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**Using an IT Programme for Improving Pronunciation and Raising Awareness on  
/ð/ and /d/ Contrast in English Language in Thai EFL Learners**

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**Submitted for the degree of Master of Arts in Teaching English to Speakers of  
Other Languages (TESOL)**

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**September 2016**

## **Abstract**

Pronunciation teaching in Thai EFL context has been considered 'unsuccessful' and has been a topic of discussion over decades. Researchers have been trying to come up with a solution to the problems and the use of computer-assisted language learning programme was one of the options. However, the amount of research conducted in this particular area, especially in Thai EFL context, was rather limited. This research aims to fill that gap by fulfilling two main objectives. First, it will investigate whether the use of an IT programme is effective in improving Thai EFL learners' pronunciation and phonemic awareness of /ð/ and /d/ phonemes. Second, it will explore Thai learners' perception on the use of an IT programme in English pronunciation learning.

This research uses a combination of the quantitative and qualitative method in data collection and analyses. The longitudinal framework was also adopted, allowing the researcher to observe growth and changes that might occur during the course of the study and possibly establish causal relationships between the associated factors. The participants include five Thai EFL learners' studying at a postgraduate level at the University of Surrey who will be invited to take part in the study on a voluntary basis. The procedure of this study involves five 15-minute pronunciation study sessions with the computer-assisted pronunciation learning programme as a core. The course lasted for two weeks. The data collection tools include paper tests, research logs and questionnaires. The test results were analysed using 'paired t-test' to indicate whether there is a significant improvement in the learners' pronunciation capacity. Then, the notes from research logs and learners' responses in questionnaires were analysed to determine the contributing factors to the test results.

The test results reveal that learners seem to improve their pronunciation after using the programme CP1, whereas the improvement in their phonemic awareness is still doubtful. In addition, although the learners seem to be content with the programme and recognise the possible advantages, they still express different opinions on the use of an IT programme in pronunciation classroom. The data analyses show that the learners' different beliefs and learning styles could probably be a critical determining factor in the effectiveness of an IT programme in English pronunciation classroom.

## **Acknowledgements**

I would like to thank my family for their support and kindness.

I would like to thank my friends who made my college life memorable.

I would like to thank Ms Wilma Dampier, my supervisor, for her support and guidance.

I would like to thank the lecturers of the MA TESOL course for their dedication and all those valuable lessons.

I would like to thank the staff of the School of English and Languages for providing us with excellent support.

Thank you very much.

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## Chapter 1: Introduction

Pronunciation is one of the key skills in language learning. (Scrivener, 2011) Teaching pronunciation to learners can improve their speaking considerably. (Harmer, 2007) However, in the field of English language teaching, pronunciation teaching has been under constant discussion about its status in the curriculum throughout the history of ELT. (Celce-Murcia *et. al.*, 2010) Teaching methods such as the direct method and the audiolingual method tend to revolve around pronunciation skills, while communicative approach tends to marginalise pronunciation and focus on overall communicative ability. (Celce-Murcia *et. al.*, *ibid.*) At present, English language teachers and researchers in the ELT field seem to give more importance to pronunciation. (Roach, 2009) They recognise its importance and try to integrate pronunciation teaching into the lessons. There are also discussions about how pronunciation teaching could be successfully carried out in a practical classroom. Many factors such as L1 influence and different learning beliefs were addressed as possible issues in pronunciation class. (Imaemsup, 2011; Khamkhien, 2010b; Lado, 1957) Various methods and language learning tools were created to overcome these issues and assist teachers in the classroom. For example, International Phonemic Symbols (IPA) were created to visually represented sounds in spoken language and Fidel charts were created to demonstrate possible spellings of English phonemes. (Celce-Murcia *et. al.*, 2010)

With the rapid development of technology, the integration of computer-assisted language learning tools has been studied and attempted in order to enhance English language learning. (Davies, Otto and Ruschoff, 2012) Through the use of technology, integrating multimedia such as videos, audio recordings and online networking can increase target language exposure for L2 learners. (Warschauer and Healey, 1998) Skinner and Austin (1999) also commented that computer-assisted language learning (CALL) could promote higher motivation in the classroom. In the field of pronunciation teaching, many studies have investigated the effectiveness of the use of CALL. Lee (2008) found that learners who have a fear of embarrassment could exploit the use of CALL to practise pronunciation by themselves. Mehrpour, Shoushtari and Shirazi (2016) suggested that the use of CALL might be able to compensate a lack of target language

exposure in non-native context. Lee (2008) and Liu (2008) argued that a computer programme cannot entirely replace a human teacher since there are still some limitations that have not been cleared up. However, looking at the possible advantages of using it for pronunciation teaching, it might be possible to say that this field of study could potentially benefit from further research on the use of CALL.

In Thai EFL context, the issues in pronunciation teaching have been discussed among teachers and researchers over decades. The linguistic distance between Thai and English language was identified as one of the problems. (Swan and Smith 2001) Simpson (2011) commented that limited exposure to the target language due to the teachers' low competency of English could be one of the problems. Covey (2007) suggested that the 'fear of failure' in Thai EFL learners which was influenced by Thai culture could undermine the learners' development. Many issues regarding pronunciation teaching in Thai EFL context have been addressed and researchers have been trying to come up with a solution to these problems. Using technology to enhance pronunciation learning was also one of the options. Thajakon and Sucaromana (2014) conducted a study on Thai primary school students and found that multimedia technology seemed to have a positive effect on the students' English phonemic awareness. A study by Kretsai (2015) showed that the use of a specific language learning programme seemed to have better effectiveness on pronunciation learning compared to the traditional teacher-led class. However, despite the positive findings, he suggested that further study in this field is still required, particularly in Thai EFL context. (Kretsai, *ibid.*) Therefore, with the availability of the pronunciation learning software, 'Clear Pronunciation 1', which was provided by the University of Surrey and the presence of Thai EFL learners at this university, this might be a good opportunity to study the effectiveness of CALL in pronunciation teaching in Thai EFL learners.

This study has two main purposes. First, it aims to investigate whether the use of an IT programme is effective in improving Thai EFL learners' pronunciation and phonemic awareness of /ð/ and /d/ phonemes. Second, it will explore Thai learners' perception on the use of an IT programme in English pronunciation learning. This study

will likely serve as a case study for EFL teachers who would like to implement the use of language learning software in their pronunciation classroom.

### **Research Questions**

To achieve its main purposes, this study will aim to answer three research questions listed below.

1) Do Thai EFL learners improve their pronunciation of /ð/ and /d/ phonemes after using the programme?

2) Do Thai EFL learners improve their awareness of /ð/ and /d/ phonemes in English speech after using the programme?

3) How do Thai EFL learners perceive the use of an IT programme in English pronunciation learning?

This study will be presented following this structure: Chapter 2 will present the background knowledge from previous research about pronunciation teaching in ELT and computer-assisted language learning (CALL) in pronunciation classroom, particularly the issues which can be related to Thai EFL context. Then, it will provide an introduction to the specific software used in this study, Clear Pronunciation 1 (CP1). Chapter 3 will demonstrate the methodology used in this study and its theoretical background. Chapter 4 will be the presentation of the study's results. Chapter 5 will be the detailed discussion and critical analysis following the three research questions. The conclusion, research limitations and suggestions for further study will then be included in Chapter 6.

### **Definition of Key Terms**

**Articulation:** The movement of speech organs (e.g. tongue, lips, jaw, vocal cord) in order to make the sounds.

**Computer-assisted pronunciation training (CAPT):** An integration of computer technology to help language learners (especially second language learners) learn and practise their pronunciation in the target language. (Versvik, 2009)

**Inter-rater reliability:** A degree to which the ratings of the same tests done by pairs of raters are consistent with each other. (McNamara, 2000)

**Phonemes:** Units that are used to describe regularly used sounds in a language. (Roach, 2009)

**Phonemic awareness:** A learner's ability to detect individual sounds or phonemes in a language. (Berg and Stegelman, 2003)

**Segmental:** A feature of the sound system of a language involving a single sound segment; e.g. consonants and vowels. (Celce-Murcia *et. al.*, 2010)

**Suprasegmental:** A feature of the sound system of a language which extends over more than a single sound segment; e.g. rhythm and intonation. (Celce-Murcia *et. al.*, 2010)

## Chapter 2: Literature Review

### Pronunciation Teaching in English Language Classroom

Pronunciation teaching in English language teaching has been arguably controversial in practice. The ups and downs of its status in ELT have been stated by many researchers in this field of study. Looking at the history of English language teaching, pronunciation has been either given utmost importance or largely neglected depending on the prominent teaching approaches. (Celce-Murcia *et. al.*, 2010; Isaacs, 2009; Levis, 2005; Ueno, 1995) For example, the audiolingual method and the contrastive analysis hypothesis focus on accurate pronunciation while the natural approach de-emphasises pronunciation teaching in favour of communicative competence and language fluency. (Pennington and Richards, 1986) However, it seems that English language teachers generally recognise the importance of pronunciation in language teaching. Kelly (2000) stated that inaccurate pronunciation could cause misunderstanding in communication. He also commented that a learner who has severe mispronunciation problems would likely struggle not only in production but comprehension of language as well. Breitzkreuz, Derwing and Rossiter (2001) suggested that pronunciation teaching should be integrated into the language curriculum. Setter (2008) noted that pronunciation was sometimes considered 'difficult' by both teachers and learners thus it is neglected in favour of reading and writing. Celce-Murcia *et. al.* (2010) suggested that teachers tend to adopt a more balanced approach by attempting to adjust the principles of pronunciation teaching to their learners' needs. Foote, Holtby and Derwing (2011) stated in their study that English language teachers in Canada view pronunciation as crucial. Murphy (2011) also mentioned that the same idea was shared by teachers in Ireland. Therefore, it seems rather clear that pronunciation teaching should be implemented in the classroom. As a result, the discussion in this field of study has shifted from 'why' pronunciation should be taught to 'how' it should be taught instead.

It appears that the ongoing discussions on how to put pronunciation teaching into practice are apparently caused by several unresolved issues in practical implementation. One of the issues in the focus is the idea of emphasis on segmental

and/or suprasegmental aspects of pronunciation. Anderson-Hsieh, Johnson and Koehler (1992) stated that instructions of prosodic features have a stronger effect on the learners than the segmental features. The study by Derwing, Munro and Wiebe (1998) suggested that the inclusion of suprasegmental aspects in pronunciation teaching made the course significantly more efficient when compared to the one that focuses on segmental aspects alone. They also noted that only the participants who received instructions on suprasegmental aspects displayed improved comprehensibility. Levis and Grant (2003) also commented that suprasegmental features are more related to spoken English and need to be emphasised in the classroom. On the other hand, Munro and Derwing (2006) found that teaching a segmental feature such as consonant distinction has a considerable impact on learners' comprehensibility. However, Ueno (1995) suggested that the instructions on both segmental and suprasegmental features should be combined as none of them appeared to be more effective than the other. In addition, a study by Saito (2014), conducted on Japanese EFL learners, suggested that both segmental and suprasegmental features are significant, especially in a group of non-native speakers who have considerable linguistic distance such as Japanese learners. The L1 transfer might result in pronunciation errors which could be improved with proper instructions. Thus, it seems that, in pronunciation teaching, both segmental and suprasegmental aspects should be taken into account.

Another issue is the belief of language teachers and learners. Sifakis and Sougari (2005) stated that most Greek EFL teachers, although comfortable with pronunciation teaching and confident in their capacity, are predominantly 'norm-bound'. They believed that learners should follow the native speakers' norms in pronunciation and teach accordingly to a native-speaker model. Kuo (2006) suggested although errors could be tolerated in real communication, it could still be considered inappropriate. Also, some learners apparently aim to achieve an accent indistinguishable from that of a native speaker. Thus, a native-speaker model should be favoured. On the other hand, Jenkins (1998) proposed that, at present, English language has become an international language and it should be more open to 'variations'. Her subsequent study in 2006 also suggested that the idea should be encouraged as English language has widely spread and it was also adopted by some researchers (e.g. Hu, 2004; Kirkpatrick,

2007; Matsuda, 2003). Roach (2009) argued that learning to pronounce like native speakers might not actually be an ultimate goal for every English language learner. Instead, learning pronunciation from the native-like model would allow learners to achieve a comprehensible conversation with native speakers. Kenworthy (1987) suggested that while the majority of learners would probably not benefit from a native-like pronunciation in practical use, there might be particular learners who need it for their occupations. Still, a native-like pronunciation is regarded as a 'high' goal. (Kenworthy, 1987) However, among the different beliefs of researchers and practitioners, intelligibility seems to be commonly seen as an appropriate and 'realistic' goal for ordinary learners. (Breitkreuz, Derwing and Rossiter, 2001; Foote, Holtby and Derwing, 2010; Harmer, 2007; Kelly, 2000; Kenworthy, 1987; Roach, 2009)

In Thailand, the situation of pronunciation teaching might raise some concern for language teachers as there are issues persistently addressed by researchers through several decades. Harris (1973) stated in his study that difference between Thai and English languages, and disregard of pronunciation teaching from Thai English teachers could possibly cause pronunciation problems in Thai EFL learners. He also suggested that, despite there being no need to reach perfect pronunciation, Thai EFL teachers should at least produce intelligible pronunciation for the listener. In contrast, Vibulphol (2004) found that the majority of Thai English language teachers believed that imperfect pronunciation is acceptable as long as they can convey the meaning. Phongsuwan (1996) conducted her study on Thai students at Washington State University and found that the major English language problems for Thai students are associated with pronunciation. Panlay (1997) explained Thai learners' use of 'loanwords', words that had been adopted from another language (in this case; English), affected their pronunciation of English language. Since there are phonemes in English language that do not exist in Thai language, those gaps that might cause confusion for Thai EFL learners. When they first learn English loanwords, they will replace those phonemes with the 'nearest' phonemes that exist in Thai language. With little instruction in pronunciation, this problem tends to persist when they continue to use English language in communication, and that might affect their pronunciation in general. (Panlay, 1997) Swan and Smith (2001) stated that phonic difference between Thai and English could

result in mispronunciation. Consonants such as /θ/ and /ð/ are often substituted by Thai approximation of /t/, /s/ and /d/, /t/, /s/ respectively. As in contrastive analysis hypothesis, a comparison between two sound systems of languages could help teachers identify which area could be problematic for learners and should be targeted in the class. (Lado, 1957) The studies mentioned above have marked the features of linguistic distance between Thai and English languages. Thus, language teachers in Thailand might consider focusing on those areas when teaching pronunciation. However, in recent years, even though there have been suggestions to shift an emphasis of ELT in Thailand to a more communicative-oriented syllabus, the problems of language speaking skills and pronunciation problems in Thai learners persist. (Wongsothorn, Hiranburana and Chinnawongs, 2002; Khamkhien, 2010a; Kongkerd, 2013) Khamkhien (2010b) performed a study on Thai college students and found that their English language pronunciation is unsatisfactory. Errors in word-stress and final cluster consonants such as /tʃ/ can frequently be witnessed. Kongkerd (2013) also indicated that many Thai learners are unable to pronounce certain sounds that do not occur in Thai language such as /ð/ as in 'the' correctly, which could be a problem since one could often come across this sound in English language. The noticing of linguistic difference alone seems to be not enough to develop Thai learners' pronunciation successfully. Therefore, it could possibly reify that the contributing factors might lie elsewhere in the procedure and/or teaching methods used in the classroom.

Experts in the field of language teaching in Thailand have attempted to identify the factors that contribute to this seemingly unsuccessful pronunciation teaching in Thailand. Wongsothorn, Hiranburana and Chinnawongs (2002) stated that a lack of language models, over-abundance of content in the curriculum and inappropriate evaluation system are the major factors that undermine English language teaching in Thailand. Wiriyaichitra (2002) indicated that EFL teachers in Thailand had to cope with large classes, heavy teaching loads and administrative tasks. Jarvis and Atsilarat (2004) noted that the number of students in the class is usually too large. Covey (2007) suggested that the influence from Thai culture developed the 'fear of failure' in Thai learners of English which could hinder the effectiveness of the class. Khamkhien (2010b) highlighted some contributing factors such as linguistic distance, language

exposure and learners' motivation and beliefs. Simpson (2011) stated that most Thai teachers of English have considerably low competency in English, thus limit the learners' exposure to the language. A study by Meksophawannagul (2015), along with another study by Nicholls and Apiwattanakorn (2015) found that Thai learners' beliefs are still oriented towards a teacher-reliant class. Allyn (2015) suggested several contributing factors to poor English language competency of Thai learners including: 1) the over-emphasis on grammatical features, 2) insufficient knowledge of English and teaching methodology of the teachers, 3) passive mentality and learning style of Thai learners and 4) the expectation of learners to rely on the teacher instructions which will likely result in teacher-dependency. Thai EFL teachers also express their concern about professional development needs. (Noom-ura, 2013; Wall, 2008) They seem to be aware that there are areas that need improvement but have not been able to resolve the issue by themselves. (Noom-ura, *ibid.*; Wall, *ibid.*) In conclusion, it seems that the factors that cause the current Thai EFL situation could range from the policies, the societal beliefs and expectations, and an insufficient amount of teacher training. There are also many suggestions from researchers on how to improve the situation such as encouraging autonomous learning in Thai learners, implementing changes in the language curriculum, changing the format of the examination and revising educational policies. (Foley, 2005; Khamkhien, 2010a; Kongkerd, 2013; Nicholls and Apiwattanakorn, 2015; Wongsothorn, Hiranburana and Chinnawongs, 2002) However, these suggestions are unlikely to be achieved easily. Considering the policy-level of changes and the challenge to societal beliefs, as Foley (2005), Khamkhien (2010a), Thep-Ackrapong (2005) and Wiriyachitra (2002) noted, substantial effort and cooperation between associated parties are needed and it could probably take years or even decades to accomplish.

There is also some research which focuses on the idea of introducing new teaching models or educational tools that could be used to improve learners' experience. For example, Imaemsup (2011) conducted a study to investigate the effectiveness of the audioarticulation model (AAM) on Thai learners. AAM was proposed by Demirezen (2010) as a method to rehabilitate fossilised pronunciation in EFL learners. The results showed that Thai learners significantly improve their

pronunciation and are generally satisfied with the method. (Imaemsup, 2011) Another study by Kretsai (2015) found that Thai EFL learners show a positive attitude towards the use of computer-assisted pronunciation learning and the use of a specific commercial language learning programme shows better effectiveness compared to the conventional face-to-face method. The adoption of new pronunciation teaching models and the use of computer-assisted language learning (CALL) could be beneficial to the Thai ELT scenario since they would only require a certain amount of teacher and staff training to be able to function effectively. In comparison to the policy-level changes which could take a much larger amount of investment and time to accomplish, the smaller scale solution might be a more realistic and desirable option for Thai EFL teachers. However, it appears that the amount of studies conducted in this area (especially within Thai EFL context) is still limited at the moment. (Khamkhien, 2010b; Kretsai, 2015) Therefore, more research on this matter is arguably necessary.

### **Computer-assisted Language Learning (CALL) in Pronunciation Classroom**

As previously mentioned, the idea of using computer-assisted language learning (CALL) in the Thai EFL context is worth considering as an optional method to teach pronunciation. However, CALL in pronunciation teaching is not actually a new concept. Despite having limited research in Thai EFL context, it has been widely discussed by researchers in other regions as a potentially useful tool for teaching pronunciation. CALL is a term used widely in the UK since the 1980s to describe the incorporation of computer technology into language learning. (Davies, Otto and Ruschoff, 2012) The fact that the academic community attempts to integrate the use of technology in language classroom signifies the potential of IT applications and tools in enhancing language learning for English language learners. (Davies, Otto and Ruschoff, *ibid.*) Warschauer and Healey (1998) stated that integrating multimedia such as videos, audio recordings and online networking makes language exposure much more accessible for language learners and offers choices for learners who cannot attend a formal class. Dudeney and Hockly (2012) suggested that, with the rising popularity of social media, advancement in mobile technologies and development language applications, language learning space has already been extended outside the conventional classroom and is spreading wider

through the overwhelming creation of online content. There are some studies which show that CALL has a positive effect on language learning. (Felix, 2005; Kettemann, 1995; Lai and Kritsonis, 2006; Pirasteh, 2014) Some of the advantages of CALL stated by researchers are that: 1) it makes language models and materials more accessible, 2) it serves as an alternative method for learners with different pace and learning styles and 3) it promotes higher motivation than the conventional classroom. (Bradley, 2015; Fitzpatrick and Davies, 2003; Khamkhien, 2011; Skinner and Austin, 1999) On the other hand, there are some arguments on limitations of CALL. Neri, Cucchiarini and Strik (2002) suggested that the development of language learning software is probably be driven mainly by technological advancement and might not be responsive to pedagogical needs. Otto and Pusack (2009) highlighted the expensive cost needed for development and maintenance of the software and hardware. Khamkhien (2011) stated that lack of proficiency and familiarity to CALL could be a problem for both learners and teachers. He also suggested the shortage of technical support and insufficient infrastructure could potentially be critical problems in some locations. Dina and Ciornei (2013) also pointed out that the adoption of CALL in the classroom might lead to a deterioration of teachers' role in the classroom. However, a study by Egbert and Yang (2004) found that even with 'limited' technology context (not highly-advanced), an implementation of CALL in the classroom still demonstrated positive effects. Also, as many researchers stated, CALL should not be considered as a replacement for traditional language instructions, but rather a complementary element which could be used to assist or enhance the classroom process. (Beatty, 2010; Egbert and Yang, 2004; Lai and Kritsonis, 2006; Lee, 2008; Liu, 2008) Therefore, even though it cannot provide a perfect solution to every addressed pedagogical issue, with careful consideration of the learning environment, CALL could possibly offer a desirable solution for specific individuals or teaching context. (Beatty, 2010)

Regarding the use of technology in pronunciation teaching, there are many studies that investigate the effectiveness of using a computer-assisted pronunciation training (CAPT) in ELT. Among these studies, several of them demonstrated positive effects of CAPT on pronunciation teaching. (Molholt, 1988; Hincks, 2003; Tanner and Landon, 2009; Thomson, 2011; Luo, 2016; Wang and Munro, 2004) Some of them also

mentioned the possible advantages of the programme that might affect the results. Liu (2008) stated that learners appear to have positive opinions on visual aids provided by the software and supported the integration of the programme in the pronunciation classroom. Lee (2008) mentioned that the software seems to have advantages in that it is also accessible outside the classroom and learners who have a fear of embarrassment can exploit the use of the programme to practice their pronunciation. Neri *et. al.* (2008) suggested that the integration of computer software in pronunciation classroom could possibly reduce the time teachers need to spend on pronunciation instructions, thus solving an issue of time constraint or unfavourable student-teacher ratio. Also, IT software could compensate for a lack of language exposure in the non-native environment. (Mehrpour, Shoushtari and Shirazi, 2016) These studies mark the potential of technology in pronunciation teaching. It could be seen that several advantages have been highlighted and there is supporting evidence provided by many studies. On the contrary, some limitations and concerns have also been raised. For example, feedbacks given by the programme might not be entirely accurate and could probably discourage learners. (Hincks, 2003; Neri, Cucchiarini and Strik, 2002) The programme is usually not flexible enough (especially when compared to human teachers) to adapt to learners' specific needs such as L1 interference in learners' with different language backgrounds. (Liu, 2008; Mehrpour, Shoushtari and Shirazi, 2016) However, as Lee (2008) proposed, the use of IT software in pronunciation teaching should be acknowledged as complementary to the classroom procedure. It should possibly not entirely replace human teachers, as there are still areas that cannot be covered. (Liu, 2008) Instead, it should rather aim to offer some options for learners who prefer different learning styles. (Lee, 2008) Additionally, Lee (*ibid.*) noted that teachers should assess the characteristics of the language programme which are positively recognised by their learners. Thus, they could select suitable IT software that shares those preferable characteristics to their learners' needs.

In the Thai EFL context, studies on the use of CALL were conducted. However, the results demonstrate a mixed reaction of positivity and concerns. A study by Supasetseree and Dennis (2010) indicated positive results from the use of Moodle in the classroom. They mentioned that it facilitates a student-centred curriculum and

provides students with online access to teaching materials enabling language practice outside class schedule. Thajakan and Sucaromana (2014) found that the use of multimedia technology could help primary school students increase their English phonemic awareness. Intratat (2007) noted that CALL allowed learners to learn at their own pace, offering a more flexible class schedule. In contrast, some teachers and EFL learners expressed their concerns over insufficient infrastructure, lack of technical support and inadequate knowledge in using technological tools and/or applications. (Intratat, 2007; Lian, 2002; Yudthana, 2004) Also, Prapinwong and Puthikanon (2008) suggested that some of the content was difficult to understand for Thai learners, probably because of the cultural difference since the language learning software is usually developed by a native English developer. However, Intratat (2007) noted that despite their concerns, the majority of the teachers and learners recognise the potential benefits of CALL. She suggested that educational institutions should respond to the demands by investing more budget into this area. Therefore, it could be seen that the notion of several positive traits of CALL and its limitations in an English language classroom have been addressed. Still, researchers seem to agree that further studies on the use of CALL in Thai EFL context would probably be necessary. (Intratat, 2007; Khamkhien, 2011; Prapinwong and Puthikanon, 2008; Thajakan and Sucaromana, 2014) Additionally, there is still a demand for research in pronunciation teaching within the Thai EFL context. (Khamkhien, 2010b; Kretsai, 2015) Considering the positive results from previous research on using CALL for pronunciation teaching within Thai EFL context such as the work by Kretsai (2015) and Thajakan and Sucaromana (2014), it seems reasonable that the idea of using CALL for pronunciation teaching could possibly benefit from further studies.

### **The Programme: Clear Pronunciation 1**

Clear Pronunciation 1 is an English language learning software developed by Clarity Language Consultants Limited. The company, usually known by the name ClarityEnglish, introduced the software in 2010 as part of the series 'Clear Pronunciation'. Clear Pronunciation 1 (CP1) is a software that focuses on individual sounds whereas Clear Pronunciation 2 (CP2) focuses more on speech. CP1's

pedagogical purpose was to help language learners with their pronunciation of 43 English phonemes, with the target group being the students from elementary to intermediate level. (Clarity Language Consultants, 2016a) The programme itself was purchased by the University of Surrey in 2011. It was used as an extension for learners who need more practice in their pronunciation, especially those who enrolled in a preparatory course for a college-level study. It was claimed that, by learning and practising 43 English phonemes, learners would improve their abilities to pronounce and detect the sounds in English language. (Clarity Language Consultants, *ibid.*) The software was primarily designed as a supplementary resource for a teacher-led course. (Clarity Language Consultants, 2016b) It can be used as an exercise in the classroom or a self-study programme for learners to continue practising at home. Stokes, the co-founder of ClarityEnglish and an EFL teacher, has noted that the pedagogical approach of the programme was mainly based on 'enlightened eclecticism'. (Stokes, 2016) He explained that the authors of the programme were all experienced in the field of English language teaching and they tended to utilise methods that had worked well in a practical classroom. (Stokes, *ibid.*) The programme provides audio clips and videos which act as a language input for the sounds and pronunciation models (in four different accents) for learners. With an add-in recorder, it could allow learners to assess their pronunciation in comparison to a consistent native or native-like model. The self-access programme also allows learners to practise at home. When there is no time constraint, unlike in the classroom, they can repeat the process as many times as they wish until they feel confident. (Clarity Language Consultants, 2016b) Stokes (2016) suggested that pronunciation could be more suitable for learners to practise independently. He explained that some learners have a fear of embarrassment. By using the programme, they can make mistakes without getting embarrassed in front of their peers. However, he is also aware of the fact that this programme has some limitations. For example, it has also been stated that the programme cannot give detailed feedbacks like a human teacher. (Stokes, *ibid.*) In a pilot study conducted by ClarityEnglish in Tanzania, it was found that although some participants were satisfied with the programmes, the majority has made very limited use of the programme due to insufficient technological and language capacity. (Clarity Language Consultants, 2015) Additionally, Stokes (2016)

has stated that there is no evidence of any research papers investigating the effectiveness of this programme.

In summary, pronunciation has been accepted as one of the skills that should be taught in an English language classroom. The principles that are seemingly endorsed by EFL practitioners include the notion of both segmental and suprasegmental features of the language as well as the primary goal of achieving intelligibility. Until now, researchers and practitioners in this field of study have been working towards the solution of how pronunciation teaching could be successfully implemented. During this period, computer-assisted language learning (CALL) has been introduced to the scene of ELT as an optional language learning tool for learners and pronunciation teaching was benefited from CALL as well. Researchers and programme developers have tried to integrate the use of technology into the pronunciation classroom in many different ways. However, in the end, despite the possible benefits CALL could bring to the classroom, there are some limitations which need to be addressed. Thus, CALL seems to be regarded as a supplementary resource to a teacher-led course, providing alternatives for learners who prefer specific learning styles as well as a solution for a learning environment with limited time and physical constraints. For Thai EFL learners, a linguistic distance seems to be a big obstacle in their pronunciation learning. Despite the fact that many efforts have been made to identify the contributing factors and possible solutions have been suggested, the pronunciation problems of Thai EFL learners persist. Many researchers encourage the policy-level or sociocultural changes, but those long-term national scale changes cannot be easily achieved. Thus, some researchers have tended to give focus to devising a new teaching method or integrating tools and technology into a classroom. CALL was also one of the options that were explored. While there were several advantages and limitations discussed, Thai EFL teachers and researchers both seem to recognise the potential of CALL in pronunciation teaching and are trying to come up with possible ways to overcome the limitations. With a rapid technological advance in this era, a considerable number of language learning software packages would probably be developed and that could give more choices for EFL teachers. Among them, Clear Pronunciation 1 appears to be a reasonable choice. It consists of features including: audio recordings of native/native-like pronunciation

models, videos as visual aids, instructions of articulation of the sounds and an inclusion of English phonemic symbols. It provides learners with consistent native/native-like pronunciation models which are suitable for an environment with limited exposure to English language such as the Thai EFL classroom. It could also act as a substitute for teachers who are not comfortable with a role of pronunciation model. It offers a self-access system which learners could use outside of the classroom, enabling them to practise their pronunciation at any time. The self-access system could possibly alleviate a problem of time constraint, usually presented in a huge class like in Thailand.

Learners who have a fear of embarrassment might also exploit this software to practise on their own without feeling embarrassed when they make mistakes. Overall, it seems like a potentially useful pronunciation learning programme for Thai EFL learners.

Therefore, as some Thai EFL researchers suggested that there are very limited studies on the use of CALL in Thai EFL context, especially in pronunciation classes, and further studies could significantly benefit the Thai EFL scene. Also, substantial materials resource and technical support are provided by the School of English and Languages, University of Surrey. This could probably be a good opportunity to assess the effectiveness of an IT software in pronunciation teaching in a Thai EFL context, investigate the learners' perception of using it and explore a possibly new tool for improving pronunciation teaching in Thailand.

### Chapter 3: Methodology

This research uses mixed methods, a combination of quantitative and qualitative method in research. Cohen, Manion and Morrison (2011) described that the idea of mixed methods was primarily driven by pragmatism. In this study, the practical implication (or rather pedagogical implication) is considered as a critical factor. The results will not be useful if it cannot reflect a real context. In an authentic classroom, there are various undetermined factors affecting the implication. The notion of triangulation in data analysis could provide different results for discussion and increase the overall validity of the research. (Cohen, Manion and Morrison, *ibid.*) The adoption of mixed methods in this study aims to cover as many different viewpoints as possible, increasing the validity of the research. The data collection tools used in this study include paper tests (in the form of pre/post-tests) and questionnaires with open-ended questions. Best and Kahn (2006) proposed that the selection of appropriate methods (quantitative/qualitative) also depends on the type of data. In this case, paper test results would provide quantitative data while the questionnaires would generate qualitative data. Thus, using each method to analyse compatible sets of data should probably be plausible. In addition, this research is conducted as a longitudinal study. As Cohen, Manion and Morrison (2011) mentioned, longitudinal studies involve an observation of a sample over a period of time. It can provide in-depth and more comprehensive data allowing more accurate analysis. It also enables researchers to observe growth and changes and even establish causal relationships between the associated factors. (Cohen, Manion and Morrison, *ibid.*) The procedure of this study includes assessing the changes in the participants' pronunciation capacity as well as their perception before and after using the pronunciation learning programme. Thus, longitudinal framework appears to be a suitable choice. It could give a researcher an insight of how the changes might have occurred during the study and help determine the factors behind them.

## Research Participants

The eligibility criteria for the participants are: 1) being a Thai postgraduate student at the University of Surrey 2) speaking Thai language as a native language 3) having been informed about the study and having an interest in it.

Five participants whose personal and language background match the eligibility criteria will be invited to take part in the study on a voluntary basis. They will take part in five English language lessons to improve their pronunciation.

## Research Tools

### Pronunciation Learning Software: Clear Pronunciation 1

The software 'Clear Pronunciation 1' (CP1) is the core of this study. It includes a brief introduction in forms of video clips and in-app exercises to provide learners with general ideas of what will be covered in the programme. However, the instructions on how to use the programme are provided in an electronic manual. In this study, the teacher will study the manual and demonstrate the learners how to operate the programme. The combination of in-app introduction and teacher instructions will be used to ensure that the learners will be able to use the programme to its full capacity.

This programme contains 25 units. Each unit contrasts two sounds such as /e/ - /æ/ and /j/ - /tʃ/. In this study, the learners will focus on one particular unit, unit 9 which contrasts the sounds /ð/ and /d/. The first exercise demonstrates each sound independently. There are videos and audio recordings of model speakers pronouncing the sounds, both in isolation and individual words. The samples will include the phonemes in initial, middle and final positions. Learners may listen and try to imitate the sounds as demonstrated by the models. They can also learn about the articulation of the sounds from the animations with the description on how to make those sounds.

The second exercise provides learners' with audio recordings of the sounds in sentences. Similar to the first exercise, learners may listen and imitate the sounds, but in the form of sentences.

The third exercise involves the sound discrimination task. Learners will listen to audio recordings and try to identify the target phonemes. After completing the task, they may use the in-app recorder to assess their pronunciation against the models and practise as much as they want.

The fourth exercise demonstrates the target sounds in a real-world context. They will listen to a narration of someone describing a photograph. The target sounds will repeatedly be used in the text. Learners will try to identify the words and complete the written 'filling-the-gap' task. Stokes (2016) claimed that although practising particular sounds might not be naturally communicative, an inclusion of communicative activities could still be useful.

The final exercise will be the International Phonetic Alphabet (IPA) test. Learners' will test their knowledge of English phonemic symbols. The inclusion of this feature should allow learners to use phonemic transcription in dictionaries for their pronunciation practice. (Clarity Language Consultants, 2016a) Also, Stokes (2016) mentioned that learning the IPA is clearly useful and practical for pronunciation training even though it does not involve any communicative activities.

### **Lesson Plan**

The lesson plan was designed based on the syllabus of the programme 'Clear Pronunciation 1'. The researcher decided to add nothing more than introductory sessions and assessment to the course, since the study's main purpose was to investigate the effectiveness of the programme on pronunciation learning. Thus, aside from the programme, the participants will learn how to improve their pronunciation with the least amount of teacher's intervention possible.

There will be five 15-minute one-to-one lessons held over the span of 2 weeks. The first lesson will involve a pre-test and introduction to the programme. The second lesson will be about the English phonemic symbols. The researcher will take a role of a teacher and introduce the concept of phonemic symbols and how to use them to the participants. This particular lesson will utilise the teaching materials from British Council (2015) and Englisch-hilfen.de (2016). The participants will then go through the exercises in the programme in the third and fourth lesson. Then, in the final lesson, they will be

asked to take a post-test and complete a questionnaire on their perception on the use of the programme.

### **Pronunciation Test**

There will be a pre-test and a post-test. The tests will be administered in the first and final lesson. The format will be a speaking and listening test. The main purpose of the test is to examine the change in participants' pronunciation capacity.

The test was divided into three parts. The first part contains 25 words list. The participant will be asked to read them aloud and their pronunciation will be recorded and assessed. This part aims to test the ability to pronounce the target sounds in words accurately. The second part aims to test the ability to detect the target sounds in words. The audio recordings retrieved from Oxford Learner's Dictionaries (Oxford University Press, 2016) will be played. The test taker will be asked to circle the words they heard from the recordings. In the last part, there will be a short text. The test taker will be asked to read the text aloud and they will be recorded and assessed by the researcher. This part will test the ability to pronounce the target sounds in connected speech. Each part contains 25, 15 and 10 items respectively, making the total score of 50.

### **Pronunciation Test Key**

The key will take the audio recordings and phonemic transcriptions from Oxford Learner's Dictionaries (Oxford University Press, 2016) as references.

### **Research Log**

The research log is a note from the researcher's observation during the whole course of study. It includes the researcher's comments on each participant's behaviour, opinions and reactions expressed during the study sessions. It was employed to track the changes and progress from the researcher's viewpoint. It could possibly help to identify how the development occurred and what are the factors behind them.

## **Student's Perception Questionnaire**

The questionnaire was designed to investigate the participant's attitude towards the programme CP1 and its application in pronunciation learning. The questionnaire was divided into two parts. The first part will examine the learner's English language learning background. Prior experience and their perception towards pronunciation learning will be noted. Then, in the second part, the learner will be asked about his/her opinions towards the programme CP1 and its application in pronunciation learning. Every questions are open-ended. The participants will be asked to provide as much detail as possible. This will allow detailed information to be collected and enable an in-depth analysis of the data.

## **Data Collection**

The data collection procedure will be carried out on the University of Surrey campus. The procedure involves five one-to-one study sessions (for each participant) held over two weeks.

### **Quantitative Data Collection**

The pronunciation test administered in the form of pre/post-test is the method used for data collection. The main purpose is to investigate the effectiveness of the programme CP1 on improving the learners' pronunciation ability and phonemic awareness. The format of the test will be a speaking and listening test. The test taker's performance will be audio recorded and the marking will be done by the researcher. Both the pre-test and post-test will use the same paper. Both pre-test and post-test results will be available for the test takers at the end of the data collection process.

The test is an achievement test. It was designed to measure learners' progress after they have completed the syllabus. (Harmer, 2007) The rationale for using the same test paper in this study is to achieve accurate results. This type of repeated measurements is suitable for determining changes in the subjects. (Best and Kahn, 2006) If the learners show better performance in the same tasks, it would probably mean there is some improvement after the lessons. Also, the participants may consider the tests as 'low-stakes' because the results only serve as a reflection of their ability and

hold no other meanings. As Cohen, Manion and Morrison (2011) mentioned, unethical incidence such as specific preparation for the test is unlikely to happen in low-stakes tests. Thus, the test results should validly reflect the participants' language development. However, the most important limitation of this test is a lack of inter-rater reliability. The entire process of the study was performed by the researcher alone. A lack of a second marker makes it impossible to assess this issue. Thus, it could undermine the liability of the result.

### **Qualitative Data Collection**

The open-ended questions will be used in the questionnaire to allow the participants to give their opinions freely. The goal of this part of the study is to examine the learners' perception towards the use of the programme CP1 and the use of IT software in pronunciation learning. The detailed responses are sought because there are many possible factors involved. Open-ended questions are suitable for this type of complex investigation. (Cohen, Manion and Morrison, 2011)

The research logs are used to track the progress and changes occurred during the sessions from the researcher's viewpoint. The data from research logs might be used in the discussion to identify the contributing factors and their relationship to the results of the tests and questionnaires.

## **Data Analysis**

### **Quantitative Data Analysis**

The pre/post-test results will be analysed using 'paired t-test'. The paired t-test, also known as the dependent t-test or related samples t-test, is a test which compares the means of two sets of statistical data retrieved from the same or related units at two different times, with the type of the compared data being continuous data. (Cohen, Manion and Morrison, 2011; Kent State University, University Libraries, 2016) For example, the pre/post-test with an intervention in-between is a procedure that falls into this category. (Cohen, Manion and Morrison, *ibid.*) This example resembles the procedure of this study. The dependent variables of this study are the pre-test and post-test scores which will be compared. The independent variables are the five participants

of the study. Sauro (2013) also suggested that this type of statistical tests has been shown to be quite accurate for small sample sizes. The results will be used to determine whether there is any significant improvement in the participants' test scores (which should also reflect their pronunciation ability and phonemic awareness) after they have taken the lessons.

### **Qualitative Data Analysis**

In this particular study, the qualitative data analysis was divided into two components. The first one is related to the results from quantitative data. The analysis will discuss the possible factors that contribute to the results and how they are related. The data will be retrieved from research logs and learners' responses in the questionnaire. The second part will analyse the learners' perception towards the use of IT programme in pronunciation learning. The learners' comments towards CP1 will be individually analysed and used as references. The data from research logs might be compared to the data from the questionnaires to identify any changes that might have occurred during the course.

## Chapter 4: Results

This chapter will present the findings of the study in response to the research questions.

**Research Question 1:** Do Thai EFL learners improve their pronunciation of /ð/ and /d/ phonemes after using the programme?

The results from the pre-test and the post-test are marked, tallied and calculated to find mean scores. Then, they will be compared and analysed using the paired t-test. The qualitative data from research logs and questionnaires will also be interpreted and presented.

Scores (Total 50)	Participants					Mean Scores	Standard Deviation (S.D.)
	P1	P2	P3	P4	P5		
Pre-test	15	23	29	34	18	23.8	7.791
Post-test	21	39	39	41	23	32.6	9.736

**Table 1:** Comparison of overall pronunciation test scores

Scores (100 %)	Participants					Mean Scores
	P1	P2	P3	P4	P5	
Pre-test	30%	46%	58%	68%	38%	48%
Post-test	42%	78%	78%	82%	46%	65%
Difference	12%	32%	20%	14%	10%	17%

**Table 2:** Comparison of overall pronunciation test scores by percentage

The figures shown in Table 1 indicate that there is an increase in each participant's test scores. The mean score in the pre-test is 23.8 and the post-test is 32.6, increasing by roughly 17%. The standard deviation values are 7.791 and 9.736 respectively. Then, the values are compared and analysed using the paired t-test. The p-value from the statistical test is 0.011 at 95% confidence interval. It signifies that there is a significant improvement in the pronunciation test scores of the participants which could probably reflect the improvement in their pronunciation ability.

Table 2 presents the test scores by percentage. The mean score was 48% in the pre-test and 65% in the post-test, showing 17% increase. An individual with the highest development has 32% increase in the test score, while the lowest has 10% increase.

Scores (Total 25)	Participants					Mean Scores	Standard Deviation (S.D.)
	P1	P2	P3	P4	P5		
Pre-test	2	6	14	17	4	8.6	6.542
Post-test	6	18	21	19	12	15.2	6.14

**Table 3:** Comparison of 'part 1' pronunciation test scores

'Part 1' of the test was designed to assess the participants' capacity in pronouncing the words that contain the target phonemes. In Table 3, the results show that every participants get a better result in the post-test. The mean scores increase from 8.6 to 15.2. The standard deviation values are 6.542 and 6.14 respectively. The p-value from the paired t-test is 0.019 at 95% confidence interval. It indicates that there might be some improvement in the participants' production ability of the target sounds which is the skill associated with this part of the test. It also supports the overall results presented earlier.

Scores (Total 10)	Participants					Mean Scores	Standard Deviation (S.D.)
	P1	P2	P3	P4	P5		
Pre-test	3	6	7	5	6	5.4	1.5166
Post-test	4	7	8	10	5	6.8	2.3875

**Table 4:** Comparison of 'part 3' pronunciation test scores

In 'Part 3' which was designed to assess the participants' pronunciation in connected speech, 4 out of 5 participants get a better score in the post-test. As shown in Table 3, the mean score also increases to 6.8 from 5.4. The standard deviation values are 1.5166 and 2.3875 respectively. However, in an analysis using the paired t-test, the p-value shown is 0.226 at 95% confidence interval. The fact that the p-value is greater than 0.05 means that the results may not be significant. It could be implied that

the participants' production of the target sounds, particularly in the form of connected speech, has not been improved.

From the learners' point of view, 3 out of 5 learners state that they feel they have improved their pronunciation after taken the lessons. Two learners comment that the introduction to the concept of phonemes was an important factor. In research logs, the researcher noted that 4 participants showed signs of improvement in their pronunciation.

**Research Question 2:** Do Thai EFL learners improve their awareness of /ð/ and /d/ phonemes in English speech after using the programme?

For this particular question, the analysis process will be the same as in the first question. The analysis of quantitative data will only use the test results from 'Part 2' of the test and will be presented together with the qualitative data analysis from research logs and questionnaires.

Scores (Total 15)	Participants					Mean Scores	Standard Deviation (S.D.)
	P1	P2	P3	P4	P5		
Pre-test	10	11	8	12	8	9.8	1.7889
Post-test	11	14	10	12	6	10.6	2.9665

**Table 5:** Comparison of 'part 2' pronunciation test scores

The participants' awareness of the target phonemes is assessed in this specific part of the test. In Table 5, the results show that 3 out of 5 participants get a better score in the post-test. The mean score is 9.8 in the pre-test and 10.6 in the post-test. The standard deviation values are 1.7889 and 2.9665 respectively. However, the calculated p-value from the paired t-test is 0.405 at 95% confidence interval. It probably means that the participants' phonemic awareness of the target sounds has not been improved.

According to the data from the questionnaires, 3 out of 5 learners feel that they have improved their phonemic awareness. They state that they are more 'careful' when

pronouncing the words and they are more aware of the phonemic feature in English language. In research logs, their ability to distinguish the target sounds were observed and assessed during the learning process using exercises from the programme CP1. The researcher found that 3 participants demonstrated some improvement regarding phonemic awareness.

**Research Question 3:** How do Thai EFL learners perceive the use of an IT programme in English pronunciation learning?

The learners' perception on the use of an IT programme will be taken from their answers in the questionnaire. Their opinions towards CP1 will be used as points of reference to how they could possibly perceive the use of an IT programme in learning English pronunciation.

All participants showed satisfaction towards the lessons and the programme CP1 itself, even though none of them had ever used this type of language learning software before. Also, from the data in research logs, none of the participants seems to have technical problems when using the programme. Thus, a technical issue might not be a concern. However, when asked if they would use it in the future, the responses showed mixed opinions for varying reasons. Two of the participants stated that they would use the software in the future, while the other two showed preference towards a teacher-led classroom. Another one suggested that using both of them together could be a good choice. They suggested three reasons for supporting the use of the programme: 1) the materials are engaging and entertaining, 2) they can practice at home and 3) the pronunciation models are consistent. On the contrary, the group which prefers a teacher-led course suggested that a teacher can give more useful feedbacks which cannot be given by the programme. Additionally, taking into account the quantitative data from the tests, it could be seen that both learners who favour the use of the programme showed the highest improvement in test scores, gaining 32% and 20% increase in the post-test.

Regarding the teaching methods used in the programme, it was found that every participant seems to be rather interested because they have been using imitation and audiolingual drills as pronunciation learning methods. Thus, the phonemic symbols and

articulation instructions used in the programme could offer some new ideas to them. However, their responses to the methods after using them vary. Only two learners recognised the benefits of the IPA and the articulation. Two learners were probably indifferent and gave no opinion on them. One learner was against the idea of learning the IPA, stating that it took too much time. Additionally, there were some other suggestions that seemed useful for the study. First, the self-recording feature was recognised as favourable. Two learners claimed that being able to assess their own pronunciation against the models is helpful. Second, two learners suggested that five 15-minute lessons over the span of two weeks might not be enough because they were not familiar with this type of teaching approach. Thus, it could be better if the study was conducted over a longer period. Finally, one learner suggested that the exercises in the programme should include more word samples, so there could be more variety in language input.

In conclusion, the test results show that learners might improve their pronunciation after using the programme CP1. Even though some learners may not feel like they have improved, the test results should be able to reflect their true ability regarding pronunciation. However, the improvement in phonemic awareness is still doubtful. Although three students state that they are more wary of the target phonemes, the statistical analysis shows that the test results were not significant. The reasons behind these mixed results could be found by looking at the qualitative data from research logs and questionnaires which will be discussed in the next chapter. The learners' also gave their opinions towards the use of the programme in the questionnaire and their behaviour and learning progress were also recorded in research logs. The learners', despite their satisfaction with the lessons overall, share different opinions towards the use of the programme. The causal relationship of the qualitative data and the quantitative data (i.e. test scores) will be discussed in the next chapter.

## Chapter 5: Discussion

In this chapter, the data collected from the tests, questionnaires and research logs will be discussed together to give a clear insight into the relationship between the possible contributing factors and the findings presented in the previous chapter. The purpose is to determine whether the use of IT programme could help improve English language pronunciation of Thai EFL learners. Also, the perception of Thai learners towards the use of IT programme in pronunciation learning will also be discussed.

**Research Question 1:** Do Thai EFL learners improve their pronunciation of /ð/ and /d/ phonemes after using the programme?

The pronunciation test scores were improved in the post-test. The mean score increased from 23.8 in the pre-test to 32.6 in the post-test, showing an increase of 17%. Each learner also gained higher score in the post-test. An individual score's largest increase in percentage was 32% while the least was 10%. The results suggested that there was a significant improvement in the learners' pronunciation of /ð/ and /d/ phonemes. Three possible reasons for this improvement could be discussed.

First, increased exposure to the target phonemes might contribute to the learners' development. The target phonemes were deliberately presented in unit 9 of the programme CP1. Through the audios, videos and language exercises, the learners can improve their proficiency in using the target phonemes. The results could be considered relevant to the idea proposed by Jesry (2005) that increased exposure to the target language contributes to the development of learners' pronunciation skill. Also, it appears to support the idea claimed by Mehrpour, Shoushtari and Shirazi (2016), that IT software could enhance the degree of exposure to the target language.

Second, the introduction of new teaching methods, particularly the introduction to the concept of phonemes and articulation, could probably help the learners with their pronunciation. This idea was supported by two learners' comments that these two features were helpful with their learning. Thus, as Munro and Derwing (2006) claimed, teaching the concept of segmental features such as phonemic symbols and articulation seems to have a positive effect on the learners' pronunciation. It should also be noted that every learners were not comfortable with any of these methods at the start. The

change in some learners' perception was observed at the end of the study. Apparently, this could result from the lessons they had taken.

Third, two learners commented that the use of CP1 with visual aids and audios made the lessons engaging and entertaining for them. Skinner and Austin (1999) also proposed similar that using technology in a language classroom seemed to have a positive influence on learners' motivation. As Dornyei (1998) stated, high motivation was considered a key factor in successful language learning by many teachers. Thus, using an IT software to make a lesson more motivating for learners could be a reasonable choice.

Although the results from 'part 3' of the test suggested that there are no significant changes, the fact that the mean score in the post-test (of this particular part) has increased by 14% might be used to argue that a lesser degree of changes could still be anticipated. Additionally, the connected speech was not the main focus of CP1. The inclusion of only one task in 'sounds in action' (fourth exercise of the unit) may not offer enough exposure to the suprasegmental features. Thus, the learners may need further instructions on connected speech to develop their skills properly. In conclusion, it might still be possible to state that Thai learners could improve their pronunciation of the target phonemes after using the programme.

**Research Question 2:** Do Thai EFL learners improve their awareness of /ð/ and /d/ phonemes in English speech after using the programme?

The results from 'part 2' of the test suggested that there was no significant improvement in the learners' awareness of the target phonemes. Although the mean score increased from 9.6 to 10.8, a total of 6% percent increase showed that the learners gained little improvement in this area. However, from the qualitative data, three learners claimed that they became more wary of the phonemes and the data from research logs suggested that 3 out of 5 learners showed improved phonemic awareness. Thus, the conflicting opinions on the results might be subjected to an external factor.

That factor could possibly lie in the test validity, specifically the issue of construct under-representation. Construct under-representation is an incident that might occur

when the test is too easy for the candidates. (McNamara, 2000) That definition could best describe the scenario in this study. The average score in the pre-test, specifically for 'part 2', is 65%. The number seems relatively greater compared to 'part 1' and 'part 3' which are 34% and 54% respectively. That could be the reason why learners showed little improvement since the complexity of the test was not compatible with their level. That could be the reason for conflicting results from different sets of data. As a result, due to a possible error in test design, it still remains unclear whether Thai learners have improved their phonemic awareness after using the programme.

**Research Question 3:** How do Thai EFL learners perceive the use of an IT programme in English pronunciation learning?

The data gathered from the learners suggested that they all shared a positive attitude towards the programme CP1. They thought it was a good and useful programme. However, when asked whether they would actually use an IT software such as CP1 for pronunciation learning, they seemed to have different opinions. Two of them said they would use it because the programme can provide a reliable source of language input and make the lessons more engaging and entertaining. One learner also stated that it is convenient to be able to practice at home. Two learners claimed that a teacher-led classroom should be better because they think the programme cannot give detailed feedbacks and proper instructions like a teacher. Another suggested that both methods should be used in combination to make the course effective.

The results of the study seemed to create mixed responses among the learners. However, by taking into account the statistical data from the tests, a correlation between these two sets of data can be seen. The group that answered they would use an IT software for learning pronunciation are the ones who showed the highest improvement in test scores. Each of them gained an increase of 32% and 20% in the post-test. Also, the learner who showed the least improvement, gaining 10% increase in the score, stated that he would prefer a teacher-led class to an IT software. Thus, it could possibly be implied from these results that learners' beliefs and different learning styles should be considered as a priority when choosing a teaching method because it might have a significant impact on their development.

There are some other points that should be mentioned. First, despite their different opinions on the use of an IT programme in pronunciation learning, the learners seem to recognise potential benefits of the use of an IT programme. The reliability of the pronunciation models, the engaging and entertaining activities and accessibility at home are the advantages they recognised. Some previous research also recognised these advantages. (Fitzpatrick and Davies, 2003; Khamkhien, 2011; Skinner and Austin, 1999) Second, some learners seem to be content with the self-recording feature of the programme. Being able to compare their pronunciation against the models could give them the idea on which areas they need to work on. One learner also suggested that an inclusion of larger word samples could be useful. Next, a lack of technical knowledge which was addressed by Khamkhien (2011) as a possible issue, does not appear to be a concern. Finally, some learners commented that the whole course could be more effective if they were given more time.

In conclusion, although the learners seem to be content with the programme and recognise the possible advantages, they still express different opinions on the use of an IT programme in pronunciation classroom. The primary factor could be the learners' different beliefs and learning styles. Their preference appears to have an influence on their improvement rate after using the programme.

## Chapter 6: Conclusion

This study revealed that Thai EFL learners improved their pronunciation of the phonemes /ð/ and /d/ after using the computer-assisted language learning programme. The statistical analysis of the test scores and qualitative data from questionnaires and research logs were compared. Then, three possible contributing factors were highlighted as follows: 1) increased exposure to the target phonemes, 2) introduction to the concept of phonemes and articulation and 3) engaging materials. However, it is still unclear whether the learners' awareness of the target phonemes has improved. The results from the qualitative data suggested that there might be some improvement, but the quantitative data analysis found no significant change in the test scores. The test paper's 'construct under-representation' was identified as a possible cause.

The learners' perception towards the use of an IT programme in a practical classroom elicited mixed responses. The data was retrieved from the learners' responses in the questionnaire and research logs (i.e. the researcher's observation notes). Every learners were satisfied with the programme CP1 itself. They recognise several advantages of the use of language learning software. Preferable features in the programme and suggestions for improvement were also noted. However, only two learners stated that they would use it for pronunciation learning. Various reasons were addressed including reliable pronunciation models, engaging materials and accessibility at home. In contrast, the learners who prefer a teacher-led class pointed out that a computer programme cannot give them proper feedbacks and instructions like a human teacher. These responses were then analysed together with the statistical data of the test scores. It was found that learners who prefer the use of an IT programme showed greater improvement in test scores. This finding suggests that different learning styles should possibly be taken as a critical factor when considering the use of language learning software in a Thai EFL classroom.

### Limitations of the Study

Although the results were analysed and discussed critically, there could have been at least four limitations that may have affected the results.

1. The quantitative data collection process was performed by the researcher alone. Thus, it could be subjected to errors from idiosyncrasy and subjectivity, especially when the researcher took a role of the test marker. Although reference from external sources has been used to create a list of clear scoring criteria, the marking of speaking test is still largely subjected to the researcher's own perception. Also, a lack of second marker made it impossible to attain inter-rater reliability because there were no other sets of markings to compare.

2. Test piloting is usually employed as a part of test development procedure to ensure the validity of the test before the final version is released. (McNamara, 2000) However, due to the scarcity of available test subjects and time constraint, the piloting of the test paper used in this study has not been done. An error caused by the invalidity of the test could also be seen from the results presented previously. If the test piloting has been done before the operational use, it might have affected the design as well as the results.

3. Non-response to specific items in the questionnaire (i.e. item non-response) could be an issue. As Durrant (2009) stated, item non-response may occur if the subject does not know the answer or refuses to answer. In this study, some participants did not provide answers to some questions in the questionnaire. The exact reason to non-response was uncertain, but it might have affected the results.

4. Due to practicality issues, the samples were chosen from a particular group of Thai EFL learners (postgraduate students at the University of Surrey). The results may not be able to represent a group of learners with different educational backgrounds or a different learning context. Therefore, this study might be more suitable as a case study rather than a generalisation.

5. The timespan of the study, particularly the study sessions, was very limited. Five 15-minute study sessions (a total of 75 minutes) were performed over a period of two weeks. Some of the participants also commented that they might need more time to study to improve their pronunciation. A possibility of different learning rates in different groups of language learners might be a factor to consider. (Munoz, 2006)

Therefore, it is apparently logical that the change in timeframe could possibly alter the results of the study.

### **Suggestions for Further Study**

This study intended to provide some information on the effectiveness of CALL in pronunciation learning in Thai EFL context and the learners' perception of the use of an IT programme for pronunciation learning. It was performed in a particular setting and several research limitations have been addressed. It is rather clear that there are still some research gaps that have not been covered. Here are some suggestions.

1) The sample group could be selected from learners with different educational backgrounds. It may allow the implication of the results in broader teaching context.

2) The timeframe of the study could probably be extended. As mentioned, the timeframe in this study was relatively short and a study over a longer period might yield different results.

3) The testing process should be done very carefully. Seeking help from other teachers or researchers (as co-test designers or markers) might be advisable because it could increase the reliability of the test. Also, piloting the test is highly recommended.

4) A comparison between two different pronunciation learning programme seems favourable. It would allow a researcher to compare the effectiveness of the programmes and figure out which features should be included to maximise the outcome.

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## Appendices

### Appendix 1: Lesson Plan

#### Lesson Plan

**Topic** – /ð/ and /d/ consonant sounds

**Time** – 15 minutes x 5 sessions (total of 75 minutes)

#### Aim

- Improve the student's pronunciation on /ð/ and /d/ consonant sounds
- Raise the student's awareness of the difference between /ð/ and /d/ consonant sounds

#### Objectives

- A student will be able to pronounce the words with /ð/ and /d/ consonant sounds correctly in segmental and connected speech.
- A student will be able to distinguish /ð/ and /d/ consonant sounds in segmental and connected speech.

Lesson	Topic	Teacher Activity	Student Activity	Resources
1	Pre-test Introduction	Administer the pre-test  Introduce the programme Clear Pronunciation 1 to the student with instructions on how to use it	Take the pre-test  Learn how to use the programme Clear Pronunciation 1	Pronunciation test  Clear Pronunciation 1
2	English phonemic symbols	Introduce English phonemic symbols to a student  Teach a student how to read phonemic transcription	Learn English phonemic symbols  Practise reading phonemic transcription	British Council online English phonemic chart <sup>1</sup>  Pronunciation exercises in English from Englisch-hilfen.de <sup>2</sup>
3	Clear Pronunciation 1 activities: consonants /ð/ and /d/ part 1  (Practise the sounds and Sounds in a sentence)	Monitor the activities  Provide any helps necessary	Follow instructions and complete the exercises in the programme	Clear Pronunciation 1

Lesson	Topic	Teacher Activity	Student Activity	Resources
4	Clear Pronunciation 1 activities: consonants /ð/ and /d/ part 2  (Can you hear the sound?, Sounds in action and Say the word)	Monitor the activities  Provide any helps necessary	Follow instructions and complete the exercises in the programme	Clear Pronunciation 1
5	Post-test  Student's perception questionnaire	Administer the post-test  Provide further clarification for the student if needed	Take the post-test  Answer the questionnaire	Pronunciation test  Student's perception questionnaire

**Note:** 1) British Council online English phonemic chart<sup>1</sup>

Available at:

[https://www.teachingenglish.org.uk/sites/teacheng/files/TEphonemic\\_GreyBlue2\\_0.swf](https://www.teachingenglish.org.uk/sites/teacheng/files/TEphonemic_GreyBlue2_0.swf)

Accessed: 25 July 2016

2) Pronunciation exercises in English<sup>2</sup>

Available at: [http://www.englisch-hilfen.de/en/exercises\\_list/aussprache.htm](http://www.englisch-hilfen.de/en/exercises_list/aussprache.htm)

Accessed: 25 July 2016

## Appendix 2: Pronunciation Test

### Pronunciation Test

1. Please pronounce the following words correctly.

Although	Another	Breathe	Brother	Cider
Death	Due	Either	Father	Further
Moody	Mother	Northern	Odd	Other
Rather	Reader	Rhythm	Smooth	That
Their	Them	Wasted	Within	Whether

2. Please circle the words you hear from the recording.

Than	Dan	Then	Den	There	Dare
Theirs	Dares	Bother	Border	Though	Dough
This	Disc	They	Day	Booth	Booed
Thus	Dust	Soothe	Sued	Those	Dose
Worthy	Wordy	Bathing	Bedding	Breathe	Breed

3. Please read aloud the following passage correctly.

This is a picture of David's brother. His name is Ted and he is two years older than him. They live in a small house in the town. This house has only two bedrooms and one bathroom. They share one bedroom with each other. Although the room was quite small, both of them seem rather happy about it. Except for when mum tells them to clean up, then they would start arguing. So, they decide just to keep their own space clean. Everything was settled with that.

### Appendix 3: Pronunciation Test Key

#### Pronunciation Test Key

4. Please pronounce the following words correctly.

Although	Another	Breathe	Brother	Cider
/ɔ:l'ðəʊ/ /deθ/	/ə'nʌðə(r)/	/bri:ð/ /dju:/ /ɑ:ðə(r)/, /i:ðə(r)/	/'brʌðə(r)/	/'saɪdə(r)/ /'fɑ:ðə(r)/ /'fɜ:ðə(r)/
Death	Due	Either	Father	Further
Moody	Mother	Northern	Odd	Other
/'mu:di/ /rɑ:ðə(r)/	/'mʌðə(r)/	/'nɔ:ðən/ /ri:ðə(r)/	/ɒd/ /smu:ð/	/'ʌðə(r)/ /ðæt/
Rather	Reader	Rhythm	Smooth	That
Their	Them	Wasted	Within	Whether
/ðeə(r)/	/ðəm/ /weɪstɪd/ /wɪ'ðɪn/ /weðə(r)/			

5. Please circle the words you hear from the recording.

Than	Dan	Then	Den	There	Dare
/ðæn/ /ðeəz/			/den/ /deɪ/ /bu:ð/		/deə(r)/ /dəʊ/ /boəd/
Theirs	Dares	Bother	Border	Though	Dough
This	Disc	They	Day	Booth	Booed



## Appendix 4: Student's Perception Questionnaire

### Student's Perception Questionnaire

This questionnaire aims to investigate the student's perception on using the programme Clear Pronunciation 1 as a method of English pronunciation training.

Any information provided in the following questionnaire will be kept anonymous and used only for research purposes.

#### Instructions

Please write your opinion in the blank space.

#### 1. Background Information

1.1 Sex     Male                       Female

1.2 Age    \_\_\_\_\_

1.3 What was your IELTS band score?

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1.4 How long have you been learning English?

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1.5 Have you been taught pronunciation in English language classroom? Which methods were used?

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1.6 Do you think correct pronunciation is important for non-native speakers? Why?

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1.7 Have you ever used IT software for pronunciation training?

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2. Perception towards the programme

2.1 Do you think your pronunciation improved after using the programme? Please explain.

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2.2 Are you satisfied with how the lessons were conducted? Why?

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2.3 What are your opinions towards the programme Clear Pronunciation 1?

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2.4 Which part of the programme do you like the most? Which part do you do not like? Why?

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2.5 Are there anything you think should be improved or added? Please specify.

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2.6 Do you think using IT software for pronunciation training is better than classroom teaching? Will you use it in the future? Why?

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2.7 Other comments and suggestions

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*Thank you for your cooperation.*



## Appendix 6: Completed Questionnaires

### Participant 1

#### Student's Perception Questionnaire

This questionnaire aims to investigate the student's perception on using the programme Clear Pronunciation 1 as a method of English pronunciation training.

Any information provided in the following questionnaire will be kept anonymous and used only for research purposes.

#### Instructions

Please write your opinion in the blank space.

#### 1. Background Information

1.1 Sex  Male  Female

1.2 Age 32

1.3 What was your IELTS band score?

6.5

1.4 How long have you been learning English?

17 years

1.5 Have you been taught pronunciation in English language classroom? Which methods were used?

listen and copy

1.6 Do you think correct pronunciation is important for non-native speakers? Why?

I think it is important because it helps to ~~comp~~ communicate direct to the point  
Don't ~~with~~ misunderstand

1.7 Have you ever used IT software for pronunciation training?

No

2. Perception towards the programme

2.1 Do you think your pronunciation improved after using the programme? Please explain.

Yes, this programme helps me to understand more how to pronounce correctly

2.2 Are you satisfied with how the lessons were conducted? Why?

Yes, it's quite interesting.

2.3 What are your opinions towards the programme Clear Pronunciation 1?

It's new. I have never seen this before.

2.4 Which part of the programme do you like the most? Which part you do not like? Why?

Every parts seem important. I think we can avoid some parts.  
about

2.5 Are there anything you think should be improved or added? Please specify.

~~Yes~~ No

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2.6 Do you think using IT software for pronunciation training is better than classroom teaching? Will you use it in the future? Why?

I think we should use both method for better result.

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2.7 Other comments and suggestions

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*Thank you for your cooperation.*

## Participant 2

### Student's Perception Questionnaire

This questionnaire aims to investigate the student's perception on using the programme Clear Pronunciation 1 as a method of English pronunciation training.

Any information provided in the following questionnaire will be kept anonymous and used only for research purposes.

#### Instructions

Please write your opinion in the blank space.

#### 1. Background Information

1.1 Sex     Male     Female

1.2 Age    22

1.3 What was your IELTS band score?

7.5

1.4 How long have you been learning English?

10 years

1.5 Have you been taught pronunciation in English language classroom? Which methods were used?

Not that I remember.

1.6 Do you think correct pronunciation is important for non-native speakers? Why?

Yes, important ~~and~~ because it <sup>prevents the misunderstanding</sup> ~~was communication~~ that may arise.

1.7 Have you ever used IT software for pronunciation training?

NO

2. Perception towards the programme

2.1 Do you think your pronunciation improved after using the programme? Please explain.

Yes, makes me aware that there are underlying reasons of why each words are pronounced differently. i.e. phonem and diphthongs

2.2 Are you satisfied with how the lessons were conducted? Why?

Yes, not time consuming and have a clear structure.  
Also, ~~the~~ the use of video makes the lesson entertaining + makes it clearer to see the mouth shape when pronouncing + can hear own voice.

2.3 What are your opinions towards the programme Clear Pronunciation 1?

~~It is a short course that still makes~~  
Even though, it is a short course but the student will definitely be more knowledgeable about how to pronounce words

2.4 Which part of the programme do you like the most? Which part you do not like? Why?

I like the guessing the words part because it requires us to think and recall what each symbols stands for which helps with learning + its fun.  
I do not like pronouncing because I find it hard but I know it will be beneficial for me.

2.5 Are there anything you think should be improved or added? Please specify.

~~None~~

✓ I think it is good already. ~~give~~

2.6 Do you think using IT software for pronunciation training is better than classroom teaching? Will

you use it in the future? Why?

It is a  
Yes, standardize and ~~not~~ new way of teaching  
that can still keep the students engage and  
entertained. + ~~parents~~ can practice at home

2.7 Other comments and suggestions

Not that I can think of.

Thank you for your cooperation.

## Participant 3

### Student's Perception Questionnaire

This questionnaire aims to investigate the student's perception on using the programme Clear Pronunciation 1 as a method of English pronunciation training.

Any information provided in the following questionnaire will be kept anonymous and used only for research purposes.

#### Instructions

Please write your opinion in the blank space.

#### 1. Background Information

1.1 Sex  Male  Female

1.2 Age 22

1.3 What was your IELTS band score?

6.5

1.4 How long have you been learning English?

15 years

1.5 Have you been taught pronunciation in English language classroom? Which methods were used?

YES ; Just repeated after teachers

1.6 Do you think correct pronunciation is important for non-native speakers? Why?

It's important to It is important to communication

1.7 Have you ever used IT software for pronunciation training?

This is the first time

2. Perception towards the programme

2.1 Do you think your pronunciation improved after using the programme? Please explain.

Yes because I have to good teacher  
and with the useful software

2.2 Are you satisfied with how the lessons were conducted? Why?

Yes The lesson is well-prepared.

2.3 What are your opinions towards the programme Clear Pronunciation 1?

Very good

2.4 Which part of the programme do you like the most? Which part you do not like? Why?

I like ~~the first part~~. ~~Teacher show what~~  
~~am with I going to study and I don't like~~  
~~the last class~~

Nothing.

2.5 Are there anything you think should be improved or added? Please specify.

The lesson should extend to make  
the better understand.

2.6 Do you think using IT software for pronunciation training is better than classroom teaching? Will

you use it in the future? Why?

It shows the correct pronunciation.  
Teachers may make some mistake.

2.7 Other comments and suggestions

Very good program  
fun + knowledge

Thank you for your cooperation.

## Participant 4

### Student's Perception Questionnaire

This questionnaire aims to investigate the student's perception on using the programme Clear Pronunciation 1 as a method of English pronunciation training.

Any information provided in the following questionnaire will be kept anonymous and used only for research purposes.

#### Instructions

Please write your opinion in the blank space.

#### 1. Background Information

1.1 Sex  Male  Female

1.2 Age 24

1.3 What was your IELTS band score?

7.0

1.4 How long have you been learning English?

18 years

1.5 Have you been taught pronunciation in English language classroom? Which methods were used?

Imitation, listen & copy. Using talking dictionary.

1.6 Do you think correct pronunciation is important for non-native speakers? Why?

It may be ~~not~~ important. Because I can still communicate with native speakers.

1.7 Have you ever used IT software for pronunciation training?

Online Electronic dictionaries

2. Perception towards the programme

2.1 Do you think your pronunciation improved after using the programme? Please explain.

A little bit. I'm more careful when pronouncing some words.  
I pay more attention on stress and imitation.

2.2 Are you satisfied with how the lessons were conducted? Why?

Yes, because the teaching is step-by-step.  
The programme is suitable for non native speakers.

2.3 What are your opinions towards the programme Clear Pronunciation 1?

Should give more detail on samples, words to practice.  
Overall, the programme is practical for me.

2.4 Which part of the programme do you like the most? Which part you do not like? Why?

Like: Recording your sound so you can listen to it.  
Dislike: Phonemic symbols because it should take more  
time to understand the usage.

2.5 Are there anything you think should be improved or added? Please specify.

More teaching hours.

More human teaching.

2.6 Do you think using IT software for pronunciation training is better than classroom teaching? Will you use it in the future? Why?

No. Classroom teaching is better since the teacher can fix students' pronunciation more effectively.

I will use the software sometime in the future to improve my pronunciation.

2.7 Other comments and suggestions

The researcher should ~~use~~ compare this programme to another programme ~~in it~~ to see if the results changed.

Thank you for your cooperation.

## Participant 5

### Student's Perception Questionnaire

This questionnaire aims to investigate the student's perception on using the programme Clear Pronunciation 1 as a method of English pronunciation training.

Any information provided in the following questionnaire will be kept anonymous and used only for research purposes.

#### Instructions

Please write your opinion in the blank space.

#### 1. Background Information

1.1 Sex  Male  Female

1.2 Age 27

1.3 What was your IELTS band score?

6.5

1.4 How long have you been learning English?

20 years.

1.5 Have you been taught pronunciation in English language classroom? Which methods were used?

Yes. Read them out ~~loud~~ loud.

1.6 Do you think correct pronunciation is important for non-native speakers? Why?

Yes, because when you communicate to native speakers if your pronunciation doesn't clear enough they won't understand you at all because they don't familiar with Thai-accent.

1.7 Have you ever used IT software for pronunciation training?

No

2. Perception towards the programme

2.1 Do you think your pronunciation improved after using the programme? Please explain.

I'm not sure but I at least have more caution before reading or speaking.

2.2 Are you satisfied with how the lessons were conducted? Why?

Yes. This is the first time I ever used IT software for practising English. The ~~program~~ programme is much better than I expected.

2.3 What are your opinions towards the programme Clear Pronunciation 1?

The programme has many functions which I think it cover enough for the lessons, voice from various speakers, movement graphic for pronunciation, for example.

2.4 Which part of the programme do you like the most? Which part you do not like? Why?

I like the reading technique lesson because I see those letters in dictionary but never able to read one of them. Now, I can read some correctly.

2.5 Are there anything you think should be improved or added? Please specify.

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2.6 Do you think using IT software for pronunciation training is better than classroom teaching? Will

you use it in the future? Why?

I think learning with teacher is the best way but  
teacher must know the English really. Otherwise,  
the teacher actually pass wrong knowledge / techniques to  
students, especially non-native teachers.

2.7 Other comments and suggestions

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*Thank you for your cooperation.*