia Pronunciation Learning Managements System on Students with Different Psychological Profiles

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Abstract

The purpose of this study is to investigate the effects of Multimedia Pronunciation Learning Management System (MPLMS) on the pronunciation achievement of students with different psychological profiles. Pronunciation is a salient element of effective communication. To be able to speak English comprehensibly, an individual needs to acquire correct pronunciation. The MPLMS is to be developed in three different presentation modes - Text + Sound + Mouth Movements (TSM), Text + Sound + Phonetic Symbols (TSP), Text + Sound + Mouth Movements + Phonetic Symbols (TSMP) with the aim to improve students' competence on correct pronunciation. To further explore the effects of the MPLMS, this study employs quasi-experimental factorial design which involves two levels for visualization, namely High Visual and Low Visual, and three levels of language anxiety, namely Low Language Anxiety, Medium Language Anxiety and High Language Anxiety. The MPLMS is expected to provide a feasible and innovative learning environment to address the problems. By integrating the MPLMS into the English language instructional design, students will improve their pronunciation competence.

Keywords: Multimedia, Pronunciation, Learning Management System, Visualization, Language Anxiety

1. Introduction

Pronunciation is the act or manner in which a particular word or sound is produced, especially the manner that is accepted or generally understood (Oxford Advanced Learner's Dictionary 7th edition, 2005). If a person's pronunciation is below average, he or she will not be able to communicate orally even though the understanding of grammar and the richness of vocabulary are excellent (Rivers, 1968; Hinofotis & Bailey, 1980; Celce-Murcia, 1996; Dorling Kindersley, 2011). In the light of globalisation trend of increased people's mobility, joint study programmes, commercial networks, information technology, diplomacy, and the like, being able to communicate in English is relatively indispensable in today's world. Moreover, in the social norms, people with proficient pronunciation are usually regarded as more professional and they are respected by given higher social status (Mishra & Sharma, 2005). On the other hand, unintelligible pronunciation seems to be a jumble of sounds that makes into an endless stream of noise (Jones, 2010). It makes comprehension difficult and it is frustrating to the listeners, and it even distorts the meaning of a message.

This study aims to design and develop three presentation modes of the Multimedia Learning Management System (MPLMS), with the purpose to improve the English pronunciation among students from non-native background. The MPLMS is a web-based multimedia pronunciation system accessible through the Internet anytime, anywhere by unlimited number of people all over the world synchronously and asynchronously for quality sustainable learning. The three interactive presentation modes are listed below:

(i) Text + Sound + Mouth Movements (TSM) (see Figure 1);
(ii) Text + Sound + Phonetic Symbols (TSP) (see Figure 2);
(iii) Text + Sound + Mouth Movements + Phonetic Symbols (TSMP) (see Figure 3).

According to Baker (2008), the social, experiential and psychological factors influence students to perceive and produce non-native language correctly. Factors affecting pronunciation acquisition lie primarily in the students.

Hence, specifically in this study, factors within the students which are visualization and language anxiety are brought sharply into focus in this research study.

2. Problem Statement

Students from non-native English speaking background have problems in pronouncing English words correctly (Fraser, 2000; Carson, 2009), which is also illustrated in the findings of the preliminary survey conducted on 18 English teachers from 11 different schools. The findings (refer to Table 1) demonstrated 88.9% of the teachers agreed that students experience difficulties in correct English pronunciation. Some examples of mispronounced words are: "fried rice" is incorrectly pronounced as "flied lice" due to the problems of differentiating the sounds between "r" and "l", "pint" /paɪnt/ is incorrectly pronounced as "pin" /pɪn/ by looking at the spelling of the word, "mull" /mʌl/ is incorrectly as /mul/ because of the common word "pull". In addition, students lack sufficient time to practise pronunciation in class looking at the high teacher-student ratio (Brown, 2001; Kankam, 2003) as evidenced in the preliminary survey with 94.4% of the teachers agreed with the statement. The teacher-student attention is minimised and students' opportunities to speak are lessened (Brown, 2001; Kankam, 2003). This issue is worsened by varied pronunciation competence of individual student in class which causes teachers facing difficulties to coach each student (Nair, Krishnasamy, & Mello, 2006; Su, 2008). In the findings of the preliminary survey, a total of 55.6% of the teachers encounter problems to correct every student's pronunciation in class, and 72.2% highlighted the different levels of pronunciation competence makes them having problems to monitor the progress of each student.

It is natural for self-consciousness to arise from a fear of being closely watched, judged, and criticized by others. Students are commonly reluctant to practise their pronunciation in front of others as the mistakes made causing them to feel embarrassed and intimidated (Fraser , 2000; Por & Fong, 2011), which is also highlighted by 61.1% of the teachers in the preliminary survey. This situation hinders learners from practising and improving, and they gradually become more and more passive. The fact of limited human capabilities, such as patience of teachers and consistent quality of sound production is undeniably true (Su, 2008). How many times can a teacher repeat the pronunciation of a same word until students master the correct sound? Even an excellent teacher of phonology can only repeat the pronunciation of a word for mere limited times and also with different quality for each repetition.

3. Siginificance of the Study

The constraints of in-class pronunciation practicing time, high teacher-student ratio are expected to be overcome through the proposed MPLMS as it is accessible through the Internet by unlimited number of learners simultaneously with infinite repeated use and with consistent quality of sound production. Not only it provides high quality individualized instruction and interaction, but also it is effort-saving to the human teachers and it ensures consistency in delivering the learning contents (Pennington, 1999). The MPLMS encourages self-paced, self-accessed and self-enhanced learning. It provides the students flexibility to learn at their own pace. They can start and stop the lessons as well as review the lessons at a pace efficient to them. This provides opportunities for autonomous practice. Control of the learning process encourages active learning and is highly motivating for the learners (Sullivan, 2001). The learners will also learn to be more independent in creating their own learning steps. This will definitely help the slow learners from being frustrated and the fast learners from getting bored (Nur Aini, Omar, & Chow, 2002). Furthermore, the MPLMS is designed by allowing the students to make mistakes and keep on practising for improvement at their own pace without having the fear to be humiliated. In this regard, the proposed MPLMS is expected to encourage students to increase practice of correct pronunciation in a low-anxiety learning environment. It makes learning pronunciation effective and a fun experience. With the innovative use of graphics, video and audio, students' attention will be captured and their learning enthusiasm will be enhanced.
The intervention of MPLMS increases the contact with correct English pronunciation and, therefore, offers considerable promise to improve the pronunciation competence of non-native English speakers.

4. Conceptual Framework

The conceptual framework in Figure 4 shows the relationships among the different variables under investigation. The independent variables are the three treatments of Text and Sound and Mouth Movements (TSM), Text and Sound and Phonetic Symbols (TSP), Text and Sound and Mouth Movements and Phonetic Symbols (TSMP) that attempt to impose effect on the dependent variable. The dependent variable is the achievement scores. The moderator variables are visualization levels and language anxiety levels.

The two moderator variables presented in this study are expected to have contingent effect on the independent variables and dependent variable relationship. The presence of the moderator variables modifies the original relations between the independent variables and dependent variable.

5. Research Design

This study employs quasi-experimental factorial design which refers to experimental design that involves two or more independent or grouping variables to study the effects of the variables individually and in interaction with each other (Gay, Mills, & Airasian, 2009). It is designed to investigate the effects of the independent variables on the dependent variable at each level of the moderator variables. The factors of the design in this study are the three presentation modes (TSM, TSP, TSMP) and two moderator variables (visualization levels, language anxiety levels). There are two levels for visualization, namely High Visual and Low Visual, and three levels of language anxiety, namely Low Language Anxiety, Medium Language Anxiety and High Language Anxiety. The factorial design of the study is schematically depicted in Figure 5 and Figure 6.

6. Instruments

There are three instruments to be used in this study to collect data. Cronbach's alpha correlation coefficient of the instruments are computed and presented in Table 2. The instruments are:

(i) Pronunciation Competence Test (Pretest and Posttest),
(ii) Style of Processing (SOP) Questionnaire, and
(iii) Foreign Language Classroom Anxiety Scale (FLCAS).

The Pronunciation Competence Test is used as pretest and posttest to evaluate the improvement of students' pronunciation performance. The difference between the posttest and the pretest scores will be compared. This is done to gauge students' understanding and application of the lessons by reporting their learning achievement scores in the tests which help to evaluate the effectiveness of using the three modes of the MPLMS in the learning of pronunciation. The SOP is used in this study to measure the high and low visualization. To assess the students' language anxiety degree in affecting their performance in English pronunciation learning, this study employs the FLCAS to determine whether there is any significant difference in pronunciation competence in using the three modes of the MPLMS. For the use in the present study, the SOP and FLCAS are translated into Malay and Chinese versions to eliminate ambiguities among the students from non-native English speaking background.

The research study is to be conducted in three phases: pre-treatment, treatment, and post-treatment, which are illustrated in Figure 7. During the pre-treatment phase, participants are required to complete the SOP, FLCAS as well as the pretest. Introduction to the MPLMS will also be given. Then, in the treatment phase, the participants will learn pronunciation with the MPLMS through the presentation mode randomly assigned to them. Finally, in the post-treatment phase, learning outcomes of the participants will be measured using posttest.

7. Conclusion

The research study is under work-in-progress development. It is hoped that the final outcomes will contribute to the design of instructional technology that best fit students' identified needs and equip students for correct pronunciation. With the use of the MPLMS, it is expected to train students to produce sounds independently and critically, and at the same time overcome the limitations of time, number of expert teachers, and reduce the anxiety of pronouncing in a threatening learning environment. In sum, the MPLMS is believed to encourage learner-centric, dynamic and sustainable learning.

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Table 1. Summarized Findings of Preliminary Survey

No.	Statements	Disagree	Not Sure	Agree
1.	I encounter problems to correct each student's pronunciation in class.	22.2%	22.2%	55.6%
2.	The varied pronunciation competence of each student in class making me hard to monitor his/her progress.	16.7%	11.1%	72.2%
3.	Students have problems in pronouncing English words correctly.	5.6%	5.6%	88.9%
4.	Students do not have sufficient time to practise their pronunciation in class.	0%	5.6%	94.4%
5.	Students feel comfortable to practise their pronunciation in front of others.	61.1%	16.7%	22.2%

Table 2. Cronbach's Alpha Correlation Coefficient of the Instruments

Instrument	Items	Question	Cronbach's Alpha	
Pronunciation Competence Test				
- Letters	10	Part I, Question 1-10	.759	
- Phonetic Symbols	10	Part II, Question 1-10	.768	
- Letters and Phonetic Symbols	10	Part III, Question 1-10	.744	
Total Reliability	**30**		**.763**	
			Malay Version	Chinese Version
Sop				
- Visual	11	2, 5, 8, 10, 11, 12, 13, 14, 16, 20, 22	.711	.793
- Verbal	11	1, 3, 4, 6, 7, 9, 15, 17, 18, 19, 21	.746	.819
Total Reliability	**22**		**.713**	**.888**
			Malay Version	Chinese Version
FLCAS				
- Communication Apprehension	11	1, 4, 9, 14, 15, 18, 24, 27, 29, 30, 32	.787	.780
- Test Anxiety	15	3, 5, 6, 8, 10, 11, 12, 16, 17, 20, 21, 22, 25, 26, 28	.760	.829
- Fear of Negative Evaluation	7	2, 7, 13, 19, 23, 31, 33	.716	.708
Total Reliability	**33**		**.828**	**.889**

Figure 1. Text + Sound + Mouth Movements (TSM)

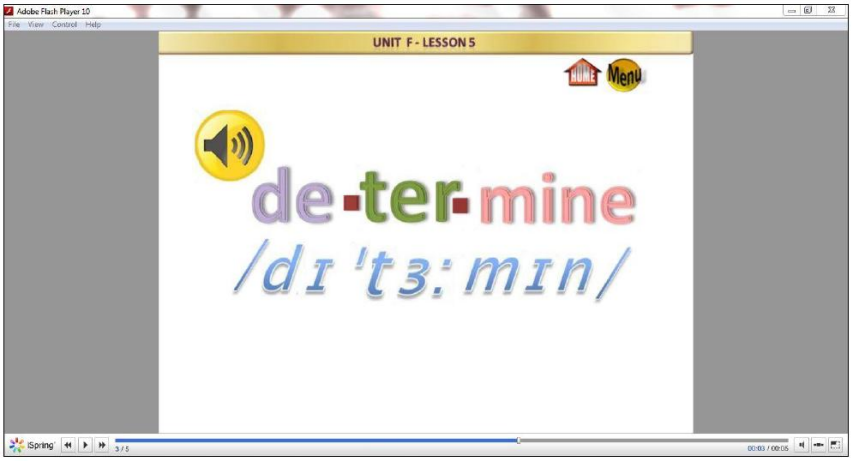


Figure 2. Text + Sound + Phonetic Symbols (TSP)

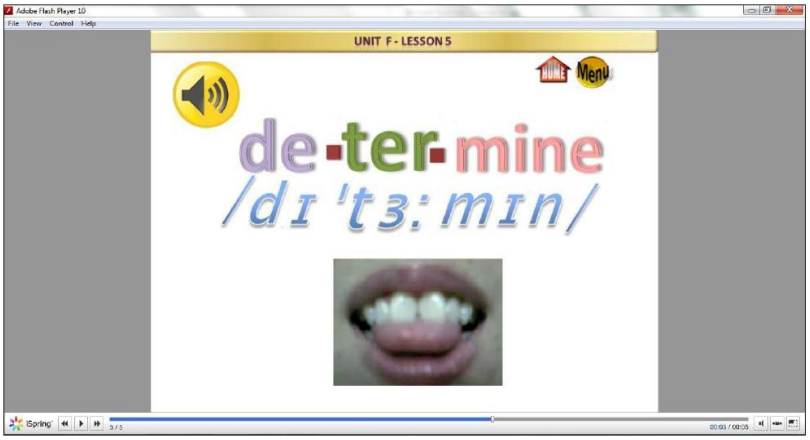


Figure 3. Text + Sound + Mouth Movements + Phonetic Symbols (TSMP)

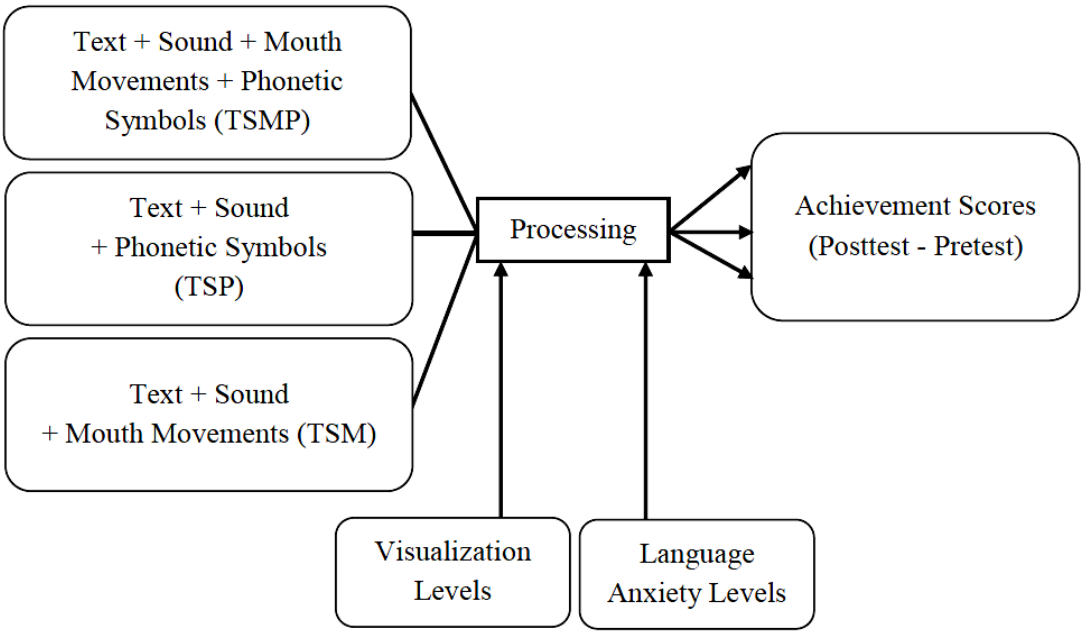
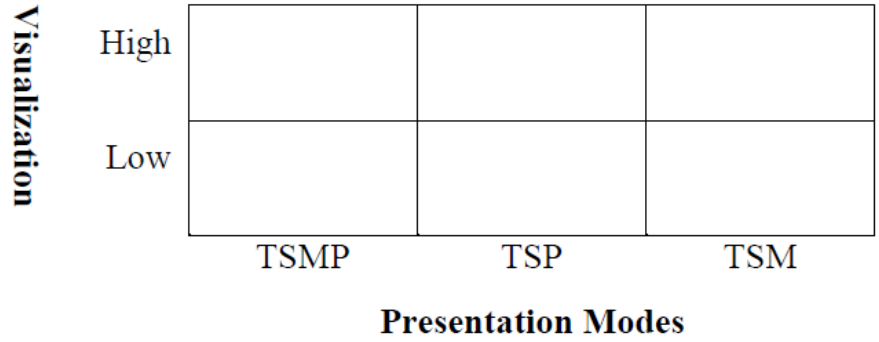


Figure 4. Conceptual Framework

Figure 5. Presentation Modes × Visualization– a 3×2 Quasi-Experimental Design



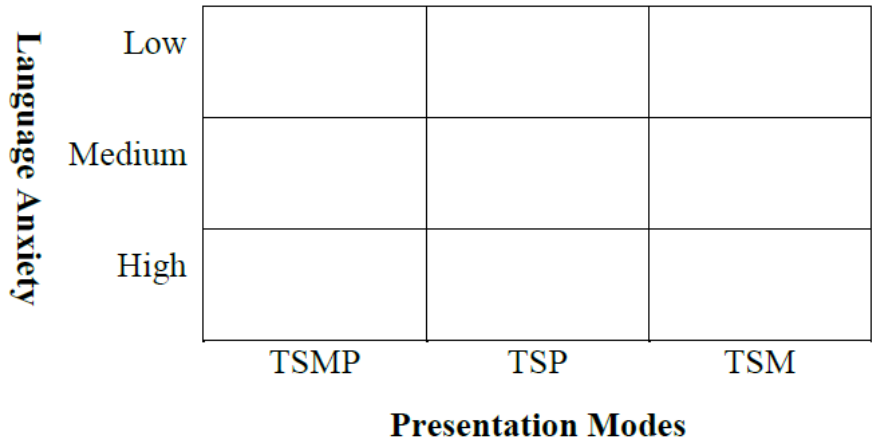


Figure 6. Presentation Modes × Language Anxiety– a 3×3 Quasi-Experimental Design

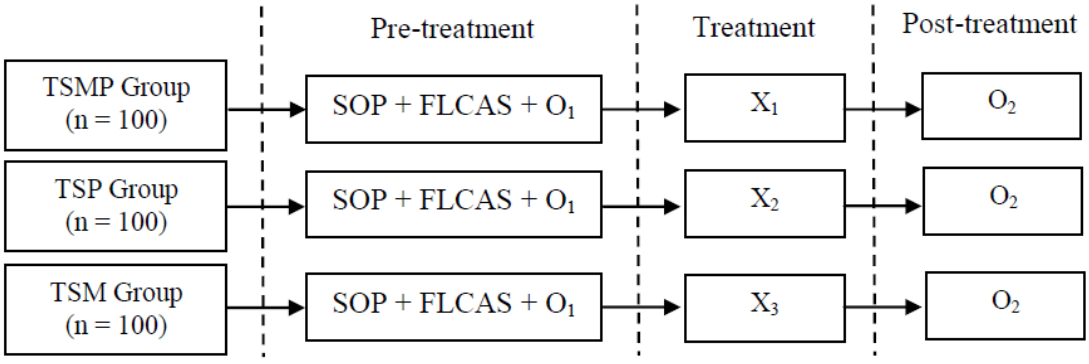


Figure 7. Phases of the Study