Chulalongkorn University
Chula Digital Collections

Chulalongkorn University Theses and Dissertations (Chula ETD)

2020

Stress patterns and metalinguistic knowledge before and after praxis intervention on the pronunciation of English derivational suffixed words by Thai learners

Chedtinee Piyapattaranop
Graduate school

Follow this and additional works at: https://digital.car.chula.ac.th/chulaetd

Part of the English Language and Literature Commons

Recommended Citation

Piyapattaranop, Chedtinee, "Stress patterns and metalinguistic knowledge before and after praxis intervention on the pronunciation of English derivational suffixed words by Thai learners" (2020). *Chulalongkorn University Theses and Dissertations (Chula ETD)*. 435.
https://digital.car.chula.ac.th/chulaetd/435

This Thesis is brought to you for free and open access by Chula Digital Collections. It has been accepted for inclusion in Chulalongkorn University Theses and Dissertations (Chula ETD) by an authorized administrator of Chula Digital Collections. For more information, please contact ChulaDC@car.chula.ac.th.

STRESS PATTERNS AND METALINGUISTIC KNOWLEDGE BEFORE AND AFTER PRAXIS INTERVENTION ON THE PRONUNCIATION OF ENGLISH DERIVATIONAL SUFFIXED WORDS BY THAI LEARNERS

Miss Chedtinee Piyapattaranop

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Arts in English as an International Language
Inter-Department of English as an International Language
GRADUATE SCHOOL
Chulalongkorn University
Academic Year 2020
Copyright of Chulalongkorn University

รูปแบบการลงเสียงหนักเบาและความรู้อภิภาษาศาสตร์ก่อนและหลังการแทรกเชิงปฏิบัติ ในการออกเสียงคำที่เติมปัจจัยหน่วยคำแปลงในภาษาอังกฤษของผู้เรียนชาวไทย

น.ส.เชษฐิณี ปิยะภัทรนพ

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต
สาขาวิชาภาษาอังกฤษเป็นภาษานานาชาติ สหสาขาวิชาภาษาอังกฤษเป็นภาษานานาชาติ
บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2563

ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Thesis Title	STRESS PATTERNS AND METALINGUISTIC KNOWLEDGE BEFORE AND AFTER PRAXIS INTERVENTION ON THE PRONUNCIATIONOF ENGLISH DERIVATIONAL SUFFIXED WORDS BY THAI LEARNERS
By	Miss Chedtinee Piyapattaranop
Field of Study	English as an International Language
Thesis Advisor	Assistant Professor Sudaporn Luksaneeyanawin, Ph.D.

Accepted by the GRADUATE SCHOOL, Chulalongkorn University in Partial Fulfillment of the Requirement for the Master of Arts

..... Dean of the GRADUATE SCHOOL
(Associate Professor THUMNOON NHUJAK, Ph.D.)

THESIS COMMITTEE

..... Chairman
(Associate Professor NATTAMA PONGPAIROJ, Ph.D.)

..... Thesis Advisor
(Assistant Professor Sudaporn Luksaneeyanawin, Ph.D.)

..... External Examiner
(Associate Professor Varisa Osatananda, Ph.D.)

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

เชษฐิณี ปิยะภัทรนพ : รูปแบบการลงเสียงหนักเบาและความรู้อภิภาษาศาสตร์ก่อนและหลังการแทรกเชิงปฏิบัติในการออกสียงคำที่เติมปัจจัยหน่วยคำแปลงในภาษาอังกฤษของผู้เรียนชาวไทย. (STRESS PATTERNS AND METALINGUISTIC KNOWLEDGE BEFORE AND AFTER PRAXIS INTERVENTION ON THE PRONUNCIATIONOF ENGLISH DERIVATIONAL SUFFIXED WORDS BY THAI LEARNERS) อ.ที่ปรึกษาหลัก : ผศ. ดร.สุดาพร ลักษณียนาวิน

งานวิจัยนี้มีจุดประสงค์เพื่อศึกษารูปแบบการลงเสียงหนักเบาและความรู้อภิภาษาศาสตร์ของผู้เรียนชาวไทยในการออกเสียงคำที่เติมปัจจัยหน่วยคำแปลงในภาษาอังกฤษ อีกทั้งยังเปรียบเทียบพฤติกรรมของผู้เรียนที่มีระดับความสามารถภาษาอังกฤษต่างกัน ทั้งในช่วงก่อนและหลังการแทรกเชิงปฏิบัติที่ผู้เรียนได้เรียนรู้และฝึกใช้กฎการลงเสียงหนักเบาของคำที่เติมปัจจัยหน่วยคำแปลงในภาษาอังกฤษ นิสิตชั้นปีหนึ่งจำนวน 30 คนเข้าร่วมเป็นกลุ่มตัวอย่างในการศึกษา ได้มาจากการสุ่มคัดเลือกและจำแนกกลุ่มตัวอย่างอย่างมีระบบเป็นสองกลุ่มตามระดับความสามารถทางภาษา คือ กลุ่มที่มีความสามารถทางภาษาระดับสูง และ กลุ่มที่มีความสามารถทางภาษาระดับต่ำ ผู้เข้าร่วมวิจัยได้อ่านออกเสียงคำหลักและคำที่เติมปัจจัยหน่วยคำแปลงในการทดสอบก่อนการแทรกเชิงปฏิบัติ การออกเสียงของผู้เข้าร่วมวิจัยจะถูกบันทึกไว้เพื่อวิเคราะห์รูปแบบการออกเสียง จากนั้นผู้เข้าร่วมวิจัยเข้าร่วมอบรมการแทรกเชิงปฏิบัติ ซึ่งกิจกรรมการเรียน คือ การดูวิดีโอเนื้อหาบทเรียนประกอบการสอนโดยผู้วิจัย พร้อมทำกิจกรรมในห้อง และรับมอบหมายการบ้าน เป็นเวลาสัปดาห์ละ 1 ชั่วโมงเป็นเวลา 3 สัปดาห์ หลังจากจบการแทรกเชิงปฏิบัติหนึ่งสัปดาห์ ผู้เข้าร่วมวิจัยอ่านออกเสียงชุดคำหลักและคำที่เติมปัจจัยหน่วยคำแปลงอีกชุด และทำแบบทดสอบความรู้อภิภาษาศาสตร์ อีกทั้งเข้าร่วมการสัมภาษณ์เกี่ยวกับพฤติกรรมการเรียนออกเสียงและความรู้เกี่ยวกับการลงเสียงหนักเบาในคำที่เติมปัจจัยในภาษาอังกฤษ ผลการศึกษาเรื่องรูปแบบการลงเสียงหนักเบาพบว่านักเรียนที่มีความสามารถทางภาษาระดับสูงสามารถออกเสียงได้ใกล้เคียงหลักการลงเสียงหนักเบาของภาษาอังกฤษมากกว่ากลุ่มที่มีความสามารถทางภาษาระดับต่ำ รูปแบบการลงเสียงที่ผิดแสดงถึงอิทธิพลทั้งจากภายในภาษาของผู้เรียนและอิทธิพลระหว่างภาษา ผลการศึกษาพฤติกรรมของผู้เรียนในช่วงก่อนและหลังการแทรกเชิงปฏิบัติแสดงว่าความสำเร็จในการเรียนขึ้นอยู่กับปัจจัยที่เกี่ยวข้องกับผู้เรียนแต่ละคน เช่น แรงจูงใจ เวลาในการสัมผัสภาษา รวมทั้งระยะเวลาในการฝึกใช้กฎและการฝึกออกเสียงนอกห้องเรียน ผลจากแบบทดสอบความรู้อภิภาษาศาสตร์แสดงว่าผู้เรียนสองกลุ่มมีความรู้อภิภาษาศาสตร์ต่างกัน กลุ่มผู้เรียนที่มีความสามารถทางภาษาระดับสูงใช้ความรู้เรื่องระบบหน่วยคำในระบบเสียงมาก ในขณะที่กลุ่มที่มีความรู้ทางภาษาระดับต่ำจะใช้ความรู้เรื่องระบบหน่วยคำหรือระบบเสียงแค่อย่างใดอย่างหนึ่งเท่านั้น ผลการศึกษาพบว่าสื่อการสอนที่ใช้ในงานวิจัยนี้เป็นประโยชน์ต่อการเรียนรู้การออกเสียงคำในภาษาอังกฤษ ผู้วิจัยเสนอแนะแนวทางด้านการสอนในชั้นเรียนภาษาอังกฤษเกี่ยวกับเรื่องระบบเสียงและการออกเสียงภาษาอังกฤษ

สาขาวิชา	ภาษาอังกฤษเป็นภาษานานาชาติ	ลายมือชื่อนิสิต .....
ปีการศึกษา	2563	ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

6087505720 : MAJOR ENGLISH AS AN INTERNATIONAL LANGUAGE
KEYWORD: stress patterns, metalinguistic knowledge, suffixed words, praxis intervention, Thai learners

Chedtinee Piyapattaranop : STRESS PATTERNS AND METALINGUISTIC KNOWLEDGE BEFORE AND AFTER PRAXIS INTERVENTION ON THE PRONUNCIATIONOF ENGLISH DERIVATIONAL SUFFIXED WORDS BY THAI LEARNERS. Advisor: Asst. Prof. Sudaporn Luksaneeyanawin, Ph.D.

This research study investigated the stress patterns and metalinguistic knowledge of Thai learners on the pronunciation of English derivational suffixed words. The study compared how the learners performed before and after the praxis intervention, where the stress placement rules of English suffixed words were explicitly taught and trained. Thirty first-year university students were selected by stratified random sampling based on their proficiency levels and were grouped into the high and low proficiency groups. They took the pre-test which was the read aloud task of the base and the suffixed words. Their performance was recorded, and the stress patterns were analysed. Then, they joined the three-week praxis intervention sessions which included the video lessons, classroom activities, and homework assignments. Within a week after the praxis intervention, the participants took the post-test by performing the read-aloud task which included another list of the base and the suffixed words, and then they did metalinguistic knowledge elicitation task. The participants were further interviewed after the post-test. They reflected on their learning performance and provided their metalinguistic knowledge regarding stress placement of English suffixed words. The results of the stress patterns revealed that the high group performed the patterns which were in agreement with the English accentual system more often than the low group. The stress error patterns performed by the Thai learners revealed the intralingual and interlingual influences. The results of learners' performance, before and after praxis intervention, showed that level of achievement in their learning was dependent on many factors such as motivation, time of exposure, and time practicing the rules and pronunciation. The results from the metalinguistic knowledge elicitation task revealed different metalinguistic knowledge between the high and low proficiency groups. The highly proficient learners used morphophonologically oriented knowledge more than the less proficient learners who used either morphologically or phonologically oriented knowledge more. The low proficient learners also gave numerous impressionistic answers. The findings exhibited that teaching materials and praxis intervention can help enhance metalinguistic knowledge and contribute to English language teaching and learning. The study also provides pedagogical implications for English language classrooms regarding English phonology and English pronunciation.

Field of Study:	English as an International Language	Student's Signature .....
Academic Year:	2020	Advisor's Signature .....

ACKNOWLEDGEMENTS

Throughout the journey of conducting this research study, I received a great deal of support and assistance from many individuals. I would like to thank all of them for being a part of the success of my thesis.

First and foremost, I would like to express my deepest gratitude to my advisor, Assistant Professor Dr. Sudaporn Luksaneeyanawin for her guidance, generous support, and dedicated involvement in every stage throughout this journey. I am so grateful to her for broadening my horizons in the academic world and giving such valuable advice about life, which inspired me enormously. I would also like to extend my appreciation to my committee members, Associate Professor Dr. Nattama Pongpairoj, and Associate Professor Dr. Varisa Osatanandha for their insightful comments, suggestions, and encouragement.

I also wish to thank all the professors in the EIL program and the special lecturers for providing extensive knowledge about Linguistics, English Language Instruction, and English Language Assessment and Evaluation. I appreciate every moment studying in the EIL program where I gained considerable knowledge, experiences, and opportunities I could not have found anywhere else. I am also thankful to all the EIL staff members who always supported and helped me during the thesis process as well as during my time as a teacher's assistant. Thanks to all EIL professors, EIL staff and my fellow teachers' assistants. The experiences and skills that I learned during my time as a teacher's assistant were precious and memorable.

Thanks are also extended to the participants in this research study for their enthusiastic contribution and dedication in completing the tasks along with joining the praxis intervention. I must also thank all the professors and lecturers at Kasetsart University for allowing me to collect data from the students in their classrooms. Without them, this research study could not have been accomplished.

Finally, I would like to thank my beloved family for always supporting and encouraging me throughout all the years of study. Thank you for believing in me. I am also thankful to my dear friends and EIL fellows for showing their boundless support and friendly encouragement. Finally, I extend my thanks to all of those who were always there and reminded me that I was never walking alone on this journey. Thank you.

Chedtinee Piyapattaranop

CHULALONGKORN UNIVERSITY

TABLE OF CONTENTS

Page

ABSTRACT (THAI) iii

ABSTRACT (ENGLISH) iv

ACKNOWLEDGEMENTS v

TABLE OF CONTENTS vi

LIST OF TABLES xi

LIST OF FIGURES xiv

CHAPTER 1 INTRODUCTION 17

1.1 Background of the study 17

1.2 Research questions 21

1.3 Objectives of the study 21

1.4 Hypothesis statements 21

1.5 Scope of the study 22

1.6 Definition of terms 22

1.7 Significance of the study 25

1.8 Limitations of the study 25

CHAPTER 2 LITERATURE REVIEW 27

2.1 Morpho-phonological aspect on English affixation 27

2.2 Accentual rules of English suffixed words 27

2.3 Accentual system of Thai syllabic words 31

2.4 Phonetic correlates of stress in Thai on the stress placement in English words 32

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

2.5 Studies of language learners' problems....34
2.5.1 Contrastive analysis....35
2.5.2 Error Analysis....37
2.5.3 Interlanguage....39
2.5.4 Interlanguage and Phonology....40
2.5.5 Factors affecting L2 learners' production of English....42
2.6 Metalinguistic knowledge....45
2.7 Previous studies on the production of suffixed words regarding stress placement....46
CHAPTER 3 METHODOLOGY....50
3.1 Research Design....50
3.2 Participant Selection....52
3.2.1 The instrument: An online survey....52
3.2.2 The procedure for selecting participants....53
3.3 The pronunciation tasks of suffixed words....54
3.3.1 The instrument: Read-aloud tasks of suffixed words in isolation....54
3.3.2 Pre-test and the post-test procedures....58
3.4 Praxis intervention....59
3.4.1 The Instrument: Video lessons on the pronunciation of suffixed words..59
3.4.2 The instrument: Computer-aided designed assignments....61
3.4.3 Praxis intervention procedures....63
3.5 Error analysis....63
3.6 Metalinguistic knowledge....65
3.6.1 The instrument: Metalinguistic knowledge elicitation task....65

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

3.6.2 The instrument: List of interview questions regarding the participants' performance 65

3.6.3 Metalinguistic knowledge elicitation procedure 65

3.7 Analysing data 66

3.7.1 Quantitative analysis of data 66

3.7.2 Qualitative analysis of data 67

CHAPTER 4 FINDINGS AND DISCUSSION 68

4.1 Mispronunciation 68

4.2 Pronunciation of suffixed words with more than four syllables 69

4.3 Pronunciation of suffixed words with error patterns 73

4.3.1 Disyllabic words 74

4.3.1.1 Pattern (| -) 74

4.3.1.2 Pattern (- |) or (| |) 78

4.3.2 Trisyllabic words 80

4.3.2.1 Pattern (| - -) 80

4.3.2.2 Pattern (- | -) 85

4.3.2.3 Pattern (- - |) or (| - |) 88

4.3.3 Tetrasyllabic words 92

4.3.3.1 Pattern (- | - -) 92

4.3.3.2 Pattern (- - | -) or (| - | -) 97

4.4 Comparison of performance by the high proficiency and low proficiency students 100

4.4.1 Students' performance 100

4.4.2 Results from the interviews regarding students' achievement in learning and performing the stress patterns of English suffixed words 104

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

4.4.2.1 Achievers with high gained scores 104

4.4.2.2 Achievers with moderate and low gained scores 105

4.4.2.3 Non-achievers 106

4.5 Metalinguistic knowledge study 108

4.5.1 Results of Thai learners' explicit reasons regarding the stress placement of English suffixed words 110

4.5.1.1 Phonologically based reasons 110

4.5.1.2 Morphologically based reasons 111

4.5.1.3 Lexically based reasons 112

4.5.1.4 Morphophonologically based reasons 114

4.5.2 The results of Thai learners' explicit reasons regarding the stress placement of English suffixed words 118

4.5.2.1 Impressionistic reasons 119

4.5.2.2 Guessing 121

4.5.2.3 No response/ Irrelevant 121

CHAPTER 5 CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS 124

5.1 The main findings of the study 125

5.1.1 Stress patterns performed by Thai learners 125

5.1.2 Thai learners' performance before and after the praxis intervention 130

5.1.3 The main findings on metalinguistic knowledge 134

5.2 Pedagogical implications 136

5.3 Limitations and recommendations for future research 138

REFERENCES 140

APPENDICES 148

APPENDIX A: A survey of the study of the English language by Thai learners 149

APPENDIX B: The list of suffixed words used in the pre-test and post-test..... 160

APPENDIX C: Links to video lessons and exercises used in the praxis intervention 163

APPENDIX D: Metalinguistic knowledge elicitation task and list of..... 165

interview questions..... 165

APPENDIX E: Participants' pronunciation of suffixed words..... 168

VITA 234

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

LIST OF TABLES

Page

Table 1: Tonal assignment rules for English loanwords in Thai.....34

Table 2: List of suffixes, base words, and suffixed words in word list set 1 and set 2 57

Table 3: Stress patterns of pentasyllabic words with the expected pattern (- - | - -) and (| - | - -) and error patterns performed by both proficiency groups 70

Table 4: Stress patterns of pentasyllabic words with the expected pattern (- | - - -) and error patterns performed by both proficiency groups 71

Table 5: Stress patterns of hexasyllabic words with the expected pattern (- - - | - -) and (- | - | - -) and error patterns performed by both proficiency groups 72

Table 6: Stress patterns of disyllabic words with the expected pattern (| -) and error patterns performed by both proficiency groups in the pre-test.....75

Table 7: Stress patterns of disyllabic words with the expected pattern (| -) and error patterns performed by both proficiency groups in the post-test.....75

Table 8: Stress patterns of disyllabic words with the expected pattern (- |) and (| |) and error patterns performed by both proficiency levels in the pre-test.....78

Table 9: Stress patterns of disyllabic words with the expected pattern (- |) and (| |) and error patterns performed by both proficiency levels in the post-test 78

Table 10: Stress patterns of trisyllabic words with the expected pattern (| - -) and error patterns performed by both proficiency groups in the pre-test 81

Table 11: Stress patterns of trisyllabic words with the expected pattern (| - -) and error patterns performed by both proficiency groups in the post-test 81

Table 12: Stress patterns of trisyllabic words with the expected pattern (- | -) and error patterns performed by both proficiency groups in the pre-test 85

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Table 13: Stress patterns of trisyllabic words with the expected pattern (- | -) and error patterns performed by both proficiency groups in the post-test 85

Table 14: Stress patterns of trisyllabic words with the expected pattern (- - |) and (| - |) and error patterns performed by both proficiency groups in the pre-test.....89

Table 15: Stress patterns of trisyllabic words with the expected pattern (- - |) and (| - |) and error patterns performed by both proficiency groups in the post-test.....89

Table 16: Stress patterns of tetrasyllabic words with the expected pattern (- | - -) and error patterns performed by both proficiency groups in the pre-test.....93

Table 17: Stress patterns of tetrasyllabic words with the expected pattern (- | - -) and error patterns performed by both proficiency groups in the post-test.....93

Table 18: Stress patterns of tetrasyllabic words with the expected pattern (- - | -) and (| - | -) and error patterns performed by both proficiency groups in the pre-test 97

Table 19: Stress patterns of tetrasyllabic words with the expected pattern (- - | -) and (| - | -) and error patterns performed by both proficiency groups in the post-test 97

Table 20: Comparison of mean score for accurate stress patterns performed by both proficiency groups in the pre-test and post-test. 101

Table 21: Pair-sample t-test showing the significant differences within the proficiency group in the pre-test and the post-test 101

Table 22: Scores for each participant from both proficiencies ranged by the number of gained scores. 103

Table 23: Two main types of learner's metalinguistic knowledge of morphophonological rules of stress placement..... 108

Table 24: Findings on the participants' metalinguistic explanations focusing on explicit reasons..... 110

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Table 25: The finding on the metalinguistic explanation showing the morpho-phonological knowledge of the participants 117

Table 26: The findings on participants' explanations focusing on non-explicit reasons 118

Table 27: The findings on the metalinguistic explanation highlighting the percentage of Impressionistic reasons provided by the non-achievers in the low proficiency group 120

Table 28: Pair-sample t-test showing the significant differences within the proficiency group in the pre-test and the post-test 130

Table 29: Scores for each participant from both proficiencies ranged by the number of gained scores. 131

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

LIST OF FIGURES

Page

Figure 1: An image presenting the concept of interlanguage.....40

Figure 2: The procedure for the research experiment and data collection.....51

Figure 3: Screen capture of video lesson part 1.....59

Figure 4: Screen capture of video lesson part 2.....60

Figure 5: Screen capture of video lesson part 3.....61

Figure 6: Screen capture of a Seesaw classroom.....62

Figure 7: Function features in the task.....62

Figure 8: Histogram comparing the stress patterns of pentasyllabic words with the expected pattern (- - | - -) and (| - | - -) and the error patterns performed by the high and low proficiency groups.....70

Figure 9: Histogram comparing the stress patterns of pentasyllabic words with the expected pattern (- | - - -) and the error patterns performed by the high and low proficiency groups.....71

Figure 10: Histogram comparing the stress patterns of hexasyllabic words with the expected pattern (- - - | - -) and (- | - | - -) and the error patterns performed by the high and low proficiency groups.....72

Figure 11: Histogram comparing the stress patterns of disyllabic words with the expected pattern (| -) and the error patterns performed by the high proficiency group in the pre-test and post-test.....76

Figure 12: Histogram comparing the stress patterns of disyllabic words with the expected pattern (| -) and the error patterns performed by the low proficiency group in the pre-test and post-test.....76

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Figure 13: Histogram comparing the stress patterns of disyllabic words with the expected pattern (- |) and (| |) and the error patterns performed by the high proficiency group in the pre-test and post-test 79

Figure 14: Histogram comparing the stress patterns of disyllabic words with the expected pattern (- |) and (| |) and the error patterns performed by the low proficiency group in the pre-test and post-test 79

Figure 15: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (| - -) and the error patterns performed by the high proficiency group in the pre-test and post-test 82

Figure 16: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (| - -) and the error patterns performed by the low proficiency group in the pre-test and post-test 82

Figure 17: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (- | -) and the error patterns performed by the high proficiency group in the pre-test and post-test 86

Figure 18: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (- | -) and the error patterns performed by the low proficiency group in the pre-test and post-test 86

Figure 19: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (- - |) and (| - |) and the error patterns performed by the high proficiency group in the pre-test and post-test 90

Figure 20: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (- - |) and (| - |) and the error patterns performed by the low proficiency group in the pre-test and post-test 90

Figure 21: Histogram comparing the stress patterns of tetrasyllabic words with the expected pattern (- | - -) and the error patterns performed by the high proficiency group in the pre-test and post-test 94

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Figure 22: Histogram comparing the stress patterns of tetrasyllabic words with the expected pattern (- | - -) and the error patterns performed by the low proficiency group in the pre-test and post-test.....94

Figure 23: Histogram comparing the stress patterns of tetrasyllabic words with the expected pattern (- - | -) and (| - | -) and the error patterns performed by the high proficiency group in the pre-test and post-test.....98

Figure 24: Histogram comparing the stress patterns of tetrasyllabic words with the expected pattern (- - | -) and (| - | -) and the error patterns performed by the low proficiency group in the pre-test and post-test.....98

Figure 25: Percentage of accurate stress patterns performed by the high proficiency group in the pre-test and post-test..... 126

Figure 26: Percentage of accurate stress patterns performed by the low proficiency group in the pre-test and post-test..... 126

Figure 27: Percentage of all error patterns on the stress placement of English suffixed words categorized by factors causing the errors..... 129

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

CHAPTER 1

INTRODUCTION

1.1 Background of the study

Creativity is a characteristic that can be illustrated in human languages such as when small discrete units are combined to form meanings.; sounds are combined to form a word, words are composed to make phrases, and phrases are put together to become a sentence. Focusing on the word level, one morpheme, the smallest unit which contains a meaning, can be attached to another morpheme to create a new word with a new meaning or with a new grammatical function. The bound morphemes that cannot stand alone as words by themselves but rather used to add to free morphemes to form new words are called affixes. In English, the two major types of affixes are prefixes and suffixes. By attaching these affixes to words, we make new words with different meanings and, sometimes, different grammatical categories. For example, we can attach the prefix {un-} to the word 'happy' to express the opposite meaning. Further, we can add the suffix {-ness} to change the meaning of "feeling unhappy" to "the state of being unhappy" and change the word class of the word from adjective to noun. However, adding a morpheme not only changes the meaning or category of a word, but can also change the sound segments within the word. For example, the final /n/ in the prefix {-in} is changed to /r/ when attached to words starting with /r/ like 'regular', which becomes 'irregular'.

According to many studies concerning morphological knowledge in connection with phonological concepts, these two terms are seemingly related to each other. As mentioned by Szigetv´ari (2013), " the morphological structure of words often influences their phonological shape." This is exhibited when the base or stem of a word is derived by another morpheme or when words are compounded. For example, the words 'electric' and 'electrician' contain phonetic differences in

terms of both segmental (final consonant [**k**] becomes [**ʃ**]) and suprasegmental aspects (the primary stress shifts to the position before the suffix: /i**ˈlek**.trɪk/ and /ˌɪl.ekˈ**trɪʃ**.ən/). The relationship between morphological and phonological processes leads to the introduction of the term "Morphophonology".

As obvious from its name, the term morphophonology comes from the combination of linguistics terms. The first is morphology, which is the study of words and word formation. When a word is introduced into a language, the segments of sounds can be put in sequence to form a new word like [**k-æ-t**] as in 'cat' or [**æ-k-t**] as in 'act'. Apart from the string of sounds that can form a new word, the base or word that is attached by a morpheme can enter the language as a new word as well. For example, the verb 'act', when attached by a noun-making morpheme such as the suffix {-ion}, then becomes 'action', which is no longer a verb. As seen in the preceding example, a morpheme not only contains the meaning, but can change the grammatical function of the word. According to Rodman et al. (2013), two important components are needed when forming a word. The first component is knowledge about the individual morpheme, concerning its meaning and its grammatical function, as mentioned previously. Another component of morphological notion involves the rules and constraints of how morphemes can be combined. To illustrate, a morpheme cannot be attached in any random order, while one morpheme can sometimes be blocked by another morpheme. For example, the word 'unproblematic' uses the suffix {-atic}, which must be attached to the word "problem" to form the word "problem<u>atic</u>" before adding the prefix {un-} because the word "unproblem" does not exist.

The second term related to morphophonology is phonology, or the study of sound patterns, which is different from phonetics as the latter concerns the study the characteristics of sound units. Phonological notion instead deals with the

processes or systems of sound patterns that occur in different linguistic environments. The study of sound patterns concerns both segmental and suprasegmental features. The segmental features cover individual sounds such as consonants and vowels. The suprasegmental features include syllable structure, stress, rhythm, and intonation. According to Zheng (2013), phonology requires the study of both physical and psychological aspects. The physical aspect can be observed in phonetics or the features of speech sounds, while the psycholinguistic aspect studies the spontaneity of the sound system that is available in the language.

Research studies on the morphophonological aspects of derivational suffixed words have found that English language learners manifest various errors when they perform tasks involving stress placement in derivational suffixed words (Ali and Phil, 2017; Byun, 2014; Shemshadsara, 2011). An example of stress misplacement in suffixed words can be observed when English language learners produce stress patterns that do not conform to the English accentual system. For example, L1 Thai learners pronounce the word 'inspiration' like /ɪnˈ**spʌɪ**.reɪˈ**ʃʌn**/ instead of /ɪn.spɪˈ**reɪ**.ʃən/. Studies regarding learners' competence of stress placement on English polysyllabic words reveal a correlation between the learners' language proficiency and the competence of placing stress on the polysyllabic words (Isarankura, 2016; Jaiprasong and Pongpairoj, 2020). Despite previous studies, it is evident that few studies have been conducted concerning Thai learners' performance on the stress placement of derivational suffixed words. Therefore, the researcher was inspired to do this research and hypothesized that highly proficient learners would possibly perform better than less proficient learners. Moreover, the stress error patterns of English suffixed words were investigated to find and explain the factors that tended to influence learners' error patterns.

The recommendations from previous studies also concern explicit teaching regarding the stress placement rules of English suffixed words, which should be implemented in EFL instruction. The effect of explicit instruction on morphophonological awareness and English word stress has been supported by previous studies (Amer and Amer, 2011; Kuo et al., 2017; Pakjamsai and Pongpairoj, 2018), which showed that it can develop EFL learners' metalinguistic awareness and improve their performance regarding the stress placement of English suffixed words. As claimed that explicit instruction could raise EFL learners' metalinguistic awareness, some research studies have been carried out focused on the metalinguistic knowledge of EFL learners from different linguistic backgrounds (Isarankura, 2008; Ngarmwirojkit, 2012). The findings from such studies showed that learners with different linguistic backgrounds tended to use different kinds of metalinguistic knowledge. Taking this point into account, the metalinguistic awareness of Thai learners on the pronunciation of English derivational suffixed words has never been investigated. Accordingly, the researcher also investigated the metalinguistic knowledge of Thai learners with different proficiency levels to see whether there were any differences in terms of metalinguistic knowledge on the pronunciation of English suffixed words.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

The present study aimed to investigate the stress patterns of English suffixed words performed by Thai learners and compare their performance levels before and after studying and practising the rules of stress placement. This study also investigated the metalinguistic knowledge regarding the pronunciation of English suffixed words after the learners received praxis intervention including explicit lessons and practice on the stress placement rules of English suffixed words.

1.2 Research questions

1. What stress patterns of English derivational suffixed words are pronounced by Thai learners?
2. What metalinguistic knowledge governs Thai learners' pronunciation of English derivational suffixed words?
3. How do Thai learners of English perform before and after the praxis intervention where they are taught and trained in the pronunciation of English derivational suffixed words?

1.3 Objectives of the study

1. To explore the stress patterns of English derivational suffixed words pronounced by Thai learners
2. To investigate the metalinguistic knowledge of Thai learners on the pronunciation of English derivational suffixed words after they are explicitly taught and trained in the pronunciation of English suffixed words.
3. To compare how Thai learners of English perform before and after the praxis intervention where they are taught and trained to pronounce English derivational suffixed words.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

1.4 Hypothesis statements

1. The stress patterns of derivational suffixed words that Thai learners of English pronounce are varied. Learners with high proficiency show patterns that are more in agreement with the English accentual system.
2. Metalinguistic knowledge governing the pronunciation of English derivational suffixed words is different between learners with various proficiency levels.
3. After praxis intervention consisting of explicit teaching and training in the stress placement rules for English derivational suffixed words, Thai learners

tend to become more accurate in their pronunciation of English derivational suffixed words compared to their pronunciation before praxis intervention.

1.5 Scope of the study

The main focus of the present study was the suffixes which yielded the shift of stress within words, so derivational suffixes were selected as the stimuli in the tasks. All inflectional suffixes were excluded as they did not trigger a stress shift within suffixed words. Based on the classification of affixes (Katamba, 1993; Rodman et al., 2013), they can be divided into two classes according to their phonological effects on affixed words: 1) neutral and 2) non-neutral. To separate the types of suffixes very clearly, only the suffixes belonging to a neutral category or non-neutral category were selected for use in this study. The suffixes that can be both neutral and non-neutral were excluded in order to prevent confusion among the participants when they performed the test and when they were studying the rules of stress placement. Another point for the scope of this study is the stylistic variation of English. The researcher based the stress patterns on the transcriptions in British and American English dictionaries as these two varieties of English are the main forms given exposure in English language education in Thailand (Kongkerd, 2013; Nomnian, 2013; Prakaianurat and Kangkun, 2018). The stress patterns for each suffixed words had to be similar in both British and American English. Suffixed words showing different stress patterns between British and American English were not selected.

1.6 Definition of terms

- **Morpheme** refers to the smallest unit in a language which contains meaning.
- **Affixation** is the morphological process of adding a bound morpheme to the base or free morpheme in order to create a new word with a new meaning (Manova, 2014).

- **A free morpheme or the base** refers to the word element which can stand alone. It is the element before getting attached by another morpheme.
- **A bound morpheme** refers to an elementary unit which cannot stand alone as a word. It needs to be attached to the base in order to form a new word with a new meaning.
- **A suffix** refers to a bound morpheme that is attached to the end of a free morpheme or the base to form a new word or to change the grammatical category.
- **A derivational suffix** refers to a morpheme that attaches to the end of the base to form a new word and it also changes the grammatical category. A word that is derived by derivational suffixes is called a derivational suffixed word.
- **Neutral suffixes** refer to the suffixes which do not cause any stress shift when they are attached to the base; the position of stress remains the same, such as in 'happy' [ˈ**hæp**.i] and 'happiness' [ˈ**hæp**.i.nəs]
- **Non-neutral suffixes** refer to the suffixes which trigger a shift of stress to another position within the suffixed words. In this study, they are divided into three positions:

  1) Ultimate stress refers to the stress on the final syllable of the suffixed words, such as 'interviewee' [ˌɪn.tə.vjuˈ**iː**]

  2) Penultimate stress refers to the stress is on the second-to-last syllable, such as in 'addiction' [əˈ**dɪk**.ʃən]

  3) Antepenultimate stress refers to the stress is on the third syllable from the last such as in 'electricity' [ˌel.ɪkˈ**trɪs**.ə.ti]

CHULALONGKORN UNIVERSITY

- **Accent** refers to the potential position within the word that can be pronounced with stress as the primary stress and/or secondary stress. The accents within the words are shown in dictionaries with acute marks in the transcription. When mentioning the word “accentuation” or “word accent”, it means the action of putting stress or extra energy on the potential positions within a certain word.
- **Stress placement** refers to the action of putting stress on the positions within the word. Depending on the speaker, the stress might not fall only on the position of the accents due to special emphasis on the meaning.
- **Interlingual interference** refers to a type of errors as the result of language transfer. It is influenced by learners’ mother tongue or their first language when they are trying to produce the utterances of the target language (Kaweera, 2013).
- **Intralingual interference** refers to a type of error that is not influenced by learners’ first language. It comes from certain rules in the target language which the learners generate when they are attempting to produce utterances in the target language (Kaweera, 2013).
- **Praxis intervention** in this research refers to a form of action that requires the participants’ participation or practice. It aims to encourage participants’ awareness when they participate in activities or practice.
- **Explicit instruction** refers to the direct teaching method used when presenting the concepts, rules, and instructions to the learners.
- **Language awareness** refers to the conscious knowledge and understanding about forms and functions of language (Carter, 2003).

- **Phonological awareness** refers to the ability to consciously notice, identify and manipulate the sound units of spoken words at both segmental and suprasegmental levels.
- **Metalinguistic knowledge** refers to learners' explicit knowledge about the applicable rules in a language system which can be verbally explained, described, or noticed (Ellis, 2016; Isarankura, 2008; Ranta, 2008; Roehr, 2007).

1.7 Significance of the study

After studying research papers focused on errors in the pronunciation of derivational suffixed words, it was revealed that the previous studies did not show the characteristics of stress placement by L2 learners in detail (Ali and Phil, 2017; Byun, 2014; Jarmulowicz and Hay, 2009). Regarding this circumstance, the researcher anticipates that this study may shed additional light on the underlying factors or reasons why L2 learners pronounce suffixed words differently from the educated English or Standard English. The distinctively pronounced words can be used as examples of non-native English speakers' pronunciation for the benefit of clarifying the concepts of error characteristics and explaining the factors behind those characteristics. All the teaching materials that were developed and used during the period of the present study can be further implemented in an English classroom or even in self-study sessions with the aim of improving English learners' pronunciation and morphophonological knowledge regarding stress placement on suffixed words. Also, this research could be used as the basis for further studies regarding related topics as well as the teaching of English pronunciation and phonology.

1.8 Limitations of the study

There were some potential limitations in the present study. First, the derived words that were composed were not frequently used. Some types of derivational suffixes are not frequently used, and the number of words derived by certain types

of suffixes tends to be limited. It is difficult to draw all derivational suffixed words that are frequently used from the corpus. Consequently, some derivational suffixed words showed very high frequency while other words may show very low frequency. Another limitation about the task was that this study implemented a read-aloud task which required the pronunciation of isolated words. Thus, the findings in this study might show different results from studies which implemented communicative tasks. Another limitation of the present study was that the delayed post-test was not implemented in the research procedure due to the limitation of time.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

CHAPTER 2

LITERATURE REVIEW

This chapter provides information concerning the literature review related to the topic. First, it covers the morphophonological notion of derivational suffixes. The stress patterns of English derivational suffixed words and the accentual system of Thai polysyllabic words are discussed. Next, notions regarding contrastive analysis, error analysis, and interlanguage are presented. Then, a brief summary of previous studies on the pronunciation of derivational suffixed words is presented. The last part of this chapter reviews the theory regarding metalinguistic knowledge.

2.1 Morpho-phonological aspect on English affixation

When considering the phonological effect of morphemes on word pronunciation, English affixes can be divided into two classes: neutral and non-neutral. According to Katamba (1993), the affixes of neutral class do not influence phonological change when they are attached to the base, such as {-less}, {-ness}, {-ly}, etc. On the other hand, non-neutral affixes have varying phonological effects on the base such as the changing of the consonant or vowel sounds, or the shift of the primary stress position in a word attached by affixes such as {-ic}, {-ive}, {-al} and so on. Also, some morphemes can be both neutral and non-neutral. The prefix {in-} is an example of an affix which belongs to both neutral and non-neutral classes. When the prefix {in-} is attached to a word, the final sound [n] may remain unchanged, such as in the word “incomplete”, or it will be changed to become more similar to the beginning sound of the base word, such as in “irresponsible”, “impatience”, and “illegal”.

2.2 Accentual rules of English suffixed words

Due to the phonological effect of non-neutral suffixes, sound changes can occur with both segmental and suprasegmental features. The researcher was

interested in the suffixes that entail the stress shift which causes the change and phonetic complex of the pitch, length, and vowel quality of the base words. When the suffix is added and the primary stress is shifted, the features of the strong syllable that is changed to a weak syllable needed to be changed. The feature of the strong syllable is prominent. It is pronounced with a fully stressed vowel, higher pitch, longer length, and louder sound. When the primary stress is shifted, the strong syllable will turn into a weak syllable that is less prominent or unstressed, and will also be pronounced with a weak unstressed vowel, lower pitch, shorter length, and softer sound.

Many works have studied and remarked on the rules of stress placement or the accentuation of derivational suffixed words. For example, Fox (2002) described three characteristics of accentuation of affixes by stating “some may ‘attract’ the accent and others ‘repel’ it or may require the accent to be placed on a specific ‘preceding’ syllable.” To give a clearer picture, Yiemkuntitavorn (2013) categorized suffixes based on their phonological effects on stress placement in English, as follows:

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

1) The suffixes that attract stress to themselves such as, {-neer}, {-ese}, {-ette}, {-sque} and {isque} (Tarone, 1978)
2) The suffixes that shift stress to the syllable before the suffixes such as {-tion}, {-cian}, {-sion}, {-ic}, {-ial}, {-ual}, {-ian}, {-ient}, {-ous}, {-eous}, {-itive}, {-itude}, and {-meter}
3) Counting from the last syllable of the word, stress will fall on the third syllable when certain suffixes are attached such as {-phy}, {-gy}, {-try}, {-cy}, {-fy}, {-ly}, {-ty}, {-ate}, {-ize}, and {-ary}

According to the definition of the phonological characteristics of accentuation in derivational suffixed words, WalidEnglish (2013) provided the terms for each characteristic of stress placement in derived words as follows:

1) Stress attracting: Suffixes attracting the primary stress to the final syllable. These suffixes can be called ultimate stressed suffixes.

Suffixes	Examples of words and transcriptions
-aire	questionnaire /ˌkwestʃəˈ**neə**/ millionaire /mɪljəˈ**neə** /
-ee	nominee /ˌnɒm.ɪˈ**ni**:/ absentee /ˌabs(ə)nˈ**ti**:/
-eer	engineer /ˌendʒɪˈ**nɪə** / volunteer /ˌvɒlənˈ**tɪə** /
-ese	Japanese /ˌdʒæpəˈ**ni**:**z**/ Vietnamese /ˌvɪetnəˈ**mi**:**z**/
-esque	romanesque /ˌrəʊməˈ**nɛsk**/ picturesque /ˌpɪktʃəˈ**rɛsk**/

2) Stress shifting: A primary stress moves to another syllable in the stem

2.1) Penultimate stressing: The stress is shifted to the second-to-last syllable. (Essberger, 2020)

Suffixes	Examples of words and transcriptions
-ic	athletic /aθˈ**lɛtɪk**/ phonetics /fəˈ**nɛtɪks**/
-sion	revision /rɪˈ**vɪ**ʒ(ə)n/ erosion /ɪˈ**rəʊ**ʒ(ə)n/
-tion	relation /rɪˈ**leɪ**ʃ(ə)n/ participation /pɑ:ˌtɪsɪˈ**peɪ**ʃ(ə)n/

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Penultimate stressing can also occur when the suffix starts with the letters “i”, “e”, or “u” and is followed by a vowel.

“I” followed by vowels suffixes

Suffixes	Examples of words and transcriptions
-ion	generation /ˌdʒenəˈ**reɪ**ʃən/ constitution /ˌkɒnstɪˈ**tʃu**:ʃən/
-ial	essential /ɪˈ**sen**ʃəl / residential /ˌrezɪˈ**den**ʃəl/
-ian	historian /hɪˈ**stɔ**:riən/ librarian /laɪˈ**breə**riən/

“e” followed by vowels suffixes

Suffixes	Examples of words and transcriptions
-eous	courageous /kəˈ**reɪ**dʒəs/ erroneous /ɪˈ**rəʊ**niəs/

“u”followed by vowels suffixes

Suffixes	Examples of words and transcriptions
-ual	habitual /həˈ**bɪ**tʃuəl/ intellectual /ˌɪntəˈ**lek**tʃuəl/

2.2) <u>Antepenultimate stressing</u>: The stress is shifted to the third syllable from the last syllable. (Essberger, 2020)

Suffixes	Examples of words and transcriptions
- al	critical /ˈ**krɪ**tɪkəl/ physical /ˈ**fɪ**zɪkəl/
-ity	ambiguity /ˌæm.bɪˈ**gju**:əti/ humanity /hju:ˈ**mæ**nəti/

-logy	methodology /ˌmeθəˈ**dɒ**lədʒi/ sociology /ˌsəʊsiˈ**ɒ**lədʒi/

Also, antepenultimate stressing can occur when the derived words are used with the suffixes {–ate}, {-ize}, {-ise}, or {-fy} and then become words with three or more syllables.

Suffixes	Examples of words and transcriptions
- ate	legitimate /ləˈ**dʒɪ**təmət/ originate /**ə**ˈ**rɪ**dʒəneɪt/
-fy	simplify /ˈ**sɪm**plɪfaɪ/ solidify /sə**ˈlɪ**dɪfaɪ/

2.3 Accentual system of Thai syllabic words

A prosodic feature like word stress is an important feature in the English language and contains the rules or systems of the accentual position. Compared to the Thai language, it raises the question of whether Thai has its own accentual system or similar rules for emphasizing the positions within words. Some research studies have explored and examined the stressed and unstressed syllable within words in the Thai language.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Luksaneeyanawin (1983) examined the stress patterns in Thai polysyllabic words and proposed the accentual system of Thai words. The proposed system is briefly concluded as follows.

1) The last syllable of a word always contains the primary accent.
2) In monomorphemic polysyllabic words, the secondary stress will not fall on the penultimate syllable or the syllable right before the last syllable, except when the antepenultimate syllable contains a linking syllable which is always unaccented.

3) In words with three syllables or more, double stress patterns are favoured by Thai speakers. This means they prefer producing two stressed syllables, in which the final syllable of the words contains the primary stress, and another syllable is stressed as secondary stress. This statement is supported by the study of Surinpiboon (1985), which showed double stress patterns were produced more often than single stress pattern.

Naksakul (2013) also provided the accentual system of polysyllabic words in the following characteristics:

1) The number of stressed syllables attached to other stressed syllables can be as high as necessary, but can only be attached by a maximum of two unstressed syllables for an unstressed syllable.
2) The unstressed syllable never falls to the last syllable; in other words, the final syllable of the words must be stressed.
3) In case there are more than two unstressed syllables attached to a string of sounds, some unstressed syllables will be deleted or changed into stressed syllables.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

2.4 Phonetic correlates of stress in Thai on the stress placement in English words

When we compare the accentual rules of English suffixed words to the accentual system in Thai, it is shown that word stress in English and Thai are different in terms of stress typology. Word stress in Thai is always fixed on the final syllable while stress in English is free so that it is not fixed on particular syllables (Isarankura, 2016; Luksaneeyanawin, 1983; Vairojanavong, 1984). Apart from the stress typology, these two languages also show some differences in terms of the characteristics of stress. As mentioned in the above section, stress can be auditorily recognized as a complex of phonetic features such as pitch, loudness, vowel length, and vowel

quality. The acoustic and auditory correlates of the features of stressed syllables can be represented by frequency - pitch, intensity - loudness, and duration - length. Though English and Thai use the same phonetic features to recognize certain stressed syllables, the main characteristics of stress in both languages are different. According to Isarankura (2016), different characteristics of stress exist in English and Thai.

> *"The main characteristic of stress in English is the rapid change of pitch towards a relatively higher lever. On the contrary, a stressed syllable in Thai is recognizable by the longer duration of the vowel sound when compared with the same vowel occurring in an unstressed syllable."* (Isarankura, 2016: 38)

From Isarankura's statement, it can be assumed that apart from the stressed syllable of certain English words recognized by the high pitch, the specific syllables pronounced by Thai learners with a longer duration for the vowel could potentially be recognized as stressed syllables as well.

Another noticeable point regarding the correlates of stress in Thai lies in the fact that Thai is a tonal language. According to studies of stress patterns and tones in Thai concerning the stress placement of English words (Gandour, 1979; Isarankura, 2016; Jaiprasong, 2019; Limsangkass, 2009; Pongprairat, 2011; Sankhavadhana, 1989; Vairojanavong, 1984), a Thai lexical tone is assigned to every syllable in English words which are borrowed and frequently used in the Thai context. There are five categories of Thai lexical tones as follows:

1) **[kā]**	mid	"to be stuck"
2) **[kà]**	low	"galangal"
3) **[kâ]**	fall	"value"

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

4) **[ká]** high "commerce"

5) **[kǎ]** rise "leg"

Gandour (1979) proposed that the distribution of Thai lexical tones in English loanwords constrains the syllable structure. The tonal assignment rules for English loanwords in Thai are summarized in Table 1.

Syllable type	Monosyllabic words	Polysyllabic words	
		non-final position	final position
live syllable (a word that ends with sonorant consonants /ŋ/, /n/, /m/, /j/, and /w/ or syllables that consist of a long vowel (Limsangkass, 2009)).	mid	mid	mid / fall
dead syllable (a word that ends with obstruent stops consonants /p/, /t/, and /k/ or syllables that consist of a short vowel which always end with glottal stop (Limsangkass, 2009)).	low / high	high	high / low / fall

(Gandour, 1979; Isarankura, 2016)

Table 1: Tonal assignment rules for English loanwords in Thai

As previous studies reinforced that Thai tones are assigned to every syllable in English loanwords, it can be assumed that Thai learners will use Thai lexical tones to mark the stressed syllables when they pronounce English words. However, the tone assigned to a certain stressed syllable may not have a high pitch due to the constraints of syllable structure on the distribution of the tones.

2.5 Studies of language learners' problems

The study of second language learning has been explained by various theories for a long time. Behaviourism was the traditional and influential theory of

second language learning. A renowned proponent of this theory was Skinner (1948), who experimented by using an operant conditioning chamber called “the Skinner box”. The theory is based on the belief that behaviours can be learned through interaction with the environment. It concerns the responsive behaviours to the environmental stimuli which are reinforced repetitively. Accordingly, behaviourists hypothesized that humans could learn something when they repeated a behaviour until it became a habit. The same as when learning a language, it is believed that second language learners can acquire or learn a language when they imitate and practice the utterances of the target language again and again until a natural habit is formed.

In the belief that learners have the capacity to learn a language through imitation and repetition, the behavioural approach is often applied in language teaching. However, language learners still face difficulties when they attempt to produce the utterances in the language they are learning. This is likely due to their mother tongue not operating under the same concepts as the target language. Some linguistic items in learners’ first language do not occur in the target language or vice versa, leading to errors in L2 production. As a result of the difficulties faced by L2 learners caused by the interference of their mother-tongue, the contrastive analysis hypothesis arose.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

2.5.1 Contrastive analysis

The contrastive analysis hypothesis was proposed by Lado (1957). This hypothesis supposes that a comparison of a learner’s native language with the target language will help predict and explain the difficulties in language learning. The main influential factor causing learners’ problems in the contrastive analysis hypothesis is language transfer. Koutsoudas and Koutsoudas (1962) claimed that “the process of transferring to second language habits acquired through familiarity with the native language is called interference”. Interference from learners’ mother tongue may benefit or hinder them when learning a foreign language. When the linguistic items in

learners' native language and the target language are similar, it is easier for the learners to learn. In contrast, the learners might face difficulties in learning if the linguistic items in the native language and target language are different.

For the benefit of language teaching and teaching materials design, the contrastive analysis method has been applied by linguists as well as language teachers. However, the application of the contrastive analysis hypothesis is different in practice. Wardhaugh (1970) proposed two different versions for the contrastive analysis hypothesis: the strong and the weak. For the strong version, the contrastive analysis hypothesis is applied to predict the difficulties of L2 learners. Contrary to the strong version, Wardhaugh mentioned that the weak version claims to "explain observed interference phenomena" by using linguistic knowledge for support.

Even though the contrastive analysis hypothesis is applied to predict and explain the difficulties or errors in second language learning, not all errors are accounted for by this hypothesis because some errors do not result in the interference of learners' first language. That is when the hypothesis was challenged by the phenomenal theory of generative transformationalists. The most popular and well-known hypothesis was the Language Acquisition Device Hypothesis (LAD) proposed by Chomsky (1965) who believed that children's brains behaved like a CPU or the device called "LAD" in language acquisition. Its role is to generate and process input to perform the language as an output. Therefore, some errors cannot fit into the explanation of learners' L1 interference because the errors come from the learners who formulate the rules by themselves, such as the overgeneralization of regular past tense rule applied to irregular past tense verbs like 'go - goed'. With evidence of errors supported by the language acquisition device hypothesis, it can be insinuated that contrastive analysis is not enough to figure out the source of learners' problems. This leads to the practice of Error Analysis.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

2.5.2 Error Analysis

To investigate the sources of errors produced by L2 learners using error analysis, the differences between errors and mistakes should be understood clearly. According to Corder (1967), errors can be defined as incorrect linguistic forms which are systematically produced by learners, while mistakes refer to unsystematic or random forms which are linguistically incorrect by various factors such as a slip of the tongue, tiredness, or memory limitation. Error analysis is the method used for identifying and explaining the errors collected from language learners' actual production. This method can gather more sources of errors that cannot be accounted for by the contrastive analysis method (Richards, 1971).

Error analysis shows great significance for language learning and teaching. Corder (1967) provided the significance of the error analysis study in three different ways as follows:

1) *To the teachers, in that they tell their learners if they undertake a systematic analysis, how far towards the goal the learners have progressed and, consequently, what remains for them to learn.*
2) *To the researcher, they provide evidence of how language is learned or acquired, as well as what strategies or procedures are being employed during the stage of learning.*
3) *To the learners themselves, the making of errors can be regarded as a device that learners use to learn. It is a way the learners have of testing their hypotheses about the language they are learning. The making of errors is a strategy employed both by children acquiring their mother tongue and by those learning a second language.*

(Corder, 1967: 167)

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

As error analysis can cover many of the sources of errors produced by language learners, the error analysis approach is applied as a framework for investigating the sources of L2 errors. According to Corder (1974) and Ellis (1997), error analysis methods can be described in five steps as follows:

1) Collecting errors

To collect the errors that might reflect the learning process of learners.

2) Identifying errors

To identify the errors from learners' performance, it is important to compare learners' production of the correct patterns or forms in the target language.

3) Describing errors

In this step, the identified errors are described and categorized into types based on the grammatical categories or general characteristics in which the learners' production differs from the target language. Classifying errors can help researchers to diagnose learners' problems at certain developmental stages as well as to see the changes in errors over time.

4) Explaining errors

After the step of error description, this is an interesting step as the researchers need to find supportive evidence to explain the sources of errors that seem to be universally different, such as omission, overgeneralization, and language transfer.

5) Error evaluation

The last step is to evaluate how the problems affect the intelligibility of interlocution. In this case, errors are divided into two types: Global errors dealing with the overall structure and Local errors involving a single constituent.

2.5.3 Interlanguage

With the error analysis method, researchers can find and explain the sources of errors which the interlingual interference or transferring of learners' L1 to L2 utterances cannot be applied in the explanation of learners' problems, such as overgeneralization, ignorance of rule restrictions, incomplete application of rules, and false concepts hypothesized (Richards, 1971). These language behaviours are not accounted for in the linguistic structures of both learners' native language and target language. It can be assumed that these errors come from intralingual interference because the interference was caused by the rules within the target language, which were hypothesized and overused by the learners. George (1972) suggested that errors made by L2 learners might not always be part of their first language, so the intermediate processes and mechanisms of L2 learners should be considered as well. Therefore, interlanguage studies must come into play.

Interlanguage refers to the idiosyncratic language system which has been processed and developed by individual learners of a second language. According to Selinker (1972), an interlanguage structure is activated whenever language learners "attempt to produce a sentence in L2 or attempt to express meaning, which they may already have, in a language which they are in a process of learning". An interlanguage structure moves along the interlanguage continuum or the intermediate process of learners who attempt to achieve competence in the target language. To illustrate, Lennon (2009) defined interlanguage as *"a language*

intermediate between the native and the target language". Figure 1 shows the continuum of L2 learners' language.

Figure 1: An image presenting the concept of interlanguage

Frith (1978) claimed that the fossilized items produced repeatedly by L2 learners provide strong evidence of interlanguage as they are formed systematically. The interlanguage resulting in fossilized items can be influenced by different factors within or without the L2 learners as mentioned by Haggard (1967). Haggard found that "alternative language units are available to individuals and these units are activated under certain conditions". This can be substantiated by Beebe (1984), who proposed that an interlanguage is *"a natural language, and it varies like any other natural language with the sociolinguistics setting".* Major (1987) provided insight into the variation of interlanguage pattern from L2 learners' production regarding the relationship of interference and developmental factors:

> *"A very good learner will progress very rapidly, and many interference processes will never surface...while a poor learner will progress slowly and often fossilize the patterns of language."*
>
> (Major, 1987: 103)

2.5.4 Interlanguage and Phonology

Concerns relating to L2 learners' pronunciation and phonology have seemingly gained little interest or indeed been neglected in second language teaching (Tarone, 1978). As maintained by Levis (2019), pronunciation is considered the "Cinderella of Linguistics", forgotten and shut out of society, resulting in a small

number of research papers on phonology and pronunciation, as well as a minimal number of pronunciation practices in English classroom. Without concern for phonological study and the practice of pronunciation, learners may produce interlanguage utterances that deviate from the standard pronunciation of the target language. This can be illustrated by the example of the numerous L1 Thai learners who speak English with a very strong Thai accent and pronunciation, which may lead to the miscommunication between speakers because the utterances are unintelligible and incomprehensible. This can be corroborated by Limsangkass (2009) who said that "With a Thai English accent, foreigners might misunderstand, which could then lead to a communication breakdown". Pongprairat (2011) also found that only native speakers with high exposure to L2 English accents tend to be able to understand L2 accents. To promote intelligibility and comprehensibility in L2 communication, L2 learners need to be trained in the standard pronunciation of certain languages.

Mentioning the interlanguage resulting from the fossilized items of learners' speech production, Tarone (1976) provided three possible explanations for the cause of fossilization in phonology.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

1) Physiological habit formation

The habits formed when one set of sound patterns has been produced and practised for a long time could be one possible cause of phonological fossilization. Learners may find it difficult to produce a new set of sound patterns for L2 because their muscles and articulators have become used to the patterns practised and used in their L1.

2) Psychological habit formation

Krashen (1977) suggested that the learners' attempt to construct abstract theories about the language may cause fossilization. Overgeneralization can be one example of psychological habit formation when learners apply a linguistic rule in cases it is not normally applied. Tarone (1976) also claimed that language transfer is probably another cause of difficulty in L2 pronunciation, and it might form a psychological habit. To illustrate, learners may produce some sounds due to the influence of their mother tongue. They may also transfer the rules or pronunciation of those sounds into L2 production.

3) Sociolinguistic habit formation

The explanation for this type of habit formation emphasizes the lack of empathy among native speakers of a second language. Empathy plays a significant role when learners try to comprehend native speakers and adopt the pronunciation of the second language so that the native speakers can understand their message. Guiora et al. (1972) showed the improvement of L2 speakers' pronunciation when empathy among native speakers increased after they were intoxicated. As the improvement of L2 pronunciation correlates with the increasing level of empathy, it is believed that the learners who lack empathy with the native speakers, or those who do not feel like they fit in the social group may produce the fossilized patterns of pronunciation.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

2.5.5 Factors affecting L2 learners' production of English

Selinker (1972) introduced five psycholinguistic processes central to second language learning which may cause the interlanguage utterances or behaviours of the language learners as follows:

1) Language transfer is the process of the native language or mother tongue of learners influencing their performance when producing the target language, which forms interlanguage.

2) Transfer of training is the process that involves interlanguage performance as a result of the training procedure, including the teaching approaches, curriculum, and materials.

3) Strategy for L2 learning is the process that concerns the approaches that L2 learners apply to learn a language.

4) Strategy for L2 communication is the process that concerns the approaches L2 learners use when communicating with native speakers of the target language.

5) Overgeneralization of the target language structures is the process wherein the L2 learners apply overgeneralized rules to the target language with any of the grammatical features.

Richards and Sampson (1974) also provided possible factors that could influence and characterize the learning system of L2 learners as follows:

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

1) Language Transfer refers to the interference of learners' mother tongue in target language production.

2) Intralinguistic Interference refers to the interference within the learners' processing of the language such as overgeneralization, ignorance of rule restrictions, incomplete application of use, and semantic errors.

3) Sociolinguistic Situation concerns the different settings in language use, such as the variation of a language used among homogeneous groups or heterogeneous groups, including dialects, registers, and mediums of expressing information. It shows the

relationship between learners' identity and the target language community.

4) Modality occurs in the productive outcomes rather than the perceptive ones. It is like the popularity of usage by the majority of people until it turns to be universal, such as spelling pronunciation, the confusion of written and spoken styles and the pronunciation of words that have been borrowed for a long time.

5) Age is considered one of the factors that can affect a learner's language system as supported by the concept of a critical period. It is believed that children can be ideal language learners since they acquire all the abstract linguistic rules at an early point in their lives. After this period, it is more difficult for learners to acquire any concepts.

6) Succession of Approximate Systems relates to the stability of learners' language processing system which can be shown by their linguistic performance. A successful language system could influence how long a learner can maintain linguistic ability.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

7) Universal Hierarchy of Difficulty explains that some forms may be inherently difficult to learn regardless of the background knowledge of the learner. There are numerous categories of difficulty including sentence length, processing time required, and derivational complexity, as well as type of embedding, number of transformations, and semantic complexity.

Apart from these seven factors, other factors may also influence language learners' achievement in target language competence, such as motivation,

attitude, intelligence, personality, learning styles, and others (Khasinah, 2014; Sudsa-ard, 2013).

2.6 Metalinguistic knowledge

Metalinguistic knowledge refers to explicit knowledge about the linguistic rules which can be reflected by the language learners' ability to consciously or verbally explain, describe, and correct L2 errors (Ellis, 2016; Isarankura, 2008; Kim, 2018; Ranta, 2008; Roehr, 2007). It is different from implicit knowledge which is knowledge about the linguistic structures operated unconsciously by learners (Alipour, 2014).

Many research studies point out the importance of metalinguistic knowledge in language learning. Metalinguistic skills are suggested and promoted in the classroom through explicit teaching as they can create awareness of the linguistic rules and facilitate the ability to monitor, notice, explain, and correct the errors made by language learners. With metalinguistic knowledge and skills, language learners can improve their ability and achieve target language competence more effectively (Alipour, 2014; Aydin, 2018; Ellis, 2016; Kim, 2018; Kuo et al., 2017; Nazarian and Izadpanah, 2017; Tokunaga, 2014)

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

According to some research studies on metalinguistic knowledge, such metalinguistic knowledge can be obtained from language learners' verbal explanation either in written or spoken form (Isarankura, 2008; Ngarmwirojkit, 2012). Learners' metalinguistic explanations are divided into two main types of reasoning: explicit and non-explicit. Explicit reasoning means the learners' explanations are related to linguistic rules such as phonology, morphology, syntax, semantics, or pragmatics. On the contrary, non-explicit reasoning indicates the learners' explanations that are not related to linguistic rules. Isarankura (2008) provided 3 sub-categories for non-explicit reasoning including Impressionistic, Guessing/Pseudo

guessing, and No reason. Impressionistic reasoning is based on the learner's feelings, instincts, or impressions concerning certain linguistic items, while Guessing type refers to reasons from the learners' guesses or strategies that the learners use for helping them guess such as eliminating improbable choices or asking for clarification. The No reason type is when learners do not provide any reasoning by keeping silent or saying that they have no idea. Irrelevant information giving is also categorized as the No reason type.

2.7 Previous studies on the production of suffixed words regarding stress placement

Certain research studies have focused on the production of suffixed words in terms of the suprasegmental aspect. Jarmulowicz and Hay (2009) researched derivational morphophonology to explore the errors performed by the English native speakers who were, at the time of the study, in the third grade. 81 third-grade students were asked to produce derived words by combining the target suffix and the base word. The results showed that the students made more stress placement errors than segmental or syllabification errors.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Byun (2014) studied the stress shift realizations in three patterns of suffixes: stress moving suffixes (the stress moving to other positions within the base), stress carrying suffixes (the stress shifting to the suffix), and neutral suffixes (the stress staying on the same position). 31 Korean ten-graders were asked to pronounce a list of words consisting of base words and suffixed words. The results showed that the students had more problems with the words attached by stress carrying suffixes or the suffixes which cause the stress to be shifted to the suffixes themselves. The results could be supported by Jarmulowicz and Hay (2009), who found that the low frequency suffixes like stress-carrying suffixes or ultimate stressed suffixes could cause problems for learners in the pronunciation of derivational suffixed words.

Ali and Phil (2017) also worked on Pakistani learners' pronunciation of derivational affixes to explore the errors that arose. 11th graders were tested by pronouncing words ending with ten different derivational suffixes. The results from this study indicated that Pakistani learners of English had seriously poor performance on the pronunciation of derivational suffixed words. The researcher concluded that the interference of the mother tongue, as well as the inadequate teaching and training of the pronunciation skills, were the important reasons that caused such poor performance.

All the previous studies mentioned above recommended that knowledge about English word stress and stress placement rules should be presented explicitly when taught to EFL learners. To show the effect of explicit teaching in the pronunciation of derived words, Amer and Amer (2011) implemented explicit instructions and showed its role in Arab students' performance on the stress placement of English words. The students were divided into a control group and an experimental group, and they received different approaches in teaching English word stress patterns. The results showed that the experimental group that received explicit teaching had a higher level of improvement.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Kuo et al. (2017) also conducted a study comparing two types of instruction on Taiwanese learners' pronunciation of English derived words, namely communicative approaches and explicit teaching approaches. The participants were divided into three groups, with each group receiving a different type of instruction: 1) explicit teaching, 2) communicative instruction, and 3) conventional instruction. After the implementation of different approaches to instruction, the students performed oral production tasks using English derived words. The result showed that both explicit and communicative instruction could help improve students' pronunciation skills on English derived words. Finally, the study suggested that both ways of

teaching should be integrated and used in the classroom. The study also recommended future study on the comparison of effects for instruction and exposure to English on the proficiency levels of learners.

In Thai context, studies by Isarankura (2016) and Jaiprasong (2019) compared the performance on stress placement of English words by Thai learners with different proficiency levels, and the results from both studies were identical. The findings showed that the learners who had higher proficiency levels could assign stress more accurately than the learners with lower proficiency levels.

Pakjamsai and Pongpairoj (2018) conducted a study to compare the effectiveness of explicit and implicit instructions for English word stress among L1 Thai learners. 18 intermediate-level Thai undergraduate students were divided into two groups and received different teaching methods: explicit and implicit. They performed a pre-test and post-test including oral production and stress identification tasks. The results revealed that, even though both teaching methods could improve learners' competence, the explicit instruction was more effective in the oral production than the implicit instruction. Using the explicit method, the rules of target language features were presented and practised explicitly in order to raise metalinguistic awareness, which enabled the learners to apply the rules, monitor their performance, and make appropriate corrections.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

The explicit teaching method seemed to be more effective for EFL teaching and learning in the Thai context. According to Chamcharatsri (2013), English is taught in Thailand as a foreign language and is used only for specific fields such as business, technology, or education. In the end, Thai people still use Thai as their national language. Even though English is used in education, Thai learners still have problem with English communication, and one factor that is a leading problem concerns the teaching system in Thailand. Kongkerd (2013) provided some examples of the

problems caused by the English teaching system in Thailand. For example, teachers use the Thai language when providing English lessons. There is significant emphasis on grammar and accuracy rather than practical language skills, and the lack of success in adopting student-centeredness to encourage autonomous and extensive learning outside of the classroom. According to these examples, it could be implied that implicit teaching or communicative approaches might not be sufficient for teaching English to Thai learners. The explicit presentation of English language features and rules is needed to help learners understand and apply the knowledge they gain when making utterances and communicating in English. They will know how the utterances should be formed and pronounced if they learn and understand the rules. Therefore, explicit instruction has been shown to be more effective for EFL learners in oral production.

With the aim of helping Thai learners improve their English competence in the Thai context, this research focused on learners' problems and explaining the factors that may cause problems in English language learning in order to offer solutions for the problems. The three-week praxis intervention which includes explicit instruction and practices was used for developing learners' knowledge about linguistic rules and supporting effectiveness in improving learners' competence in English oral production.

CHAPTER 3

METHODOLOGY

This chapter discusses the research design and detailed procedures for the research. It provides details on the criteria of sampling and the selection of participants for the experiment, the tasks design, and the development of tools of the production tasks and the praxis intervention. It also describes how the data from the experiment are analysed.

3.1 Research Design

The research design for the present study was adapted from Piyapattaranop and Luksaneeyanawin (2019). The procedure was divided into four phases as shown in Figure 2. Each phase needed different research instruments to yield the data. The first phase shows the process of group sampling by using an online survey to select the participants for the experiment. The second phase presents the pre-test implementing the read-aloud task in which the participants were instructed to read aloud a set of suffixed words in isolation. The third phase describes the praxis intervention including the explicit instruction regarding the stress placement rules of suffixed words, which were reinforced by computer-aided lessons and exercises to enhance the metalinguistic awareness among participants. The fourth phase shows the post-test implementing the read-aloud task which contained another set of suffixed words, and the metalinguistic knowledge elicitation task. After the praxis intervention, a further interview was conducted to ask the participants to reflect on what they did during the praxis intervention. Interviewing about their performance on the stress patterns was used to elicit the metalinguistic knowledge in participants' pronunciation of suffixed words. The entire procedure of carrying out these four phases took around 10 weeks or approximately three months to accomplish. Figure 2 shows an overview of the research procedure.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

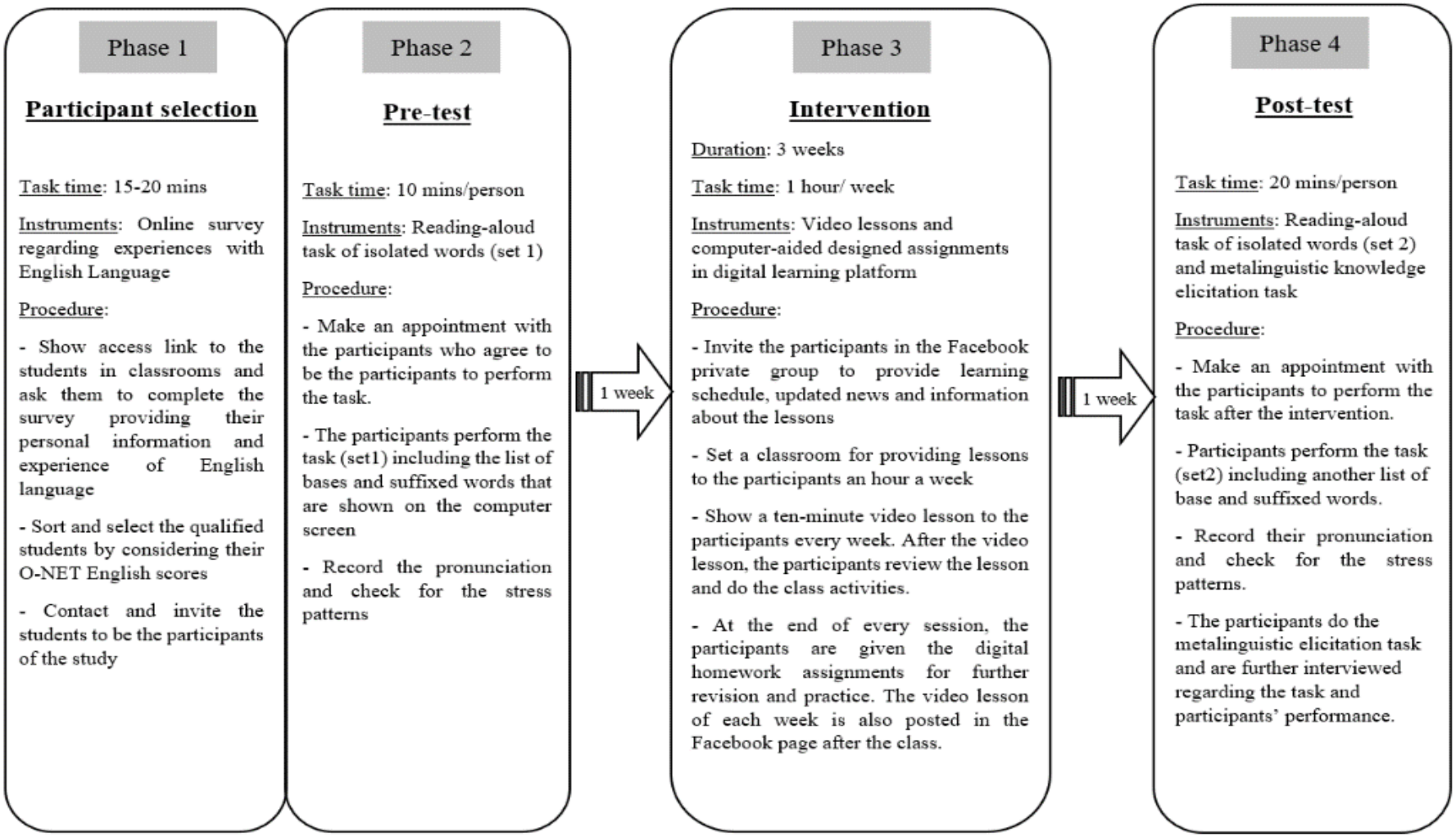


Figure 2: The procedure for the research experiment and data collection

3.2 Participant Selection

The population of the present study was selected using the systemic stratified random sampling method. The participants were selected from undergraduate students who had never taken English Linguistics courses before, especially Phonology, and had no disorders in terms of reading, listening, or speaking. Accordingly, non-English major students who had just enrolled in the university were considered the most suitable participants for the study. From among a population of 100 students at Kasetsart University enrolled in Foundation English courses during the first semester of academic year 2019, 30 students were purposively selected as participants. At the time they were tested, the participants were not taking any courses related to English Linguistics especially a course that provided Phonology lessons on stress placement for affixed words. As the researcher sought to compare the stress patterns performed by participants with different levels of English proficiency, the participants were separated into two groups: High and Low, based on their scores on an English proficiency test.

3.2.1 The instrument: An online survey

The items in the survey were derived and adapted from the questionnaire used in “Study on English in Finland 2007” which was conducted by a research team at the University of Jyvaskyla (Leppanen et al., 2011). The items from the original survey were selected for the researcher’s consideration. Some parts or items that were considered irrelevant were excluded such as the part mentioning other languages besides English and the participants’ native language, or the part relating to opinions towards English in the future. The survey items were translated into Thai, so the participants who were non-English major students would feel more comfortable completing the survey. The questionnaire (shown in Appendix A) was created in an online survey form with four parts including 27 main items by using a

survey-creating platform at Surveymonkey.com. The participants could gain access to the survey via computers or any electronic devices such as tablets or smartphones. The first part of the survey asked about the participants' background information that might be related to a language environment. The second part concerned their opinions towards the English language to see how they felt in terms of the importance of the English language. The third and fourth parts of the questionnaire focused on English language learning and the use of English in daily life, both inside and outside the classroom. The information provided in the survey was used for considering how they learned English and how much exposure to the English language they actually received.

3.2.2 The procedure for selecting participants

In this phase, the researcher applied for permission from the university and the course instructors to collect data in classrooms. The students were given the link to access an online survey relating to their experience in the English Language. In the survey, the students needed to provide their personal information, their English scores on the Ordinary National Education Test (O-NET) and their contact information. The first-year students who were not majoring in English were separated from the students from other years, ranked based on their O-NET score. Among the population of 100 students who completed the survey, 30 first-year students were selected by using the systemic stratified random sampling method based on their O-NET scores. Counting from the highest score, the first 15 students out of 100 students were contacted by the researcher to be participants in the study. The students who agreed to be part of the study were grouped into the high proficiency group. Among the high proficiency group in this study, the participants' scores ranged from 58.75 to 73 points out of 100 points. For the low proficiency group, 15 students out of 100 students counting from the lowest score were contacted to join the experiment in

the study. The students who agreed to join were grouped into the low proficiency group. The O-NET scores of the participants in the low proficiency group ranged from 16.25 to 30 points.

Some students were excluded from the criteria of participant selection if they were under eighteen years old and did not participate in all research procedure. The students who agreed to be participants in the research study could leave the research procedure at any time if they felt uncomfortable with any part of the experimental phases. In case they left; or were excluded from the experiment, the researcher would recruit another qualified student to join the experiments by using the same method as mentioned above. All participants' personal information such as names, contact information, and age was protected, and all data in every phase that the researcher obtained from the participants were reported as a whole. The participants who completed all the phases of the experiment were paid for dedicating their time to the three-month-period experiment at the end of the post-test phase. The participants who were not able to complete the entire research procedure received small gifts in appreciation of their participation in the research.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

3.3 The pronunciation tasks of suffixed words

This section covers the development of test items and instruments used in the pre-test and the post-test to elicit the data regarding stress patterns and participants' performance on the pronunciation of suffixed words. First, the researcher provides information about the test development, including the instruments and criteria for selecting the test items. Then, the procedure for the pre-test and post-test phases is explained.

3.3.1 The instrument: Read-aloud tasks of suffixed words in isolation

The present study implemented read-aloud tasks containing a list of base and suffixed words in isolation. The stimuli used in this study were the four types of

derivational suffixed words. Each type of test words varied according to the phonological effect on the primary stress within suffixed words. According to the collection of suffixes in Jarmulowicz (2002), the high-frequency suffixes of each stress pattern were selected to be attached with the base words. The suffixes used in this study were categorized by grouping them into four stress patterns as follows:

1) **Neutral stressed suffix** *refers to* a suffix that does not cause a stress shift in suffixed words. The suffixes in this type are {-ful}, {-ness}, {-less}, and {-ly}.
2) **Ultimate stressed suffix** *refers to* a suffix which draws the primary stress to the suffix itself when the suffix is attached to the base. Suffixes of this type consist of {-ee}, {-eer}, {-ese}, and {-aire}.
3) **Penultimate stressed suffix** *refers to* a suffix in which the primary stress is placed on the second-to-last syllable. In other words, the primary stress is shifted to the position before the suffix. The suffixes in this type are {-tion}, {-ial}, {-eous}, and {-ual}.
4) **Antepenultimate stressed suffix** *refers to* a suffix in which the primary stress falls on the third syllable counting from the last syllable of the suffixed word. The suffixes in this type include {-al}, {-ate}, {-ity}, and {-ify}.

After the suffixes of each stress pattern were selected, the researcher looked up for the words attached by each suffix in the British National Corpus (BNC). The two suffixed words with the highest frequency in each list of certain suffixes were selected as the test items and used in two different sets of test words. The list of test words is provided in Appendix B1. As some suffixes were not frequently used compared to other suffixes on the list, some suffixed words showed very low rates of frequency. However, they still showed the highest frequency among the words within the list shown in the corpus. The suffixed words were polysyllabic and ranged from a

minimum of two syllables to a maximum of six syllables. All the base words were content words. When the suffix was attached, the meaning of the base and the suffixed word must relate. Importantly, when the non-neutral stressed suffix was added to the base, the suffixed words should show the stress shift from the base to another position according to the stress placement rules of certain types of suffixes. Each of the 16 suffixes was attached to two base words to create 2 test words in each set, meaning there were 32 suffixed words created within one set of the test word list. Those sets of 32 suffixed words with the same 16 suffixes attached to different sets of base words were created for this study.

After the 2 sets of the test word list were created, each set was used in the different phases. The suffixed word list in set 1 contained 32 suffixed words and it was used in the pre-test. The suffixed word list set 2 containing another 32 suffixed words was used in the post-test. Table 2 shows the list of suffixed words in set 1 and set 2 along with the base words. The primary stressed syllable of each word was marked with a bold text and acute accent mark to show the phonological effect after each type of suffix was attached to the words.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Types of suffixes	suffixes	Suffixed words (Set 1)		Suffixed words (Set 2)	
Neutral	{-ful}	'beauty – 'beautiful	'power - 'powerful	suc'cess - suc'cessful	'care - 'careful
	{-ness}	a'ware – a'wareness	'ill - 'illness	'conscious - 'consciousness	'happy - 'happiness
	{-less}	'end - 'endless	'help - 'helpless	'home - 'homeless	'doubt - 'doubtless
	{-ly}	'usual - 'usually	'actual - 'actually	'probable - 'probably	par'ticular - par'ticularly
Ultimate stressed	{-ee}	'trust - trus'tee	'refuge - refu'gee	'absent - absen'tee	'train - trai'nee
	{-eer}	'mountain - mountai'neer	com'mand - comman'deer	'engine - engi'neer	'auction - auctio'neer
	{-ese}	'China - Chi'nese	Viet'nam - Vietna'mese	Ja'pan - Japa'nese	'Portugal - Portu'guese
	{-aire}	'question - question'naire	'billion - billio'naire	'million - millio'naire	'doctrine - doctri'naire
Penultimate stressed	{-tion}	'educate - edu'cation	'situate - situ'ation	'product - pro'duction	'populate - popu'lation
	{-ial}	'industry - in'dustrial	'commerce - com'mercial	'finance - fi'nancial	'office - of'ficial
	{-eous}	'outrage - out'rageous	ad'vantage - advan'tageous	'courage - cou'rageous	'instant - instan'taneous
	{-ual}	'concept - con'ceptual	'habit - ha'bitual	'intellect - intel'lectual	'contract - con'tractual
Antepenultimate stressed	{-al}	'agriculture - agri'cultural	'abdomen - ab'dominal	'politic - po'litical	'origin - o'riginal
	{-ity}	'authorize - au'thority	res'ponsible - responsi'bility	'commune - com'munity	'active - ac'tivity
	{-ate}	'triangle - tri'angulate	'different - diffe'rentiate	'certify - cer'tificate	'commune - com'municate
	{-ify}	'solid - so'lidify	'detox - de'toxify	'person - per'sonify	'object - ob'jectify

Table 2: List of suffixes, base words, and suffixed words in word list set 1 and set 2

57

3.3.2 Pre-test and the post-test procedures

To investigate the stress patterns of suffixed words performed by Thai learners of English before and after praxis intervention, a pre-test and post-test were required. In the pre-test phase, the participants were asked to perform read-aloud tasks including a list of suffixed words in set 1, which was shown on a computer screen. In the post-test, the procedure was the same, but the read-aloud tasks used in this phase contained set 2 of suffixed words consisting of all the suffixed words that were created with the same design as the pre-test. Also, the suffixed words in the post-test did not appear in the materials used in the lessons for praxis intervention.

The test words were randomly put into PowerPoint slides, one word per slide, starting with the base and its suffixed word. The list of the test words in each set is provided in Appendix B2. Each word was shown on the screen within one and a half seconds after the participants pressed the Space Bar key. The suffixed words were randomly shown to prevent participants from being aware of the following suffixed words and their stress patterns. The participants were instructed to read the words into a microphone starting from the base word followed by its suffixed word. Then, their performance was recorded and checked for the stress patterns by the researcher and the inter-rater using the auditory method. First, the researcher listened to the recorded pronunciation and used IPA transcription and some symbols to mark the stressed syllables. For words which the researcher was not sure whether it was stressed or unstressed, the researcher used the Praat program (https://www.fon.hum.uva.nl/praat/) to show the acoustic features of stressed syllables as indicated by 'intensity or loudness' (dB), 'pitch' (Hz), and 'the length of wave form showing vowel duration' (Sec.) (Limsangkass, 2009). In addition to using Praat to help and train the researcher to detect the stressed syllables, the researcher

also conferred with the inter-rater when there were discrepancies concerning the stress patterns of certain words. Judgement on the stress patterns was from the perception of the researcher and inter-rater, so it was quite subjective. The researcher and the inter-rater would listen to the recorded pronunciation again together, and then discuss it before making a final judgement.

3.4 Praxis intervention

This section describes the development of learning materials used in praxis intervention. The researcher provides the details of the instruments including the video lessons and digital assignments. After that, the procedure for praxis intervention is discussed.

3.4.1 The Instrument: Video lessons on the pronunciation of suffixed words

The video lessons in the praxis intervention phase were created by animation software for education, called PowToon (https://www.powtoon.com) to attract the participants' attention as well as to save time and costs for creating teaching materials. All three video lessons focused on different content with some drills for the participants to practise (Please refer to Appendix C).

CHULALONGKORN UNIVERSITY

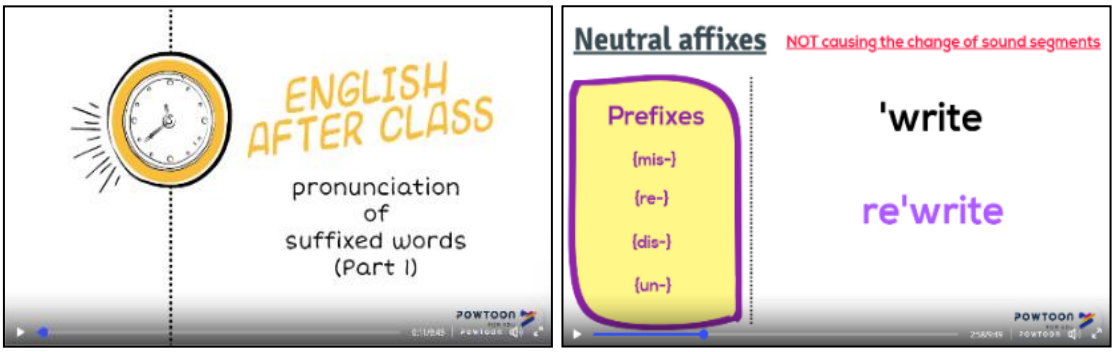


Figure 3: Screen capture of video lesson part 1

The first video introduced knowledge about affixation – how we can create new words by attaching affixes. Then, it showed the interaction between affixes and sound segments within words. Affixes including prefixes and suffixes were divided into two types: neutral and non-neutral. Some examples of affixes and words were shown and pronounced. There was a short interval between the words and the next one so that the participants could repeat the narrator's pronunciation of the suffixed words. At the end of the first video, it mentioned the change of sound segments by affixation in the suprasegmental aspect, which led to the stress patterns of derivational suffixed words in the second video. The link to video lesson 1 is provided in Appendix C.

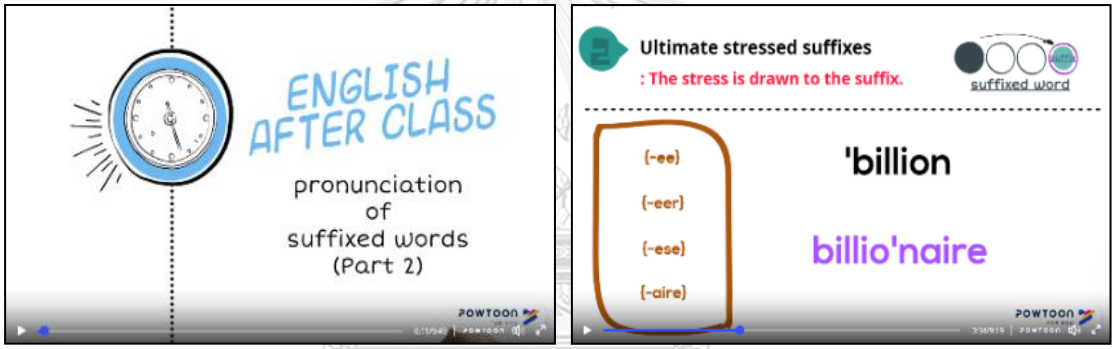


Figure 4: Screen capture of video lesson part 2

The second video provided more information about the types of affixes that could trigger changes in word stress. The suffixes which had this ability were derivational suffixes. Then, the video explained that these types of suffixes could yield different stress patterns for derivational suffixed words. The neutral stressed suffixes did not cause any stress shift. The ultimate stressed suffixes drew the stress to the suffixes, while the penultimate stressed suffixes attracted the stress to the syllable right before the suffixes. The antepenultimate stressed suffixes moved the stress to the third syllable counting from the last. After the explanation of each pattern, there were some drills for the students to practise. There was another lesson at the end of the video so the participants could practice the pronunciation

of the base and suffixed words again. The words were shown for 5 seconds with a pause to let the participants think and pronounce the words by themselves. The link to video lesson 2 is provided in Appendix C.

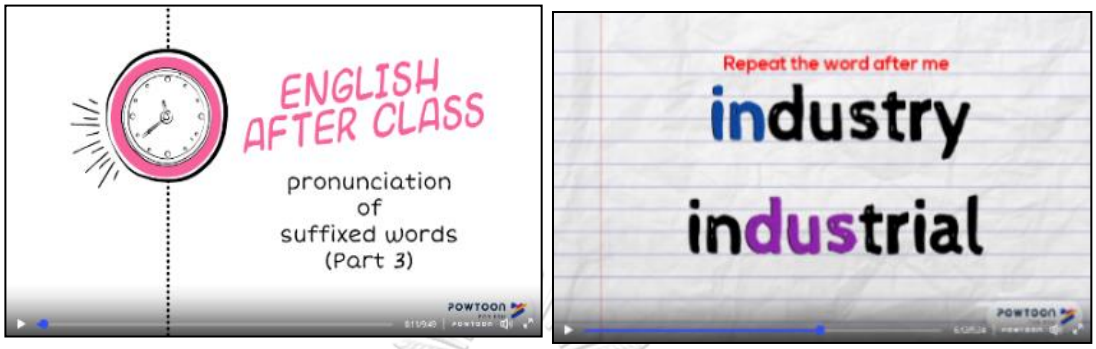


Figure 5: Screen capture of video lesson part 3

The last video emphasized the practice of pronouncing derivational suffixed words. It presented a list of suffixed words categorized by stress patterns: Neutral stressed, Ultimate stressed, Penultimate stressed, and Antepenultimate stressed. In each set, the base word was shown on the screen with the pronunciation from the narrator. Afterwards, the suffixed word of each base word was shown with a 5-second pause. The participants tried to pronounce the words with the rules that they learned from the previous videos. After all the words in each set were presented, the narrator pronounced the base and the suffixed words again; so that the participants could check their pronunciation. The link to video lesson 3 is provided in Appendix C.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

3.4.2 The instrument: Computer-aided designed assignments

Seesaw (https://app.seesaw.me/#/login) is a digital learning management platform that helps manage a classroom as well as engage students with creative activities. The teacher can design the tasks and upload them to the Seesaw classroom. Students can access and do tasks directly in the Seesaw classroom, including type, draw, record voices or videos, and upload files in the classroom. Also, the Seesaw classroom can be accessed via computer, smart phone, or iPad, so it is

very convenient for the participants to practise and do assignment from anywhere and at any time. The assignments provided during praxis intervention contained 6 exercises (See the link to .pdf files for the exercises in Appendix C). Three exercises focused on reviewing the suffixes and the rules. Another three exercises focused on the practising of the rules as the participants needed to record their pronunciation in the exercises. All their works were shown in the Seesaw classroom which their peers and teacher could see and gave comments under their works. The appearance of the Seesaw classroom and function features in the assignments are presented in the following image:

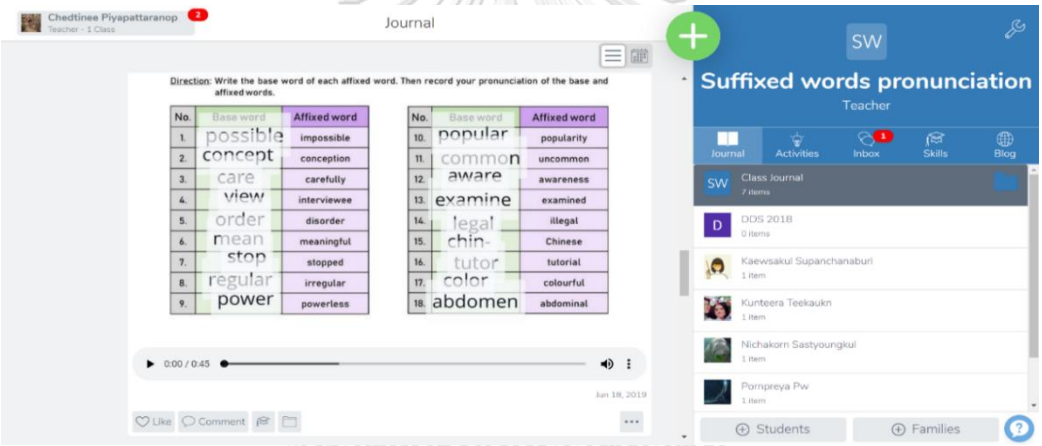


Figure 6: Screen capture of a Seesaw classroom

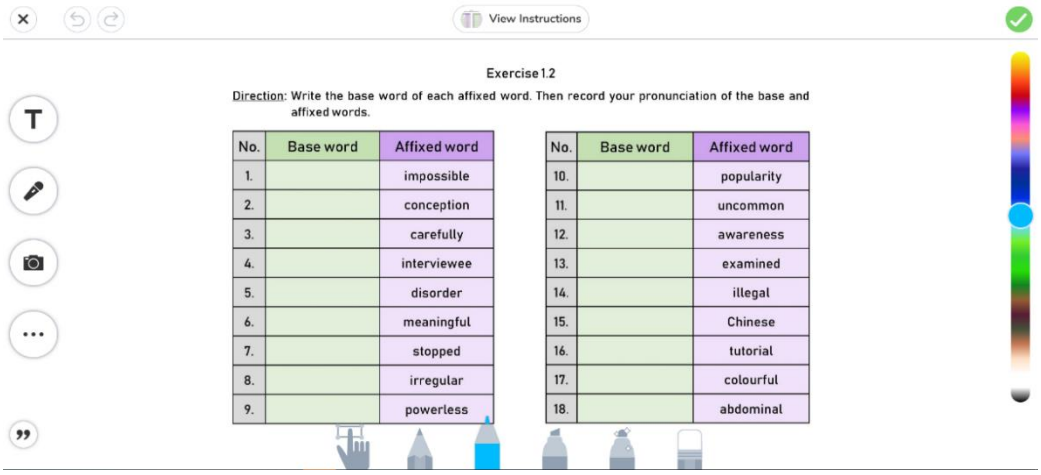


Figure 7: Function features in the task

3.4.3 Praxis intervention procedures

One week after the pre-test, the participants were expected to participate in three-week training sessions regarding the stress placement rules for suffixed words. During the three weeks of the praxis intervention phase, sessions were held once a week. In each week, the participants were required to join a class with the researcher for an hour to watch a video lesson regarding the affixation and stress placement rules of suffixed words. The video took approximately 10-15 minutes. After watching the video lesson, the participants discussed and reviewed the lesson, then did activities or simple games for revision in the classroom. After each class, the participants were given digital homework assignments for further revision and practice. All the video lessons were posted in the Facebook private group as well as in the digital classroom platform created on the website Seesaw.com (https://app.seesaw.me/#/login).

3.5 Error analysis

This research study aimed to investigate the stress patterns of English derivational suffixed words performed by Thai learners. The participants were instructed to perform read-aloud tasks containing a list of words in isolation set 1 for the pre-test. Then, the participants were required to join a three-week praxis intervention session where they were explicitly taught and trained in the stress placement rules of suffixed words. One week after praxis intervention, the participants were asked to perform the post-test including the read-aloud tasks for word list set 2 in order to see how they performed after they studied and practised the rules.

The researcher used the error analysis method to analyse the data regarding the stress patterns. According to the steps in error analysis (Ellis, 1997), the data were collected and analysed as follows:

1) Collecting errors

The participants' performance levels in the read-aloud tasks, both in the pre-test and post-test, were collected in a real time situation. The researcher recorded their performance with a microphone connected to a recorder. The participants' performance was recorded as Mp.3 files then converted into wave form by using the Wavepad Sound Editor program (https://www.nch.com.au/wavepad/index.html).

2) Identifying errors

The recorded pronunciation from participants was transcribed using the IPA (International Phonetic Alphabet). The position of stress which the participants performed were checked by the researcher and another inter-rater expert in phonetics and phonology. Transcription of participants' performance is provided in Appendix E.

3) Describing errors

After the pronunciation was transcribed, the data were grouped and categorized by the number of syllables and the patterns of stress. In each group, the performance was categorized into three main groups: the expected patterns, the error patterns, and the mispronunciation.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

4) Explaining errors

In this stage, the researcher explained the sources of error stress patterns with supporting evidence from the literature review and previous studies concerning stress patterns.

5) Error evaluation

The researcher provided discussion on the participants' performance in terms of the errors and factors influencing the learners' error patterns.

3.6 Metalinguistic knowledge

Apart from the aim of investigating the stress patterns of English derivational suffixed words performed by Thai learners, this research study also proposed to investigate the metalinguistic knowledge of Thai learners concerning the pronunciation of English suffixed words after praxis intervention. This section provides the research instruments used for eliciting the metalinguistic knowledge and the procedure for collecting data during this phase.

3.6.1 The instrument: Metalinguistic knowledge elicitation task

The metalinguistic elicitation task contained a list of eight words selected randomly from the post-test. The participants were asked to read each word aloud, after which they had to explain how they pronounced the words, i.e., give the reason why they pronounced each word a certain way. The list of the words in the metalinguistic elicitation task is shown in Appendix D.

3.6.2 The instrument: List of interview questions regarding the participants' performance

The list of interview questions is shown in Appendix D. The interviews required the participants to offer reflections on the read-aloud tasks that they performed, before and after praxis intervention. Also, they were asked to share their knowledge about derivational suffixed words and stress placement rules.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

3.6.3 Metalinguistic knowledge elicitation procedure

One week after praxis intervention, the participants were asked to perform the read-aloud tasks again to check whether the students learned the stress patterns of suffixed words after the lessons and the practice of the stress placement rules. The read-aloud task in this phase contained set 2 of the suffixed words that did not occur in the pre-test or praxis intervention. After the read-aloud task, the participants were asked to perform the elicitation task by spelling out their

metalinguistic knowledge regarding the pronunciation of suffixed words. They were also interviewed further regarding their performance. For the data from the interviews and metalinguistic elicitation tasks, the participants' answers were recorded and collected.

3.7 Analysing data

The data collected in the study were analysed and presented using both quantitative and qualitative approaches. Quantitatively, a T-test was used to compare the results from the pre-test and post-test of the two sample groups whether the differences were statistically significant or not. Qualitatively, the findings regarding stress patterns and metalinguistic knowledge were descriptively presented and discussed.

3.7.1 Quantitative analysis of data

For the quantitative data, the pair-sample t-test was used to compare the pre-test and post-test scores of each proficiency group to see the improvement of their performance after the praxis intervention. Also, the independent-sample t-test presented the mean scores of both proficiency groups in the post-test to compare the performance between groups.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

The stress patterns performed by the participants were presented in tables using descriptive statistics showing the frequency of the patterns in percentages as well as the standard deviation between the groups. Also, histograms or bar charts were used to compare the patterns performed by each proficiency group in the pre-test and the post-test.

Data from participants' metalinguistic knowledge were presented in tables showing the frequency of each category for metalinguistic knowledge in percentages.

3.7.2 Qualitative analysis of data

The data from the pre-test and post-test were descriptively presented and discussed. For data regarding the stress patterns, the data were grouped by the number of syllables in the words and the patterns of stress. Then, the data were discussed according to the theoretical framework to investigate the factors that caused certain stress patterns. The theoretical framework regarding the metalinguistic explanation was also used to describe and categorize the reasons provided by the participants regarding their pronunciation of the suffixed words. The data from the interviews with participants and the data from the online survey regarding experience in the English language were used for discussion concerning the participants' performance.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

CHAPTER 4
FINDINGS AND DISCUSSION

This chapter presents and discusses the three main findings of the study concerning the three research questions. The organization of this chapter starts from the main findings on stress patterns in the pre-test and post-test. Next, the main findings regarding the participants' performance are shown and discussed. The last section shows the findings for the participants' metalinguistic knowledge concerning the pronunciation of suffixed words after praxis intervention.

4.1 Mispronunciation

Before showing the findings for the stress patterns, the researcher would like to show the mispronunciation that occurred in participants' performance. The mispronunciation produced by the participants of both proficiency groups were found in both segmental and suprasegmental aspects as shown in the following.

1) A mixture of mispronunciation

Ex: "endless": ['ʌn^{m} 'li^{f}] [ən 'dis]

"doubtless": [dʊ bə 'ra^{f}], ['dəʊ tʊən]

"education": ['ɪn 'kræ^{h} 'tʃʌn^{f}], ['dɪ 'kat^{h} tes]

2) Consonant omission

Ex: "successful": ['sak^{h} 'se^{f} ful]

"trustee": ['tʌs tɪ]

3) Consonant addition

Ex: "beautiful": ['bləʊ tə fəl]

"financial": [faɪ 'næn ʃɪəls]

4) Consonant substitution

Ex: "conceptual": [kɔn 'sep^{h} tʃuən^{f}]

"happiness": ['hæp pɪ neʃ], ['hæp pɪ net]

5) Vowel substitution

Ex: “mountaineer”: ['maʊ tə 'nɜ^{f}], ['maʊ^{h} tə 'ni^{m}]

“political”: [pə 'laɪ tɪ kəl]

6) Mispronunciation related to syllabification

- Adding syllable

Ex: “outrageous”: ['au^{h} re 'dʒɜ^{f} rʌs] [au 're^{h} dʒɪ ɔs]

“questionnaire”: ['kwes ʃən 'na ri]

- Deleting syllable

Ex: “instantaneous”: [ɪn træn 'tɪəs], [ɪn 'stæn^{h} ʃɪəl]

“Vietnamese”: ['vjes 'nams], [wjet 'nis^{f}]

- Missyllabified syllable

Ex: “endless”: ['en^{h} dəls]

“helpless”: ['hel 'plis]

Mispronunciation was excluded from the analysis of stress patterns as it reflected unsystematic items or mistakes due to many possible factors as suggested by Corder (1967)

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

4.2 Pronunciation of suffixed words with more than four syllables

The objectives of this study were to investigate and compare the stress patterns of English suffixed words performed by Thai learners in the pre-test and post-test. However, the stress patterns of pentasyllabic words and hexasyllabic words in this study could not be compared between the pre-test and post-test because the expected patterns did not exist in both tests. Therefore, the main findings of the pronunciation of pentasyllabic and hexasyllabic words were presented not by comparison between the pre-test and the post-test. The pentasyllabic words were these three words: agricultural, differentiate, and particularly. The hexasyllabic word in this study is the word: responsibility. The results on stress patterns of

pentasyllabic and hexasyllabic words performed by the high proficiency group and low proficiency group are shown in the following tables and charts.

Pentasyllabic words with pattern (- - | - -) or (| - | - -)

Patterns / Participants & Words		Expected patterns		Error patterns								MP
		--|--	|-|--	|----	-|---	----|	|--|-	--|-|	-||--	|-|-|	-||-|	
High group	agricultural	5	3	0	0	1	0	2	1	1	1	1
	differentiate	3	7	1	0	0	0	0	0	2	0	2
Total	30 (100%)	8 (27%)	10 (33%)	1 (3%)	0 (0%)	1 (3%)	0 (0%)	2 (7%)	1 (3%)	3 (10%)	1 (3%)	3 (10%)
Low group	agricultural	0	0	0	1	0	1	0	1	0	0	12
	differentiate	0	3	0	0	0	1	1	0	1	0	9
Total	30 (100%)	0 (0%)	3 (10%)	0 (0%)	1 (3%)	0 (0%)	2 (7%)	1 (3%)	1 (3%)	1 (3%)	0 (0%)	21 (70%)

Table 3: Stress patterns of pentasyllabic words with the expected pattern (- - | - -) and (| - | - -) and error patterns performed by both proficiency groups

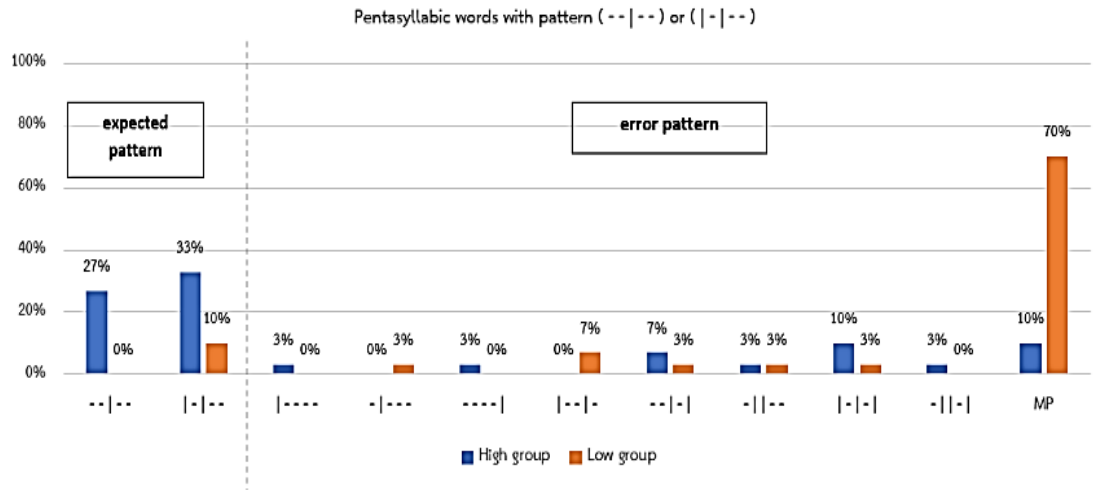


Figure 8: Histogram comparing the stress patterns of pentasyllabic words with the expected pattern (- - | - -) and (| - | - -) and the error patterns performed by the high and low proficiency groups

Pentasyllabic word with pattern (- | - - -)

Patterns / Participants & Words		Expected patterns	Error patterns								MP
		-|---	|----	--|--	---|-	-|-|-	-|--|	|-|--	|--||	||--|	
High group	particularly	2	1	1	6	3	1	0	1	0	0
Total	15 (100%)	2 (13%)	1 (7%)	1 (7%)	6 (40%)	3 (20%)	1 (7%)	0 (0%)	1 (7%)	0 (0%)	0 (0%)
Low group	particularly	0	0	0	2	2	0	2	0	1	8
Total	15 (100%)	0 (0%)	0 (0%)	0 (0%)	2 (13%)	2 (13%)	0 (0%)	2 (13%)	0 (0%)	1 (7%)	8 (53%)

Table 4: Stress patterns of pentasyllabic words with the expected pattern (- | - - -) and error patterns performed by both proficiency groups

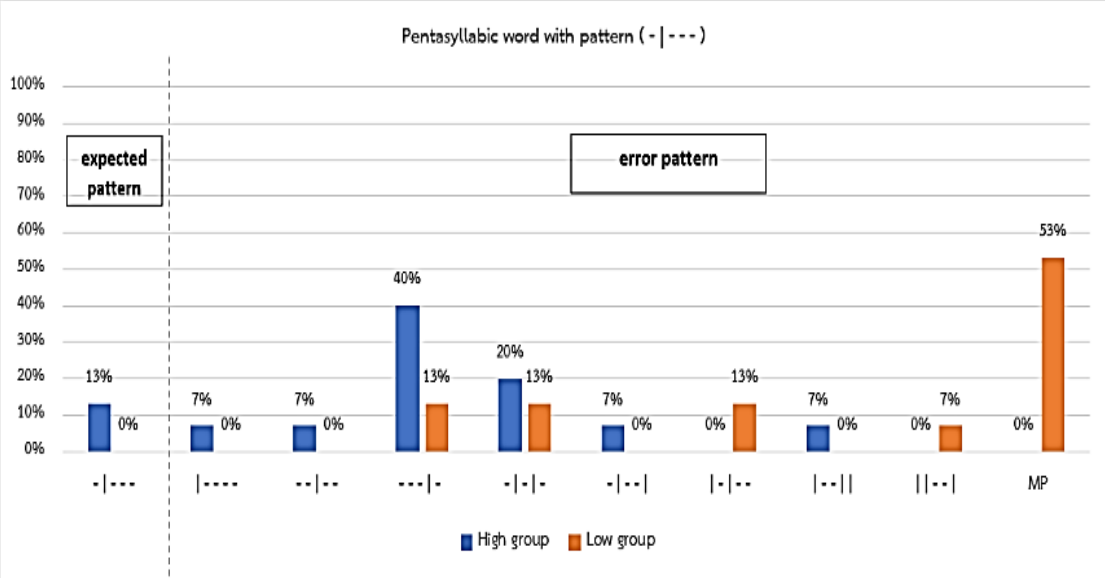
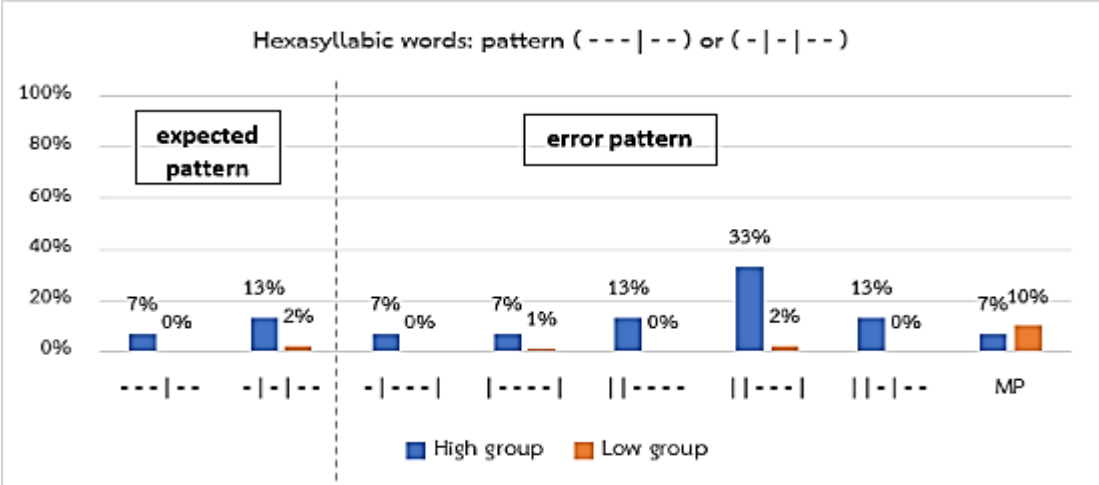


Figure 9: Histogram comparing the stress patterns of pentasyllabic words with the expected pattern (- | - - -) and the error patterns performed by the high and low proficiency groups

Hexasyllabic word with pattern (- - | - -) or (| - | - -)

Patterns / Participants & Words		Expected patterns		Error patterns					MP
		---|--	-|-|--	-|---|	|----|	||----	||---|	||-|--	
High group	responsibility	1	2	1	1	2	5	2	1
Total	15 (100%)	1 (7%)	2 (13%)	1 (7%)	1 (7%)	2 (13%)	5 (33%)	2 (13%)	1 (7%)
Low group	responsibility	0	2	0	1	0	2	0	10
Total	15 (100%)	0 (0%)	2 (13%)	0 (0%)	1 (7%)	0 (0%)	2 (13%)	0 (0%)	10 (67%)

Table 5: Stress patterns of hexasyllabic words with the expected pattern (- - - | - -) and (- | - | - -) and error patterns performed by both proficiency groups



CHULALONGKORN UNIVERSITY

Figure 10: Histogram comparing the stress patterns of hexasyllabic words with the expected pattern (- - - | - -) and (- | - | - -) and the error patterns performed by the high and low proficiency groups

The main finding in the participants' performance of pentasyllabic words and hexasyllabic words was that the error patterns varied according to the higher number of syllables in words. The results were in accordance with the discussion in Watanapokakul (2009) that more syllables in an English word caused more difficulty for the learners to pronounce the words with accurate stress patterns. Considering

the error patterns, the patterns that were performed due to the realization of English stress pattern concerned the patterns which the final syllable was avoided such as (| - - - -), (- | - - -), (- - | - -), (| - | - -), and so on. However, the participants did not know the stress placement rules for each type of suffix, so the stressed positions did not conform to the accentual pattern of the English suffixed words. Some error patterns were transferred by the Thai language, i.e., the final syllable was always stressed, such as (- - - - |), (- - | - |) (| - | - |), (- | - - |), (| | - - |), (| | - - - |) and so on.

4.3 Pronunciation of suffixed words with error patterns

The finding on the stress patterns was elicited from the reading aloud tasks in the pre-test and post-test phases. The results were reported quantitatively and qualitatively to explore the stress patterns of English suffixed words performed by Thai learners and compare their performance before and after praxis intervention regarding the stress placement in suffixed words. The quantitative findings showed the number of stress patterns of suffixed words performed by the participants with high proficiency and low proficiency. The qualitative results showed both the expected stress patterns and the error patterns performed by Thai learners.

The symbols used in this chapter represent the following characteristics.

(1) | represents a stressed syllable

(2) – represents an unstressed syllable

(3) Lexical tones in the Thai language (Gandour, 1979) are represented by the following symbols placed as raised characters after the syllables.

(^{m}) represents the mid-tone as in [ka^{m}] which means “to be stuck”.

(^{l}) represents the low tone as in [ka^{l}] which means “galangal”.

(^{f}) represents the falling tone as in [ka^{f}] which means “value”.

(^{h}) represents the high tone as in [ka^{h}] which means “commerce”.

(ʳ) represents the rising tone as in [kaʳ] which means “leg”.

The results were grouped and presented according to the words with different number of syllables ranging from two to four syllables, and the results were also grouped by the types of stress patterns in accordance with the accentual system of English suffixed words. Organization of the results in this chapter can be described as follows:

4.2.1 Disyllabic words

4.2.1.1 Pattern (| -)

4.2.1.2 Pattern (- |) or (| |)

4.2.2 Trisyllabic words

4.2.2.1 Pattern (| - -)

4.2.2.2 Pattern (- | -)

4.2.2.3 Pattern (- - |) or (| - |)

4.2.3 Tetrasyllabic words

4.2.3.1 Pattern (- | - -)

4.2.3.2 Pattern (- - | -) or (| - | -)

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

4.3.1 Disyllabic words

4.3.1.1 Pattern (| -)

The disyllabic words with pattern (| -) in this study are from these six words: endless, helpless, illness, careful, doubtless, and homeless. The results of disyllabic words with pattern (| -) are presented in the following tables and charts.

Pre-test

Participants & Words \ Patterns		expected pattern	Error patterns		Mispronunciation (MP)
		| -	- |	| |	
High group	endless	7	0	8	0
	helpless	5	0	6	4
	illness	8	0	6	1
Total	**45 (100%)**	**20 (44%)**	**0 (0%)**	**20 (44%)**	**5 (11%)**
Low group	endless	6	1	0	8
	helpless	7	0	4	4
	illness	5	0	2	8
Total	**45 (100%)**	**18 (40%)**	**1 (2%)**	**6 (13%)**	**20 (44%)**

Table 6: Stress patterns of disyllabic words with the expected pattern (| -) and error patterns performed by both proficiency groups in the pre-test

Post-test

Participants & Words \ Patterns		expected pattern	Error patterns		Mispronunciation (MP)
		| -	- |	| |	
High group	careful	10	1	4	0
	doubtless	4	0	1	10
	homeless	8	3	3	1
Total	**45 (100%)**	**22 (49%)**	**4 (9%)**	**8 (18%)**	**11 (24%)**
Low group	careful	2	1	10	2
	doubtless	0	0	0	15
	homeless	8	1	4	2
Total	**45 (100%)**	**10 (22%)**	**2 (4%)**	**14 (31%)**	**19 (42%)**

Table 7: Stress patterns of disyllabic words with the expected pattern (| -) and error patterns performed by both proficiency groups in the post-test

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

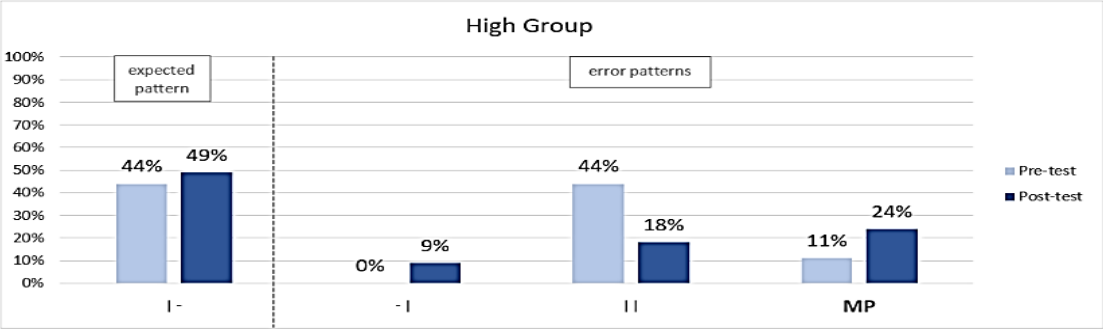


Figure 11: Histogram comparing the stress patterns of disyllabic words with the expected pattern (| -) and the error patterns performed by the high proficiency group in the pre-test and post-test

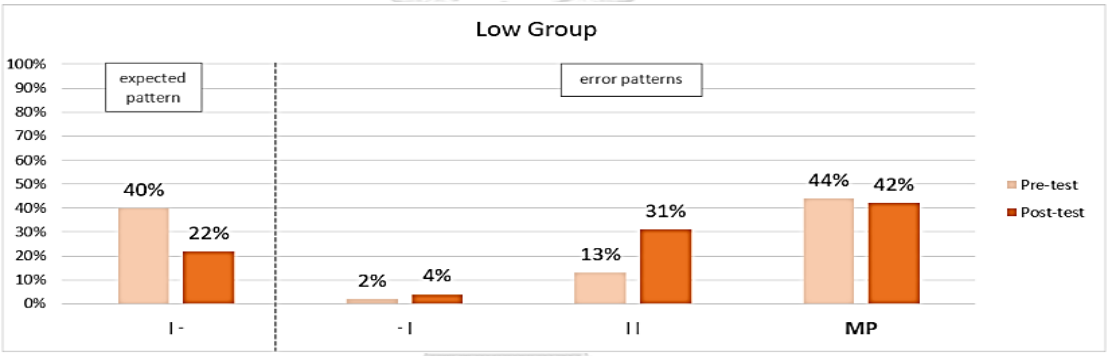


Figure 12: Histogram comparing the stress patterns of disyllabic words with the expected pattern (| -) and the error patterns performed by the low proficiency group in the pre-test and post-test

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

In this group of disyllabic words, the pattern (| -) was the expected pattern because the base words were attached with neutral stressed suffixes. In the pre-test, the expected pattern (| -) was produced by the high proficiency group at 44% and produced by the low proficiency group at 40%. However, the percentage of the expected pattern performed by the high and low proficiency groups went in the opposite direction for the post-test. The expected pattern was increasingly performed by the high proficiency group at 49% while the low proficiency group decreasingly performed the pattern at 22%.

The error patterns found in this word group were (- |) and (| |). According to the Thai accentual system, the primary stress always falls on the final syllable and is more potentially produced with a double stress pattern when the word does not contain a linker syllable (Luksaneeyanawin, 1983; Surinpiboon, 1985). As proposed by Bee (1975), a linker syllable refers to an open syllable consisting of a vowel phoneme /a/. It is usually realized as an unstressed syllable in casual speech. With the stress on the final syllables, the patterns (- |) and (| |) were both affected by Thai transfer, and the double stress pattern (| |) was produced more because not all the words contained linker syllables. The pattern (| |) was the most frequently produced pattern by both proficiency groups in the pre-test, but the pattern was produced less by the high proficiency group from 44% to 18% in the post-test. I could be suggested that the high proficiency group learned the stress placement rules of neutral stressed suffixes, or they may be more aware of English word stress than the low proficiency group. On the contrary, the low group increasingly produced the pattern (| |) in the post-test; this error pattern rose from 13% to 31%. The fact that the low proficiency group exhibited poorer performance in this word group can be explained with two reasons. The first reason was that they did not apply the English stress placement rules when pronouncing the words. Another reason suggested they were very careful of the pronunciation, so they decided to play it safe by putting the stress on both syllables, keeping the stress on the final syllable of the words as well as putting another stress on the first syllable (Luksaneeyanawin, 1983).

The pattern (- |) occurred marginally in this word group at less than 10% for both pre-test and post-test.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

4.3.1.2 Pattern (- |) or (| |)

The disyllabic words with the pattern (- |) or (| |) in this study are from these three words: Chinese, trustee, and trainee. The result of disyllabic words with the pattern (| -) are presented in the following tables and charts.

Pre-test

Participants & Words \ Patterns		expected pattern		Error patterns	Mispronunciation (MP)
		- |	| |	| -	
High group	Chinese	4	6	5	0
	trustee	2	3	8	2
Total	**30 (100%)**	**6 (20%)**	**9 (30%)**	**13 (43%)**	**2 (7%)**
Low group	Chinese	5	3	2	5
	trustee	0	0	4	11
Total	**30 (100%)**	**5 (17%)**	**3 (10%)**	**6 (20%)**	**16 (53%)**

Table 8: Stress patterns of disyllabic words with the expected pattern (- |) and (| |) and error patterns performed by both proficiency levels in the pre-test

Post-test

Participants & Words \ Patterns		expected pattern		Error patterns	Mispronunciation (MP)
		- |	| |	| -	
High group	trainee	6	1	8	0
Total	**15 (100%)**	**6 (40%)**	**1 (7%)**	**8 (53%)**	**0 (0%)**
Low group	trainee	0	2	7	6
Total	**15 (100%)**	**0 (0%)**	**2 (13%)**	**7 (47%)**	**6 (40%)**

Table 9: Stress patterns of disyllabic words with the expected pattern (- |) and (| |) and error patterns performed by both proficiency levels in the post-test

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

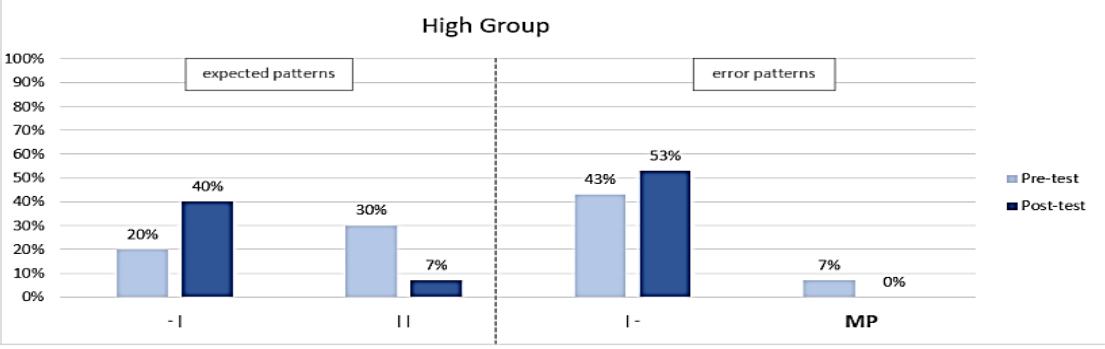


Figure 13: Histogram comparing the stress patterns of disyllabic words with the expected pattern (- |) and (| |) and the error patterns performed by the high proficiency group in the pre-test and post-test

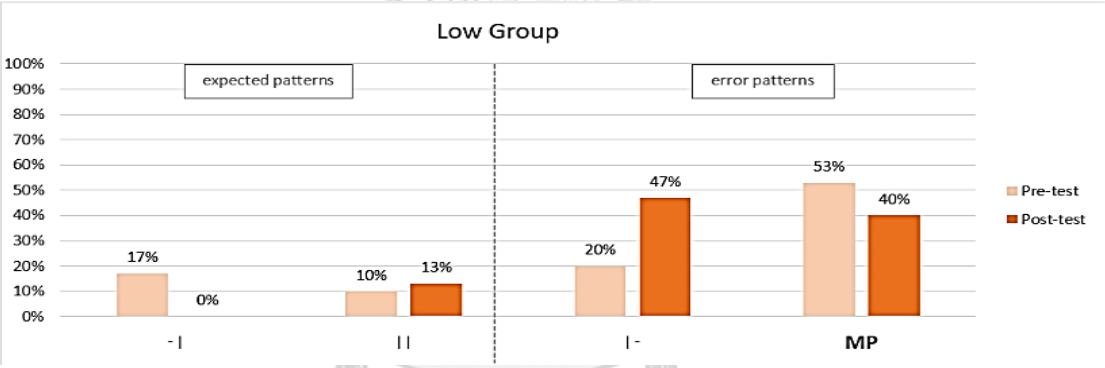


Figure 14: Histogram comparing the stress patterns of disyllabic words with the expected pattern (- |) and (| |) and the error patterns performed by the low proficiency group in the pre-test and post-test

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

The disyllabic words in this group were attached with the ultimate stressed suffixes which attracted the primary stress to fall on the last syllable. In addition to the stress shifting to the last syllable, the former position of the primary stress could be emphasized as secondary stress. Thus, two stress patterns possibly occurred in this word group: (- |) or (| |). In the pre-test, the high proficiency group performed the expected patterns at 50% in total (20% for - | and 30 % for | |). For the low proficiency group, they performed the expected patterns in the pre-test at 27% in total (17% for - | and 10% for | |). However, the performance of expected

patterns was produced less by both groups of proficiency in the post-test. The high proficiency group performed the expected patterns at 47% in total (40% for - | and 7% for | |). The percentage of the expected stress patterns in the post-test revealed that the high proficiency group produced the single stress pattern (- |) more than the double stress pattern (| |) after they learned the stress placement rules. It can be inferred that they became aware that the primary stressed syllable within English words must be more prominent than other syllables. The low proficiency group performed the expected pattern in the post-test at 13% with only the pattern (| |).

The error pattern found in this word group was (| -). The high proficiency performed this pattern in the pre-test at 43%, which increased in the post-test to 53%. The low group produced the error pattern at 20% in the pre-test, which increased significantly in the post-test to 47%. The increased number of (| -) patterns in the post-test was possibly due to the overgeneralization of the English accentual rule of disyllabic words. In English, the content words and most disyllabic words have a trochaic pattern which consists of a strong syllable followed by a weak syllable to form the pattern (| -) (Cutler and Carter, 1987; Thiessen and Saffran, 2007). The participants might have been aware that the test was in English, so they tried to anglicise or make English-like pronunciation regardless of the stress shifting rule for suffixes that they learned.

4.3.2 Trisyllabic words

4.3.2.1 Pattern (| - -)

The trisyllabic words with the pattern (| - -) in this study are from these seven words: actually, beautiful, powerful, usually, consciousness, happiness, and probably. The results of disyllabic words with the pattern (| - -) are presented in the following tables and charts.

Pre-test

Participants & Words	Patterns	Expected patterns	Error patterns						MP
		|--	--|	-|-	|-|	||-	-||	|||	
High group	actually	8	0	0	4	1	1	0	1
	beautiful	7	0	0	7	0	0	1	0
	powerful	8	0	0	6	0	0	1	0
	usually	10	0	0	5	0	0	0	0
Total	60 (100%)	33 (55%)	0 (0%)	0 (0%)	22 (37%)	1 (2%)	1 (2%)	2 (3%)	1 (2%)
Low group	actually	3	0	2	1	0	0	0	9
	beautiful	7	0	0	4	0	2	1	1
	powerful	3	0	0	8	1	1	0	2
	usually	7	1	1	0	0	0	0	6
Total	60 (100%)	20 (33%)	1 (2%)	3 (5%)	13 (22%)	1 (2%)	3 (5%)	1 (2%)	18 (30%)

Table 10: Stress patterns of trisyllabic words with the expected pattern (| - -) and error patterns performed by both proficiency groups in the pre-test

Post-test

Participants & Words	Patterns	Expected patterns	Error patterns						MP
		|--	--|	-|-	|-|	||-	-||	|||	
High group	consciousness	2	0	2	0	3	1	1	6
	happiness	11	0	0	3	1	0	0	0
	probably	4	1	2	3	0	1	0	4
Total	45 (100%)	17 (38%)	1 (2%)	4 (9%)	6 (13%)	4 (9%)	2 (4%)	1 (2%)	10 (22%)
Low group	consciousness	0	0	0	0	0	0	0	15
	happiness	8	0	0	2	2	0	0	3
	probably	1	0	3	2	3	0	0	6
Total	45 (100%)	9 (20%)	0 (0%)	3 (7%)	4 (9%)	5 (11%)	0 (0%)	0 (0%)	24 (53%)

Table 11: Stress patterns of trisyllabic words with the expected pattern (| - -) and error patterns performed by both proficiency groups in the post-test

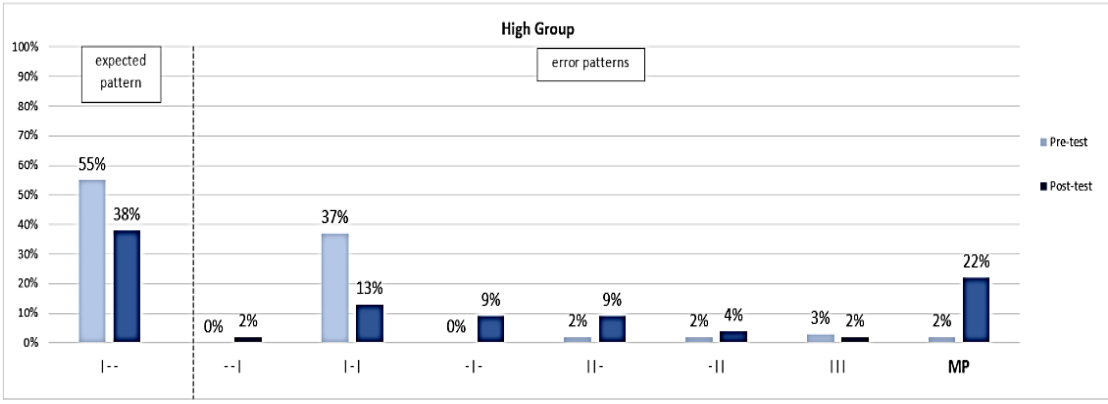
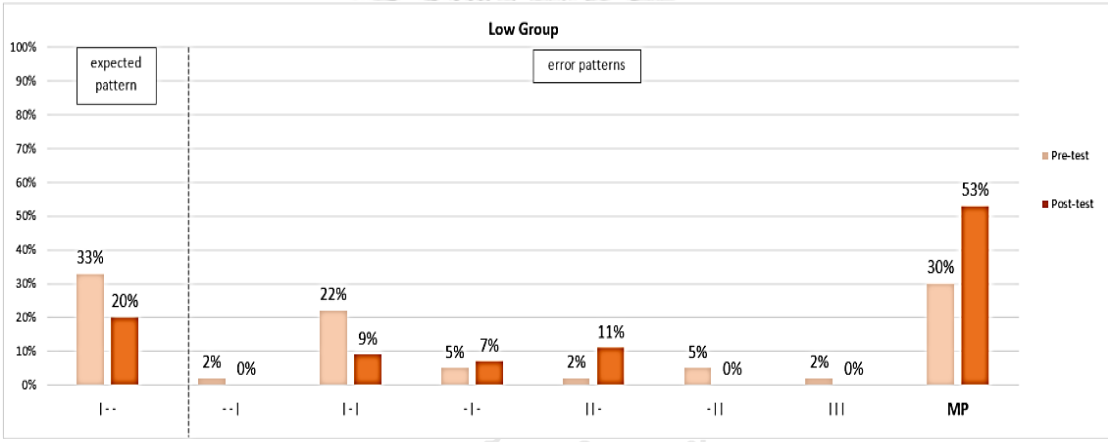


Figure 15: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (| - -) and the error patterns performed by the high proficiency group in the pre-test and post-test



จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Figure 16: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (| - -) and the error patterns performed by the low proficiency group in the pre-test and post-test

The expected pattern of this group of trisyllabic words was (| - -) because they were trochaic and dactyl words attached with neutral stressed suffixes. Trochee refers to a metrical foot of a stressed syllable followed by an unstressed syllable (| -) such as ‘actual’, ‘beauty’ and ‘happy’. Dactyl refers to a metrical foot of a first stressed syllable followed by two unstressed syllables (| - -), such as the word ‘probable’. When they were attached with the neutral stressed suffixes, the stress stayed in the same position. Therefore, the pattern (| - -) was what we

expected in this group. The performance of the expected pattern from the high proficiency group was at 55% in the pre-test and fell to 38% in the post-test. The low proficiency group performed the expected pattern at 33% in the pre-test and the pattern was produced less in the post-test at 20%.

The error pattern which was most frequently found in the pre-test was the pattern (| - |) which the high group produced at 37% and the low group produced at 22%. The (| - |) pattern agreed with the accentual system of Thai trisyllabic words (Luksaneeyanawin, 1983; Naksakul, 2013); in words with more than two syllables, the final syllable must contain the primary stress and the secondary stress usually falls on the antepenultimate syllable. It can be suggested from the results that both groups of participants performed the error patterns with the Thai transfer pattern in the pre-test. However, the pattern (| - |) was decreased by both groups in the post-test; the high group performed this pattern at 13%, while the low group performed at 9%.

The pattern (- | -) and (| | -) were the error patterns that were increasingly produced by both groups of proficiency after they learned the stress placement rules. The high proficiency group performed the pattern (- | -) at 9% and the pattern (| | -) at 9%. The low group performed the pattern (- | -) at 7% and the pattern (| | -) at 11%. Considering the characteristics of these two patterns, the stress did not fall on the last syllable. This can imply that the participants who performed these patterns were trying to avoid putting stress on the last syllable. Vairojanavong (1984) discussed the underlying reason for these patterns in that it was due to the awareness among learners that the words they were pronouncing were not Thai, so they tried to put stress on the positions which made the words sound more like English. However, they did not know the location of the accented syllable, so they put stress on positions which did not conform to the English accentual system. After analysing the words that were pronounced with the pattern (| | -), it

was found that they were performed as if the words were compound words in Thai. This was probably caused by Thai transfer with the awareness of English word stress. To illustrate the point, the word “happiness” was given as an example. This word was pronounced as [**'hæp^{h} 'pi^{f} nes**]. According to the stress placement rules, no suffixes carry stress except the ultimate stressed type. So, after praxis intervention, the participants could learn that the neutral suffix {-nes} was not stressed, so they avoided putting the primary stress on the last syllable. However, the base word “happy” occurs a lot in Thai as a borrowed word, so it is frequently pronounced with a Thai stress pattern as [**'hæp^{h} 'pi^{f}**] and gets fossilized into their pronunciation. Therefore, it was pronounced as [[**'hæp^{h} 'pi^{f}**] + **nes**] and became the pattern (| | -)

The other error patterns that occurred in this word group were (- - |), (- | |) and (| | |). The Thai transfer pattern (- - |) which was marginally produced in the trisyllabic word group could confirm that the participants preferred producing a double stress pattern to a single stress pattern when they pronounced words with a Thai stress pattern. The pattern (- | |) was found to be produced by participants with the words: “actually”, “powerful”, “beautiful”, “consciousness” and “probably”. After considering the words pronounced with this pattern, it was found that the pattern was performed as if it was a compounding word in Thai; they pronounced the base words with Thai transfer patterns and kept the primary stress on the last syllable due to the influence of the Thai accentual system. The word “beautiful” can be used as an example. The base word “beauty” was pronounced with a double stress pattern (| |) similar to [**'bju^{m} 'ti^{f}**]. When the word was attached with a suffix, the primary stress on the last syllable remained, while the secondary stress was reduced, so the suffixed word “beautiful” was pronounced like [[**bju 'ti^{f}] + 'ful^{m}**] and formed the pattern (- | |). The primary stress remained on the last syllable of the base word and the last syllable of the suffixed word.

The pattern (| | |) was also found in this group, and was the pattern that occurred when the participants were too careful with their pronunciation, causing them to emphasize every syllable and make them all prominent.

4.3.2.2 Pattern (- | -)

The trisyllabic words with the pattern (- | -) in this study are from these 12 words: awareness, commercial, conceptual, habitual, industrial, outrageous, successful, contractual, courageous, financial, official, and production. The stress patterns performed by the high proficiency group and low proficiency group are shown in the following tables and charts.

Pre-test

Participants & Words \ Patterns		Expected patterns	Error patterns						MP
		- | -	| - -	- - |	| - |	| | -	- | |	| | |	
High group	awareness	12	1	0	0	0	2	0	0
	commercial	5	1	0	6	1	0	0	2
	conceptual	4	5	0	0	0	4	0	2
	habitual	0	4	4	3	0	0	0	4
	industrial	5	1	0	0	0	4	0	5
	outrageous	1	5	2	1	1	0	1	4
Total	**90 (100%)**	**27 (30%)**	**17 (19%)**	**6 (7%)**	**10 (11%)**	**2 (2%)**	**10 (11%)**	**1 (1%)**	**17 (19%)**
Low group	awareness	5	0	0	0	0	1	0	9
	commercial	5	1	1	2	0	0	0	6
	conceptual	0	0	1	1	0	0	1	12
	habitual	0	3	0	0	0	0	0	12
	industrial	2	0	0	0	0	2	0	11
	outrageous	1	1	0	1	0	0	0	12
Total	**90 (100%)**	**13 (14%)**	**5 (6%)**	**2 (2%)**	**4 (4%)**	**0 (0%)**	**3 (3%)**	**1 (1%)**	**62 (69%)**

Table 12: Stress patterns of trisyllabic words with the expected pattern (- | -) and error patterns performed by both proficiency groups in the pre-test

Post-test

Participants & Words \ Patterns		Expected patterns	Error patterns						MP
		- | -	| - -	- - |	| - |	| | -	- | |	| | |	
High group	successful	11	0	0	0	1	2	1	0
	contractual	9	1	0	0	1	3	0	1
	courageous	9	0	2	0	0	0	0	4
	financial	7	2	2	2	0	1	0	1
	official	3	8	2	2	0	0	0	0
	production	11	1	0	0	1	2	0	0
Total	**90 (100%)**	**50 (56%)**	**12 (13%)**	**6 (7%)**	**4 (4%)**	**3 (3%)**	**8 (9%)**	**1 (1%)**	**6 (7%)**
Low group	successful	1	2	1	0	2	1	1	7
	contractual	7	1	0	0	1	2	0	4
	courageous	4	1	1	0	0	0	0	9
	financial	2	1	0	1	1	4	0	6
	official	2	4	0	1	2	0	0	6
	production	9	0	0	0	1	3	1	1
Total	**90 (100%)**	**25 (28%)**	**9 (10%)**	**2 (2%)**	**2 (2%)**	**7 (7%)**	**10 (11%)**	**2 (2%)**	**33 (37%)**

Table 13: Stress patterns of trisyllabic words with the expected pattern (- | -) and error patterns performed by both proficiency groups in the post-test

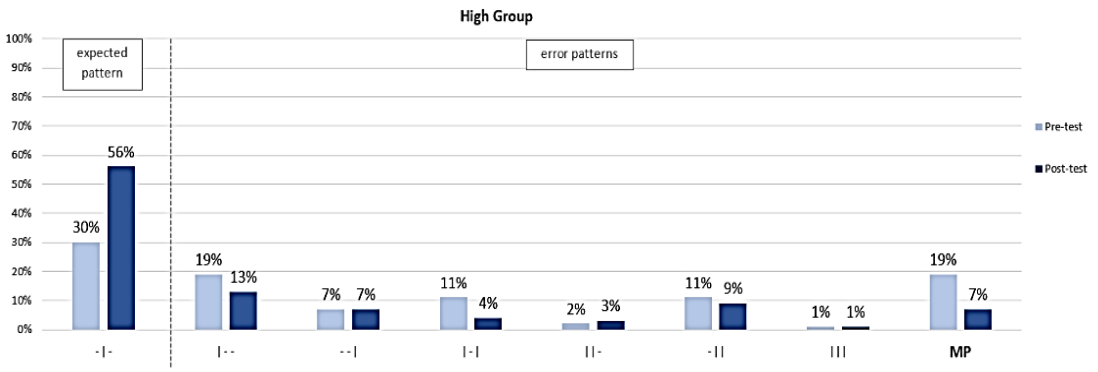


Figure 17: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (- | -) and the error patterns performed by the high proficiency group in the pre-test and post-test

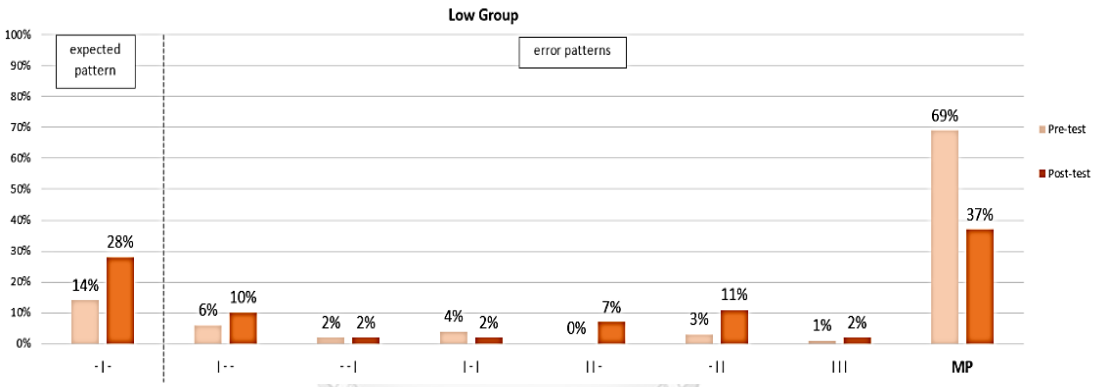


Figure 18: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (- | -) and the error patterns performed by the low proficiency group in the pre-test and post-test

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

The expected pattern of trisyllabic words in this group was (- | -) as most of them were attached with penultimate stressed suffixes. There were only two words that were formed by disyllabic words with the pattern (- |) attached with the neural stressed suffixes, i.e., “awareness” and “successful”.

The results showed signs of improvement for both proficiency groups. In the pre-test, the high proficiency group performed the expected pattern (- | -) at 30% and increasingly produced the pattern in the post-test at 56%. The low group performed the expected pattern in the pre-test at 14% and the pattern was

increasingly produced in the post-test at 28%. It can be concluded that the participants learned the rules for penultimate stressed suffixed words. Considering the penultimate stressed suffixed words which conformed to the expected pattern, two words were most frequently produced by the participants after they learned the rules, including “production” and “contractual”. According to Jarmulowicz (2002) and Suhandoko and Ningrum (2020), the suffixes {-tion} and {-ual} are frequently found in academic English. Therefore, the frequency of suffixes might play a role in participants’ learning. They can learn the stress placement rules of suffixes with high frequency better than the rules of low frequency suffixes.

For the error patterns, the pattern (| - -) was highly performed by the participants. The high group performed this pattern at 19% in the pre-test, which decreased in the post-test to 13%. The low group performed the pattern (| - -) at 6% in the pre-test, which increased in the post-test to 10%. It can be suggested that some participants became aware of the English left-handed stress pattern after praxis intervention, so they tried to anglicise their pronunciation with the left movement of the stress that they thought was more consistent with English. Without considering the stress placement rules of penultimate stressed suffixed words, the stress pattern did not conform to the expected pattern.

Chulalongkorn University

The Thai transfer pattern (- - |) and (| - |) were also frequently performed especially by the high proficiency group. The performance of the single stress pattern showed the same percentage in the pre-test and post-test (7% by the high group and 2% by the low group) while the double stress pattern was decreased in the post-test (the high group: from 11% to 9% and the low group: from 4% to 2%).

The compounding patterns (| | -) and (- | |) were also increasingly performed by the participants in the post-test. The increased pattern (| | -) in the post-test was performed by the high group at 3% and by the low group at 7%; it was

mostly found in the words “successful” and “official”. After analysing these two words, the researcher found that the participants tried to avoid putting the stress on the last syllable as they might learn that these suffixes did not contain the primary stress. Still, they kept the stress pattern on the base words such as [**ˈsʌkʰ ˈsesʰ**] which were pronounced with Thai transfer pattern, so the pattern (| | -) was performed like [[**ˈsʌkʰ ˈsesʰ**] + **ful**].

The pattern (- | |) was performed by the high group at 11% in the pre-test, which decreased slightly to 9% in the post-test. The low group performed this pattern in the pre-test at 3%, which increased to 11% in the post-test. The words that were found mostly produced with the pattern (- | |) in the post-test included “contractual”, “financial” and “production”. The participants pronounced the base words with a Thai transfer pattern such as [**faɪ ˈnænʰ**] and kept the primary stress on the last syllable due to the influence of the Thai accentual system. It formed the compounding pattern like [[**faɪ ˈnænʰ**] + **ˈʃɪəlᶠ**]. The increasing performance of the patterns shows the transfer from Thai compounding process.

The least frequently occurred error pattern was (| | |) which was the pattern that was produced when you wanted to emphasize every syllable.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

4.3.2.3 Pattern (- - |) or (| - |)

The trisyllabic words with the pattern (- - |) or (| - |) in this study are from these 13 words: billionaire, questionnaire, commandeer, mountaineer, refugee, Vietnamese, absentee, auctioneer, millionaire, doctrinaire, engineer, Japanese, and Portuguese. The stress patterns performed by the high proficiency group and low proficiency group are shown in the following tables.

Pre-test

Participants & Words	Patterns	Expected patterns		Error patterns					MP
		- - |	| - |	| - -	- | -	| | -	- | |	| | |	
High group	billionaire	1	6	0	0	0	7	0	1
	questionnaire	0	9	1	0	0	1	0	4
	commandeer	2	6	1	0	0	2	1	3
	mountaineer	0	8	1	0	0	1	2	3
	refugee	0	3	1	2	0	4	0	5
	Vietnamese	1	3	3	3	0	1	0	4
Total	**90 (100%)**	**4 (4%)**	**35 (39%)**	**7 (8%)**	**5 (6%)**	**0 (0%)**	**16 (18%)**	**3 (3%)**	**20 (22%)**
Low group	billionaire	0	2	1	0	0	0	0	12
	questionnaire	0	4	0	0	0	0	0	11
	commandeer	0	3	1	3	1	0	0	7
	mountaineer	0	3	5	0	0	0	0	7
	refugee	1	2	0	1	0	0	0	11
	Vietnamese	4	3	0	1	0	0	0	7
Total	**90 (100%)**	**5 (6%)**	**17 (19%)**	**7 (8%)**	**5 (6%)**	**1 (1%)**	**0 (0%)**	**0 (0%)**	**55 (61%)**

Table 14: Stress patterns of trisyllabic words with the expected pattern (- - \|) and (\| - \|) and error patterns performed by both proficiency groups in the pre-test

Post-test

Participants & Words	Patterns	Expected patterns		Error patterns					MP
		- - |	| - |	| - -	- | -	| | -	- | |	| | |	
High group	absentee	2	2	2	8	1	0	0	0
	auctioneer	3	2	1	1	0	0	0	8
	millionaire	8	3	0	2	0	2	0	0
	doctrinaire	3	7	2	0	0	1	0	2
	engineer	8	4	3	0	0	0	0	0
	Japanese	12	0	1	2	0	0	0	0
	Portuguese	3	6	1	1	0	0	0	4
Total	**105 (100%)**	**39 (37%)**	**24 (23%)**	**10 (10%)**	**14 (13%)**	**1 (1%)**	**3 (3%)**	**0 (0%)**	**14 (13%)**
Low group	absentee	2	3	0	2	2	0	2	4
	auctioneer	2	2	0	0	0	0	0	11
	millionaire	3	4	0	0	1	2	0	5
	doctrinaire	2	5	0	0	0	0	0	8
	engineer	4	7	3	0	0	0	0	1
	Japanese	9	2	0	4	0	0	0	0
	Portuguese	2	3	0	0	0	0	0	10
Total	**105 (100%)**	**24 (23%)**	**26 (25%)**	**3 (3%)**	**6 (6%)**	**3 (3%)**	**2 (2%)**	**2 (2%)**	**39 (37%)**

Table 15: Stress patterns of trisyllabic words with the expected pattern (- - \|) and (\| - \|) and error patterns performed by both proficiency groups in the post-test

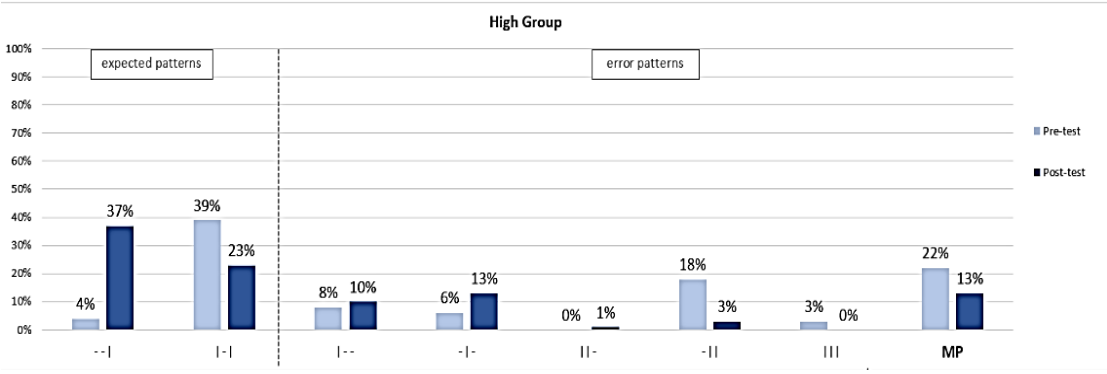


Figure 19: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (- - |) and (| - |) and the error patterns performed by the high proficiency group in the pre-test and post-test

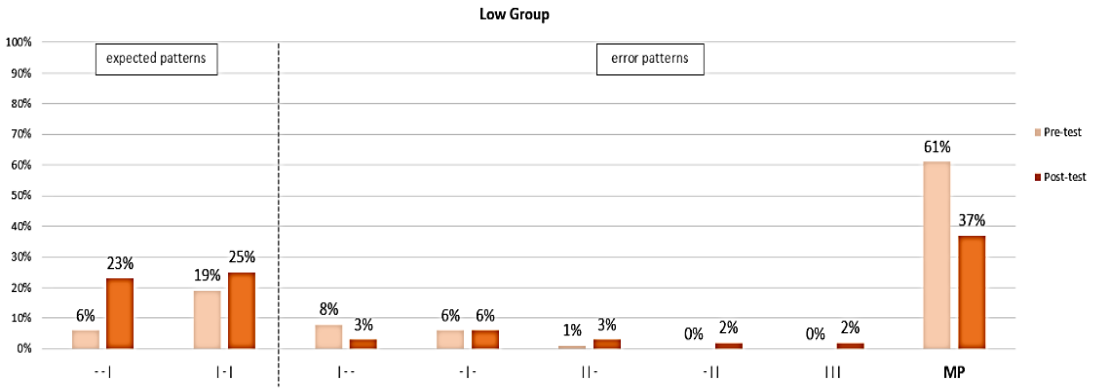


Figure 20: Histogram comparing the stress patterns of trisyllabic words with the expected pattern (- - |) and (| - |) and the error patterns performed by the low proficiency group in the pre-test and post-test

In this group of trisyllabic words, the patterns (- - |) and (| - |) possibly occurred as the words in this group were attached with the ultimate stressed suffixes which attracted the stress to the last syllable and the prior primary stressed position was less prominent and became the secondary stress. Thus, these two patterns were considered the expected patterns.

In the pre-test, the high proficiency group performed the expected patterns at 43% in total (4% for - - | and 39% for | - |). For the low proficiency group, they performed expected patterns in the pre-test at 25% in total (6% for - - | and

19% for | - |). The performance of expected patterns in the post-test was improved by both groups in terms of proficiency. The high proficiency group performed the expected patterns at 60% in total (37% for - | and 23% for | |). The low proficiency group performed the expected patterns in the post-test at 48% in total (23% for - | and 25% for | |). The result from the expected patterns showed that the participants performed better after they learned the rules of ultimate stressed suffixed words containing three syllables.

The errors that were found in this word group included the patterns (| - -), (- | -), (| | -), (- | |), and (| | |).

The patterns (- | -) and (| - -) were the patterns that occurred when the participants were aware of the English stress pattern, so they tried to anglicise the words by avoiding the stress on the last syllable. However, it might be because they did not know the rules for ultimate stressed suffixed words, so they put the stress on a different position that did not conform to the rules. The overgeneralization of English stress patterns can be supported by Limsangkass (2009) who found that the L2 learners created English stress patterns by avoiding the final stressed syllable to deal with the words they were not certain about pronouncing. The high group increased both pattern in the post-test (the pattern (| - -): from 8% to 10%, and the pattern (- | -): from 6% to 13%). On the contrary, the low group did not increase these patterns in the post-test (the pattern (| - -): from 8% to 3%, and the pattern (- | -) remained at the same percentage of 6%).

The compounding patterns (| | -) and (- | |) were merginally produced by both proficiency groups. Interestingly, the high group performed the pattern (- | |) at 18% in the pre-test and decreasingly performed the pattern in the post-test to 3%. This suggests that the participants had some knowledge regarding the morphological process of the suffixes before learning the stress placement rules. The participants pronounced the base words with Thai transfer pattern such as [bɪ 'ljənˢ] and they also put the stress on the last syllable of the suffixed words after they

formed a suffixed word by attaching the suffix {-aire} to the base. It formed a compounding pattern like [[**bɪ 'ljən**^{f}] + **'neər**^{m}]. However, the patterns decreased after they learned the stress placement rules of ultimate stressed suffixed words.

The pattern (| | |) was the least frequently occurred. It was produced by both proficiency groups at less than 5% in both the pre-test and post-test.

4.3.3 Tetrasyllabic words

4.3.3.1 Pattern (- | - -)

The tetrasyllabic words with the pattern (- | - -) in this study are from these 13 words: abdominal, authority, detoxify, solidify, triangulate, activity, certificate, community, communicate, objectify, original, personify, political. The stress patterns performed by the high proficiency group and the low proficiency group are shown in the following tables.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Pre-test

Participants & Words \ Patterns		Expected patterns	Error patterns								MP
		-|--	|---	---|	|-|-	-|-|	||--	|--|	-||-	||-|	
High group	abdominal	4	1	2	0	0	3	5	0	0	0
	authority	3	6	2	0	0	0	4	0	0	0
	detoxify	4	0	0	0	5	0	2	0	0	4
	solidify	1	4	2	0	0	0	6	0	0	2
	triangulate	4	6	0	0	0	1	1	0	1	2
Total	**75 (100%)**	**16 (21%)**	**17 (23%)**	**6 (8%)**	**0 (0%)**	**5 (7%)**	**4 (5%)**	**18 (24%)**	**0 (0%)**	**1 (1%)**	**8 (11%)**
Low group	abdominal	4	0	0	1	0	1	4	0	1	4
	authority	3	0	0	2	0	0	1	1	0	8
	detoxify	2	0	0	0	3	0	0	0	0	10
	solidify	0	0	0	0	0	0	1	0	0	14
	triangulate	0	0	0	0	0	1	1	0	0	13
Total	**75 (100%)**	**9 (12%)**	**0 (0%)**	**0 (0%)**	**3 (4%)**	**3 (4%)**	**2 (3%)**	**7 (9%)**	**1 (1%)**	**1 (1%)**	**49 (65%)**

Table 16: Stress patterns of tetrasyllabic words with the expected pattern (- | - -) and error patterns performed by both proficiency groups in the pre-test

Post-test

Participants & Words \ Patterns		Expected patterns	Error patterns											MP
		-|--	|---	--|-	---|	|-|-	-|-|	||--	--||	|--|	-||-	||-|	||||	
High group	activity	9	1	1	0	1	0	0	0	3	0	0	0	0
	certificate	6	4	0	1	0	1	0	0	2	1	0	0	0
	community	11	1	1	0	0	0	0	0	1	0	0	0	1
	communicate	11	1	0	1	0	0	0	0	2	0	0	0	0
	objectify	8	1	0	0	0	3	2	0	0	0	0	0	1
	original	11	0	0	1	0	3	0	0	0	0	0	0	0
	personify	7	0	0	4	0	2	0	0	2	0	0	0	0
	political	8	1	0	2	0	2	0	0	1	0	0	0	1
Total	120 (100%)	71 (59%)	9 (7%)	2 (2%)	9 (7%)	1 (1%)	11 (9%)	2 (2%)	0 (0%)	11 (9%)	1 (1%)	0 (0%)	0 (0%)	3 (3%)
Low group	activity	2	7	0	0	3	0	0	0	2	0	0	0	1
	certificate	1	0	2	0	1	0	1	0	4	0	0	0	6
	community	5	1	0	1	0	0	2	1	2	0	0	0	3
	communicate	4	1	0	0	0	0	1	0	4	0	0	0	5
	objectify	2	0	0	0	0	1	1	0	2	0	1	0	8
	original	5	3	0	2	0	1	0	0	1	0	0	0	3
	personify	3	0	0	0	0	0	0	0	3	0	0	0	9
	political	6	0	0	1	0	1	0	0	1	0	1	1	4
Total	120 (100%)	28 (23%)	12 (10%)	2 (2%)	4 (3%)	4 (3%)	2 (2%)	5 (4%)	1 (1%)	19 (16%)	0 (0%)	2 (2%)	1 (1%)	39 (33%)

Table 17: Stress patterns of tetrasyllabic words with the expected pattern (- | - -) and error patterns performed by both proficiency groups in the post-test

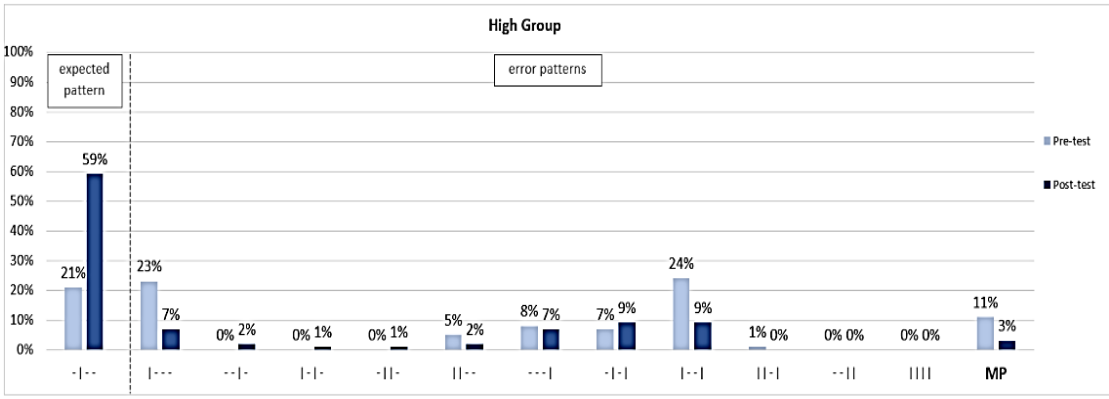


Figure 21: Histogram comparing the stress patterns of tetrasyllabic words with the expected pattern (- | - -) and the error patterns performed by the high proficiency group in the pre-test and post-test

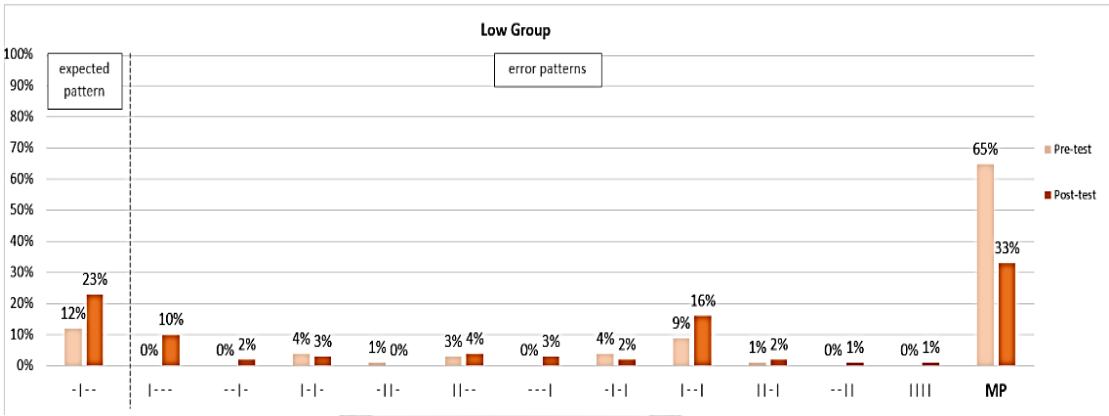


Figure 22: Histogram comparing the stress patterns of tetrasyllabic words with the expected pattern (- | - -) and the error patterns performed by the low proficiency group in the pre-test and post-test

The expected pattern in this tetrasyllabic word group was (- | - -) as the base words in this group were attached with the antepenultimate stressed suffixes, so the stress fell on the third syllable counting from the last. The performance of the expected pattern showed improvement in both proficiency groups as the expected pattern was increasingly produced in the post-test. The high group performed the pattern (- | - -) in the pre-test at 21% and the pattern increased to 59% in the post-test. The low group produced the pattern in the pre-

test at 12% and increasingly produced the pattern in the post-test at 23%. The suffixed words which were mostly produced with the expected pattern in the post-test included “community”, “communicate”, “original”, and “political”. After analysing the frequency of these suffixes according to Suhandoko and Ningrum (2020), it was found that {-ity}, and {-al} were the most frequent suffixes in academic English. Thus, the participants possibly picked up the stress pattern of the high frequency suffixes better than the low frequency suffixes. For the word “communicate”, the participants could place the stress accurately, even though the suffix {-ate} was used with low frequency. It might be because the base word was “commune” which was the same base word as “community”; the participants probably transferred the same stress pattern of “community” to the word “communicate”.

The results from the error patterns that were found in the group of tetrasyllabic words showed that the number of syllables might influence the production of error patterns. This means the more error patterns are produced when there are more syllables in the word. The most frequently found error pattern was the pattern (| - - |), which conformed to the Thai accentual pattern of tetrasyllabic words according to Luksaneeyanawin (1983) and Surinpiboon (1985). The high group performed the pattern (| - - |) at 24% in the pre-test and performed less in the post-test at 9%. The low group performed the pattern at 9% in the pre-test and increasingly produced the pattern in the post-test at 16%. There were some other patterns which were influenced by the Thai transfer including (- - - |), (- | - |), and (| | - |), which were faintly produced by the participants.

The error pattern, which was the second most produced by the participants, was the anglicised pattern (| - - -). The high group performed this pattern at 23% in the pre-test and the pattern reduced to 7% in the post-test. The

low group did not perform this pattern in the pre-test, but the pattern was found to 10% in the post-test. Some other patterns were produced when the participants tried to anglicise the pattern by avoiding the final stressed syllable. However, their performance did not conform to the expected pattern. Those error patterns were (- - | -), (| - | -), and (- | | -). For the pattern (| | - -), the suffixed words that were pronounced with this pattern were analysed. It was found that this pattern was produced from the participants' realization of the stress pattern of the antepenultimate stressed suffixed words, but they also put the stress on the first syllable of the suffixed words. For example, the word "object" was pronounced like ['ɑb dʒek]. When the suffix {-ify} was attached, the participant pronounced the suffixed word "objectify" as ['ɔbʰ 'dʒekʰ tɪ faɪ]. The antepenult became prominent, but the first syllable was still stressed. It can be suggested that the participant learned the stress placement rules of antepenultimate stressed suffixes, but the first syllable kept the stress as it was stressed in the base word.

The other error pattern that was found in this tetrasyllabic group was (- - | |) which occurred only once in the word "community". As claimed by Vairojanavong (1984), This pattern occurred when the participant tried to seek for another stress syllable, so they exceeded the stressed syllable with double stress pattern. The participants put stress on the final syllable due to the influence of Thai accentual system. Then, they might learn that most English words were not stressed on the final position, so they tried to put stress on another position. Therefore, the pattern (- - | |) was produced. However, the stressed pattern did not conform to the stress placement rules. The pattern (| | | |) also occurred only once in the word "political" as the participant tried to emphasize every syllable.

4.3.3.2 Pattern (- - | -) or (| - | -)

The tetrasyllabic words with the pattern **(- - | -) or (| - | -)** in this study are from these six words: advantageous, education, situation, instantaneous, intellectual, and population. The stress patterns performed by the high proficiency group and the low proficiency group are shown in the following tables.

Pre-test

Patterns / Participants & Words		Expected patterns		Error patterns								MP
		--|-	|-|-	|---	-|--	---|	||--	--||	-|-|	|--|	|-||	
High group	advantageous	1	3	1	4	0	1	0	0	4	0	1
	education	8	2	0	0	0	0	4	0	0	1	0
	situation	4	6	0	0	0	0	2	0	0	3	0
Total	45 (100%)	13 (29%)	11 (24%)	1 (2%)	4 (9%)	0 (0%)	1 (2%)	6 (13%)	0 (0%)	4 (9%)	4 (9%)	1 (2%)
Low group	advantageous	0	0	0	0	0	1	0	1	0	0	13
	education	6	2	0	0	1	0	1	0	1	0	4
	situation	3	4	0	0	1	0	0	0	1	0	6
Total	45 (100%)	9 (20%)	6 (13%)	0 (0%)	0 (0%)	2 (4%)	1 (2%)	1 (2%)	1 (2%)	2 (4%)	0 (0%)	23 (51%)

Table 18: Stress patterns of tetrasyllabic words with the expected pattern (- - | -) and (| - | -) and error patterns performed by both proficiency groups in the pre-test

Post-test

Patterns / Participants & Words		Expected patterns		Error patterns								MP
		--|-	|-|-	|---	-|--	---|	-||-	--||	-|-|	|--|	-|||	|-||
High group	instantaneous	0	2	0	3	1	1	0	4	1	0	0	3
	intellectual	5	1	1	2	0	0	2	1	0	0	0	3
	population	9	2	0	0	0	0	2	0	2	0	0	0
Total	45 (100%)	14 (31%)	5 (11%)	1 (2%)	5 (11%)	1 (2%)	1 (2%)	4 (9%)	5 (11%)	3 (7%)	0 (0%)	0 (0%)	6 (13%)
Low group	instantaneous	0	1	0	0	0	1	0	1	0	1	0	11
	intellectual	5	0	0	4	0	0	0	1	0	0	0	5
	population	3	7	0	0	0	0	0	0	1	0	2	2
Total	45 (100%)	8 (18%)	8 (18%)	0 (0%)	4 (9%)	0 (0%)	1 (2%)	0 (0%)	2 (4%)	1 (2%)	1 (2%)	2 (4%)	18 (40%)

Table 19: Stress patterns of tetrasyllabic words with the expected pattern (- - | -) and (| - | -) and error patterns performed by both proficiency groups in the post-test

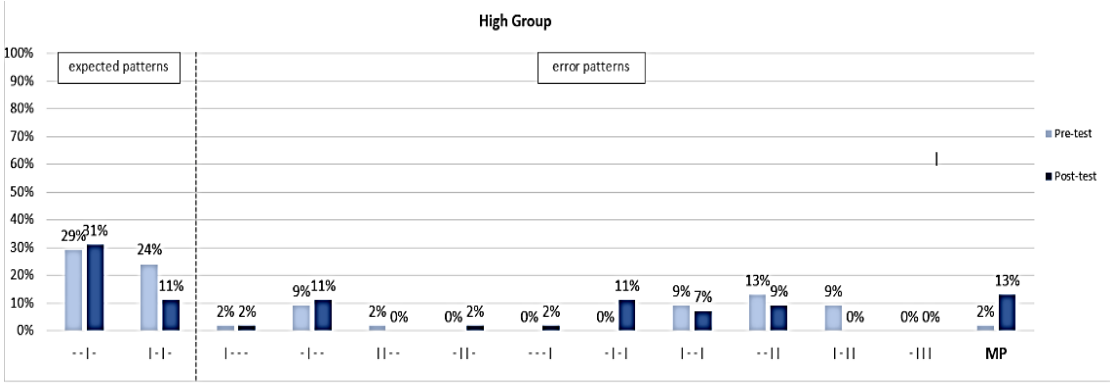


Figure 23: Histogram comparing the stress patterns of tetrasyllabic words with the expected pattern (- - | -) and (| - | -) and the error patterns performed by the high proficiency group in the pre-test and post-test

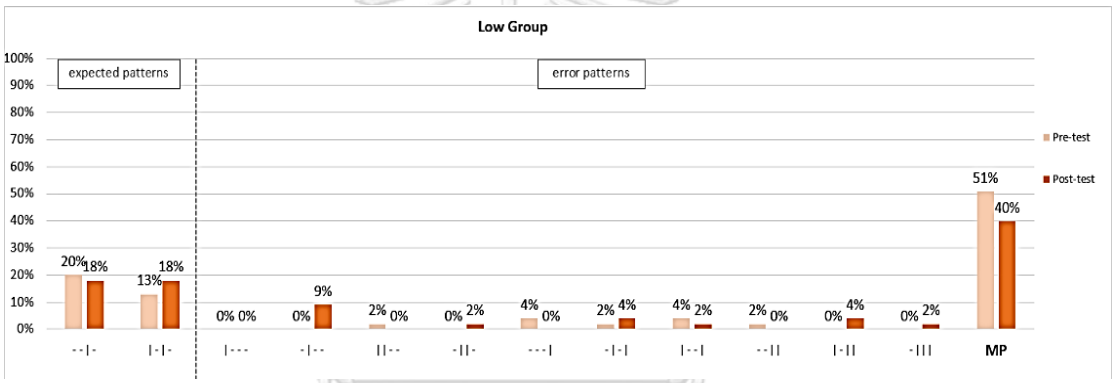


Figure 24: Histogram comparing the stress patterns of tetrasyllabic words with the expected pattern (- - | -) and (| - | -) and the error patterns performed by the low proficiency group in the pre-test and post-test

For the tetrasyllabic words in this group, the expected patterns were (- - | -) and (| - | -) as the words were attached with the penultimate stressed suffixes which caused the stress to be shifted to the position just before the suffix. The high proficiency group performed the expected patterns in the pre-test at 53% in total (29% for - - | - and 24% for | - | -). In the post-test, the expected patterns were produced by the high group at 42% in total (31% for - - | - and 11% for | - | -). For the low proficiency group, the expected patterns were produced in the pre-test at 33% in total (20% for - - | - and 13% for | - | -). In the post-test, the expected patterns were performed by the low group at 38% in total (18% for - - | - and 18%

for | - | -). The words that were found mostly produced with the expected patterns were the words ending with suffix {-tion} including “education”, “situation”, and “population”. As the suffix {-tion} is a frequently occurrring suffix in academic English (Suhandoko and Ningrum, 2020), it was suggested that the participants learn the stress placement rules of the words with the high frequency suffixes better than the words with the low frequency suffixes.

The error patterns that were found in this word group varied based on the higher number of syllables in the words. The higher the number of syllables, the more the error patterns produced. The error patterns which were frequently pronounced by the participants were (- | - -), (- - | |), and (| - - |).

The pattern (- | - -) was produced by the high group at 9% in the pre-test and increased to 11% in the post-test. The low group did not produce this pattern at all in the pre-test, but increased to 9% in the post-test. It can be suggested that the participants who performed this pattern became aware of the English stress pattern, so they tried to anglicise the pattern to be English-like and avoided putting the stress on the last syllable. However, they could not put the stress on the position which conformed to the expected pattern as they did not know the stress placement rule for penultimate suffixed words. There were other patterns which were produced when the participants tried to anglicise English stress pattern including (| - - -), (| | - -), and (- | | -).

The pattern (- - | |) was performed by the high group at 13% in the pre-test and performed at 9% in the post-test. The low group performed this pattern at 2% in the pre-test and did not perform it in the post-test. According to Vairojanavong (1984), the pattern may occur when the participants were aware of English words but they still put stress on the last syllable according to the influence of Thai accentual system. After looking at the words pronounced with this pattern, it was found in the words “education”, “situation”, “intellectual”, and “population”. This error pattern could support the claim from Vairojanavong. The participants

realized that the stress pattern of the word ending with {-tion} and {-ual} were mostly stressed before the suffix. Therefore, the position before the suffix was stressed. However, participants still put stress on the last syllable of the suffixed words due to the influence of Thai accentual system, so the pattern (- - | |) was produced. The pattern (| - | |) was also the pattern that occurred with the same characteristics. They learned that the stress should be on the penultimate syllable but the L1 transfer still existed.

The pattern (| - - |) was produced according to Thai transfer; the high group performed this pattern at 9% in the pre-test and 7% in the post-test. The low group performed this pattern at 4% in the pre-test and 2% in the post-test. The other patterns which were influenced by Thai transfer pattern were (- - - |) and (- | - |).

The pattern (- | | |) was found produced by the participants at only 2% with the word “instantaneous”. It was the pattern for which the participants tried to emphasize every syllable.

4.4 Comparison of performance by the high proficiency and low proficiency students

This section presents the findings regarding the participants’ performance for pronunciation of suffixed words in the pre-test and post-test. The quantitative results compare the performance of the participants before and after praxis intervention. The qualitative results discuss the factors which influence participants’ performance in terms of their learning.

4.4.1 Students’ performance

The results of accurate stress patterns performed by the participants of both proficiency levels in the pre-test and post-test are presented in Table 20.

Group	Pre-test		Post-test	
	Mean (%)	S.D.	Mean (%)	S.D
High proficiency (N=15)	40.73	15.723	52.53	20.553
Low proficiency (N=15)	22.93	14.926	29.13	18.083

Table 20: Comparison of mean score for accurate stress patterns performed by both proficiency groups in the pre-test and post-test.

According to Table 20, the mean score for the high proficiency group was 40.73 in the pre-test , which rose to 52.53 in the post-test. The mean score for the low proficiency group was 22.93 in the pre-test, which increased to 29.13 in the post-test. From an overall comparison of the performance, the result shows that the high proficiency group performed much better than the low proficiency group in both the pre-test and the post-test phases.

To see the difference in test performance for each group, the levels of significance for both groups were compared. Table 21 presents the statistical results from the pair-sample t-test showing the significant differences in the ability to perform accurate stress patterns within the proficiency group in the pre-test and the post-test.

Group	Pre-test		Post-test		t	P
	Mean (%)	S.D.	Mean (%)	S.D		
High proficiency (N=15)	40.73	15.723	52.53	20.553	-3.597	.003*
Low proficiency (N=15)	22.93	14.926	29.13	18.083	-1.603	.131

* $p \leq 0.05$ level = significant

Table 21: Pair-sample t-test showing the significant differences within the proficiency group in the pre-test and the post-test

The tables illustrate that the high group's ability to perform accurate stress patterns showed a significant difference between the pre-test and post-test. The low group, on the contrary, was not significantly different in terms of performance in the

pre-test and post-test. The results of the significant differences between the pre-test and post-test in each group show that the high proficiency participants improved their competence in placing stress accurately more than the low group after they studied the stress placement rules explicitly and practised the pronunciation of English derivational suffixed words.

The standard deviations show high dispersion in the post-test scores of both proficiency groups. The high group's S.D. value was at 20.55 while the S.D. value of the low group was at 29.13. The results from the standard deviation show that the scores for each group spread out more after praxis intervention. This suggests that some participants improved significantly while other participants showed low rates of improvement or did not improve at all. With the high dispersion of post-test scores and the insignificant difference in the low group's performance, the researcher aimed to further investigate the individual performance of participants to identify the factors that influenced the participants' learning achievement of the pronunciation of English suffixed words.

Table 22 shows the scores foreach participant from both proficiency groups in terms of percentage. The scores ranged from the highest achievement to the lowest achievement by considering the number of gained scores. The participants of each proficiency group were divided into two groups based on their achievement after looking at their gained scores. The first group was the achiever group which referred to those with higher scores in the post-test. Another group that was marked in grey was considered the non-achiever group referring to those with lower or equal post-test scores compared to the pre-test scores.

High Proficiency Group			
Participants	Pre-test	Post-test	gained score (%)
H12	47%	91%	+ 44
H09	44%	72%	+ 28
H14	28%	47%	+ 19
H02	38%	56%	+ 18
H15	41%	59%	+ 18
H11	25%	38%	+ 13
H13	69%	81%	+ 12
H06	56%	66%	+ 10
H03	25%	34%	+ 9
H01	16%	22%	+ 6
H10	50%	56%	+ 6
H04	56%	59%	+ 3
H08	16%	16%	0
H05	50%	47%	- 3
H07	50%	44%	- 6
Average	**41%**	**53%**	---------

Low Proficiency Group			
Participants	Pre-test	Post-test	gained score (%)
L14	44%	75%	+ 31
L06	9%	34%	+ 25
L15	19%	41%	+ 22
L01	13%	34%	+ 21
L10	16%	31%	+ 15
L12	9%	22%	+ 13
L09	38%	44%	+ 6
L07	3%	6%	+ 3
L11	31%	34%	+ 3
L05	38%	38%	0
L02	6%	3%	- 3
L03	9%	6%	- 3
L13	34%	28%	- 6
L04	28%	19%	- 9
L08	47%	22%	- 25
Average	**23%**	**29%**	---------

Table 22: Scores for each participant from both proficiencies ranged by the number of gained scores.

According to Table 22, with the total number of 30 participants in this study, it is shown that the number of the achievers was more than the number of the non-achievers. Especially in the high proficiency group, 12 out of 15 students improved their performance after the praxis intervention. For the low proficiency group, there were 9 students who improved after they studied and practised the stress placement rules. Considering the gained scores, some students showed outstanding performance as their gained scores were very high. More surprisingly, they were those who started off with below average scores in the pre-test, such as H12, H09, L14, L06, L15, and L01. It showed that the praxis intervention which provided them the explicit lessons with engaging activities and exercises, could help enhance the participants' learning achievement in the stress placement of English derivational suffixed words. Some participants did not show much improvement, and some got poorer performance after the praxis intervention. To investigate how they learned and what factors that hindered their progress, the researcher asked the participants to join an interview session where they reflected on their performance during the praxis intervention and during the tests. They were also asked to provide their

metalinguistic knowledge regarding the stress placement rules of English suffixed words. The results from the interview were revealed and discussed in the following section.

4.4.2 Results from the interviews regarding students' achievement in learning and performing the stress patterns of English suffixed words

To investigate how the participant learned and performed the tasks, the data obtained from the interview were used to explain the reasons. The results from the interviews showed that the achievement of participants' performance was influenced by many factors. Only a few participants had outstanding performance after the three-week intervention phase. The possible reason was that the praxis intervention in this study served the treatment as an extra training course for participants without grades or scores. Therefore, it depended on the participants' motivation and effort in learning during the three weeks of praxis intervention.

4.4.2.1 Achievers with high gained scores

Among the group of achievers, there were only a few cases of participants who improved a lot and had outstanding performance in the post-test. The following participants are examples of those who gained high achievement with outstanding performance in the post-test.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

<u>H12 (47% -> 91% : gained score +44)</u>

<u>L14 (44% -> 75% : gained score +31)</u>

<u>H09 (44% -> 72% : gained score +28)</u>

These participants from high and low proficiency groups gained scores in the pre-test of less than 50% (H12 got 47%, while L14 and H09 got 44%). Surprisingly, their scores in the post-test jumped in percentage. The high percentage of the gained scores shows that they improved a lot after they learned and practised the rules. After interviews with the participants, it was found that they spent the three weeks during praxis intervention very effectively. They paid attention and enjoyed the activities and lessons in the classroom. They mentioned that the lessons

were easy to follow because there were clear examples and the drills in the video lessons helped them to see the patterns clearly and practice along. They also practised outside the classroom by doing the homework assignments which were assigned to them after each session. Sufficient time of exposure to the rules and the flexible time for practice helped these participants to acquire the rules and reached high achievement in their performance.

L06 (9% -> 34% : gained score +25)

L01 (13% -> 34% : gained score +21)

The participants with low proficiency levels showed performance with high achievement as well, though it can be seen from the post-test that their scores did not reach 50%. This is because their scores in the pre-test were very low. During the interviews, they mentioned that the class and lessons were engaging, and they enjoyed the activities so much. They became aware of English word stress after praxis intervention, so they tried to produce the prominent syllable within the suffixed words. However, they could not remember all the stress placement rules as they spent insufficient time on practising and learning, which is why their scores in the post-test were still below the average. It is suggested that the participants need to spend more time learning the rules and practising the pronunciation of suffixed words.

CHULALONGKORN UNIVERSITY

4.4.2.2 Achievers with moderate and low gained scores

Most of the participants in the group of achievers showed a higher number of participants whose gained scores were not high, meaning they improved only slightly after praxis intervention. The factors that influenced their low achievement were varied as discussed in the following.

H02 (38% -> 56% : gained score +18)

H13 (69% -> 81% : gained score +12)

H01 (16% -> 22% : gained score +6)

L09 (38% -> 44% : gained score +6)

According to the interviews with this group of achievers, it was found that their achievement was not high due to insufficient time for practice. The H02 could spell out all the rules which conformed to the stress placement rules of suffixed words. However, the pronunciation did not conform to the rules that H02 explained. This suggests that the participants need to spend more time practising to apply the rules in pronunciation to improve performance when he/she pronounces the suffixed words. Apart from the factor regarding the insufficient time for practice, the concern for using rules was one factor that influenced the participants' achievement. According to the interviews, some participants did not consider the rules when they performed tasks, so their pronunciation was based on prior knowledge acquired through exposure to English language. If the participants had high exposure to English language, they could get good scores in the pre-test, like the performance of H13. According to the performance in the pre-test and post-test, H13 got high scores on both tests (69% in the pre-test and 81% in the post-test), but his gained score was only 12% which was not high. It was found that this participant did not pay much attention to the lesson and never did the assignments after class. Good performance came from high exposure to the English language, which the participant learned and imitated from native English movies and shows. However, there were some participants whose exposure to the English language was complicated by Thai contexts such as H01 and L09, because most suffixed words were pronounced with a Thai accentual pattern. That led their performance to improve at a very low rate. Even though exposure to English language can aid participants to improve their pronunciation, the quality of the input they are exposed to and the explicit rules regarding the pronunciation are essential for them to achieve English language competence.

4.4.2.3 Non-achievers

The following group of participants comprised the non-achievers whose scores in the post-test were equal to or lower than the pre-test scores. The factors which influence their performance are discussed.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

H05 (50% -> 47% : gained score -3)

H07 (50% -> 44% : gained score -6)

L05 (38% -> 38% : gained score 0)

L13 (34% -> 28% : gained score -6)

According to the performance of this group of non-achievers, there was no improvement and some even got worse. They did not improve their performance after praxis intervention. Among these participants, some of their scores were even lower than the pre-test score. After the interviews, it was found that the participants in this group were not interested in the rules as they felt the rules were not important, and the rules made them confused and frustrated when they performed the tasks, so they gave up on learning and never thought about applying the rules in their pronunciation.

L02 (6% -> 3% : gained score -3)

L03 (9% -> 6% : gained score -3)

These participants were non-achievers who had serious problem with word pronunciation. Their performance reveals that they could not read the words even when the words were very simple. For example, they mispronounced the word “homeless” like [**ˈhəʊ^{m} mɪ ˈlas^{h}**] or pronounced the word “careful” like [**ˈka^{m} rɪ ˈful^{m}**]. According to the information they provided in the online survey regarding their experience with the English language, it was found that they had very low exposure to English language, especially reading. Such low exposure to English reading led the participants to very low vocabulary size in their mental lexicon and they lacked knowledge of phonemes and did not have any phonological awareness, which is essential for English reading and pronunciation. These learners need extra supports for practising reading skills and pronunciation skills from the beginning level to develop their ability to read and pronounce English words.

4.5 Metalinguistic knowledge study

This section presents the results regarding the metalinguistic knowledge of participants after praxis intervention. The quantitative results compare the metalinguistic knowledge of high and low proficiency groups. The qualitative results discuss the participants' knowledge regarding the stress placement rules after the morphophonological rules were explicitly taught and the students were trained in performance of the stress shift.

According to the theoretical framework regarding the learners' metalinguistic explanation, the learners' reasons were divided into two main kinds of reasons: Non-explicit and Explicit (Isarankura, 2008; Ngarmwirojkit, 2012; Worathumrong, 2015). The non-explicit reasons referred to the reasons which were not related to linguistic rules while the explicit reasons were related to the linguistic rules. The following table shows the categories of learners' metalinguistic explanation in two main kinds, non-explicit and explicit, as shown in Table 23.

Non-explicit reasons	Explicit reasons
▪ *Impressionistic* ▪ *Guessing/ Requesting Clarification* ▪ *No response/ Irrelevant*	▪ *Phonology* ▪ *Morphology* ▪ *Lexicon* ▪ *Morpho-phonology* ▪ *Syntax* ▪ *Semantics* ▪ *Pragmatics*

(Isarankura, 2008; Ngarmwirojkit, 2012; Worathumrong, 2015)

Table 23: Two main types of learner's metalinguistic knowledge of morphophonological rules of stress placement

The non-explicit reasons consist of three categories: Impressionistic, Guessing or Requesting clarification, and No response or Irrelevant. Derived from Isarankura (2008), the characteristics of each non-explicit reason category are briefly explained as follows:

1) Impressionistic reasons are those that mention intuition, feelings, or beliefs in pronouncing certain English suffixed words.

2) Guessing or Requesting clarification refers to reasons that show how the participants make a guess or show strategies which can help them guess such as using an interrogative sentence to ask for clarification.

3) No response or Irrelevant reasons are shown when participants tell the researcher that they have no idea, or they remain silent without giving any reasons. It is also categorized as this type if the participants provide information that is off topic or irrelevant.

The explicit reasons in this study comprise four categories: phonologically based, morphologically based, lexically based, and morpho-phonologically based. The characteristics of each explicit reason category are briefly explained as follows:

1) Phonologically based reasons are those which refer to the awareness of sounds, phonemes, and phonological processes.

2) Morphologically based reasons are reasons which merely show awareness of morphemes and how words are formed by certain morphemes.

3) Lexically based reasons are shown when participants recognize the pronunciation of certain words as words in lexicon or vocabulary without providing any rules regarding the speech sounds or word formation.

4) Morpho-phonologically based reasons are those that show the relationship between the suffixes and their effect on the sound segments and stress patterns. The participants may recognize each type of suffix and provide the stress placement rules of English suffixed words.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

4.5.1 Results of Thai learners' explicit reasons regarding the stress placement of English suffixed words

The overall results of metalinguistic knowledge from high and low proficiency groups are shown in Table 24.

Metalinguistic Knowledge \ Participants		High proficiency	%	Low Proficiency	%
Non-Explicit reasons	Impressionistic	16	13%	31	26%
	Guessing	7	6%	0	0%
	No response/Irrelevant	1	1%	15	13%
Explicit reasons	**Phonologically based**	4	3%	26	**22%**
	Morphologically based	16	13%	24	**20%**
	Lexically based	16	13%	6	5%
	Morpho-phonologically based	56	**47%**	9	7%
Blended reasons	Morpho-phonologically + Impressionistic	1	1%	0	0%
	Morpho-phonologically + Guessing	2	2%	0	0%
	Morpho-phonologically + Lexically	1	1%	0	0%
	Morphologically + Phonologically	0	0%	9	7%
Total		120	100%	120	100%

Table 24: Findings on the participants' metalinguistic explanations focusing on explicit reasons

According to Table 24, the metalinguistic explanations of the high proficiency group and the low proficiency group were based on different aspects of knowledge. Among the explicit reasons, the high proficiency group based their explanation on the pronunciation of suffixed words on the morpho-phonological rules at 47% whereas the low group based their explanation on the rules in phonology at 22% and in morphology at 20%. This could suggest that the high proficiency group learned the stress placement rules better than the low proficiency group and applied the rules in their pronunciation.

The following shows some examples of the explicit reasons provided by the participants on the pronunciation of suffixed words.

4.5.1.1 Phonologically based reasons

This kind of reason was mentioned when the participants relied on phonological rules such as how to separate syllables, how to combine consonant and vowel sounds, or mentioning the features of stress syllables. Examples of the phonologically based reasons are shown as follows.

<u>- Conforming pronunciation to the English accentual system</u>

L09: “political” [pə 'lɪ tɪ kəl]

“พยายามแบ่งพยางค์ แล้วออกเสียงไปเลย”

(I tried to separate the syllables and then read the word.)

L14: “financial” [faɪ 'næn ʃəl]

“อ่านทีละพยางค์”

(I pronounced the words by each syllable.)

<u>- Non-conforming pronunciation to the English accentual system</u>

H06: “instantaneous” [ɪn 'stænʰ tə nəs]

“สะกดออกมาแล้ว เน้นที่ tan”

(I spelled the word and put the stress on ‘tan’.)

L05: “probably” [prə 'be bli]

“ใช้การตัดแบ่งทีละพยางค์”

(I separated each syllable.)

L08: “consciousness” ['kɔnᵐ sɪ ʌl 'nesˡ]

“แบ่งพยางค์ตามความเข้าใจ”

(I separated the syllables based on my understanding.)

L15: “probably” ['prɑ pə li]

“ดูจากสระว่ารวมกับพยัญชนะแล้วจะออกมาแบบไหน”

(I looked at the vowel and thought of how it would sound when it was combined with the consonant.)

4.5.1.2 Morphologically based reasons

The participants used the morphologically based reasons to explain the rules which only focused on the morphological aspect and did not include the phonological aspect of the pronunciation. For example, they might recognize certain suffixes, or they might explain how the word is formed, but they

did not give the explanation about how the word was pronounced. Examples of morphologically based reasons are shown as follows.

<u>- Conforming pronunciation to the English accentual system</u>

H03: “Japanese” [dʒə pæ 'nis]

“คำเดิมคือ Japan เติม ese เข้าไปเป็น Japanese”

(The original word is ‘Japan’. Then {-ese} is added, so it becomes ‘Japanese’.)

H06: “financial” [faɪ 'næn ʃəl]

“ออกเสียงคำว่า finance แล้วเติม ial”

(I pronounced ‘finance’ and then I added {-ial}.)

<u>- Non-conforming pronunciation to the English accentual system</u>

H08: “doctrinaire” ['dɑkʰ 'triᵐ 'neəᵐ]

“ดู suffix ตัวท้าย แต่ไม่รู้ว่าเน้นที่ไหน”

(I looked at the suffix at the end, but did not know where it should be stressed.)

L04: “political” ['poᵐ lɪ tɪ 'kɔlᵐ]

“แยก al ออกมาแล้วก็เชื่อมกับ politic”

(I separated {-al} and combined it with ‘politic’.)

L10: “objectify” [ɔb 'dʒekᶠ tɪ 'faɪᵐ]

“อ่าน object ตามปกติ แล้วก็เติม ify ข้างหลัง”

(I read ‘object’ and I add {-ify} at the end.)

4.5.1.3 Lexically based reasons

The lexically based reasons were mostly given by the participants with high proficiency. It could be observed that they recognized the pronunciation of the words when exposed to them until they acquired the word and the pronunciation in their mental lexicon. The participants would mention that they recognized the words as they often saw or heard them in some contexts, or they

linked the pronunciation to a word which looked similar. Examples of lexically based reasons are shown as the following.

<u>- Conforming pronunciation to the English accentual system</u>

H02: “Japanese” [dʒə pæ 'nis]

“เคยได้ยินในคลิปที่เรียนในสาขา”

(I heard this word from a video clip that I learned in the faculty.)

H13: “instantaneous” ['ɪnᵐ stæn 'te nɪəs]

“เคยเห็นคำอื่นอย่าง simultaneous ก็เลยอ่านให้คล้ายกัน”

(I have seen other words like ‘simultaneous’, so I tried to pronounce the word to sound similar to ‘simultaneous’.)

L03: “Japanese” ['dʒe pæ 'nis]

“เห็นตามสถานที่ต่าง ๆ บ่อย ก็เลยออกเสียงตามนั้น”

(I have often seen the word from many places, so I pronounced it like that.)

<u>- Non-conforming pronunciation to the English accentual system</u>

H07: “political” [po 'lɪʰ tɪ 'kɔlᶠ]

“คำนี้คุ้น ๆ เพราะเคยเรียนแล้วเขาออกเสียงแบบนี้”

(This word looks familiar. I learned this word before and the lecturer pronounced it like this.)

H11: “financial” [faɪ 'nænʰ 'ʃɪəlᶠ]

“เห็นบ่อยตามโฆษณา”

(I have often seen this word in advertisements.)

L08: “probably” [pro 'be bli]

“คิดถึงคำที่คล้าย ๆ กัน เช่น project แล้วก็ปรับกับตัวที่เห็น”

(I thought of a similar word like ‘project’ and adapted the pronunciation to the word I saw.)

L15: “Japanese” [**ˈdʒe pæ nɪs**]

“เคยเจอในหนังสือพิมพ์ หรือหนังสือเรียน เพราะล่าสุดเพิ่งเรียนเรื่องวัฒนธรรม เคยเห็นในแบบฝึกหัด”

(I have seen the word in newspaper or textbooks. Recently, I just learned about cultures. I have seen it in the exercise.)

According to the lexically based examples, it can be considered that exposure to the English language might help them to get accurate pronunciation. However, the quality of the input that they were exposed to should be accurate as well, because there were some participants whose pronunciation did not conform to the English accentual system. This was probably due to their exposure to the English language with Thai interference such as the teachers, Thai announcers or public figures who pronounce English words with a Thai accent. Without knowledge regarding the stress placement rules, the learners were not able to apply and perform the pronunciation which conformed to the stress placement rules of English suffixed words.

4.5.1.4 Morphophonologically based reasons

The morphophonologically based reasons were the expected metalinguistic knowledge in this study as the stress placement rules of English suffixed words were taught and trained in the praxis intervention. The researcher expected that the participants would acquire the rules and be able to apply the rules in their pronunciation. The reasons which were based on morphophonological rules showed the interaction between the suffixes and phonological effects regarding stress placement. Some examples of morphophonologically based reasons are shown as follows:

<u>- Conforming pronunciation to the English accentual system</u>

H04: “doctrinaire” [**dɑk trɪ ˈneə**]

“เน้นตัวสุดท้ายเพราะ aire จะดึง stress มาที่ตัวเอง”

(This word is stressed on the last syllable because {-aire} will attract the stress to itself.)

H15: “objectify” [əb 'dʒek tɪ faɪ]

“ลงท้ายด้วย ify จำได้ว่าเน้นตัวที่สามจากท้าย”

(It ends with {-ify}. I remember it is stressed on the third syllable from the last.)

L11: “political” [pə 'lɪ tɪ kəl]

“suffix ตัวนี้เน้นตัวที่สามจากท้าย”

(With this suffix, the stress falls on the third syllable from the last.)

After analysing the data of the morpho-phonologically based reasons, the researcher found some performances which did not conform to the stress placement rules even though the participants were able to explain the rules regarding the stress placement rules of suffixed words. Some examples of morphophonologically oriented reasons that the participants learned but did not apply to their pronunciation are shown as follows:

<u>- Non-conforming pronunciation of the rules</u>

** Only metalinguistic knowledge conforms to the rules. **

H02: “doctrinaire” ['dɔk trɪ neə]

“suffix เป็นกลุ่มที่ต้องเน้นที่ suffix”

(The suffix is the type that puts the stress on the suffix.)

H05: “Japanese” [dʒə 'pæ nis]

“จำได้ว่า ese ต้องเน้นพยางค์สุดท้าย เลยพยายามออกเสียงข้างหน้าให้เบา ๆ”

(I remember that with {-ese}, the stress is on the last syllable, so I tried to pronounce the preceding syllables with a softer sound.)

** Only pronunciation conforms to the rules**

L12: “doctrinaire” [ˈdɑkʰ trə ˈneəᵐ]

“aire จะเน้นที่ tri”

(With {-aire}, it is stressed on ‘tri’.)

** Both metalinguistic knowledge and pronunciation <u>do not</u> conform to the rules.**

H07: “objectify” [ɔb ˈdʒekʰ tɪ ˈfaɪᵐ]

“ify พยายามจะเน้นที่ ti”

(I saw {-ify}, so I tried to put the stress on ‘ti’.)

H06: “consciousness” [ˈkɑnᵐ ˈʃɪəsᶠ nes]

“ออกเสียงตามที่เคยอ่านมาเลย ness จะต้อง stress ก่อนตัวมัน”

(I pronounced the word like I used to, and it must be stressed before the suffix {-ness}.)

To discuss more details about the morpho-phonologically based reasons, participants were divided into eight groups by their proficiency and their achievement. According to the participants’ gained scores in Table 22, the gained scores of the achievers in the high proficiency group were ranged from 44% to 3%. In the low proficiency group, the gained scores of the achievers were ranged from 31% to 3%. The researcher used the percentile ranks to clearly separate the high achievers from the low achievers in each proficiency group. Each group of participants consists of high achievers, moderate achievers, low achievers and the non-achievers in the high proficiency and the low proficiency groups as follows:

HH = High proficiency with high achievement

HM = High proficiency with moderate achievement

HL = High proficiency with low achievement

HN = High proficiency with no achievement

LH = Low proficiency with high achievement

LM = Low proficiency with moderate achievement

LL = Low proficiency with low achievement

LN = Low proficiency with no achievement

Table 25 shows the results of metalinguistic knowledge of the participants whose explanations were morpho-phonologically based. It also shows the percentage of the metalinguistic knowledge and the pronunciation that conformed to the stress placement rules comparing to those that did not conform.

Metalinguistic Knowledge \ Participants		HH N=24	HM N=32	HL N=40	HN N=24	LH N=24	LM N=24	LL N=24	LN N=48
Non-Explicit reasons	Impressionistic	4%	19%	20%	4%	21%	13%	13%	42%
	Guessing	8%	13%	-	4%	-	-	-	-
	No response/Irrelevant	-	3%	-	-	8%	8%	29%	8%
Explicit reasons	Phonologically based	-	6%	5%	-	25%	8%	42%	17%
	Morphologically based	-	6%	18%	29%	33%	17%	-	25%
	Lexically based	13%	25%	3%	17%	8%	-	-	8%
	Morpho-phonologically based	**71%**	**25%**	**55%**	**38%**	4%	17%	17%	-
	- MLK + Pronunciation conforms to the rules	67%	22%	25%	13%	4%	4%	17%	-
	- Only MLK conforms to the rules	4%	3%	20%	17%	-	8%	-	-
	- Only pronunciation conforms to the rules	-	-	-	-	-	4%	-	-
	- None of them conforms to the rules	-	-	10%	8%	-	-	-	-
Blended reasons	Morpho-phonologically + Impressionistic	-	-	-	4%	-	-	-	-
	Morpho-phonologically + Guessing	4%	-	-	4%	-	-	-	-
	Morpho-phonologically + Lexically	-	3%	-	-	-	-	-	-
	Morphologically + Phonologically	-	-	-	-	-	38%	-	-

Table 25: The finding on the metalinguistic explanation showing the morpho-phonological knowledge of the participants

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

The results from Table 25 show that the participants in the high proficiency group, which were high achievers, had metalinguistic knowledge and pronunciation which conformed to the stress placement rules more than the other groups of participants. After interviews with the high achievers, it was revealed that they practised the rules until the rules were acquired and their pronunciation conformed to the rules. Therefore, it can be concluded the perception of the rules alone could not guarantee accurate pronunciation, which conforms to the rules. Even when the rules were acquired, the participants might not be able to perform if they did not practice applying the rules in the pronunciation. They would not be able to detect the stressed position in their own performance. Word pronunciation

tasks require knowledge about the rules and the production process at the same time. The perception of the rules could help the learners notice their own pronunciation and apply the rules when they saw new words. However, the production process required a lot of practice until the learners acquired the rules and performed accurately. To achieve competence regarding the English pronunciation of suffixed words, learners need to spend more time learning the rules as well as practising their pronunciation.

4.5.2 The results of Thai learners' explicit reasons regarding the stress placement of English suffixed words

The findings on metalinguistic knowledge regarding the non-explicit reasons are presented in Table 26.

Metalinguistic Knowledge \ Participants		High proficiency	%	Low Proficiency	%
Non-Explicit reasons	Impressionistic	16	13%	31	26%
	Guessing	7	6%	0	0%
	No response/Irrelevant	1	1%	15	13%
Explicit reasons	Phonologically based	4	3%	26	22%
	Morphologically based	16	13%	24	20%
	Lexically based	16	13%	6	5%
	Morpho-phonologically based	56	47%	9	7%
Blended reasons	Morpho-phonologically + Impressionistic	1	1%	0	0%
	Morpho-phonologically + Guessing	2	2%	0	0%
	Morpho-phonologically + Lexically	1	1%	0	0%
	Morphologically + Phonologically	0	0%	9	7%
Total		120	100%	120	100%

Table 26: The findings on participants' explanations focusing on non-explicit reasons

Table 26 focuses on the non-explicit reasons provided by participants. The results show that both the high and low proficiency groups provided impressionistic reasons more than other types of non-explicit reasons. This means the participants provided reasons for the pronunciation of suffixed words by using their feelings or the impression of the words that they saw on the screen in the performance task. The following reasons are shown as examples of impressionistic reasons.

4.5.2.1 Impressionistic reasons

H15: “political” [po 'lɪ tɪ kəl]

“ไม่ได้คิดอะไร เจอก็อ่านไปเลย”

(I did not think of anything. I just looked at the words and pronounced them.)

L13: “Japanese” [dʒə pæ 'nis^{h}]

“คิดว่าน่าจะออกแบบนี้”

(I think it should be pronounced like this.)

H01: “consciousness” [kən 'ʃɪəs^{h} 'nes^{h}]

“อ่านไปเลย พยายามจะนึกกฎแล้วแต่จำไม่ได้”

(I just pronounced it. I tried to think of the rules, but I could not remember them.)

L09: “objectify” [ɔb 'dʒek^{f} tɪ 'faɪ^{m}]

“อ่านตามที่คิด เพราะไม่แน่ใจว่าออกเสียงยังไง”

(I pronounced it from what I thought it should be because I was not sure how to pronounce it.)

L09: “financial” [fɪ la 'si^{f}]

“อ่านไปเลย”

(I just pronounced it.)

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

To examine the impressionistic reasons provided by the low proficiency group in greater detail, the participants were categorized into eight groups based on their proficiency levels and their levels of achievement as mentioned earlier. Table 27 highlights the percentage of Impressionistic reasons provided by the non-achievers in the low proficiency group.

Metalinguistic Knowledge \ Participants		HH N=24	HM N=32	HL N=40	HN N=24	LH N=24	LM N=24	LL N=24	LN N=48
Non-Explicit reasons	Impressionistic	4%	19%	20%	4%	21%	13%	13%	42%
	Guessing	8%	13%	-	4%	-	-	-	-
	No response/Irrelevant	-	3%	-	-	8%	8%	29%	8%
Explicit reasons	Phonologically based	-	6%	5%	-	25%	8%	42%	17%
	Morphologically based	-	6%	18%	29%	33%	17%	-	25%
	Lexically based	13%	25%	3%	17%	8%	-	-	8%
	Morpho-phonologically based	71%	25%	55%	38%	4%	17%	17%	-
	- MLK + Pronunciation conforms to the rules	67%	22%	25%	13%	4%	4%	17%	-
	- Only MLK conforms to the rules	4%	3%	20%	17%	-	8%	-	-
	- Only pronunciation conforms to the rules	-	-	-	-	-	4%	-	-
	- None of them conforms to the rules	-	-	10%	8%	-	-	-	-
Blended reasons	Morpho-phonologically + Impressionistic	-	-	-	4%	-	-	-	-
	Morpho-phonologically + Guessing	4%	-	-	4%	-	-	-	-
	Morpho-phonologically + Lexically	-	3%	-	-	-	-	-	-
	Morphologically + Phonologically	-	-	-	-	-	38%	-	-

Table 27: The findings on the metalinguistic explanation highlighting the percentage of Impressionistic reasons provided by the non-achievers in the low proficiency group

According to Table 27, the non-achievers of the low proficiency group were more impressionistic than the other groups. To find the factors which support the phenomenon of the non-achievers in the low proficiency group being so impressionistic about the pronunciation, the findings from the interview with the participants were discussed. It was found that the impressionistic reasons were mostly provided by the low proficiency group who were the non-achievers as shown in the table above. The results from the interview with the non-achievers showed two main factors which led them to be impressionistic in their pronunciation. The first factor was that they did not consider the rules and gave up on practising because of having a negative attitude towards learning the rules. Another factor was that they had insufficient vocabulary in their mental lexicon. Also, they lacked knowledge of phonemes and phonological awareness which led them to mispronounce words.

Apart from the impressionistic reasons, there were other kinds of non-explicit reasons provided by the participants, as shown in the following categories.

4.5.2.2 Guessing

H11: “doctrinaire” [**ˈdɑkʰ trɪ ˈneəᵐ**]

“มั่ว”

(I just winged it.)

H07: “instantaneous” [**ɪn ˈstænʰ te ˈnɪəsᶠ**]

“ไม่รู้ เดาเอา”

(I did not know. I just guessed.)

H14: “consciousness” [**ˈkɔn ˈsɪ ʃʊ ˈɔ nes**]

“เดา”

(I just guessed.)

4.5.2.3 No response/ Irrelevant

L07: “objectify” [**ˈɔbʰ dʒek tɪ ˈfaɪᵐ**]

“ob อ่านว่า อ๊อบ ส่วนตัวนี้อ่านว่า อิฟาย”

(‘ob’ is pronounced [**ˈɔbʰ**] and this one is pronounced [**ɪ ˈfaɪᵐ**].)

L05: “consciousness” [**ˈkɔnᵐ ˈsɔʰ nes**]

“เพราะมี o มี sci”

(It is because there are ‘o’ and ‘sci’.)

L15: “doctrinaire” [**ˈdɑk trə ˈneər**]

“เคยเรียนมาว่าคำพวกนี้คล้าย ๆ กริยาสามช่อง swim swam swum เลยเหมือน near naire มันมีตัว r กำกับอยู่ว่าต้องออกเสียง”

(I learned this word before. It looks similar to the three forms of verbs like ‘swim – swam – swum’. It sounds like ‘near’ [**ˈnɪər**] and ‘naire’ [**neər**]]. There’s also an ‘r’, so I should pronounce [r] too.)

Also, some participants provided reasons which were a combination of reasons, such as the following.

Morpho-phonologically + Impressionistic

H05: “probably” ['prɑ bə bli]

“ไม่รู้จักคำนี้ พอเห็น ly ก็เลยพยายามนึก stress ตัวข้างหน้า (stress ของคำเดิม) แต่เพราะไม่เคยเห็นคำนี้ เลยไม่รู้ว่า stress ตรงไหน ก็เลยใช้ sense”

(I did not know this word. I saw {-ly}, so I tried to think of the stressed position of the base, but I did not know this word. I did not know where to put the stress, so I just tried to make sense.)

Morpho-phonologically + Guessing

H05: “consciousness” [kən 'ʃɪəs nes]

“ness จะใช้ stress ตัวเดิม ก็เลยคิดว่า cious คือ stress เดิม ก็เลยเน้น cious แต่ก็แอบไม่แน่ใจว่าจะเป็น con หรือเปล่าเพราะส่วนใหญ่ภาษาอังกฤษมักจะเน้นตัวหน้า แต่เลือก cious เพราะเน้นยากกว่า”

({-ness} keeps the stress in the same position. I think ‘cious’ is the prior stressed position, so I stressed ‘cious’. I am still not sure whether it is stressed on ‘con’ because most English words are stressed on the first syllable. By the way, I chose ‘cious’ because it is more difficult to put the stress there.)

H09: “consciousness” [kən 'sɪəsʰ 'nesˡ]

“เป็นกลุ่ม neutral ก็เลยเดาว่าเน้นที่ con”

(The suffix is neutral stressed, so I guessed it is stressed on ‘con’.)

Morpho-phonologically + Lexically based

H02: “probably” ['prɑb ə bli]

เป็นกลุ่มที่ stress จะอยู่ที่เดิม แต่ไม่แน่ใจว่า stress เดิมอยู่ที่ไหน แต่คุ้น ๆ ว่าเคยได้ยินเขาออกเสียงแบบนี้

(The suffix is in the group for which the stress stays in the same position, but I am not sure of the stressed position of the base word. I think I heard people pronounce it like this.)

Morphologically + Phonologically

L01: “probably” [**ˈpro^{m} bə ˈbli^{f}**]

“แยกพยางค์ก่อน ดูพยัญชนะแล้วก็สระ จากนั้นก็ดู suffix”

(I separated syllables, and looked at the consonants and vowels. Then, I looked at the suffix.)

L10: “Japanese” [**dʒə ˈpæ nis**]

“อ่านเว้นเป็นพยางค์ แล้วเติม ese ข้างหลัง”

(I separated syllables and added {-ese} at the end.)

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

CHAPTER 5

CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

This chapter presents the conclusion of the study. It also discusses the implications and recommendations of the study. The main findings of the study are discussed with regard to the research questions and hypotheses. Then, the pedagogical implications are suggested. The last part of the chapter provides various recommendations for future research.

The present study aimed to explore the stress patterns of English suffixed words produced in the pre-test and post-test tasks by Thai learners having diverse proficiency levels. The learners' performance in the pronunciation of suffixed words was compared to see how they performed before and after praxis intervention. Praxis intervention was carried out to explicitly teach the morpho-phonological rules of suffixed words and provide exercises for students to practise in order to pronounce suffixed words systematically. The study also investigated the metalinguistic knowledge of Thai learners after they were explicitly and systematically taught and trained how to pronounce English derivational suffixed words.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

The 3 research questions in this study are as follows:

1. What stress patterns of English derivational suffixed words are pronounced by Thai learners?

2. What metalinguistic knowledge governs Thai learners' pronunciation of English derivational suffixed words?

3. How do Thai learners of English perform before and after the praxis intervention where they are taught and trained in the pronunciation of English derivational suffixed words?

The hypotheses for the research questions are provided in the following statements.

1. The stress patterns of derivational suffixed words that Thai learners of English pronounce are varied. Learners with high proficiency show patterns that are more in agreement with the English accentual system.

2. Metalinguistic knowledge governing the pronunciation of English derivational suffixed words is different between learners with various proficiency levels.

3. After praxis intervention consisting of explicit teaching and training in the stress placement rules for English derivational suffixed words, Thai learners tend to become more accurate in their pronunciation of English derivational suffixed words compared to their pronunciation before praxis intervention.

5.1 The main findings of the study

5.1.1 Stress patterns performed by Thai learners

First, the researcher would like to discuss the results of accurate stress patterns performed by both proficiency levels in the post-test compared with the post-test. Figures 25 and 26 show the percentage of accurate stress patterns performed in the pre-test and post-test by high and low proficiency groups.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

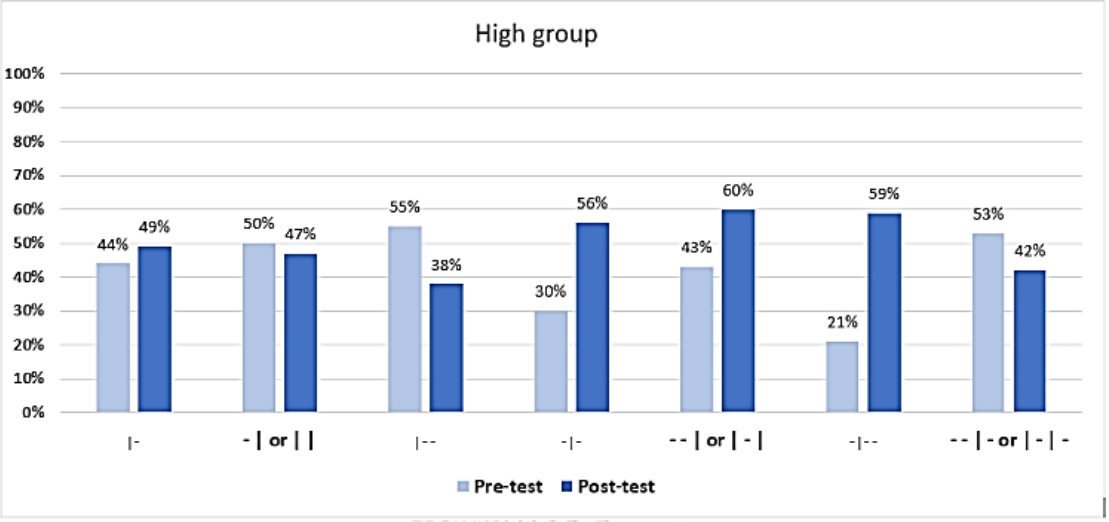


Figure 25: Percentage of accurate stress patterns performed by the high proficiency group in the pre-test and post-test

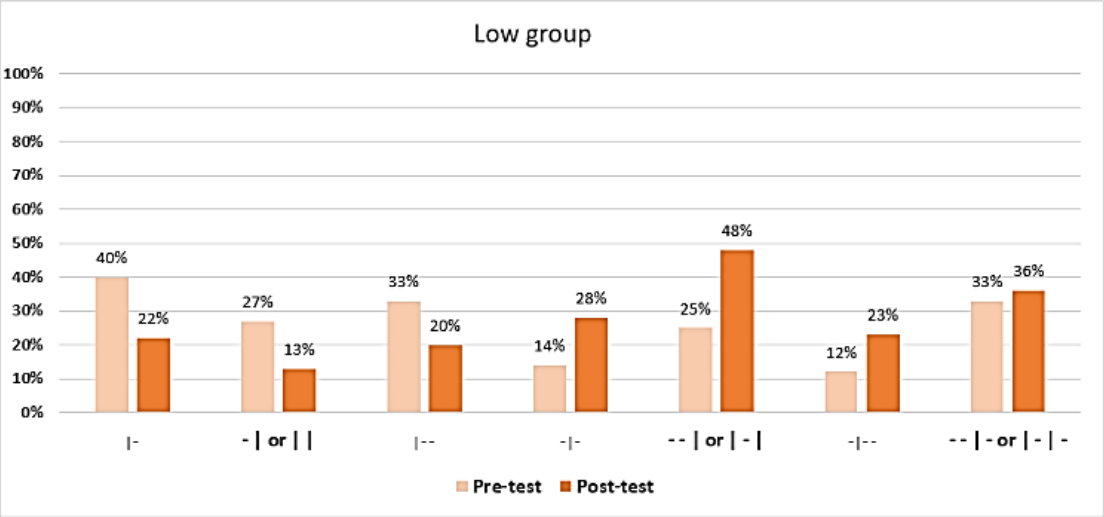


Figure 26: Percentage of accurate stress patterns performed by the low proficiency group in the pre-test and post-test

Overall, the high proficiency group performed the stress patterns in agreement with the English accentual system better than the low proficiency group. Comparing the participants' accurate stress patterns in the pre-test and post-test, the researcher found that both proficiency groups performed poorer in pattern (- |) or (| |) and pattern (| - -). Discussing the results from the words with expected pattern (-

|) or (| |), they were all attached with ultimate stressed suffixes. After the praxis intervention, the error pattern (| -) increased significantly, while the expected patterns decreased. It can be understood that the error pattern was affected by overgeneralization. The participants thought that all English disyllabic words were stressed on the first syllable, so they overgeneralized the (| -) pattern regardless of the stress placement rules for ultimate stressed suffixed words. For the lower rates of accurate stress patterns (| - -), the researcher found difficulty in performing the accurate stress patterns caused by the types of suffixes. The pattern (| - -) was attached by neutral stressed suffixes. It can be assumed that the neutral suffixed words are problematic because the patterns are fixed to the base words. This problem is due to the free accentual system in English. There are no rules governing the stress patterns of the words, meaning one has to learn and remember the locations by heart. Most Thai students are not exposed to the English language enough to learn all the word accents in English base words.

The error patterns found in Thai learners' stress placement are caused by many factors. The three major factors causing error patterns are briefly concluded as follows:

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

1) Thai Transfer

The error patterns caused by Thai transfer were mostly found in the findings. They were influenced by Thai accentual system. A characteristic of this pattern is that the final syllable is always stressed (Luksaneeyanawin, 1983; Naksakul, 2013; Surinpiboon, 1985).

2) Overgeneralization

As the result of overgeneralization, error patterns were also produced frequently by Thai learners. They were affected by the English accentual system, which was overly applied in the pronunciation of English suffixed words. The learners

put the stress on the first syllable of the suffixed words regardless of any stress placement rules. A possible reason is that the learners might have thought that most English words carry the stress on the first syllable, so they apply that rule to every English word without any knowledge in the stress placement rules of suffixed words. Error patterns were caused by the overgeneralization of the anglicized patterns. The learners might learn that most English words are not stressed on the last syllable. Regardless of the stress placement rules of suffixed words, they tried to anglicise the English stress patterns and avoid putting the stress on the last syllable.

3) Words pronounced as if they are compound words

The last stress error patterns found in Thai learners' performance are the stress patterns that are produced using the compounding patterns of Thai words. According to the word-formation rules, a suffix that is attached to a word involves the boundary which separates the morpheme from the base word (Chomsky and Halle, 1968; Katamba, 1993). Therefore, learners may keep the stress pattern of the base word and create the pattern again when attaching a suffix, such as in the word 'happiness' pronounced with the pattern (| | -), or the word 'beautiful' pronounced with the pattern (- | |).

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Figure 27 summarizes the percentage of all error patterns on the stress placement of English suffixed words by Thai learners in both the pre-test and post-test. The patterns are categorized by the factors influencing the errors on stress patterns.

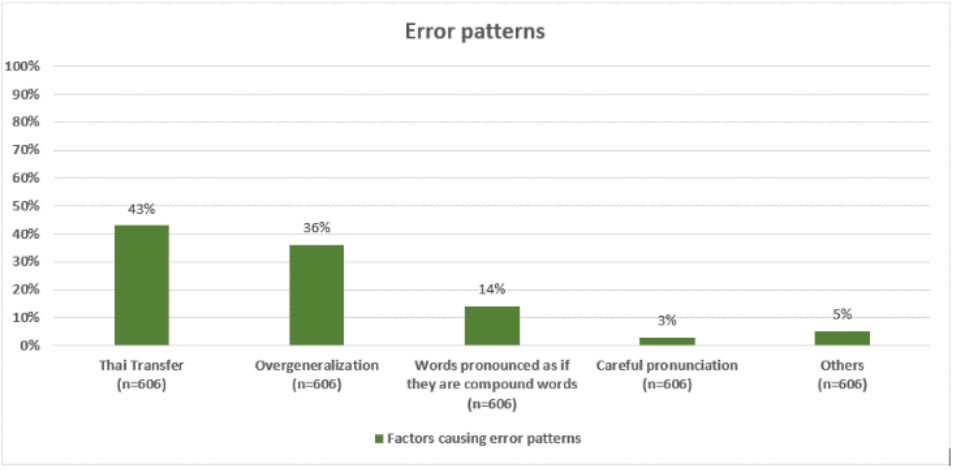


Figure 27: Percentage of all error patterns on the stress placement of English suffixed words categorized by factors causing the errors

Apart from the three major factors above, other factors may affect the errors in stress placement made by Thai learners. The first factor is the frequency of suffixes and suffixed words. According to the results, it was found that the learners could assign stress accurately when they pronounced high-frequency words or words attached by high-frequency suffixes. This supported the finding by Jarmulowicz (2002) who found that suffix frequency might have an impact on learners' knowledge about suffixes because learners are exposed more frequently to words attached with frequent suffixes. Jaiprasong and Pongpairoj (2020) also discussed the same findings in their study by stating that the unsatisfactory production of stress demanding suffixed words, or the ultimate stress suffixed words, might be due to infrequent exposure to derived words with suffixes of this type.

Another point that may cause errors in stress patterns is the number of syllables as well as awareness of stressed and unstressed syllable. As claimed by Watanapokakul (2009), the results in this study supported her findings that the number of syllables correlates with the variation of stress patterns. This means the more syllables the suffixed words contain, the greater number of various stress

patterns the learners will produce. In addition to the number of syllables, the lack of awareness of the features of unstressed syllables can cause errors in stress patterns as well. Even though the learners learn the rules and are able to apply them in their pronunciation, errors can still occur. They still put the stress on the first syllable because they might not be aware that when the stress is shifted, the strong syllable in the base word should be reduced to a weak syllable after the stress shift. Along with the stress placement rules of English suffixed words, therefore, learners need to learn the phonetic features of both strong and weak syllables as well as practice pronouncing stressed and unstressed syllables to develop greater awareness of stress patterns consisting of both stressed and unstressed syllables.

5.1.2 Thai learners' performance before and after the praxis intervention

The findings on Thai learners' performance before and after the praxis intervention are discussed and shown in Table 28 and 29. Table 28 shows the results of participants' performance and the significant differences within the proficiency group in the pre-test and the post-test.

Group	Pre-test		Post-test		t	P
	Mean (%)	S.D.	Mean (%)	S.D		
High proficiency (N=15)	40.73	15.723	52.53	20.553	-3.597	.003*
Low proficiency (N=15)	22.93	14.926	29.13	18.083	-1.603	.131

* $p \leq 0.05$ level = significant

Table 28: Pair-sample t-test showing the significant differences within the proficiency group in the pre-test and the post-test

According to Table 28, the increasing mean scores in the post-test of the high and low proficiency groups show that both proficiency groups improved their performance after they explicitly learned and practised the stress placement rules of

English suffixes. The high proficiency group improved their performance at a very high significant rate while the low group's performance improved insignificantly. It can be concluded that the high proficient students could perform much better than the low proficient students. After they explicitly learned and practised the stress placement rules of English suffixes, the high proficient students could assign the stress more accurately than the low proficient students.

Table 29 shows the scores of each participant from both proficiencies ranged by the number of the gained scores.

High Proficiency Group			
Participants	**Pre-test**	**Post-test**	**gained score (%)**
H12	47%	91%	+ 44
H09	44%	72%	+ 28
H14	28%	47%	+ 19
H02	38%	56%	+ 18
H15	41%	59%	+ 18
H11	25%	38%	+ 13
H13	69%	81%	+ 12
H06	56%	66%	+ 10
H03	25%	34%	+ 9
H01	16%	22%	+ 6
H10	50%	56%	+ 6
H04	56%	59%	+ 3
H08	16%	16%	0
H05	50%	47%	- 3
H07	50%	44%	- 6
Average	**41%**	**53%**	---------

Low Proficiency Group			
Participants	**Pre-test**	**Post-test**	**gained score (%)**
L14	44%	75%	+ 31
L06	9%	34%	+ 25
L15	19%	41%	+ 22
L01	13%	34%	+ 21
L10	16%	31%	+ 15
L12	9%	22%	+ 13
L09	38%	44%	+ 6
L07	3%	6%	+ 3
L11	31%	34%	+ 3
L05	38%	38%	0
L02	6%	3%	- 3
L03	9%	6%	- 3
L13	34%	28%	- 6
L04	28%	19%	- 9
L08	47%	22%	- 25
Average	**23%**	**29%**	---------

Table 29: Scores for each participant from both proficiencies ranged by the number of gained scores.

The results from Table 29 shows the effectiveness of praxis intervention as the number of achievers was more than the number of non-achievers. The lessons providing explicit rules, engaging activities and practices could help the students enhance their metalinguistic knowledge and their performance. More surprisingly, some of the students with high gained scores were those who got below average scores in the pre-test. Also, those students with high gained scores were

found in both high and low proficiency groups, and some students got scores in very high percentages in the post-test such as H12 and L14. The results from the interview revealed that these students were interested in the lessons, activities, and practicing the rules in their pronunciation. Therefore, it has been proven that once the students are engaged, they can achieve significantly as in the case of L06 whose score was 9% in the pre-test, and jumped up to 34% in the post-test. I was also found that some students improved very little or got poorer in their performances. Therefore, the factors that affect their learning achievement should be investigated and discussed.

As the praxis intervention in the study was executed in a very limited period, the participants may not have been sufficiently exposed to explicit teaching and practising in the classroom. Also, the praxis intervention only served as an extra training course for participants, without grades or scores for their performance. Materials and homework assignments were provided as extra voluntary practice outside the classroom. Therefore, learning achievement in the pronunciation of English suffixed words seemingly depended on the learners' individual differences. Khasinah (2014) discussed the factors which affect learners' achievement in language learning, offering that individual differences such as motivation, attitude, intelligence, and personality are crucial factors that may hinder or benefit learners' effort to achieve competence in the target language.

After interviewing the participants, the key factor found to play an important role in Thai learners' achievement in the pronunciation of English suffixed words was the interest in using the rules and practising pronunciation. High achievers who are more motivated and put forth effort into learning and practising, both inside and outside the classroom, tend to be more successful compared to the learners who were not interested in learning and practising the rules. When the rules are not interested, learners tend to rely on their prior knowledge when performing read-

aloud tasks. Many research studies confirm the importance of exposure to the English language, which can aid English-language learners to achieve language competence (Al-Zoubi, 2018; Jarmulowicz et al., 2007; Thanavisuth, 2007). However, the quality of the input that the learners are exposed to, whether inside or outside the classroom, is also important in EFL teaching and learning settings, including those in Thailand. Chantapanyo (2016) suggested that extensive experience in studying the English language does not necessarily correlate to accurate pronunciation. One factor which might play a role is the transfer of training, which provides the input that learners are exposed to, such as teachers' pronunciation, textbooks, materials, and curriculum design.

According to the results from the present study, participants benefiting from high exposure to authentic English language from native speakers can get good scores on tests, while participants who are exposed to the English language in a Thai setting with interference have poor performance due to mostly pronouncing English suffixed words with Thai transfer patterns. However, Thai learners with high exposure to the English language do not show high achievement, i.e., high gained scores after praxis intervention, even though their pre-test scores are high. This is because they did not apply the stress placement rules in their pronunciation. When they depended on prior knowledge, the learners were not able to apply the rules when seeing new suffixed words that they had never seen before.

Another problem among Thai learners which hinders them to achieve more in the pronunciation of English suffixed words is limited vocabulary size as well as the lack of phonemic and phonological awareness. These factors are clearly demonstrated by learners who cannot read even basic words and produce many mispronunciation errors. These factors need to be fixed by encouraging the learners to read more extensively as a way to increase the size of their vocabulary. Also, they

should be exposed to English in both spoken and written forms for more improvement on the quality of lexical representation, which bridges the association of word meaning, phonological knowledge and morphological knowledge (Jarmulowicz et al., 2007).

5.1.3 The main findings on metalinguistic knowledge

This research aims to investigate the metalinguistic knowledge of Thai learners in the pronunciation of English suffixed words after praxis intervention. Explicit lessons are used in the praxis intervention phase to raise metalinguistic awareness among Thai learners regarding the stress placement rules for English suffixed words.

The results from the participants show that the learners from high and low proficiency groups based their pronunciation on different kinds of metalinguistic knowledge. The students with high proficiency relied heavily on morphophonological knowledge as they applied the stress placement rules of English suffixes in their pronunciation. The low-proficiency group based their knowledge either on phonological rules or morphological rules. From the results, it can be implied that Thai learners become more aware of the linguistic rules in pronunciation after receiving explicit instruction. Among the group of low proficiency participants, it was found that many of them, especially the non-achievers, were impressionistic when they performed the read-aloud tasks. From the interviews with the non-achievers in the low proficiency group, it can be concluded that they pronounced English suffixed words based on their feelings or impressions because they did not consider the rules and could not read certain words due to the limited size of their vocabulary as well as having a lack of phonemic and phonological awareness.

Even though high proficiency students show positive signs of using metalinguistic knowledge concerning the stress placement rules for English suffixed

words, some performances do not conform to the stress placement rules. The results show a correlation between learners' achievement and the awareness of stress placement rules. Higher achievers with high gained scores can spell out their metalinguistic knowledge and assign accurate stress in their pronunciation conforming to the stress placement rules of English suffixed words. The results from the interviews with high achievers show that they spend time practising until the rules are acquired.

The fact that some participants did not acquire the metalinguistic knowledge or could not perform the stress shift according to the morpho-phonological rules, it must have been from the lack of time to study the rules and sufficiently practice the pronunciation. Carlet and Souza (2018) revealed in their study that only the perception skills improved after explicit instruction, but did not carry out to production. This can be implied to the present study that the perception about the stress placement rules is different from the production of the suffixed words regarding the stress placement. To perceive or acquire the rules, the learners need to be instructed explicitly to understand how they work. To achieve performance in production, learners need a significant amount of practice using pronunciation (Eyovi, 2016). Metalinguistic knowledge has an important role in language learners' competence because it can assist learners who are in different stages of development to monitor, describe, explain, and correct their performance. If the learners and teachers can identify the developmental stage the learners are in, it will help them to know what should be developed and how to improve their performance in accordance with their individual differences in language learning (Luksaneeyanawin, 2007)

5.2 Pedagogical implications

The findings from the present study contribute to the implications for the English language teaching in the pronunciation of suffixed words. The implications are provided as follows.

First, the study of stress patterns shows various error patterns that are produced by Thai learners of English. Such error patterns can be used as examples to show the distinction between error stress patterns and accurate stress patterns. The findings of interlanguage study regarding the factors influencing each pattern can be implemented for explaining the characteristics of error stress patterns. The features of the stressed and unstressed syllables should be introduced and trained. Teachers could compare the features of stressed and unstressed syllables by playing recorded sounds of word pronunciation and showing the features of each syllable by using graphs or pictures. Then, the learners would try to listen and differentiate the stressed and unstressed syllables as well as try to pronounce the word using the practice of rhythm in nursery rhymes, or rhythm in dancing or exercising.

Second, the study discusses the factors that influence learners' achievement in the pronunciation of English suffixed words. It demonstrates that highly motivated learners tend to be more successful than less motived learners. Accordingly, the researcher suggests that teachers use the materials or strategies that encourage learners' motivation and effort in learning. Engaging activities or games which allow learners to process the rules and practice pronunciation can create an enjoyable environment in the classroom. Learners will not get bored or lose the motivation to learn. The study also points out the limitations of praxis intervention, which does not give grades or scores for the learners' performance. Taking this limitation into account, grades, scores, and corrective feedback should be provided so that learners can track their own performance and be motivated to improve.

Apart from engaging and motivating activities, the factors regarding exposure to the English language and the quality of input should be taken into consideration

as well. Learners should be adequately exposed to English words along with the pronunciation in Educated English or Standard English. In Thailand's educational system, English is a compulsory subject, but a lot of Thai students cannot speak English well or pronounce the English words correctly. One reason is that English lessons are taught in Thai in some English classrooms. Moreover, English is taught as a foreign language, so students do not feel that it is necessary to use English outside the classroom. Therefore, Thai learners do not have enough exposure to English language and do not practise English pronunciation or English speaking enough. The quality of English language input is also important as it may affect learners' pronunciation. Even they spend time studying and practising English pronunciation outside the classroom, they might produce pronunciation errors if they are exposed to English words or conversation with Thai pronunciation produced by teachers, announcers, or influencers who speak English with Thai pronunciation. To solve this problem, teachers should apply and introduce Standard English pronunciation to their students and let them practise the pronunciation until they learn how to pronounce the words correctly. English pronunciation in different contexts can be presented to show the differences and variations in English pronunciation. Tasks and exercises that allow students to practise English pronunciation should be used. Teachers may let their students watch video clips of movie excerpts or news report, and let them practise by repeating the dialogues or doing some role plays.

Finally, this study proves that metalinguistic knowledge could facilitate learners' pronunciation of English suffixed words if given enough practice. This can be seen from the performance of high achievers who can spell out the metalinguistic explanations and the pronunciations which conform to all the stress placement rules. When they acquire the morphophonological rules of English suffixes, they can apply the rules to new suffixed words presented on the screen in the post-test. It led them to exhibit outstanding performance and high achievement. It was also found that some students can spell out all the stress placement rules of English suffixes, but their pronunciation did not conform to the rules. It is due to the lack of sufficient

practice of using the rules in their pronunciation. Once students learned the rules, they should apply the rules and keep on practising pronunciation until it becomes natural. When they practise a lot, they will be aware of their pronunciation and will be able to detect errors and correct their pronunciation. For the benefits of raising the morphophonological awareness and improve the learners' performance on the pronunciation of English suffixed words, the use of metalanguage or metalinguistic skills should be supported and encouraged in the classroom. Teachers should provide opportunities for learners to reflect on their own performance by using their metalinguistic knowledge. The teachers could also provide activities that allow learners to perform, observe, describe, and correct their pronunciation. Read-aloud tasks or the error detecting games could be used so that students can use their metalinguistic knowledge to find errors, explain the reasons, and correct those errors.

5.3 Limitations and recommendations for future research

The present study aims to explore the stress patterns of English suffixed words performed by Thai learners and compare the learners' performance regarding the pronunciation of English suffixed words before and after praxis intervention. Also, it investigates the metalinguistic knowledge of learners in the pronunciation of English suffixed words after they received explicit instruction concerning the stress placement rules of suffixes. The research questions and hypotheses were fulfilled by the findings of the study. However, there are some limitations that the researcher would take into account for the recommendation of future research.

This study implemented word pronunciation tasks which only included words in isolation. The results of learners' performance and stress patterns may show some distinctions if different kinds of tasks are used. Accordingly, future research should be extended to study the stress patterns and learners' performance by using different tasks, such as communicative conversational tasks or text readings.

Due to the limited period of the praxis intervention, the results showed only a few cases of participants who highly achieved their performance in the

pronunciation. The researcher hopes that longer period of praxis intervention with longer time of exposure to explicit lessons in the classroom could yield different results of learners' performance in the pre-test and post-test phases. Also, a delayed post-test should be conducted to investigate learners' retention in performance regarding the stress placement rules and the pronunciation of English suffixed words.

The results from metalinguistic knowledge show differences between the metalinguistic knowledge of participants with different proficiency levels. Highly proficient learners acquire the morphophonological rules better than low proficient learners who base their knowledge on phonological or morphological rules. As the results show varying levels of metalinguistic knowledge among learners with different proficiency levels, future research should be extended to the study of metalinguistic knowledge regarding the pronunciation of English suffixed words by learners with different L1 backgrounds.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

REFERENCES

Al-Zoubi, S. M. (2018). The impact of exposure to English language on language acquisition. *Journal of Applied Linguistics and Language Research, 5*(4), 151-162.

Ali, N., and Phil, M. (2017). On Pakistani ESL learners' pronunciation practices of derivational affixes. *International Journal of English and Education, 6*(2), 309-331.

Alipour, S. (2014). Metalinguistic and linguistic knowledge in foreign language learners. *Theory and Practice in Language Studies, 4*(2), 2640-2645.

Amer, M. M., and Amer, W. M. (2011). The role of explicit instruction in English word stress patterns in an EFL Arab university context. *Indonesian Jornal of English Language Teaching, 7*(2), 71-87.

Aydin, F. (2018). L2 metalinguistic knowledge and L2 achievement among intermediate-level adult Turkish EFL learners. *Journal of Language and Linguistic Studies, 14*(1), 28-49.

Bee, P. (1975). Restricted phonology in certain Thai liner syllables. In J. G. Harris & J. R. Chamberlain (Eds.), *Studies in Tai linguistics in honor of William J. Gedney*. Bangkok: CIEL.

Beebe, L. (1984). Myths about interlanguage phonology. In S. Eliasson (Ed.), *Theoretical issues in contrastive phonology* (pp. 51-62). Heidelberg: Julius Groos Verlag.

Byun, J. (2014). *Study on korean EFL learners' stress shift realizations in three suffix patterns : Stress-moving, stress-carrying and neutral suffixes*.

Carlet, A., and Souza, H. K. d. (2018). Improving L2 pronunciation inside and outside the classroom: perception, production and autonomous learning of L2 vowels. *Ilha do Desterro, 71*(3), 099-123.

Carter, R. (2003). Language awareness. *ELT Journal, 5*(1), 64-65. Retrieved from https://doi.org/10.1093/elt/57.1.64

Chamcharatsri, P. B. (2013). Perception of Thai English. *Journal of English as an International Language, 8*(1), 36.

Chantapanyo, P. S. (2016). *A study of English pronunciation skill: A case study of*

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

primary school students grade 4-6 at Wat Maiyainut school in Bangkok. (Master thesis). Mahachulalongkornrajavidyalaya University, Bangkok.

Chomsky, N. (1965). *Aspects of the theory of syntax.* MA: M.I.T Press.

Chomsky, N., and Halle, M. (1968). *The sound patttern of English*. New York: Harper & Row.

Corder, S. P. (1967). The significance of learner's errors. *International Review of Applied Linguistics in Language Teaching, 5*(4), 161-170. Retrieved from https://files.eric.ed.gov/fulltext/ED019903.pdf

Corder, S. P. (1974). "Error analysisi". In J. P. B. Allen & S. P. Corder (Eds.), *Techniques in Applied Linguistics*. London: Oxford Universitiy Press.

Cutler, A., and Carter, D. M. (1987). The predominance of strong initial syllables in the English vocabulary. *Computer Speech and Language, 2*, 133-142.

Ellis, M. (2016). Metalanguage as a component of the communicative classroom. *Accents Asia, 8*(2), 143-153.

Ellis, R. (1997). *Second language acquisition*. Oxford: Oxford University Press.

Essberger, J. (2020). Word stress rules. Retrieved from https://www.englishclub.com/pronunciation/word-stress-rules.htm

Eyovi, N. n. A. (2016). Morpho-phonological misuse of english: A cause of poor performance amongst Cameroonian secondary school students. *Global Journal of Human-Social Science: G Linguistics & Education, 16*(7), 5-18.

Fox, A. (2002). *Prosodic features and prosodic structure: The phonology of 'Suprasegmentals'*: OUP Oxford.

Frith, M. B. (1978). Interlanguage theory: Implications for the classroom. *McGill Journal of Education: Revue Des Sciences De l'éducation De McGill, 13*(002).

Gandour, J. (1979). Tonal rules for English loanwords in Thai in honour of Eugenie J.A. Henderson. In T. Luangthongkum, V. Panupong, P. Kullavanijaya, & M. R. K. Tingsabudh (Eds.), *Tonal rules for English loanwords in Thai* (pp. 131-144). Bangkok: Chulalongkorn University Press.

George, H. V. (1972). A model of error production. In *Commom Errors in LAnguage Learning* (pp. 4-8). Rowley, Massachusetts: Newbury House.

Guiora, A. Z., Beit-Hallahmi, B., Brannon, R. C. L., Dull, C. Y., and Scovel, T. (1972). The

effects of experimentally induced changes in ego states on pronunciation ability in a second language: An exploratory study. *Comprehensive Psychiatry, 13*(5), 421-428. Retrieved from https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.927.9067&rep=rep1&type=pdf

Haggard, M. P. (1967). Models and data in speech perception. In W. Wathen-Dunn (Ed.), *Models for the Perception of Speech and Visual Form*. Massachusetts: MIT Press.

Isarankura, S. (2008). *Acquisition of the English article system by Thai learners: An analysis of metalinguistic knowledge in English areticle use.* (Doctoral dissertaion). Chulalongkorn University, Bangkok.

Isarankura, S. (2016). *Effects of stress patterns and tones in Thai on stress placement in English polysyllabic loanwords among Thai students in an English major program*. Retrieved from https://www.dpu.ac.th/dpurdi/research/461

Jaiprasong, S. (2019). *An interlanguage study of L2 perception and production of English word stress by L1 Thai learners.* (Doctoral dissertation). Chulalongkorn University, Bangkok.

Jaiprasong, S., and Pongpairoj, N. (2020). L2 production of English word stress by L1 Thai learners. *Language Education and Acquisition Research Network Jornal, 13*(2), 142-157.

Jarmulowicz, L. (2002). English derivational suffix frequency and children's stress judgement. *Brain and Language, 81*(1-3), 192-204. doi:10.1006/brln.2001.2517

Jarmulowicz, L., and Hay, S. E. (2009). Derivational morphophonology: Exploring errors in third graders' productions. *Language Speech and Hearing Services in Schools, 40*, 299-311.

Jarmulowicz, L., Taran, V. L., and Hay, S. E. (2007). Third graders' metalinguistic skills, reading skills, and stress production in derived English words. *Speech, Language, and Hearing Research, 50*, 1593-1605.

Katamba, F. (1993). Introducing Lexical Morphology. In F. Katamba (Ed.), *Morphology* (pp. 89-110). London: Palgrave.

Kaweera, C. (2013). Writing error : A review of interlingual and intralingual interference in

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

EFL context. *English Language Teaching, 6*(7), 9-18. doi:0.5539/elt.v6n7p9

Khasinah, S. (2014). Factors influencing second language acquisition. *Englisia, 1*(2), 256-269.

Kim, S. H. (2018). Metalinguistic knowledge. In J. I. Liontas (Ed.), *The TESOL encyclopedia of English language teaching* (pp. 1-6). United States: John Wiley & Sons, Inc.

Kongkerd, W. (2013). Teaching English in the era of English used as a lingua franca in Thailand. *Executive Journal, 33*(4), 3-12.

Koutsoudas, A., and Koutsoudas, O. (1962). A contrastive analysis of the segmental phonemes of Greek and English. *LAnguage Learning, 12*(3), 211-230. Retrieved from https://doi.org/10.1111/j.1467-1770.1962.tb01251.x

Krashen, S. (1977). *Some issues relating to the monitor model*. Paper presented at the Eleventh Annual TESOL Convention, Miami, Florida.

Kuo, F.-l., Kuo, Y., and Chiu, T.-w. (2017). A comparative study of effectiveness of explicit and communicative instruction on Taiwanese EFL secondary school students' morphophonological awareness of derived words. *Studies in English Language Teaching, 5*(2), 323-343. Retrieved from http://www.scholink.org/ojs/index.php/selt/article/view/936/1066

Lado, R. (1957). *Linguistics across cultures: Applied linguistics for language teachers*. Ann Arbor, Michigan: University of Michigan Press.

Lennon, P. (2009). Contrastive analysis, Error Analysis, Interlanguage1. Retrieved from http://wwwhomes.uni-bielefeld.de/sgramley/CA-ErrorAnalysis-Interlang-Lennon.pdf

Leppanen, S., Pitkanen-Huhta, A., Nikula, T., Kytola, S., Tormkanga, T., Nissinen, K., Kaanta, L., Raisanen, T., Laitinen, M., Koskela, H., Lahdesmaki, S., and Jousmaki, H. (2011) National Survey on the English Language in Finland: Uses, meanings and attitudes. In, *Studies in Variation, Contacts and Change in English 5*. Helsinki: VARIENG.

Levis, J. M. (2019). *Cinderella no more! Second language pronunciation research and practice*. Paper presented at the TESOL 2018 International Conference and English Language Expo, Chicago, America.

https://www.academia.edu/38362208/Cinderella_No_More_pdf

Limsangkass, S. (2009). *An interlanguage study of English intonation in Thai studens speaking Pattani Malay as their mother tongue.* (Master thesis). Chulalongkorn University, Bangkok.

Luksaneeyanawin, S. (1983). *Intonation in Thai.* (Doctoral dissertation). University of Edinburgh, Scotland, United Kingdom.

Luksaneeyanawin, S. (2007). Unfolding linguistics. In W. Aroonmanakun (Ed.), *Unfolding linguistics*. Bangkok: Chulalongkorn University Printing House.

Major, R. C. (1987). A model for interlanguage phonology. In G. I. a. S. Weinberger (Ed.), *Interlanguage phonology: The acquisition of a second language sound system* (pp. 101-124). Cambridge, MA: Newbury House.

Manova, S. (2014). Affixation. Retrieved from https://www.oxfordbibliographies.com/view/document/obo-9780199772810/obo-9780199772810-0183.xml

Naksakul, K. (2013). *Rabop siang pasa tai* [Thai sound system] (7th ed.). Bangkok: Chulalongkorn University.

Nazarian, S., and Izadpanah, S. (2017). The study of the metalinguistic knowledge of English by students in an intensive and traditional course. *International Journal of English Linguistics, 7*(1), 215-225.

Ngarmwirojkit, C. (2012). *A metalinguistic study of spacing in Thai writing by Japanese students.* (Master thesis). Chulalongkorn University, Bangkok.

Nomnian, S. (2013). Thai cultural aspects in English language textbooks in a Thai secondary school. *Veridian E-Journal, 6*, 13-30.

Pakjamsai, J., and Pongpairoj, N. (2018). The effectiveness of explicit and implicit instruction of L2 English word stress among L1 Thai learners. *Thoughts, 2018*(1), 1-28.

Piyapattaranop, C., and Luksaneeyanawin, S. (2019). *Phonological patterns of stress placement and metalinguistic knowledge on the pronunciation of suffixed words performed by Thai learners of English.* Paper presented at the The 24th PAAL Conference, Seoul, Korea.

Pongprairat, R. (2011). *A study of interlanguage English intonation of Thai learners and*

the degree of intelligibility, and comprehensibility rating in native speakers' learning. (Doctoral dissertation). Chulalongkorn University, Bangkok.

Prakaianurat, P., and Kangkun, P. (2018). Language attitudes of Thai working adults toward native and non-native English varieties. *MANUSYA: Journal od Humanities Regular, 21*(2), 92-111.

Ranta, L. (2008). Metalinguistic knowledge and oral production. In N. H. Hornberger & J. cenoz (Eds.), *Encyclopedia of Language and Education* (Vol. 6, pp. 205-216). Boston, MA: Springer.

Richards, J. C. (1971). A noncontrastive approach to error ananlysis. *English Language Teaching, 25*, 204-219.

Richards, J. C., and Sampson, G. P. (1974). Jack C. Richards and Gloria P. Sampson. In J. C. Richards (Ed.), *Error analysis : Perspectives on second language acquisition*. London: Longman.

Rodman, R., Hyams, N., and Fromkin, V. (2013). *An introduction to language, International edition*(10th ed.). Belmont, CA, United States: Cengage Learning, Inc.

Roehr, K. (2007). Metalinguistic knowledge and language ability in University-level L2 learners. *Applied Linguistics, 29*(2), 173-199.

Sankhavadhana, T. (1989). *A contrastive study of intonation in English and Thai.* (Master thesis). Chulalongkorn University, Bangkok.

Selinker, L. (1972). Interlanguage. *IRAL; International Review of Applied Linguistics in Language Teaching, 10*(3), 209-231.

Shemshadsara, Z. G. (2011). EFL learner's awareness of stress-moving vs. neutral suffixes. *English Language Teaching, 4*(4), 146-153.

Skinner, B. F. (1948). 'Superstition' in the pigeon. *Journal of Experimental Psychology, 38*(2), 168-172. doi:https://doi.org/10.1037/h0055873

Sudsa-ard, S. (2013). The learner factors: Guide for successful language learning. *Thammasat Review, 16*(3), 41-52.

Suhandoko, and Ningrum, D. R. (2020). A corpus-based list of academic English derivational suffixes. *Indonesian Journal of Applied Linguistics, 10*, 481-490.

Surinpiboon, S. (1985). *The accentual system of polysyllabic words in Thai.* (Master

thesis). Chulalongkorn University, Bangkok.

Szigetv´ari, P. (2013). *English phonological analysis, 8: The phonology-morphology interface*. Lecture Material. Retrieved from http://seas3.elte.hu/phono-analysis/analysis8.pdf

Tarone, E. (1978). The phonology of interlanguage. In J. C. Richards (Ed.), *Understanding second and foreign language learning* (pp. 15-33). Rowley, MA: Newbury House.

Tarone, E. E. (1976). Some influences on interlanguage phonology. Working papers on Bilingualism, No. 8. 87-111. Retrieved from https://files.eric.ed.gov/fulltext/ED125251.pdf

Thanavisuth, C. (2007). Language input and interaction: From home to classroom settings. In W. Aroonmanakun (Ed.), *Unfolding linguistics* (pp. 178-197). Bangkok: Chulalongkorn University Rinting House.

Thiessen, E. D., and Saffran, J. R. (2007). Learning to learn: Infants' acquisition of stress-based strategies for word segmentation. *Language Learning and Development, 3*(1), 73-100.

Tokunaga, M. (2014). Exploring metalinguistic knowledge of low to intermediate proficiency EFL students in Japan. *SAGE Open, 4*(4), 1-10.

Vairojanavong, N. (1984). *A contrastive study of the accentual systems in English and Thai and an error analysis of the pronunciation of English polysyllabic medical terms.* (Master thesis). Chulalongkorn University, Bangkok.

WalidEnglish. (2013). *Lecture 6-Stress in complex words suffixes 2*. Retrieved from https://www.scribd.com/doc/124697858/Lecture-6-Stress-in-Complex-Words-Suffixes-2

Wardhaugh, R. (1970). The contrastive analysis hypothesis. *TESOL Quarterly, 4*(2), 123-130.

Watanapokakul, S. (2009). The relationship between the CU students' ability to identify stress patterns of English polysyllabic medical terms and ability to pronounce them. *PASAA, 43*, 93-113.

Worathumrong, S. (2015). *A pragmatic study of compliments and compliment responses by Thais and Americans: Cross cultural, interlanguage and metalinguistic studies.* (Doctoral dissertation). Chulalongkorn University, Bangkok.

Yiemkuntitavorn, S. (2013). *Kwamroo buangton tee kru sorn pasa ankrit kuan roo kiawkab karnoksiang* [Basic knowledge about pronunciaiton which an English language teacher should know]. Bangkok: Chula Press.

Zheng, Y. (2013). The application of the individual teaching based on gnerative phonology in the university. *Theory and Practice in Language Studies, 3*(9), 1680-1684. doi:10.4304/tpls.3.9.1680-1684

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

APPENDICES

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

APPENDIX A: A survey of the study of the English language by Thai learners

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

APPENDIX A: A survey of the study of the English language by Thai learners

แบบสำรวจ เรื่อง การเรียนภาษาอังกฤษของนักเรียนชาวไทย

คำชี้แจงเกี่ยวกับแบบสำรวจ

แบบสำรวจเรื่อง "การเรียนภาษาอังกฤษของนักเรียนชาวไทย"

ดัดแปลงและแปลจากแบบสำรวจเรื่อง "การเรียนภาษาอังกฤษในฟินแลนด์ ปี 2007" ซึ่งจัดทำโดย University of Jyvaskyla

แบบสอบถามนี้จัดทำขึ้นเพื่อสำรวจข้อมูลของนิสิตชาวไทยเกี่ยวกับการเรียนรู้และประสบการณ์ในการใช้ภาษาอังกฤษ โดยข้อมูลที่ได้จะนำไปใช้ในการคัดเลือกผู้มีส่วนร่วมในงานวิจัยเกี่ยวกับการออกเสียงคำศัพท์และความรู้เกี่ยวกับกฎการออกเสียงคำที่เติม suffix ในภาษาอังกฤษ

โดยแบ่งออกเป็น 4 ตอน ดังนี้

1. ข้อมูลส่วนตัว มีทั้งหมด 13 ข้อ

2. ความคิดเห็นต่อภาษาอังกฤษ มีทั้งหมด 4 ข้อใหญ่ 24 ข้อย่อย

3.การเรียนและการรู้ภาษาอังกฤษ มีทั้งหมด 3 ข้อใหญ่ 3 ข้อย่อย

4. การใช้ภาษาอังกฤษ มีทั้งหมด 7 ข้อใหญ่ 39 ข้อย่อย

รวมทั้งสิ้น 27 ข้อใหญ่ 66 ข้อย่อย

จากผู้เข้าร่วมทำแบบสอบถามทั้งหมด ผู้ทำวิจัยจะติดต่อเลือกเพียง 30 คน เพื่อเข้าร่วมในการวิจัย โดยมีเกณฑ์การคัดเลือกดังนี้

1. นิสิตชั้นปีที่ 1 นอกสาขาวิชาภาษาอังกฤษ จำนวน 15 คนแรกที่มีคะแนนโอเน็ตอยู่ในช่วงต่ำ (0-30 คะแนน)

ไล่นับจากคะแนนต่ำที่สุดไปสูงที่สุดในช่วง และเป็นนิสิตที่ตอบตกลงเข้าร่วมเป็นผู้มีส่วนร่วมในการวิจัยขั้นต่อไป

2.นิสิตชั้นปีที่ 1 นอกสาขาวิชาภาษาอังกฤษ จำนวน 15 คนแรกที่มีคะแนนโอเน็ตอยู่ในช่วงสูง (55-75 คะแนน)

ไล่นับจากคะแนนสูงที่สุดไปถึงต่ำที่สุดของช่วง และเป็นนิสิตที่ตอบตกลงเข้าร่วมเป็นผู้มีส่วนร่วมในการวิจัยขั้นต่อไป

แบบสำรวจ เรื่อง การเรียนภาษาอังกฤษของนักเรียนชาวไทย

ตอนที่ 1 ข้อมูลส่วนตัว

* 1. ชื่อ-สกุล

* 2. ข้อมูลติดต่อ

กรุณาระบุช่องทางติดต่อที่สะดวกไว้อย่างน้อย **2** ช่องทาง

เบอร์โทรศัพท์

อีเมล์

ไลน์

เฟสบุ๊ค

* 3. อายุ

* 4. เพศ

- ชาย
- หญิง
- ไม่ระบุ

* 5. คุณศึกษาอยู่ชั้นปีใด

- ปีหนึ่ง
- ปีสอง
- ปีสาม
- ปีสี่
- สูงกว่าปีสี่

* 6. คะแนน **O-NET** วิชาภาษาอังกฤษ **(0.00-100.00** คะแนน**)**

* 7. ภาษาแม่ของคุณคือภาษาอะไร

* 8. ในครอบครัวของคุณ มีคนที่ใช้ภาษาแม่อื่น ๆ ที่ต่างจากคุณหรือไม่

- ◯ ไม่มี
- ◯ ถ้า มี (กรุณาระบุภาษาที่ใช้)

* 9. ในการเรียนระดับการศึกษาขั้นพื้นฐานของคุณ คุณครูใช้ภาษาอะไรในการสอนวิชาภาษาอังกฤษในห้องเรียนของคุณ

- ◯ ภาษาไทยอย่างเดียว
- ◯ ภาษาไทยเป็นส่วนใหญ่
- ◯ ภาษาอังกฤษอย่างเดียว
- ◯ ภาษาอังกฤษเป็นส่วนใหญ่
- ◯ ภาษาไทยและภาษาอังกฤษเท่า ๆ กัน

* 10. คุณไปเที่ยวต่างประเทศบ่อยแค่ไหน

- ◯ อย่างน้อยเดือนละครั้ง
- ◯ น้องกว่าสองสามครั้งในช่วง 5 ปี
- ◯ ปีละสองสามครั้ง
- ◯ ไม่เคยไปเลย
- ◯ สองสามครั้งในช่วง 5 ปี

* 11. คุณเคยอยู่ในประเทศที่ใช้ภาษาอังกฤษ ต่อเนื่องเป็นระยะเวลาสามเดือนหรือมากกว่านั้นหรือไม่

- ◯ ไม่
- ◯ ถ้า เคย (โปรดระบุประเทศที่อยู่ และภาษาที่คุณใช้ในประเทศนั้น)

* 12. ทำเครื่องหมายเลือกข้อระดับการศึกษาและสถานที่ที่คุณเคยได้ศึกษาภาษาอังกฤษ

การศึกษาในที่นี้รวมถึงการได้เรียนรู้ภาษาอังกฤษเพียงเล็กน้อย หากคุณไม่เคยศึกษาภาษาอังกฤษในระดับหรือสถานที่นั้น ๆ โปรดเว้นว่างข้อนั้นไว้

- ☐ ก่อนเข้าโรงเรียน
- ☐ หลักสูตรการศึกษาผู้ใหญ่
- ☐ ในระดับการศึกษาภาคบังคับ (ชั้นอนุบาลถึงมัธยมปีที่สาม)
- ☐ โรงเรียนส่งเสริมการเรียนรู้ (เมื่อจบแล้วไม่ได้รับประกาศณียบัตร)
- ☐ ระดับสูงกว่ามัธยมต้น
- ☐ หลักสูตรที่จัดโดยนายจ้าง
- ☐ ระดับอาชีวศึกษา
- ☐ หลักสูตรเรียนภาษาที่ต่างประเทศ
- ☐ สถาบันโพลีเทคนิค
- ☐ ศึกษาด้วยตนเอง
- ☐ ระดับมหาวิทยาลัย
- ☐ คอร์สพิเศษที่บุคคลทั่วไปสามารถเข้าร่วมได้ (เช่น การอบรมหรือการบรรยาย ที่จัดโดยมหาวิทยาลัยหรือองค์กรต่างๆ เป็นต้น)

13. ทำเครื่องหมายเลือกโอกาสต่าง ๆ ที่คุณได้ใช้ภาษาอังกฤษ

ให้นับรวมโอกาสเพียงเล็กน้อยที่คุณได้พูด อ่าน และเขียนภาษาอังกฤษด้วย

- [ ] ใช้ในที่ทำงาน
- [ ] ใช้ตอนทำงานอดิเรก
- [ ] ใช้ที่โรงเรียนหรือสถานศึกษา
- [ ] ใช้กับเพื่อน
- [ ] ใช้ที่บ้าน
- [ ] ใช้ตอนไปท่องเที่ยว

แบบสำรวจ เรื่อง การเรียนภาษาอังกฤษของนักเรียนชาวไทย

ตอนที่ 2 ความคิดเห็นที่มีต่อภาษาอังกฤษ

* 14. ส่วนตัวแล้ว คุณคิดว่าภาษาอังกฤษสำคัญแค่ไหน

- ( ) สำคัญมาก
- ( ) สำคัญอยู่บ้าง
- ( ) ไม่ค่อยสำคัญเท่าไหร่
- ( ) ไม่สำคัญเลย

* 15. คุณรู้สึกอย่างไรเมื่อได้ยินสิ่งเหล่านี้

โปรดกรอกข้อมูลแต่ละข้อ จากความรู้สึกแรกที่คุณคิดต่อสิ่งนั้น

	ชื่นชมผู้พูด	ภูมิใจในตัวผู้พูด	ภูมิใจในตัวเองที่มีทักษะภาษาอังกฤษที่ดี	ตลกขบขัน	เห็นใจ	รำคาญ	อับอายในฐานะที่เป็นคนไทย	ไม่รู้สึกอะไร
1) คนไทยที่พูดภาษาอังกฤษไม่รู้เรื่องเลย	( )	( )	( )	( )	( )	( )	( )	( )
2) คนไทยที่พูดภาษาอังกฤษได้คล่อง ด้วยสำเนียงที่ใกล้เคียงกับเจ้าของภาษา	( )	( )	( )	( )	( )	( )	( )	( )
3) คนไทยที่พูดภาษาอังกฤษได้คล่อง ด้วยสำเนียงไทย	( )	( )	( )	( )	( )	( )	( )	( )

* 16. โปรดอ่านข้อความแสดงความเห็นเกี่ยวกับความสำคัญของภาษาอังกฤษในประเทศไทย

กรอกข้อมูลแต่ละข้อ จากความรู้สึกแรกที่คุณคิดต่อข้อความนั้น ๆ

	เห็นด้วยอย่างมาก	เห็นด้วย	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างมาก	ไม่รู้สึกอะไร
1) เด็ก ๆ ควรจะต้องรู้ภาษาอังกฤษ	○	○	○	○	○
2) คนวัยทำงานควรจะต้องรู้ภาษาอังกฤษ	○	○	○	○	○
3) คนสูงอายุจะต้องรู้ภาษาอังกฤษ	○	○	○	○	○
4) การแพร่หลายของภาษาอังกฤษในประเทศไทยถือว่าเป็นภัยต่อภาษาแม่ของคนไทย	○	○	○	○	○
5) คนไทยที่ไปเที่ยวต่างประเทศควรต้องรู้ภาษาอังกฤษ	○	○	○	○	○
6) คนไทยสามารถโกอินเตอร์ได้โดยไม่จำเป็นต้องรู้ภาษาอังกฤษ	○	○	○	○	○
7) การที่ทุกคนสามารถพูดภาษาอังกฤษได้ถือเป็นสิ่งสำคัญต่อการพัฒนาสังคมที่มีความหลากหลายทางวัฒนธรรม	○	○	○	○	○
8) สำหรับคนไทย ภาษาแม่มีประโยชน์มากกว่าภาษาอังกฤษ	○	○	○	○	○
9) ภาษาอังกฤษมีประโยชน์กับคนไทยมากกว่าภาษาจีน	○	○	○	○	○
10) ภาษาอังกฤษช่วยพัฒนาทักษะภาษาแม่ของคนไทยได้	○	○	○	○	○
11) ทักษะภาษาอังกฤษถูกประเมินคุณค่าสูงเกินไป	○	○	○	○	○
12) การบริการต่าง ๆ ในสังคม (เช่น การรักษาพยาบาล) ควรมีการใช้ภาษาอังกฤษมากพอๆ กับภาษาไทย	○	○	○	○	○
13) บริษัทต่าง ๆ ในประเทศไทยควรมีการใช้ภาษาอังกฤษในการทำงานหรือให้บริการด้วย	○	○	○	○	○

* 17. โปรดอ่านข้อความแสดงความเห็นเกี่ยวกับภาษาอังกฤษในฐานะภาษาของโลก

กรอกข้อมูลแต่ละข้อ จากความรู้สึกแรกที่คุณคิดต่อข้อความนั้น ๆ

	เห็นด้วยอย่างยิ่ง	เห็นด้วย	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง	ไม่รู้สึกอะไร
1) ภาษาอังกฤษเข้ามาแทนที่ภาษาอื่น ๆ ในโลก	○	○	○	○	○
2) ทักษะภาษาอังกฤษควรเป็นสิ่งที่ทุกคนในโลกควรมี	○	○	○	○	○
3) ค่านิยมต่าง ๆ ที่มาพร้อมกับภาษาอังกฤษกำลังทำลายวัฒนธรรมอื่น ๆ	○	○	○	○	○
4) ภาษาอังกฤษทำให้เกิดการแพร่กระจายของระบบเศรษฐกิจแบบตลาดและแนวคิดด้านวัตถุนิยม	○	○	○	○	○
5) ภาษาอังกฤษเป็นภาษาแห่งความก้าวหน้า	○	○	○	○	○
6) ทักษะภาษาอังกฤษช่วยให้เกิดความเข้าใจตรงกันทั่วโลก	○	○	○	○	○
7) เพื่อให้ก้าวทันโลก คนต้องสามารถใช้ภาษาอังกฤษได้	○	○	○	○	○
8) คนที่มีทักษะภาษาอังกฤษจะเป็นคนที่รู้จักฟังความคิดเห็นของผู้อื่นมากกว่าคนที่ไม่สามารถใช้ภาษาอังกฤษได้	○	○	○	○	○

แบบสำรวจ เรื่อง การเรียนภาษาอังกฤษของนักเรียนชาวไทย

ตอนที่ 3 การศึกษาและการรู้ภาษาอังกฤษ

* 18. คุณเรียนภาษาอังกฤษมานานแค่ไหน

คำว่า "เรียน" ในที่นี้ รวมทั้งการเรียนในสถาบันและการศึกษาด้วยตนเอง

- ○ ไม่เคยเรียนภาษาอังกฤษเลย
- ○ น้อยกว่าหนึ่งปี
- ○ 1-2 ปี
- ○ 3-5 ปี
- ○ 6-10 ปี
- ○ 11-15 ปี
- ○ มากกว่า 15 ปี

* 22. ในเวลาว่าง คุณฟังภาษาอังกฤษจากแหล่งต่าง ๆ เหล่านี้ บ่อยแค่ไหน

	แทบทุกวัน	ประมาณอาทิตย์ละครั้ง	ประมาณเดือนละครั้ง	น้อยกว่าเดือนละครั้ง	ไม่เคยฟังเลย
1) ฟังเพลงพร้อมเปิดเนื้อร้อง	○	○	○	○	○
2) ฟังเพลงโดยไม่เปิดเนื้อเรื่อง	○	○	○	○	○
3) ฟังบทพูดจากในหนัง รายการโทรทัศน์ หรือวิดีโอ ออนไลน์ พร้อมเปิดซับไตเติล	○	○	○	○	○
4) ฟังบทพูดจากในหนัง รายการโทรทัศน์ หรือวิดีโอ ออนไลน์ โดยไม่เปิดซับไตเติล	○	○	○	○	○
5) ฟังบทพูดจากรายการวิทยุ	○	○	○	○	○

อื่น ๆ โปรดระบุ (ถ้ามี)

* 23. ในเวลาว่าง คุณอ่านภาษาอังกฤษจากแหล่งต่าง ๆ เหล่านี้ บ่อยแค่ไหน

	แทบทุกวัน	ประมาณอาทิตย์ละครั้ง	ประมาณเดือนละครั้ง	น้อยกว่าเดือนละครั้ง	ไม่เคยเลย
1) หนังสือพิมพ์	○	○	○	○	○
2) นิตยสาร (ประเภทใดก็ได้)	○	○	○	○	○
3) การ์ตูน	○	○	○	○	○
4) วรรณกรรม นิยาย เรื่องแต่ง	○	○	○	○	○
5) วรรณกรรมจากเรื่องจริง บทความด้านวิชาชีพหรือ วิชาการ	○	○	○	○	○
6) คู่มือและคำอธิบายสินค้า	○	○	○	○	○
7) อีเมล์	○	○	○	○	○
8) เว็บไซต์ต่าง ๆ	○	○	○	○	○

อื่น ๆ โปรดระบุ (ถ้ามี)

19. กรุณาประเมินทักษะภาษาอังกฤษของคุณเอง ดังต่อไปนี้

	คล่องแคล่วดี	คล่องแคล่วพอประมาณ	กลางๆ	ยากลำบาก	แค่เพียงไม่กี่คำ	ไม่ได้เลย
1) ฉันพูดภาษาอังกฤษได้...	○	○	○	○	○	○
2) ฉันอ่านภาษาอังกฤษได้...	○	○	○	○	○	○
3) เวลามีคนพูดภาษาอังกฤษ ฉันเข้าใจได้...	○	○	○	○	○	○

* 20. ภาษาอังกฤษสามารถเรียนรู้ได้จากทั้งในบทเรียนและในชีวิตประจำวัน ตัวอย่างเช่น ในที่ทำงานหรือจากกิจกรรมยามว่าง แล้วคุณเรียนภาษาอังกฤษจากที่ใด

- ○ แค่ในบทเรียนเท่านั้น
- ○ นอกห้องเรียนเป็นส่วนใหญ่
- ○ ส่วนใหญ่ในบทเรียน
- ○ จากนอกห้องเรียนเท่านั้น
- ○ ในบทเรียนวิชาภาษาอังกฤษและแหล่งอื่น เท่า ๆ กัน
- ○ ไม่มีที่กล่าวมาข้างต้น

แบบสำรวจ เรื่อง การเรียนภาษาอังกฤษของนักเรียนชาวไทย

ตอนที่ 4 การใช้ภาษาอังกฤษ

* 21. คุณใช้ภาษาอังกฤษมากที่สุดที่ไหน

สามารถเลือกตอบได้มากกว่าหนึ่งข้อ

- ☐ ที่โรงเรียนหรือเวลาเรียน
- ☐ ในเวลาว่าง
- ☐ ในที่ทำงาน
- ☐ ไม่ได้ใช้ภาษาอังกฤษเลย
- ☐ อื่น ๆ (โปรดระบุ)

* 24. ในเวลาว่าง คุณพูดภาษาอังกฤษในสถานการณ์ต่าง ๆ เหล่านี้ บ่อยแค่ไหน

	แทบทุกวัน	ประมาณอาทิตย์ละครั้ง	ประมาณเดือนละครั้ง	น้อยกว่าเดือนละครั้ง	ไม่เคยเลย
1) พูดกับเพื่อนชาวไทย	○	○	○	○	○
2) พูดกับเพื่อนชาวต่างชาติ	○	○	○	○	○
3) พูดกับนักท่องเที่ยวที่มาประเทศไทย	○	○	○	○	○
4) เมื่อแสดงความรู้สึกเชิงลบ (เช่น สบถ หรือ ด่า)	○	○	○	○	○
5) เมื่อแสดงความรู้สึกเชิงบวก (เช่น แสดงความรัก ความพอใจ)	○	○	○	○	○

อื่น ๆ โปรดระบุ (ถ้ามี)

* 25. ข้อความต่อไปนี้เกี่ยวข้องกับการใช้อินเตอร์เน็ตและการเล่นเกมส์อิเล็กทรอนิกส์ในเวลาว่าง

กิจกรรมใดบ้างในรายการต่อไปนี้ที่คุณใช้ภาษาอังกฤษ

	แทบทุกวัน	ประมาณอาทิตย์ละครั้ง	ประมาณเดือนละครั้ง	น้อยกว่าเดือนละครั้ง	ไม่เคยเลย
1) สืบค้นข้อมูล (เช่น ใน Google)	○	○	○	○	○
2) อ่านหนังสือพิมพ์หรือข่าวบนอินเตอร์เน็ต	○	○	○	○	○
3) สั่งสินค้าหรือรับบริการต่าง ๆ บนอินเตอร์เน็ต	○	○	○	○	○
4) สนทนาด้วยการพูดทางอินเตอร์เน็ต (เช่น Skype)	○	○	○	○	○
5) สนทนาด้วยการพิมพ์ทางอินเตอร์เน็ต (เช่น ในข้อความ หรือ แชท)	○	○	○	○	○
6) ติดตามการสนทนาในกระทู้หรือบล็อก	○	○	○	○	○
7) เล่นเกมบนอินเตอร์เน็ต	○	○	○	○	○
8) เล่นเกมคอมพิวเตอร์หรือเกมส์บังคับที่ไม่ได้ใช้อินเตอร์เน็ต	○	○	○	○	○

อื่น ๆ โปรดระบุ (ถ้ามี)

* 26. คุณมีความคิดเห็นอย่างไรต่อข้อความเหล่านี้ ซึ่งเกี่ยวข้องกับการใช้ภาษาอังกฤษของคุณ

โปรดกรอกข้อมูลจากความรู้สึกแรกที่คิดต่อข้อความนั้น

	เห็นด้วยอย่างยิ่ง	เห็นด้วย	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง	ไม่มีความเห็น
1) ฉันใช้ภาษาอังกฤษได้คล่องแคล่วพอ ๆ กับภาษาแม่ของฉัน	○	○	○	○	○
2) ฉันใช้ภาษาอังกฤษเสมอเมื่อมีโอกาส	○	○	○	○	○
3) ฉันใช้ภาษาอังกฤษเมื่อจำเป็นเท่านั้น	○	○	○	○	○
4) การใช้ภาษาอังกฤษให้คล่องแคล่วเป็นสิ่งที่ฉันคำนึงเสมอเวลาที่ใช้ภาษาอังกฤษ	○	○	○	○	○
5) การใช้ภาษาอังกฤษเป็นเรื่องง่ายสำหรับเจ้าของภาษามากกว่าคนที่ไม่ได้มีภาษาอังกฤษเป็นภาษาแม่	○	○	○	○	○

* 27. คุณใช้ภาษาอังกฤษบ่อยแค่ไหนด้วยเหตุผลต่าง ๆ ต่อไปนี้

พิจารณาจากโอกาสในการพูด อ่าน และ เขียน

	แทบทุกวัน	ประมาณอาทิตย์ละครั้ง	ประมาณเดือนละครั้ง	น้อยกว่าเดือนละครั้ง	ไม่เลย
1) เพื่อสื่อสารกับคนอื่น	○	○	○	○	○
2) เพื่อให้เรียนภาษาอังกฤษได้ดีขึ้น	○	○	○	○	○
3) เพื่อความบันเทิง	○	○	○	○	○
4) เมื่อไม่มีทางเลือก	○	○	○	○	○
5) เพื่อสืบค้นข้อมูล	○	○	○	○	○
6) เพื่อใช้ในการทำงาน	○	○	○	○	○
7) เพื่อใช้ในการศึกษา	○	○	○	○	○
8) เพื่อใช้ในกิจกรรมยามว่างหรือใช้ในหมู่เพื่อน	○	○	○	○	○

APPENDIX B: The list of suffixed words used in the pre-test and post-test

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

APPENDIX B: The list of suffixed words used in the pre-test and post-test

APPENDIX B1: The list of derivational suffixed words used as research items in the study presented with frequency from BNC (British National Corpus)

Types of suffixes	suffixes	words			
Neutral	{-ful}	successful (10564)	beautiful (8307)	careful (5013)	powerful (6962)
	{-ness}	awareness (3517)	illness (3194)	consciousness (2529)	happiness (1603)
	{-less}	endless (1512)	homeless (1043)	doubtless (835)	helpless (786)
	{-ly}	usually (18711)	probably (26239)	actually (25221)	particularly (21509)
Ultimate stressed	{-ee}	absentee (146)	trustee (880)	refugee (804)	trainee (607)
	{-eer}	engineer (2199)	auctioneer (203)	mountaineer (75)	commandeer (23)
	{-ese}	Japanese (5841)	Chinese (3969)	Portuguese (743)	Vietnamese (742)
	{-aire}	questionnaire (1177)	millionaire (389)	doctrinaire (74)	billionaire (52)
Penultimate stressed	{-tion}	education (25683)	situation (15573)	production (15313)	population (12859)
	{-ial}	financial (16234)	industrial (11283)	official (9335)	commercial (7881)
	{-eous}	outrageous (594)	advantageous (366)	courageous (358)	instantaneous (229)
	{-ual}	intellectual (2946)	conceptual (1001)	contractual (875)	habitual (284)
Antepenultimate stressed	{-al}	political (29541)	original (11065)	agricultural (3971)	abdominal (516)
	{-ity}	community (22674)	authority (18091)	activity (11339)	responsibility (9023)
	{-ate}	triangulate (3)	certificate (2842)	communicate (1497)	differentiate (501)
	{-ify}	solidify (32)	personify (23)	detoxify (14)	objectify (14)

APPENDIX B2: Two sets of suffixed word lists including base words and suffixed words. The words are ordered by the appearance of words on a computer screen.

Word list (Set1)	
base words	suffixed words
beauty	beautiful
trust	trustee
educate	education
agriculture	agricultural
mountain	mountaineer
industry	industrial
authorize	authority
aware	awareness
outrage	outrageous
triangle	triangulate
end	endless
China	Chinese
solid	solidify
usual	usually
question	questionnaire
concept	conceptual
power	powerful
refuge	refugee
situate	situate
abdomen	abdominal
command	commandeer
commerce	commercial
responsible	responsibility
ill	illness
advantage	advantageous
different	differentiate
help	helpless
Vietnam	Vietnamese
detox	detoxify
actual	actually
billion	billionaire
habit	habitual

Word list (Set2)	
base words	suffixed words
success	successful
absent	absentee
product	production
politic	political
engine	engineer
finance	financial
commune	community
conscious	consciousness
courage	courageous
certify	certificate
home	homeless
Japan	Japanese
person	personify
probable	probably
million	millionaire
intellect	intellectual
care	careful
train	trainee
populate	population
origin	original
auction	auctioneer
office	official
active	activity
happy	happiness
instant	instantaneous
commune	communicate
doubt	doubtless
Portugal	Portuguese
object	objectify
particular	particularly
doctrine	doctrinaire
contract	contractual

APPENDIX C: Links to video lessons and exercises used in the praxis intervention

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

APPENDIX C: Links to video lessons and exercises used in the praxis intervention

1) English After Class: The pronunciation of suffixed words (part1)
https://drive.google.com/file/d/1p9YNlRaJChcdHYqav9EiS09tdmq5iy1c/view?usp=sharing

2) English After Class: The pronunciation of suffixed words (part2)
https://drive.google.com/file/d/13-2UEWiOPdPr1MksUlt8EyWjMpfGyO50/view?usp=sharing

3) English After Class: The pronunciation of suffixed words (part3)
https://drive.google.com/file/d/1v9Cd581dwB5mpDhGYNvow4bacM--PcbS/view?usp=sharing

4) Exercise for the intervention course (Part1) Ex. 1-1
https://drive.google.com/file/d/1WDu1oHURaD5ZDfDJiZOCYT8fleKmC6tr/view?usp=sharing

5) Exercise for the intervention course (Part1) Ex. 1-2
https://drive.google.com/file/d/1F7DTKwDlw4jRxOf0UAddo30VE3twsXfP/view?usp=sharing

6) Exercise for the intervention course (Part2) Ex. 2-1
https://drive.google.com/file/d/17rZx2I5wXo4NEqkGRUcP9X6trmKoJVA7/view?usp=sharing

7) Exercise for the intervention course (Part2) Ex. 2-2
https://drive.google.com/file/d/19sefablvb7F1EOrkjuD1Wx0BsUqllum/view?usp=sharing

8) Exercise for the intervention course (Part3) Ex. 3-1
https://drive.google.com/file/d/1wYO_6rb9HoXOV3iDOlrp3XO-0iHGmA5g/view?usp=sharing

9) Exercise for the intervention course (Part3) Ex. 3-2
https://drive.google.com/file/d/1CMu-7EsTTwXx36UzSMvBpvDeKMDULorj/view?usp=sharing

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

APPENDIX D: Metalinguistic knowledge elicitation task and list of interview questions

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

APPENDIX D: Metalinguistic knowledge elicitation task and list of interview questions

<u>คำชี้แจง</u>

แบบสัมภาษณ์ฉบับนี้มีจุดมุ่งหมาย เพื่อศึกษาความรู้ทางภาษาศาสตร์เกี่ยวกับกฎการออกเสียงคำในภาษาอังกฤษ รวมถึงสอบถามความคิดเห็นเกี่ยวกับบทเรียนเรื่องการออกเสียงคำที่เติม suffix ในภาษาอังกฤษ เพื่อเป็นแนวทางในการปรับปรุงการเรียนการสอนการออกเสียงภาษาอังกฤษในอนาคต

ขอให้นิสิต ตอบคำถามตามความเป็นจริง เพราะคำตอบของนิสิตมีประโยชน์และคุณค่าอย่างยิ่งต่อการพัฒนาการเรียนการสอนการออกเสียงในภาษาอังกฤษ และการตอบแบบสัมภาษณ์ครั้งนี้จะไม่มีผลเสียหรือผูกพันต่อตัวนิสิต ในทางใดทั้งสิ้น เพราะผู้วิจัยจะเสนอผลการศึกษาในภาพรวม

แบบสัมภาษณ์มีทั้งหมด 6 ข้อ ซึ่งจะถามเกี่ยวกับความรู้เรื่องการออกเสียงคำที่เติม suffix และให้นิสิตประเมินการการออกเสียงของตัวเองทั้งช่วงก่อนเรียนละหลังเรียนรู้กฎการออกเสียง รวมถึงสามารถแสดงความคิดเห็นต่อกิจกรรมการเรียนรู้เรื่องการออกเสียงคำที่เติม suffix ที่นิสิตได้เข้าร่วมไป

เพื่อความสะดวกในการเก็บข้อมูล ผู้วิจัยขออนุญาตบันทึกเสียงของนิสิตเอาไว้เพื่อนำไปวิเคราะห์ต่อ และจะทำลายทิ้งเมื่องานวิจัยนี้สิ้นสุด

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

ขอบพระคุณที่ให้ความร่วมมืออย่างดี

แบบทดสอบวัดความรู้อภิภาษาศาสตร์

อ่านคำเหล่านี้ แล้วอธิบายว่าตอนที่ออกเสียงคำต่อไปนี้ นิสิตคิดถึงอะไร มีวิธีการอย่างไร ถึงออกเสียงออกมาได้เป็นแบบนั้น

1) probably

2) objectify

3) doctrinaire

4) political

5) financial

6) consciousness

7) instantaneous

8) Japanese

คำถามสัมภาษณ์

1) ตอนที่ทำแบบทดสอบอ่านออกเสียง นิสิตนึกถึงอะไร ใช้วิธีการอย่างไรให้สามารถทำแบบทดสอบจนสำเร็จ

2) แบบทดสอบออกเสียงมีส่วนยากและส่วนง่ายตรงไหนบ้าง และเพราะเหตุใดจึงคิดเช่นนั้น

3) หากเปรียบเทียบการออกเสียงของตนตอนทำแบบทดสอบก่อนเรียนกับตอนทำแบบทดสอบหลังเรียน นิสิตคิดว่าการออกเสียงของตัวเองมีการเปลี่ยนแปลงหรือไม่

4) นิสิตคิดว่าสิ่งใดจะช่วยให้นิสิตสามารถทำแบบทดสอบอ่านออกเสียงได้ดีขึ้น

5) ขอให้นิสิตอธิบายความรู้ที่เกี่ยวกับเรื่อง affix เท่าที่สามารถอธิบายได้

6) ขอให้นิสิตยกตัวอย่างคำที่เติม suffix พร้อมอธิบายหลักการออกเสียงคำที่นิสิตยกตัวอย่างมา

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

APPENDIX E: Participants' pronunciation of suffixed words

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

APPENDIX D: Participants' pronunciation of suffixed words

endless ['end ləs] (| -)

Patterns / participants	BW end [end]		SW			MP
			| –	– |	| |	
H01	en^{m}	|			'end^{m} 'les^{h}	
H02	en^{h}	|	'end ləs			
H03	en^{m}	|			'end^{m} 'les^{h}	
H04	end	|			'end^{h} 'les^{l}	
H05	en^{m}	|	'end ləs			
H06	end	|	'end ləs			
H07	en^{m}	|	'end ləs			
H08	en^{m}	|			'end^{m} 'les^{l}	
H09	end	|	'end ləs			
H10	end	|			'end^{h} 'les^{l}	
H11	end	|			'end^{m} 'les^{l}	
H12	en	|	'end ləs			
H13	en	|			'end^{m} 'les^{l}	
H14	en	|	'end ləs			
H15	end	|			'end^{m} 'les^{l}	

Patterns / participants	BW end [end]		SW			MP
			| –	– |	| |	
L01	en	|				'end 'leẗ^{h}
L02	an	MP				'ʌn^{m} 'lɨ^{f}
L03	en	|				'æt^{f} 'les^{h}
L04	ens^{h}	MP	'end^{h} ləs			
L05	end	|				'en^{h} dəls
L06	eɪd^{l}	MP		en 'les^{h}		
L07	is^{h}	MP				'ïẗ^{h} 'leẗ^{l}
L08	end^{l}	|	'end ləs			
L09	eɪn	MP	'end ləs			
L10	en	|				'en^{m} də 'leʃ^{h}
L11	end	|	'end ləs			
L12	en^{m}	|				'end^{m} 'res^{h}
L13	en^{m}	|	'end ləs			
L14	end	|	'end ləs			
L15	end	|				ən 'dis

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

helpless [ˈhelp ləs] (| -)

Patterns / participants	BW help [help]		SW			MP
			| –	– |	| |	
H01	help^{h}	|			ˈhelp^{m} ˈles^{l}	
H02	help^{h}	|	ˈhelp ləs			
H03	help^{h}	|				ˈhelp^{h} ˈnes^{l}
H04	help	|			ˈhelp ˈles^{l}	
H05	help	|				ˈhelp nəs
H06	help^{h}	|	ˈhelp ləs			
H07	help^{h}	|				ˈhelp lət̚
H08	help^{h}	|			ˈhelp^{h} ˈles^{l}	
H09	help	|				ˈhelp^{h} ˈnes^{l}
H10	help	|			ˈhelp^{h} ˈles^{l}	
H11	help^{h}	|			ˈhelp^{h} ˈles^{l}	
H12	help	|	ˈhelp ləs			
H13	help	|	ˈhelp ləs			
H14	help^{h}	|			ˈhelp^{h} ˈles^{l}	
H15	help	|	ˈhelp ləs			

Patterns / participants	BW help [help]		SW			MP
			| –	– |	| |	
L01	help^{h}	|			ˈhelp^{h} ˈples^{h}	
L02	hæp^{h}	MP				ˈhæ pəl
L03	help^{h}	|	ˈhelp^{h} ləs			
L04	help^{h}	|	ˈhelp^{h} ləs			
L05	help	|	ˈhelp ləs			
L06	help^{h}	|				ˈhelp^{h} lət̚
L07	help^{h}	|			ˈhelp^{h} ˈles^{l}	
L08	help^{h}	|			ˈhelp^{h} ˈles^{l}	
L09	help	|	ˈhelp^{h} ləs			
L10	help^{h}	|				help^{h} pə ˈliʃ^{h}
L11	help^{h}	|	ˈhelp ləs			
L12	help^{h}	|	ˈhelp^{h} ləs			
L13	help^{h}	|	ˈhelp^{h} ləs			
L14	help	|			ˈhelp ˈples	
L15	help	|				ˈhel ˈplis

“H” = “High proficiency group”; H01 means participant number 1 in the high proficiency group. “L” = “Low proficiency group”; L01 means participants 1 in the low proficiency group.

“BW” = “Base words”; “SW” = “Suffixed words”; “MP” = “Mispronunciation”

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

illness [ˈɪl nəs] (| -)

Patterns / participants	BW ill [ɪl]		SW			MP
			| –	– |	| |	
H01	ɪlᵐ	|			ˈɪlᵐ ˈnesʰ	
H02	ɪl	|	ˈɪl nəs			
H03	ɪlᵐ	|			ˈɪlᵐ ˈnesˡ	
H04	ɪl	|				ˈilʰ netʲ
H05	ɪl	|	ˈɪl nəs			
H06	ɪl	|	ˈɪl nəs			
H07	ɪlᵐ	|	ˈɪl nəs			
H08	ɪlᵐ	|			ˈɪlᵐ ˈnesˡ	
H09	ilᵐ	|	ˈɪl nes			
H10	il	|	ˈɪl nəs			
H11	ɪlᵐ	|	ˈɪl nəs			
H12	ɪl	|	ˈɪl nəs			
H13	ɪl	|			ˈɪlᵐ ˈnesˡ	
H14	ɪl	|			ˈɪlᵐ ˈnesˡ	
H15	ɪlᵐ	|			ˈɪlᵐ ˈnesˡ	

Patterns / participants	BW ill [ɪl]		SW			MP
			| –	– |	| |	
L01	ɪlᵐ	|			ˈɪlᵐ ˈnesʰ	
L02	ɪʃˡ	MP				ˈiʃʰ ne
L03	lɔlᵐ	MP				ˈlɔᵐ ˈnesˡ
L04	ɪlᵐ	|				ˈɔʰ nəs
L05	ɪl	|	ˈɪl nəs			
L06	ɪlᵐ	|				ɪl ˈnisʰ
L07	aɪᵐ	MP				ˈaɪᵐ ˈlisʰ
L08	ɛlᵐ	MP	ˈɪl nəs			
L09	ɪl	MP			ˈɪlᵐ ˈnesˡ	
L10	ɪlᵐ	|				ˈɪlᵐ lɪʃ
L11	ɪl	|	ˈɪl nəs			
L12	ɪlᵐ	|				ˈɪl ˈnis
L13	ɪlᵐ	|	ˈɪlʰ nəs			
L14	ɪl	|	ˈɪl nəs			
L15	ɪl	|				ˈɪl lə nəs

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

careful [ˈkeə fəl] (| -)

Patterns / participants	BW care [keər]		SW			MP
			| –	– |	| |	
H01	keə^{m}	|		kæ 'ful		
H02	keər	|	'keə ful			
H03	keər^{m}	|	'keə ful			
H04	keə	|	'keə fəl			
H05	keər	|	'keə ful			
H06	keə	|	'keə ful			
H07	keər	|	'keər fəl			
H08	keə^{m}	|			'keə^{m} 'ful^{m}	
H09	keər	|	'keə fəl			
H10	keə	|			'keə 'ful	
H11	keər^{m}	|			'keə^{m} 'ful^{m}	
H12	keər	|	'keə fəl			
H13	keər	|	'keə ful			
H14	keər	|			'keə 'ful	
H15	keər	|	'keə fəl			

Patterns / participants	BW care [keər]		SW			MP
			| –	– |	| |	
L01	keə^{m}	|			'keə^{m} 'ful^{m}	
L02	kas^{h}	MP				'kar^{m} 'ful^{m}
L03	ka^{m}	MP				'ka^{m} ɹ 'ful^{m}
L04	keə^{m}	|			'keə^{m} 'ful^{m}	
L05	keə	|		keə 'ful		
L06	keə^{m}	|			'keə^{m} 'ful^{m}	
L07	keə^{m}	|			'keə^{m} 'ful^{m}	
L08	keə	|			'keər^{m} 'ful^{m}	
L09	keə	|			'keər 'ful	
L10	keə^{m}	|			'keə^{m} 'ful^{m}	
L11	keər	|			'keər 'ful	
L12	keə	|			'keə 'ful	
L13	keə^{m}	|			'keə^{m} 'ful^{m}	
L14	keər	|	'keə^{h} ful			
L15	keər	|	'keə^{h} ful			

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

doubtless [ˈdaʊt ləs] (| -)

Patterns / participants	BW doubt [daʊt]		SW			MP
			| –	– |	| |	
H01	dʌbʰ	MP				'dɔp 'lesʰ
H02	daʊt̚	|	'daʊt les			
H03	dʌb	MP				'dɔp les
H04	daʊt̚	|	'daʊt les			
H05	dobʰ	MP				'dɔp les
H06	dʌb	MP				'dʌp ləs
H07	daʊt̚					'dɑb lət
H08	dʌbʰ	MP				'dʌbʰ 'lesˡ
H09	daʊtʰ	|			'daʊtʰ 'lesˡ	
H10	daʊt	|				'dɑb ləs
H11	daʊtʰ	|	'daʊt les			
H12	daʊt	|	'daʊt ləs			
H13	daʊt	|				'dɑb 'les
H14	dɑbtʰ	MP				'dɑbʰ 'lesˡ
H15	dʌbt	MP				'dʌp ləs

Patterns / participants	BW doubt [daʊt]		SW			MP
			| –	– |	| |	
L01	dʌbʰ	MP				'daʊtʰ let
L02	'dʊtˡ 'tɔᶠ	MP				dʊ bə 'raᶠ
L03	tutʰ	MP				'botʰ let
L04	dubʰ	MP				'dupʰ les
L05	dɑb	MP				'daʊb let
L06	dʊəbʰ	MP				'dʊəᵐ 'letˡ
L07	'doᵐ 'blᶠ	MP				'doᵐ 'blᶠ let
L08	dubtʰ	MP				'dup let
L09	dɑp	MP				'dɑp les
L10	daʊt	|				'dəʊ tʊən
L11	drɑp	MP				'dɑp les
L12	dubʰ	MP				'dʌsʰ 'lesˡ
L13	dʌnʰ	MP				'dʌnʰ lest
L14	dobt	MP				'dop les
L15	dɔbt	MP				'bɑp tes

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

homeless [ˈhəʊm ləs] (| -)

Patterns / participants	BW home [həʊm]		SW			MP
			| –	– |	| |	
H01	hə̞ʊmᵐ	|		hom 'lesʰ		
H02	hə̞ʊm	|		hə̞m 'les		
H03	hə̞ʊmᵐ	|			'hə̞ʊmᵐ 'lesˡ	
H04	hə̞ʊm	|			'hə̞ʊm 'les	
H05	hə̞ʊm	|	'hə̞ʊm lə̞s			
H06	hə̞ʊm	|	'hə̞ʊm lə̞s			
H07	hə̞ʊm	|				'hə̞ʊm rə̞s
H08	hə̞ʊmᵐ	|	'hə̞ʊmᵐ lə̞s			
H09	hə̞ʊm	|	'hə̞ʊm lə̞s			
H10	hə̞ʊm	|	'hə̞ʊm lə̞s			
H11	hə̞ʊmᵐ	|	'hə̞ʊm lə̞s			
H12	hə̞ʊm	|	'hə̞ʊm lə̞s			
H13	hə̞ʊm	|			'hə̞ʊm 'lə̞sˡ	
H14	hə̞ʊm	|		hə̞m 'les		
H15	hə̞ʊm	|	'hə̞ʊm lə̞s			

Patterns / participants	BW home [həʊm]		SW			MP
			| –	– |	| |	
L01	hə̞ʊmᵐ	|	'hə̞ʊm les			
L02	hə̞ʊmᵐ	|				'hə̞ʊᵐ mɪ 'lasʰ
L03	hə̞ʊmᵐ	|			'hə̞ʊmᵐ 'lesʰ	
L04	hə̞ʊmᵐ	|	'hə̞ʊm les			
L05	hə̞ʊm	|	'hə̞ʊm lə̞s			
L06	hə̞ʊmᵐ	|	'hə̞ʊm let			
L07	hə̞ʊmᵐ	|			'hə̞ʊmᵐ 'lesˡ	
L08	hə̞ʊmᵐ	|	'hə̞ʊm les			
L09	hə̞ʊm	|			'hə̞ʊm 'les	
L10	hə̞ʊmᵐ	|				'hə̞ʊmᵐ 'letˡ
L11	hə̞ʊm	|		hə̞ʊm 'les		
L12	hə̞ʊm	|	'hə̞ʊm les			
L13	hə̞ʊmᵐ	|	'hə̞ʊm les			
L14	hə̞ʊm	|	'hə̞ʊm lə̞s			
L15	hə̞ʊm	|			'hə̞ʊm 'lesˡ	

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

Chinese [ˌtʃaɪ ˈniːz] (- |) or (| |)

Patterns / participants	BW China [ˈtʃaɪ.nə]		SW			MP
			– |	| |	| –	
H01	ˈtʃaɪᵐ ˈnaᶠ	| |		ˈtʃaɪ ˈnɪsʰ		
H02	ˈtʃaɪᵐ ˈnaʰ	| |	tʃaɪ ˈniːsʰ	-		
H03	tʃaɪ ˈnaᶠ	– |		ˈtʃaɪ ˈniːsʰ		
H04	ˈtʃaɪʰ na	| –	tʃaɪ ˈniːs			
H05	ˈtʃaɪ na	| –			ˈtʃaɪ nis	
H06	ˈtʃaɪ na	| –			ˈtʃaɪ nis	
H07	ˈtʃaɪ na	| –	tʃaɪ ˈniːsʰ			
H08	ˈtʃaɪᵐ ˈnaᶠ	| |		ˈtʃaɪ ˈnɪsʰ		
H09	ˈtʃaɪ na	| –			ˈtʃaɪ nis	
H10	ˈtʃaɪʰ na	| –		ˈtʃaɪᵐ ˈnɪsʰ		
H11	tʃaɪ ˈnaᶠ	– |		ˈtʃaɪᵐ ˈnɪsʰ		
H12	ˈtʃaɪ na	| –			ˈtʃaɪ nɪs	
H13	ˈtʃaɪ na	| –		ˈtʃaɪ ˈnɪsʰ		
H14	ˈtʃaɪ na	| –	tʃaɪ ˈniːs			
H15	ˈtʃaɪ na	| –			ˈtʃaɪ nɪs	

Patterns / participants	BW China [ˈtʃaɪ.nə]		SW			MP
			– |	| |	| –	
L01	ˈtʃaɪ na	| –				ˈtʃaɪᵐ ˈnit̚ʰ
L02	tʃaɪ ˈnaᶠ	– |	tʃaɪ ˈnis			
L03	ˈtʃaɪᵐ ˈnaᶠ	| |				ˈtʃaɪᵐ ˈnaᶠ ˈnisʰ
L04	ˈtʃaɪ na	| –				ˈtʃaɪʰ nɪt̚
L05	ˈtʃaɪ na	| –	tʃaɪ ˈnis			
L06	ˈtʃaɪᵐ ˈnaᶠ	| |	tʃaɪᵐ ˈnisʰ			
L07	ˈtʃaɪʰ na	| –				ˈʃaɪʰ ˈniˡ
L08	ˈtʃaɪ na	| –		ˈʃaɪᵐ ˈnisʰ		
L09	ˈtʃaɪ na	| –		ˈtʃaɪᶠ ˈnizˡ		
L10	ˈtʃaɪ na	| –				ˈtʃaɪᵐ ˈniʃʰ
L11	ˈtʃaɪ na	| –	tʃə ˈnis			
L12	ˈtʃaɪ na	| –	tʃaɪᵐ ˈnisʰ			
L13	ˈtʃaɪ na	| –			ˈtʃaɪ nɪs	
L14	ˈtʃaɪ na	| –		ˈtʃaɪᵐ ˈnisʰ		
L15	ˈtʃaɪ na	| –			ˈtʃaɪ nis	

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

trustee [ˌtrʌs ˈtiː] (- |) or (| |)

Patterns / participants	BW trust [trʌst]		SW			MP
			– |	| |	| –	
H01	trʌstʰ	|				ˈtrʌt̪ʰ ˈtiːᶠ
H02	trʌstʰ	|			ˈtrʌsʰ tiʳ	
H03	trʌsʰ	|		ˈtrʌsʰ ˈtiːᶠ		
H04	trʌst	|			ˈtrʌs ti	
H05	trʌs	|		ˈtrʌs ˈtiː		
H06	trʌs	|			ˈtrʌs ti	
H07	trʌs	|				ˈtrɜsʰ ti
H08	trʌstʰ	|		ˈtrʌsʰ ˈtiːᶠ		
H09	trʌst	|			ˈtrʌsʰ ti	
H10	trʌs	|			ˈtrʌsʰ ti	
H11	trʌstʰ	|	trəs ˈtiːᶠ			
H12	trʌʃ	MP			ˈtrʌs ɾe	
H13	trʌst	|			ˈtrʌsʰ ti	
H14	trʌs	|	trʌs ˈtiː			
H15	trʌst	|			ˈtrʌs ti	

Patterns / participants	BW trust [trʌst]		SW			MP
			– |	| |	| –	
L01	tʌt̪	MP				ˈt̪ʌt̪ʰ ˈtiˡ
L02	tʌʃʰ	MP				ˈtʌtʰ ˈtetˡ
L03	trʌtʰ	MP				ˈtʌt̪ʰ ˈtiᶠ
L04	trʌt	MP				ˈtrʌt̪ʰ ti
L05	trʌs	|				ˈtrʌt̪ʰ ˈtri
L06	trʌs	|				trut̪ʰ
L07	treɪtˡ	MP				ˈtɜ ti
L08	tʌsʰ	|				ˈtʌs tɪ
L09	trʌsʰ	|			ˈtrʌs tɪ	
L10	tasʰ	MP				ˈtratʰ ˈtriᶠ
L11	trʌsʰ	|			ˈtrʌs tɪ	
L12	tʌksʰ	MP				ˈtʌkʰ ˈtisʰ
L13	trʌsʰ	|			ˈtrʌs tɪ	
L14	trʌsʰ	|			ˈtrʌs tɪ	
L15	trust	MP				ˈtrud

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

trainee [ˌtreɪˈniː] (- |) or (| |)

Patterns / participants	BW train [treɪn]		SW – |	SW | |	SW | –	MP
H01	treɪn^{m}	|	tre 'ni^{f}			
H02	treɪn	|			'treɪ ni	
H03	treɪn^{m}	|			'treɪ ni	
H04	treɪn	|	tre 'ni			
H05	treɪn	|			'treɪ ni	
H06	treɪn	|			'treɪ ni	
H07	treɪn	|			'treɪ ni	
H08	treɪn^{m}	|		'treɪ^{m} 'ni^{f}		
H09	treɪn	|	treɪ 'ni			
H10	treɪn	|			'treɪ ni	
H11	treɪn^{m}	|			'treɪ ni	
H12	treɪn	|	treɪ 'ni			
H13	treɪn	|	treɪ 'ni^{f}			
H14	treɪn	|	tre 'ni			
H15	treɪn^{m}	|			'treɪ ni	

Patterns / participants	BW train [treɪn]		SW – |	SW | |	SW | –	MP
L01	treɪn^{m}	|		'treɪ^{m} 'ni^{m}		
L02	tə 'djut^{h}	MP				trə 'nis
L03	ten	MP				trə 'nis
L04	treɪn^{m}	|			'treɪ ni	
L05	treɪn	|			'treɪ ni	
L06	treɪn^{m}	|			'treɪ ni	
L07	treɪn^{m}	|				'tweɪn^{m} 'ni^{f}
L08	treɪn	|				'traɪ^{m} 'ni^{f}
L09	treɪn	|			'treɪ ni	
L10	treɪn^{m}	|			'treɪ ni	
L11	treɪn	|			'treɪ ni	
L12	teɪn	MP		'treɪ^{m} 'ni^{f}		
L13	treɪn	|			'treɪ ni	
L14	treɪn	|				'traɪ^{m} 'ni^{f}
L15	tæn	MP				'tæn

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

actually ['æk tʃuə li] (| - -)

Patterns / participants	BW actual ['æk tʃuəl]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
H01	'æk^{h} tʃuəl	| –				ˈæk^{h} tʃuə 'li^{l}				
H02	'æk^{l} 'tʃuəl^{h}	| |				ˈæk^{l} tʃuə 'li^{h}				
H03	'æk^{h} 'tʃuəl^{f}	| |				ˈæk^{h} tʃuə 'li^{f}				
H04	'æk tʃuəl	| –	ˈæk tʃuə li							
H05	'æk tʃəl	| –	ˈæk tʃuə li							
H06	'æk tʃuəl	| –	ˈæk tʃuə li							
H07	'æk^{h} 'tʃuəl^{f}	| |								æk^{h} tʃuə 'ri^{f}
H08	'æk^{h} 'tʃuən^{f}	MP						æk 'tʃuə^{f} 'li^{f}		
H09	'æk tʃuəl	| –	ˈæk tʃuə li							
H10	'æk^{f} 'tʃuəl^{l}	| |	ˈæk tʃuə li							
H11	'æk^{h} 'tʃuəl^{f}	| |				ˈæk^{m} tʃu 'li^{f}				
H12	'æk tʃəl	| –	ˈæk tʃuə li							
H13	'æk^{h} tʃuəl	| –	ˈæk tʃuə li							
H14	'æk tʃuəl	| –					ˈæk^{h} 'tʃuə^{f} li			
H15	'æk tʃəl	| –	ˈæk tʃuə li							

Patterns / participants	BW actual ['æk tʃuəl]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
L01	'æk^{h} 'tua^{m}	MP								ˈæk^{h} tuə 'li^{l}
L02	a 'kɔn^{m} 'teɪt^{l}	MP								ʌ 'kɔn^{m} te 'li^{f}
L03	'ak^{h} 'ʃol^{f}	MP	ˈæk tʃuə li							
L04	'æk^{h} 'tʃua^{m}	MP				ˈæk^{h} tʃuə 'li^{l}				
L05	'æk^{h} tʃuəl	| –	ˈæk tʃuə li							
L06	'æk^{f} 'tʃua^{m}	MP								ˈæk^{h} tuə 'li^{f}
L07	'ækl 'tʃɜ^{f}	MP								æk 'ʃɜ^{f} nə 'li^{f}
L08	'æk^{h} tʃə	MP								'æk 'to lə ti
L09	'æk^{h} tʃəl	| –	ˈæk tʃuə li							
L10	'æk^{h} 'tʃuəl^{f}	| |								æk tʃə 'æ ri
L11	'æk^{f} 'tuə^{m}	MP								'æk^{f} 'tʃuə^{m} 'a^{m} 'li^{f}
L12	'æk^{h} 'tuəl^{f}	MP								ˈæk^{h} tuə 'li^{f}
L13	'æk^{h} tʃə 'la^{l}	MP		æk 'tʃuə li						
L14	'æk tʃuəl	| –		æk 'tʃuə li						
L15	'æk^{h} təl	MP								æk 'tþ ri

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

beautiful ['bju: tɪ fəl] (| - -)

Patterns / participants	BW beauty ['bju: ti]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
H01	bju 'ti^{f}	– |				'bju:^{h} tɪ 'ful^{m}				
H02	'bju: ti	| –	'bju: tɪ fəl							
H03	'bju^{h} 'ti^{l}	| |	'bju: tɪ fəl							
H04	'bju:^{h} ɾi	| –	'bju: tɪ fəl							
H05	'bju: ti	| –	'bju: tɪ fəl							
H06	'bju: ti	| –				'bju: tɪ 'ful				
H07	'bju: ɾi	| –				'bju: tɪ 'ful				
H08	'bju^{m} 'ti^{f}	| |				'bju:^{h} tɪ 'ful^{m}				
H09	'bju:^{h} ti	| –	'bju: tɪ fəl							
H10	'bju:^{h} ti	| –				'bju:^{h} tɪ 'ful^{m}				
H11	'bju: tɪ	| –				'bju:^{h} tɪ 'ful^{m}				
H12	'bju: ɾi	| –	'bju: tɪ fəl							
H13	'bju^{h} 'ti^{l}	| |				'bju: tɪ 'ful				
H14	'bju: tɪ	| –							'bju: 'ti 'ful	
H15	'bju: ɾi	| –	'bju: tɪ fəl							

Patterns / participants	BW beauty ['bju: ti]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
L01	'bju^{h} 'ti^{l}	| |				'bju:^{h} tɪ 'ful^{m}				
L02	'bju:^{h} tɪ	| –	'bju: tɪ fəl							
L03	'bju^{m} 'ti^{f}	| |							'bju:^{h} 'ti^{f} 'ful^{m}	
L04	'bju:^{h} tɪ	| –				'bju:^{h} tɪ 'ful^{m}				
L05	'bju:^{h} tɪ	| –	'bju: tɪ fəl							
L06	bju 'ti^{f}	– |				'bju:^{h} tɪ 'ful^{m}				
L07	'bju^{m} 'ti^{f}	| |						bju 'ti^{f} 'ful^{m}		
L08	'bju: tɪ	| –	'bju: tɪ fəl							
L09	'bju:^{h} tɪ	| –	'bju: tɪ fəl							
L10	'bju: tɪ	| –				'bju: tɪ 'ful				
L11	'bju: tɪ	| –	'bju: tɪ fəl							
L12	bju 'ti^{f}	– |						bju 'ti^{f} 'ful^{m}		
L13	'bju: tɪ	| –	'bju: tɪ fəl							
L14	'bju:^{h} ɾi	| –	'bju: tɪ fəl							
L15	'bju: tɪ	| –								'bləʊ tə fəl

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

powerful ['paʊ ə fəl] (| - -)

Patterns / participants	BW power [paʊ ər]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
H01	paʊ 'wɜ^{f}	– |				ˈpaʊ^{h} ə 'ful^{m}				
H02	'paʊ^{m} 'wɜr^{h}	| |	ˈpaʊ ə fəl							
H03	'paʊ^{m} 'wɜr^{f}	| |				ˈpaʊ^{m} ə 'ful^{m}				
H04	'paʊ^{h} vɜ	MP	ˈpaʊ ə fəl							
H05	'paʊ wə	| –	ˈpaʊ ə fəl							
H06	'paʊ wə	| –	ˈpaʊ ə fəl							
H07	'paʊ wər	| –	ˈpaʊ ə fəl							
H08	'paʊ^{m} 'wɜr^{f}	| |				ˈpaʊ^{h} ə 'ful^{m}				
H09	'paʊ^{h} wə	| –	ˈpaʊ ə fəl							
H10	'paʊ vɜ	MP				ˈpaʊ ə 'ful				
H11	'paʊ^{m} 'wɜr^{f}	| |				ˈpaʊ^{m} ə 'ful^{m}				
H12	'paʊ wə	| –	ˈpaʊ ə fəl							
H13	'paʊ ər	| –	ˈpaʊ ə fəl							
H14	'paʊ wə	| –							'paʊ 'wɜ 'ful	
H15	'paʊ wər	| –				ˈpaʊ^{h} ə 'ful^{m}				

Patterns / participants	BW power [paʊ ər]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
L01	'paʊ^{m} 'wɜ^{f}	| |				ˈpaʊ^{h} ə 'ful^{m}				
L02	'po^{m} 'wɜ^{f}	MP								'po^{m} 'ro^{m} 'fi^{f}
L03	paʊ 'wɜ^{f}	– |				ˈpaʊ^{m} ə 'ful^{m}				
L04	'paʊ^{h} wə	| –				ˈpaʊ^{h} ə 'ful^{f}				
L05	'paʊ wər	| –				ˈpaʊ^{h} ə 'ful^{f}				
L06	'paʊ^{m} 'wɜr^{f}	| |				ˈpaʊ^{h} ə 'ful^{m}				
L07	'paʊ^{m} 'wɜr^{f}	| |				ˈpaʊ^{h} ə 'ful^{m}				
L08	'paʊ wər	| –	ˈpaʊ ə fəl							
L09	'paʊ wər	| –				ˈpaʊ^{h} ə 'ful^{m}				
L10	'paʊ wə	| –				ˈpaʊ^{h} ə 'ful^{m}				
L11	'paʊ wər	| –					ˈpaʊ^{m} 'wɜ^{f} fəl			
L12	'paʊ^{m} 'wɜr^{f}	| |						paʊ 'wɜ^{f} 'ful^{m}		
L13	'paʊ wə	| –	ˈpaʊ ə fəl							
L14	'paʊ wər	| –	ˈpaʊ ə fəl							
L15	'plaʊ wər	MP								'plaʊ ə fjʊl

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

usually ['ju: ʒuə li] (| - -)

Patterns / participants	BW usual ['ju: ʒuəl]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
H01	jʊ 'tʃuəlᶠ	– |				ˈjuːʰ ʃuə 'liᶠ				
H02	jʊ 'tʃuəlʰ	– |				'juːˡ ʃuə 'liʰ				
H03	'juʰ 'tʃuəlᶠ	| |				'juːʰ ʃuə 'liᶠ				
H04	'juʰ tʃuəl	| –	'ju: ʒuə li							
H05	'juʰ tʃəl	| –	'ju: ʒuə li							
H06	'juᵐ 'tʃuəlᶠ	| |	'ju: ʒuə li							
H07	'juʰ tʃuəl	| –	'ju: ʒuə ri							
H08	'juᵐ 'tʃuəᶠ	MP				'juːᵐ ʃuə 'liᶠ				
H09	'ju tʃuəl	| –	'ju: ʒuə li							
H10	'juʰ ʒuəl	| –	'ju: ʒuə li							
H11	jʊ 'tʃuəlᶠ	– |				'juːʰ ʃuə 'liᶠ				
H12	'ju tʃuəl	| –	'ju: ʒuə li							
H13	'ju ʒuəl	| –	'ju: ʒuə li							
H14	'juʰ 'tʃuəlˡ	| |	'ju: ʒuə li							
H15	'ju tʃuəl	| –	'ju: ʒuə li							

Patterns / participants	BW usual ['ju: ʒuəl]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
L01	'ʌnᵐ 'tʃuaᵐ	MP								'ʌn 'ʃuəᶠ li
L02	'jusʰ tə 'laᶠ	MP								'ʒusʰ ta 'liᶠ
L03	'asʰ 'kɜlᶠ	MP								'ʌsʰ kə 'liᶠ
L04	'jusʰ 'tʃuaᵐ	MP	'juːʰ ʒuə li							
L05	'ju tʃuəl	| –	'ju: ʒuə li							
L06	'ʌsʰ 'ɔwᵐ	MP			ju ʃə 'liᶠ					
L07	'ʌlʰ 'liᶠ	MP								ə 'juʰ 'liᶠ
L08	'æsʰ ə	MP	'ju: ʒu li							
L09	'ʌsʰ 'alᶠ	MP	'juːʰ ʒuə li							
L10	ju 'ʃuəlᶠ	– |		ju 'ʒuə li						
L11	alsʰ	MP	'ju: ʒuə li							
L12	'uᵐ 'rɔlᶠ	MP								uᵐ 'ɔᵐ 'liᶠ
L13	'jusʰ tʃuə	MP	'ju: ʒuə li							
L14	ju 'ʃuəlᶠ	– |	'ju: ʒuə li							
L15	'ʌs sul	MP								'ʌs 'lul li

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

consciousness ['kɒn ʃəs nəs] (| - -)

Patterns / participants	BW conscious ['kɒn ʃəs]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
H01	'kɔnᵐ 'tʃɪəsʰ	| |						kən 'ʃɪəsʰ 'nesʰ		
H02	kən 'sɪəs	MP								kən 'sɪə nes
H03	'kɔnᵐ 'tʃɪəsʰ	| |								kən 'sɪəsʰ net
H04	kən 'ʃɪəs	– |								kən 'ʃɪəsʰ net
H05	'kɔnᵐ 'ʃɪəsᶠ	| |					'kɑn 'ʃɪəs nes			
H06	ˈkɒn ʃəs	| –	'kɑn ʃəs nes							
H07	kən 'siʰ ʃəs	MP								kən 'si ʃəs nət
H08	'kɔnᵐ 'tʃɪəsʰ	| |								'kɔnᵐ 'ʃɪəsʰ 'netˡ
H09	'kɔnᵐ 'sɪəs	MP							'kɔnᵐ 'ʃɪəsʰ 'nesˡ	
H10	ˈkɒn ʃəs	| –		kən 'sɪəs nes						
H11	'kɔnᵐ 'tʃɪəsʰ	| |					'kɑnᵐ 'ʃɪəsʰ nəs			
H12	ˈkɒnʰ ʃəs	| –	'kɑn ʃəs nəs							
H13	ˈkɒnʰ ʃəs	| –					'kɔnᵐ 'ʃɪəsʰ nəs			
H14	kɔn 'saɪʰ dʒə 'rʌs	MP								kən 'saɪʰ dʒə 'rʌsʰ 'nesˡ
H15	kən 'ʃɪəsᶠ	– |		kən 'sɪəs nes						

Patterns / participants	BW conscious ['kɒn ʃəs]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
L01	'kɔnᵐ 'tʃɪəsʰ	| |								'kɔnᵐ 'ʃɪəᶠ net
L02	'kɔsʰ 'nelᵐ	MP								'kɔsʰ sɪ 'nɪəlᵐ a 'liᶠ
L03	'kɔnᵐ 'sekʰ 'tʃʊəᶠ	MP								kɔnᵐ 'sekʰ 'ʃʊəᶠ 'niᶠ
L04	kəns 'ʃɪəsᶠ	– |								kən 'ʃɪətʰ nəs
L05	'kɔnᵐ 'sɔɪlᵐ	MP								kɔn 'sɔʰ nes
L06	kən 'ʃɪəwᶠ	MP								'kɑn ʃə nes
L07	'kɔnᵐ sɪ 'utʰ	MP								'kɔnᵐ sɪ 'usʰ 'nesˡ
L08	kɔnᵐ sɪ 'ɜlᶠ	MP								'kɔnᵐ sɪ 'ɜlʰ 'nesˡ
L09	'kɔnᵐ 'sʌsʰ	MP								kən 'saɪʰ ən 'nesˡ
L10	kən 'saɪ ʌs	MP								kən 'saɪʰ ən 'neʃˡ
L11	'kɔns	MP								'kɔnᵐ 'ʃɪəᶠ nes
L12	kɔn 'sekʰ 'ʌsʰ	MP								kən sɪ 'ʌsʰ 'nesˡ
L13	kɔn 'sɪʰ ʃɪən	MP								kɔn 'sɪh ʃən nes
L14	'kɔnʰ sɪ əs	MP								kən 'saɪʰ ən nes
L15	'kɔnʰ ses	MP								'kɑn sə nes

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

happiness ['hæ pi nəs] (| - -)

Patterns / participants	BW happy ['hæ pi]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
H01	'hæp^{l} 'pi^{f}	| |				'hæp pɪ 'nes^{l}				
H02	'hæp pi	| –	'hæp pɪ nəs							
H03	'hæp^{h} 'pi^{f}	| |	'hæp pɪ nəs							
H04	'hæp pi	| –				'hæp pɪ 'nes				
H05	'hæp pi	| –	'hæp pɪ nəs							
H06	'hæp pi	| –	'hæp pɪ nes							
H07	'hæp pi	| –	'hæp pɪ nes							
H08	'hæp^{h} 'pi^{f}	| |					'hæp^{h} 'pi^{f} nes			
H09	'hæp pi	| –	'hæp^{h} pɪ nes							
H10	'hæp pi	| –	'hæp pɪ nəs							
H11	'hæp^{h} 'pi^{f}	| |	'hæp pɪ nəs							
H12	'hæp pi	| –	'hæp pɪ nəs							
H13	'hæp pi	| –	'hæp pɪ nes							
H14	'hæp pi	| –				'hæp pɪ 'nes				
H15	'hæp pi	| –	'hæp pɪ nes							

Patterns / participants	BW happy ['hæ pi]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
L01	'hæp pi	| –	'hæp^{h} pɪ nes							
L02	'hæp pi	| –								'hæp^{h} pɪ 'nis^{f}
L03	'hæp^{l} 'pi^{f}	| |					'hæp^{h} 'pi^{f} nes			
L04	'hæp pi	| –				'hæp^{h} pɪ 'nes^{f}				
L05	'hæp pi	| –	'hæp pɪ nəs							
L06	'hæp pi	| –	'hæp pɪ nes							
L07	'hæp^{h} 'pi^{f}	| |					'hæp^{h} 'pi^{f} nes			
L08	'hæp pi	| –	'hæp pɪ nəs							
L09	'hæp pi	| –	'hæp pɪ nes							
L10	'hæp pi	| –								'hæp pɪ neʃ
L11	'hæp pi)	| –	'hæp pɪ nəs							
L12	'hæp pi	| –								'hæp pɪ net
L13	'hæp pi	| –	'hæp pɪ nes							
L14	'hæp pi	| –	'hæp pɪ nes							
L15	'hæp pi	| –				'hæp pɪ 'nes^{l}				

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

probably ['prɒ bə bli] (| - -)

Patterns / participants	BW probable ['prɒ bə bəl]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
H01	'prɒbʰ ə 'bəlᶠ	| – |			prə ba 'bliᶠ					
H02	prə 'blaʰ bəl	– | –	'prɑb ə bli							
H03	'proᵐ 'beᵐ 'bəlᶠ	| | |				'proᵐ bə 'bliᶠ				
H04	prə 'bleʰ bə bəl	MP		prə 'be bli						
H05	' prɒ bəl	MP								'prɑb ʔə li
H06	prə 'baʰ bəl	– | –		pro 'ba bli						
H07	'prɒbʰ ə 'bəlᶠ	| – |				'prɑʰ bə 'bliᶠ				
H08	prə ba 'bəlᶠ	– – |						prə 'blaᵐ 'bliᶠ		
H09	'prɒbʰ ə bəl	| – –								prə 'beʰ blə li
H10	prə 'bæʰ bəl	– | –	'prɑb ə bli							
H11	'prɒbʰ ə 'bəlᶠ	| – |				'prɑb ə 'bliᶠ				
H12	'prɒbʰ ə bəl	| – –	'prɑb ə bli							
H13	prə 'be bəl	– | –	'prɑb ə bli							
H14	'prɒ pə bəl	MP								'prɑp ə bli
H15	'prɒb ə bəl	| – –								'prɑb ʔə li

Patterns / participants	BW probable ['prɒ bə bəl]		SW							MP
			| – –	– | –	– – |	| – |	| | –	– | |	| | |	
L01	'proᵐ ba 'bəlᶠ	| – |				'proᵐ bə 'bliᶠ				
L02	'pɑsʰ sɪ 'bəlᶠ	MP								'pɔsʰ sɪ bɔ 'liᶠ
L03	'proᵐ da 'bliᶠ	MP								pro 'raʰ bɪ 'tiᶠ
L04	pro 'baʰ bəl	– | –					'proᵐ 'baʰ bli			
L05	prob 'eɪ bəl	– | –								prəb 'ʔe bli
L06	'proᵐ 'bæᵐ 'bɜnᶠ	MP					'proᵐ 'bæᶠ bli			
L07	pro 'bæbʰ 'bɜnᶠ	MP								'proᵐ ba la 'liᶠ
L08	'prɑbʰ bəl	MP				'prɑbʰ ə 'blif				
L09	'pro 'ba 'bəl	| | |								'prɑb ʔa 'blaɪᵐ
L10	'proᵐ 'baʰ ble	MP		pro 'be bli						
L11	'pro ba bəl	| – –	'prɑb ə bli							
L12	'proᵐ 'beᵐ 'bəlᶠ	| | |					'proᵐ 'beʰ bli			
L13	prə 'baʰ bəl	– | –		prə 'be li						
L14	prə ba 'eɪʰ bəl	MP								prə bə 'be li
L15	prə 'beɪ bəl	– | –		prə 'be bli						

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

awareness [ə ˈweə nəs] (- | -)

Patterns / participants	BW aware [əˈweər]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
H01	ə ˈweə	– |						ə ˈweəᵐ ˈnesʰ		
H02	ə ˈweər	– |	ə ˈweə nəs							
H03	ə ˈweər	– |						ə ˈweəᵐ ˈnesʰ		
H04	ə ˈveər	MP	ə ˈweə nəs							
H05	ə ˈweər	– |	ə ˈweə nəs							
H06	ə ˈweər	– |	ə ˈweə nəs							
H07	ə ˈweərᵐ	– |		ˈa weə nəs						
H08	a ˈweərᵐ	– |	ə ˈweə nəs							
H09	ə ˈweəᵐ	– |	ə ˈweə nəs							
H10	ə ˈveər	MP	ə ˈweə nəs							
H11	ə ˈvæᵐ	MP	ə ˈweə nəs							
H12	ə ˈweərᵐ	– |	ə ˈweə nəs							
H13	ə ˈweər	– |	ə ˈweə nəs							
H14	ə ˈweə	– |	ə ˈweə nəs							
H15	ə ˈweərᵐ	– |	ə ˈweə nəs							

Patterns / participants	BW aware [əˈweər]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
L01	a ˈweəᵐ	– |	ə ˈweə nəs							
L02	a ˈwɜʁʰ	MP								a wə ˈnesˡ
L03	ə ˈweəᵐ	– |								ə weəᵐ ˈnetˡ
L04	a ˈwaᵐ	MP								ər ˈwɑʰ nəs
L05	ə ˈweəᵐ	– |						a ˈweəᵐ ˈnesʰ		
L06	ə ˈvaː ᵐ	MP								a wʌ ˈnesʰ
L07	a ˈwepʰ	MP								ə ˈweɪᵐ ˈreɪᵐ ˈnesˡ
L08	ˈa ˈweɪ	MP	ə ˈweə nəs							
L09	ə ˈweərᵐ	– |	ə ˈweəʰ nəs							
L10	ə ˈweəᵐ	– |								ə wə ˈreʰ nəʃ
L11	ə ˈweəᵐ	– |	ə ˈweə nəs							
L12	ˈɔ weəᵐ	MP								ə wæ ˈnisʰ
L13	ə ˈwɔrᵐ	MP								ə ˈwɔᵐ ˈresᶠ ˈnisʰ
L14	ˈɔ weɪ	MP								ə ˈwɔʰ ri nəs
L15	a ˈveɪ	MP	ə ˈweə nəs							

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

commercial [kə ˈmɜː ʃəl] (- | -)

Patterns / participants	BW commerce [ˈkɒ mɜːs]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
H01	'kɔm^{m} 'mɜs^{h}	| |				'kɔm^{m} mə 'tʃɪəl^{f}				
H02	kəm 'mɜ˞s^{h}	– |								'kɔm^{m} mə 'tʃɪəls^{f}
H03	'kɔm^{m} 'mɜs^{h}	| |				'kɔm^{m} mə 'tʃɪəl^{f}				
H04	kəm 'mɜ˞s	– |	kəm 'mɜ tʃɪəl							
H05	'kɔm^{m} 'mɜ˞s^{h}	| |		'kɔm mə tʃəl						
H06	'kɔm^{m} 'mɜs^{h}	| |				'kɔm^{m} mə 'tʃɪəl^{f}				
H07	kəm 'mɜ˞s^{h}	– |	kəm 'mɜ tʃɪəl							
H08	'kɔm^{m} 'mɜs^{h}	| |				'kɔm^{m} mə 'tʃɪəl^{f}				
H09	kəm 'mɜ˞s^{h}	– |				'kɔm^{m} mə 'tʃɪəl^{f}				
H10	'kɔm^{m} 'mɜs^{h}	| |	kəm 'mɜ tʃɪəl							
H11	kəm 'mɜ˞s^{h}	– |				'kɔm^{m} mə˞ 'tʃɪəl^{f}				
H12	kəm 'mɜs	– |								kɔm 'mɜn tʃəl
H13	kəm 'mɜ˞s	– |	kəm 'mɜ˞ tʃɪəl							
H14	kɔm 'mɜ sɪ	MP					'kɔm 'mɜ tʃɪəl			
H15	'kɔm mə˞s	| –	kɔm 'mɜ tʃɪəl							

Patterns / participants	BW commerce [ˈkɒ mɜːs]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
L01	'kɔm^{m} 'mɜs^{m}	| |				'kɔm^{m} mɜ 'tʃɪəl^{f}				
L02	'kæm^{h} mə 'li^{f}	MP								'kæm^{h} mə la 'li^{f}
L03	'kɔm^{m} men 'dɜ^{f}	MP								'kɔm^{m} mæn də 'sɔl^{f}
L04	'kɔm^{h} mə red	MP	kəm 'mɜ tʃɪəl							
L05	kəm 'mɜ˞s	– |								'kɔm^{m} mɜ 'tʃɪəwt^{f}
L06	kəm 'mæs^{h}	MP				'kɔm^{m} mɜ 'tʃɪəl^{f}				
L07	'kɔm^{m} mɪ 'reɪs^{l}	MP								'kɔm^{m} mɪ 'kɔː^{f}
L08	kəm 'mɜ˞d	MP		'kɔm^{h} mɜ tʃəl						
L09	kəm 'mɜ˞s	– |	kɔm 'mɜ^{h} tʃɪəl							
L10	'kɔm^{m} mə 'raɪʃ^{h}	MP								kəm 'mɜ^{h} rɪ kəl
L11	'kɔm mə res	MP	kəm 'mɜ^{h} tʃɪəl							
L12	'kɔm^{m} 'mɜs^{m}	| |			kɔm^{m} mɜ 'tʃɪəl^{f}					
L13	kɔm mə 'si^{f}	MP								kɔm mə 'sɪən^{f}
L14	'kɔm^{m} 'mɜʃ^{h}	MP	kɔm 'mɜ^{h} tʃɪəl							
L15	kəm 'mɜ˞s	– |	kəm 'mɜ tʃɪəl							

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

conceptual [kəp ˈsep tʃuəl] (- | -)

Patterns / participants	BW concept [ˈkɒn sept]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
H01	ˈkɔnᵐ ˈsepˡ	| |								ˈkɔn səp ˈtʃɪəl
H02	ˈkɔn sept	| –						kən ˈsepʰ ˈtʃuəlʰ		
H03	ˈkɔnᵐ ˈsepˡ	| |						kɔn ˈsepʰ tʃuəlᶠ		
H04	ˈkɔn sep	| –	kən ˈsep tʃuəl							
H05	ˈkɔn sep	| –		ˈkɔn səp tʃuəl						
H06	ˈkɔn sep	| –	kən ˈsep ˈtʃuəl							
H07	ˈkɔn sep	| –						kɔn ˈsepʰ tʃuəlᶠ		
H08	ˈkɔnᵐ ˈsepˡ	| |								kɔn ˈsepʰ tʃuənᶠ
H09	ˈkɔn sept	| –		ˈkɔn sɛp tʃuəl						
H10	ˈkɔn sep	| –	kən ˈsep tʃuəl							
H11	ˈkɔn sept	| –						kɔn ˈsepʰ tʃuəlᶠ		
H12	ˈkɔn sept	| –		ˈkɔn səp tʃuəl						
H13	ˈkɔn sept	| –	kən ˈsepʰ tʃuəl							
H14	ˈkɔnᵐ ˈsepˡ	| |		ˈkɔn sɛp tʃuəl						
H15	ˈkɔn sept	| –		ˈkɔn sɛp tʃuəl						

Patterns / participants	BW concept [ˈkɒn sept]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
L01	ˈkɔnᵐ ˈsepˡ	| |								ˈkɔnᵐ sɛp ˈtuaᵐ
L02	ˈkoʰ na tɪ	MP								ko ro ˈtʃɜᶠ
L03	ˈkɔnᵐ ˈkepʰ	MP								ˈkɔnᵐ ˈkæpʰ ˈtɔwᶠ
L04	ˈkɔn səpt	| –								ˈkɔnᶠ sɛp ˈtʃuaᶠ
L05	ˈkɔnᵐ ˈseptʰ	| |							ˈkɔnᵐ ˈsepʰ ˈtʃuəlᶠ	
L06	ˈkɔnᵐ ˈsepˡ	| |								ˈkɔnᶠ sɛp ˈtuaᵐ
L07	ˈkɔnᵐ ˈkɔpʰ	MP								ˈkɔnᵐ ˈkɔtʰ ˈtuːᵐ
L08	ˈkɔn sep	| –								ˈkɔn sɛp dʒə
L09	ˈkɔnᵐ ˈsepˡ	| |				ˈkɔnᵐ səp ˈtʃʊelᶠ				
L10	ˈkɔnᵐ ˈsepˡ	| |								ˈkɔnᵐ sɪ ˈpɪʰ tʃɪəl
L11	ˈkɔn sep	| –								ˈkɔnᵐ ˈsep ˈtɔwˡ
L12	ˈkɔn sep	| –			kɔn səp ˈtʊəlᶠ					
L13	ˈkɔnᵐ ˈsepˡ	| |								ˈkɔnʰ sɛp ˈtʊənˡ
L14	ˈkɔn sept	| –								kɔn ˈsepʰ tʃən
L15	ˈkɔnʰ ˈkæptˡ	MP								ˈkɔn kæp təl

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

habitual [hə ˈbɪ tʃuəl] (- | -)

Patterns / participants	BW habit [ˈhæ bɪt]		SW - | -	SW | - -	SW - - |	SW | - |	SW | | -	SW - | |	SW | | |	MP
H01	'hæ bɪt	| –			hæ bɪ 'tʃʊəlᶠ					
H02	'hæ bɪt	| –				'hæˡ bɪ 'tʃʊəlʰ				
H03	'hæ bɪt	| –			hæ bɪ 'tʃʊəlᶠ					
H04	'hæ bɪt	| –					|			'hæ bɪ təl
H05	'ha bɪt	| –				'hæ bɪ 'tʃʊəl				
H06	'ha bɪt	| –				'ha bɪ 'tʃʊəl				
H07	'hæ bɪt	| –			hæ bɪ 'tʃʊəlᶠ					
H08	'hæʰ 'bɪtˡ	| |								'hæʰ bɪ 'tʃʊənᶠ
H09	'hæ bɪt	| –								'hæᵐ bɪ 'tʃʊənᶠ
H10	'hæ bɪt	| –		'ha bɪ tʃʊəl						
H11	'ha bɪt	| –			ha bɪ 'tʃʊəlᶠ					
H12	'hæ bɪt	| –		'hæ bɪ tʃəl						
H13	'hæ bɪt	| –								'hæ bɪ tʃɪəl
H14	'hæ bɪt	| –		'hæ bɪ tʃʊəl						
H15	'hæ bɪt	| –		'hæ bɪ tʃʊəl						

Patterns / participants	BW habit [ˈhæ bɪt]		SW - | -	SW | - -	SW - - |	SW | - |	SW | | -	SW - | |	SW | | |	MP
L01	'haᵐ 'bɪtˡ	| |								'haʰ bɪ 'tʊəᵐ
L02	'ha 'bɪs	MP								'haᵐ bɪ 'tɜːᶠ
L03	'ha bɪt	| –								'haᵐ bɪ 'taʊᶠ
L04	'ha bɪt	| –								'hæʰ bɪ 'tʃʊəᵐ
L05	'hæ bɪt	| –		'ha bɪ tʃʊəl						
L06	'ha bɪt	| –								ha bɪ 'tɔw
L07	'ha 'bɪs	MP								ha bɪ 'tʃɜːᶠ
L08	'haʰ bɪt	| –								'hæ bɪ dʒə
L09	'haᵐ 'bɪtˡ	| |								'hæ bɪ 'tol
L10	'haᵐ 'bɪʃˡ	MP		'hæ bɪ tʃəl						
L11	'ha bɪt	| –								'hæ bɪ tɔl
L12	'hæʰ bɪt	| –								'hæʰ bɪ 'tɔlᶠ
L13	'ha bɪt	| –								hæ bɪ 'tɔlᶠ
L14	'ha bɪt	| –		'hæ bɪ tʃəl						
L15	'ha bɪt	| –								'hæ bɪ tɔl

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

industrial [ɪn ˈdʌs triəl] (- | -)

Patterns / participants	BW industry [ˈɪn dəs tri]		SW - | -	SW | - -	SW - - |	SW | - |	SW | | -	SW - | |	SW | | |	MP
H01	ɪn ˈdʌt̚ʰ ˈtriˡᶠ	MP						ɪn ˈdʌtʰ ˈtrɪəlˡᶠ		
H02	ɪn ˈdʌsʰ trɪ	– | –								ɪn ˈdʌsʰ ˈtelʳ
H03	ɪn ˈdʌsʰ ˈtriˡᶠ	– | |						ɪn ˈdʌsʰ ˈtrɪəlˡᶠ		
H04	ɪn ˈdʌsʰ trɪ	– | –	ɪn ˈdʌs trɪəl							
H05	ɪn ˈdrʌs trɪ	MP								ɪn ˈdrʌs təl
H06	ɪn ˈdrʌs trɪ	MP						ɪn ˈdʌsʰ ˈtrɪəlˡᶠ		
H07	ɪn ˈdrʌs trɪ	MP	ɪn ˈdʌs trɪəl							
H08	ɪn ˈdʌsʰ ˈtriˡᶠ	– | |						ɪn ˈdʌsʰ ˈtrɪəlˡᶠ		
H09	ɪn ˈdʌs trɪ	– | –	ɪn ˈdʌs trɪəl							
H10	ɪn ˈdʌs trɪ	– | –	ɪn ˈdʌt trɪəl							
H11	ɪn ˈdʌsʰ ˈtriˡᶠ	– | |								ɪn ˈdrʌsʰ ˈtrɪəlˡᶠ
H12	ɪn ˈdʌs trɪ	– | –		ˈɪn dəs trɪəl						
H13	ɪn ˈdʌs trɪ	– | –	ɪn ˈdʌsʰ trɪəl							
H14	ɪn ˈdʌsʰ trɪ	– | –								ɪn ˈdʌsʰ tə ˈrɔl
H15	ɪn ˈdʌs trɪ	– | –								ɪn ˈdʌsʰ trɪ ˈɔl

Patterns / participants	BW industry [ˈɪn dəs tri]		SW - | -	SW | - -	SW - - |	SW | - |	SW | | -	SW - | |	SW | | |	MP
L01	ˈɪnᵐ ˈdʌsʰ trɪ	| | –								ɪn ˈdʌt̚ʰ ˈtɪaᵐ
L02	ɪn ˈdʊsʰ tə ˈliˡᶠ	MP								ɪn ˈlut̚ʰ tə ˈliˡᶠ
L03	ɪn ˈdʊsʰ ˈtriˡᶠ	– | |								ɪn ˈdut̚ʰ tɪ ˈrɔlˡᶠ
L04	ɪn ˈdrʌst̚ trɪ	MP								ɪn ˈdrʌt̚ʰ trɪəl
L05	ɪn ˈdas trɪ	– | –								ɪn ˈdat̚ tʃɪəl
L06	ɪn ˈdʌsʰ ˈtriˡᶠ	– | |								ɪn dʌs ˈt̚ɔw
L07	ɪn ˈdʌt̚ʰ ˈtriˡᶠ	MP								ɪn ˈdʌt̚ʰ ˈtiˡᶠ rɪə
L08	ɪn ˈdʌsʰ trɪ	– | –	ɪn ˈdʌsʰ trəl							
L09	ɪn ˈdʌs trɪ	– | –						ɪn ˈdʌsʰ ˈtrɔlˡ		
L10	ɪn ˈdʌsʰ ˈtraɪᵐ	MP								ɪn ˈdusʰ staɪ ˈrɔlˡᶠ
L11	ɪn ˈdʌsʰ trɪ	– | –						ɪn ˈdʌsʰ ˈtrɔlˡ		
L12	ɪn ˈdʌsʰ ˈriˡᶠ	– | |								ɪn ˈdʌt̚ʰ ˈtɪaᶠ
L13	ɪn ˈdʌsʰ trɪ	– | –								ɪn ˈdʌsʰ trɪən
L14	ɪn ˈdʌsʰ trɪ	– | –	ɪn ˈdʌt̚ʰ trəl							
L15	ɪn ˈdu ˈtraɪ	MP								ɪn ˈdut̚ʰ trɔl

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

outrageous [aʊt ˈreɪ dʒəs] (- | -)

Patterns / participants	BW outrage [ˈaʊt reɪdʒ]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
H01	'art 'redʒˡ	| |			aʊt rə 'dʒɪəsʰ					
H02	'aʊʰ tredʒ	| –								'aʊt tə gra 'dʒɪəsʰ
H03	'aʊᵐ 'tredʒˡ	| |				'aʊᵐ trɛ 'dʒɪəsʰ				
H04	'aʊʰ tredʒ	| –					'aʊʰ 'tre dʒəs			
H05	'aʊtʰ redʒ	| –		'aʊ re dʒəs						
H06	'aʊtʰ 'rædʒˡ	MP		'aʊʰ re dʒəs						
H07	'aʊt redʒ	| –			aʊ rə 'dʒɪəsᶠ					
H08	'aʊtʰ 'rædʒˡ	MP							'aʊʰ 'reᵐ 'dʒɪəsᶠ	
H09	'aʊʰ tredʒ	| –								'aʊ tɛ dʒəs
H10	'aʊtʰ 'tredʒˡ	| |	aʊ 'treɪʰ dgɪəs							
H11	'aʊʰ 'tredʒˡ	| |								aʊ dʒə rəs
H12	aʊ res	MP		'aʊ re dʒəs						
H13	'aʊt redʒ	| –		'aʊ re dʒɪəs						
H14	'aʊtʰ tredʒ	| –								'aʊʰ ræ 'dʒᶠ rəs
H15	'aʊtʰ 'redʒˡ	| |		'aʊ re dʒəs						

Patterns / participants	BW outrage [ˈaʊt reɪdʒ]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
L01	'aʊʰ 'renʰ	MP								'aʊʰ rɛ 'ʌsʰ
L02	'ɔtʰ tə 'raᶠ	MP								'ɔʰ tə 'ga:tˡ
L03	'aʊʰ 'geɪnᵐ	MP								'aʊʰ ge 'ʌtᶠ
L04	'aʊtʰ redʒ	| –	aʊ 're dʒɪəs							
L05	'aʊtʰ redʒ	| –								'aʊʰ rə 'tʃɪəsᶠ
L06	'aʊtʰ 'redʒˡ	| |								'aʊʰ ret 'ʌsᶠ
L07	'aʊtʰ 'resˡ	MP								'aʊʰ 'raᵐ dʒɪ ʊn
L08	'aʊtʰ reɪdʒ	| –								'aʊʰ redʒ 'ʌsᶠ
L09	'aʊtʰ 'redʒˡ	| |		'auʰ re dʒɪəs						
L10	'aʊʰ ræg	MP								'auʰ re 'dʒᶠ rʌs
L11	'aʊt ret	MP								'auʰ re gɪəs
L12	'aʊtʰ ret	MP								'aʊʰ re 'ʌsʰ
L13	'aʊtʰ redʒ	| –				'auʰ re 'dʒɪəs				
L14	'aʊtʰ rɪdʒ	| –								au 'reʰ dʒɪ ɔs
L15	'aʊʰ tedʒ	MP								'auʰ 'tredʒ

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

successful [sək ˈses.fəl] (- | -)

Patterns / participants	BW success [sək ˈses]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
H01	sək ˈses^{h}	– |						sək ˈses^{h} ˈful^{m}		
H02	ˈsʌk ses	| –	sək ˈses ful							
H03	ˈsʌk^{h} ˈses^{h}	| |					ˈsʌk^{h} ˈses^{h} ful			
H04	sək ˈsɪəs	MP	sək ˈses ful							
H05	ˈsʌk ses	| –	sək ˈses ful							
H06	ˈsʌk ses	| –	sək ˈses ful							
H07	sək ˈses	– |	sək ˈses ful							
H08	ˈsʌk^{h} ˈses^{h}	| |							ˈsʌk^{h} ˈses^{h} ˈful^{m}	
H09	ˈsʌk ses	| –	sək ˈses ful							
H10	sək ˈses	– |	sək ˈses ful							
H11	ˈsʌk^{h} ˈses^{h}	| |						sək ˈses^{h} ˈful^{m}		
H12	sək ˈses	– |	sək ˈses ful							
H13	ˈsʌk^{h} ses	| –	sək ˈses ful							
H14	sək ˈses	– |	sək ˈses ful							
H15	sək ˈses	– |	sək ˈses fəl							

Patterns / participants	BW success [sək ˈses]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
L01	ˈsʌk^{h} ses	| –								ˈsak^{h} ˈse^{f} ful
L02	sʊ ˈkɔs^{h}	MP								ˈsu^{m} ˈkɔt^{h} ˈfil^{f}
L03	sə ˈkʌs^{h}	MP								so ˈkʌs^{h} ful
L04	ˈsʌk^{h} ˈses^{h}	| |								ˈsʌk ʃɪəs ˈful^{m}
L05	ˈsʌk səs	| –		ˈsʌk ses ful						
L06	ˈsʌk^{h} ˈses^{h}	| |						sʌk ˈses^{h} ˈful^{m}		
L07	ˈsʌk^{h} ˈkres^{l}	MP								ˈsʌk^{h} ˈkret^{l} ˈful^{m}
L08	ˈsʌk^{h} ˈses^{h}	| |					ˈsʌk^{h} ˈses^{h} ful			
L09	ˈsʌk səs	| –		ˈsʌk ses ful						
L10	ˈsʌk^{h} ket	MP								sʌk ˈket^{h} ˈful^{m}
L11	ˈsi kres	MP								ˈsi kret ful
L12	ˈsʌk^{h} ˈses^{l}	| |					ˈsʌk^{h} ˈses^{h} fəl			
L13	ˈsʌk^{h} ˈses^{h}	| |							ˈsʌk^{h} ˈses^{h} ˈful^{m}	
L14	ˈsʌk səs	| –	sək ˈses ful							
L15	sʌk ˈses	– |			sək ses ˈful					

“H” = “High proficiency group”; H01 means participant number 1 in the high proficiency group. “L” = “Low proficiency group”; L01 means participants 1 in the low proficiency group.

“BW” = “Base words”; “SW” = “Suffixed words”; “MP” = “Mispronunciation”

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

contractual [kən ˈtræk tʃuəl] (- | -)

Patterns / participants	BW contract [ˈkɒn trækt]		SW - | -	SW | - -	SW - - |	SW | - |	SW | | -	SW - | |	SW | | |	MP
H01	ˈkɒnᵐ ˈtrækˡ	| |						kən ˈtrækʰ ˈʃʊəlᶠ		
H02	kɒn ˈtrækˡ	– |	kən ˈtræk ʃʊəl							
H03	ˈkɒnᵐ ˈtræktˡ	| |						kən ˈtrækʰ ˈʃʊəlᶠ		
H04	ˈkɒn træk	| –	kən ˈtræk ʃəl							
H05	ˈkɒn trækt	| –		ˈkɒn træk ʃəl						
H06	ˈkɒn træk	| –	kən ˈtræk ʃʊəl							
H07	ˈkɒn træk	| –	kɒn ˈtræk ʃə							
H08	ˈkɒnᵐ ˈtrækˡ	| |								ˈkɒnᵐ ˈtrækʰ ˈʃʊənᶠ
H09	ˈkɒnᵐ ˈtræktˡ	| |	kən ˈtræk ʃʊəl							
H10	kən ˈtrækt	– |	kən ˈtræk ʃʊəl							
H11	ˈkɒnᵐ ˈtrækˡ	| |						kən ˈtrækʰ ˈʃʊəlᶠ		
H12	ˈkɒn trækt	| –	kən ˈtræk ʃəl							
H13	ˈkɒnᵐ ˈtræktˡ	| |	kən ˈtræk ʃʊəl							
H14	ˈkɒn træk	| –					ˈkɒnᵐ ˈtrækʰ ʃʊəl			
H15	kən ˈtrækt	– |	kən ˈtræk ʃəl							

Patterns / participants	BW contract [ˈkɒn trækt]		SW - | -	SW | - -	SW - - |	SW | - |	SW | | -	SW - | |	SW | | |	MP
L01	ˈkɒnᵐ ˈtresʰ	MP								ˈkɒnᵐ ˈtekʰ tʊəl
L02	ˈkɒnᵐ te ˈlaᶠ	MP								kæn te lə ˈlaᶠ
L03	ˈkɒnᵐ ˈtrʌkʰ	MP						kən ˈtrækʰ ˈʃʊəlᶠ		
L04	ˈkɒnᵐ ˈtrækˡ	| |	kən ˈtræk ʃʊəl							
L05	ˈkɒn ˈtræk	| |	kən ˈtræk ʃʊəl							
L06	ˈkɒnᵐ ˈtækˡ	MP						kən ˈtrækʰ ˈʃʊəlᶠ		
L07	ˈkɒnᵐ ˈteɪtˡ	MP								ˈkɒnᵐ ˈteɪᵐ tʊ ˈeɪtˡ
L08	ˈkɒn træk	| –					ˈkɒnᵐ ˈtrækʰ ʃəl			
L09	ˈkɒnᵐ ˈtræsʰ	MP	kən ˈtræk ʃʊəl							
L10	ˈkɒnᵐ ˈtrekˡ	MP								kən ˈtrekʰ ˈʃʊənᶠ
L11	ˈkɒn træk	| –		ˈkɒn træk ʃʊəl						
L12	ˈkɒnᵐ ˈtæksʰ	MP	kən ˈtræk ʃʊəl							
L13	ˈkɒn træk	| –	kən ˈtræk ʃən							
L14	ˈkɒn tæk	MP	kən ˈtræk ʃəl							
L15	ˈkɒn tækt	MP	kən ˈtræk təl							

“H” = “High proficiency group”; H01 means participant number 1 in the high proficiency group. “L” = “Low proficiency group”; L01 means participants 1 in the low proficiency group.

“BW” = “Base words”; “SW” = “Suffixed words”; “MP” = “Mispronunciation”

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

courageous [kə ˈreɪ dʒəs] (- | -)

Patterns / participants	BW courage [ˈkɜ: ɪdʒ]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
H01	ˈkɜᵐ ˈredʒˡ	| |			kə re ˈdʒɪəsʰ					
H02	kə ˈredʒ	– |	kə ˈreɪ dʒɪəs							
H03	ˈkɜ redʒ	| –	kə ˈreɪ dʒəs							
H04	kə ˈredʒ	– |								kə ˈræ dʒɪəs
H05	ˈkɔ rɪdʒ	MP	kə ˈreɪ dʒɪəs							
H06	ˈkɔ redʒ	MP	kə ˈreɪ dʒəs							
H07	ˈkɜ redʒ	| –	kə ˈreɪ dʒəs							
H08	ˈkɔᵐ ˈredʒˡ	MP								ˈkɔᵐ ˈreɪᵐ dʒɪəsʰ
H09	ˈkɜ redʒ	| –								kə ˈreɪ dʒə nəs
H10	ˈkɜ rɪdʒ	| –	kə ˈreɪ dʒəs							
H11	kə ˈredʒ	– |			kə re ˈdʒɪəsʰ					
H12	ˈkɔ rɪdʒ	MP	kə ˈreɪ dʒəs							
H13	ˈkɜᵐ ˈredʒˡ	| |	kə ˈreɪ dʒəs							
H14	ˈkɜ redʒ	| –								kə ˈreɪ dʒə rəs
H15	kə ˈredʒ	– |	kə ˈreɪ dʒəs							

Patterns / participants	BW courage [ˈkɜ: ɪdʒ]		SW - | -	| - -	- - |	| - |	| | -	- | |	| | |	MP
L01	ˈkɜ redʒ	| –			kə re ˈdʒɪəsʰ					
L02	ko ˈraᵐ	MP								ˈkoᵐ ˈraᵐ ˈʌnᵐ
L03	köəᵐ ˈgenʰ	MP								ˈkoᵐ ˈgekʰ ˈuəᵐ
L04	ˈkɔ res	MP		ˈkɔ re dʒəs						
L05	kə ˈredʒ	– |	kə ˈreɪ dʒəs							
L06	ˈkɔᵐ ˈreɪtˡ	MP								kə ˈreˡˡ ˈʌsᶠ
L07	ˈkɔnᵐ ˈgresʰ	MP								ˈkɔnᵐ tə ˈgreɪˡ ˈʌsᶠ
L08	ˈkaʊʰ redʒ	MP								ˈkɔ ˈreɪ əs
L09	kə ˈredʒ	– |								kə ˈreɪdʒ ʔʌt
L10	ˈkɔ redʒ	MP	kə ˈreɪ dʒəs							
L11	ˈkɔnᵐ ˈgresˡ	MP								kə ˈgreɪ dʒəs
L12	ˈku redʒ	MP								kɔ ˈreɪʰ ˈʌsʰ
L13	kə ˈredʒ	– |	kə ˈreɪ dʒəs							
L14	ˈkɔ redʒ	MP								kɔn ˈæŋ dʒəl
L15	ˈkɜ redʒ	| –	kə ˈreɪ dʒəs							

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

financial [faɪ ˈnæn ʃəl] (- | -)

Patterns / participants	BW finance [ˈfaɪ næns]		SW - | -	SW | - -	SW - - |	SW | - |	SW | | -	SW - | |	SW | | |	MP
H01	faɪ 'nænsʰ	– |			faɪ næn 'ʃɪəlᶠ					
H02	'faɪ næns	| –								faɪ 'næn ʃɪəls
H03	faɪ 'nænsʰ	– |			faɪ næn 'ʃɪəlᶠ					
H04	faɪ 'næns	– |		'faɪ næn ʃəl						
H05	'faɪ næns	| –	faɪ 'næn ʃəl							
H06	faɪ 'næns	– |	faɪ 'næn ʃɪəl							
H07	faɪ 'nænsh	– |	faɪ 'næn ʃəl							
H08	'faɪᵐ 'nænsʰ	| |				'faɪᵐ næn 'ʃɪəlᶠ				
H09	'faɪ næns	| –	faɪ 'næn ʃəl							
H10	faɪ 'næns	– |	faɪ 'næn ʃəl							
H11	'faɪᵐ 'nænsʰ	| |				faɪᵐ næn 'ʃɪəlᶠ				
H12	'faɪ næns	| –	faɪ 'næn ʃəl							
H13	faɪ 'næns	– |	faɪ 'næn ʃɪəl							
H14	'faɪᵐ 'nænsʰ	| |						faɪ 'næn 'ʃɪəl		
H15	faɪ 'næns	– |		'faɪ næn ʃɪəl						

Patterns / participants	BW finance [ˈfaɪ næns]		SW - | -	SW | - -	SW - - |	SW | - |	SW | | -	SW - | |	SW | | |	MP
L01	faɪ 'næns	– |						faɪ 'nænʰ 'ʃɪəlᶠ		
L02	fə na 'liᶠ	MP								faɪ 'naᵐ lɪ 'tiᶠ
L03	'fʌnᵐ 'niᶠ	MP								fə 'næsʰ 'nɔlᶠ
L04	fɪ 'næns	MP						fə 'nænʰ 'ʃɪəlᶠ		
L05	'faɪ nəns	| –					'faɪ 'næn ʃəl			
L06	faɪ 'nænʰ	– |						faɪ 'nænʰ 'ʃɪəlᶠ		
L07	fɪ 'na net	MP								'fɪʰ 'nɔsʰ sɪ 'kɔlᶠ
L08	'faɪᵐ 'nænsʰ	| |				faɪᵐ næn 'ʃɪəlᶠ				
L09	faɪ 'nænsʰ	– |	faɪ 'næn ʃɪəl							
L10	fɪ 'nænʰ se	MP						faɪ 'nænʰ 'ʃɪəlᶠ		
L11	faɪ 'nænsh	– |								'faɪ næn sɪ kəl
L12	'fi 'næs	MP								'fɪʰ nætʰ 'sɔlᶠ
L13	'faɪᵐ 'ænsʰ	MP								faɪ 'ænʰ 'kɔlᶠ
L14	faɪ 'næns	– |	faɪ 'næn ʃəl							
L15	faɪ 'næns	– |		faɪ næn ʃəl						

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

official [ə ˈfɪʃəl] (- | -)

Patterns / participants	BW office [ˈɒf ɪs]		SW							MP
			- | -	| - -	- - |	| - |	| | -	- | |	| | |	
H01	ˈɑfʰ ˈfɪsʰ	| |				ˈɔfʰ fɪ ˈʃɪəlᶠ				
H02	ˈɑf fɪs	| –		ˈɔf fɪ ʃɪəl						
H03	ɔf ˈfɪsʰ	– |			ɔf fɪ ˈʃɪəlᶠ					
H04	əf ˈfɪs	– |		ˈɔf fɪ ʃɪəl						
H05	ˈɑf fɪs	| –		ˈɔf fɪ ʃəl						
H06	ˈɑf fɪs	| –		ˈɔf fɪ ʃɪəl						
H07	ˈɑfʰ ˈfɪsʰ	| |		ˈɔf fɪ ʃɪəl						
H08	ˈɑfʰ ˈfɪsʰ	| |				ˈɔfʰ fɪ ˈʃɪəlᶠ				
H09	ˈɑf fɪs	| –	ɔf ˈfɪ ʃəl							
H10	ɔf ˈfɪs	– |	ɔf ˈfɪ ʃəl							
H11	ˈɑfʰ ˈfɪsʰ	| |			ɔf fɪ ˈʃɪəlʰ					
H12	ˈɑf fɪs	| –	ɔf ˈfɪ ʃəl							
H13	ˈɑf ˈfɪs	| |		ˈɔf fɪ ʃɪəl						
H14	ˈɑfʰ ˈfɪsʰ	| |		ˈɔf fɪ ʃɪəl						
H15	ɔf ˈfɪs	– |		ˈɔf fɪ ʃəl						

Patterns / participants	BW office [ˈɒf ɪs]		SW							MP
			- | -	| - -	- - |	| - |	| | -	- | |	| | |	
L01	ˈɑf fɪs	| –					ˈɔfʰ fɪʰ ʃɪəl			
L02	ˈɑfʰ ˈsiᶠ	MP								ˈɔfʰ fɪ ˈlɛᶠ
L03	ˈɑfʰ ˈfɜᶠ	MP								ˈɔfʰ fə ˈnɔlᶠ
L04	ˈɑfʰ ˈfɪsʰ	| |								ˈɔf fɪ kəl
L05	ɔf ˈfɪs	– |					ˈɔfʰ fɪʰ ʃəl			
L06	ˈɑfʰ ˈfɪsʰ	| |		ˈɔf fɪ ʃɪəl						
L07	ˈɑfʰ ˈfɪsʰ	| |								ˈɔfʰ ˈfɪʰ sɪ ˈkɔlᶠ
L08	ˈɑf fɪs	| –		ˈɔf fɪ ʃɪəl						
L09	ˈɑf ˈfɪs	| |	ɔf ˈfɪ ʃəl							
L10	ˈɑfʰ ˈfɪsʰ	| |		ˈɔf fɪ ʃɪəl						
L11	ˈɑf fɪs	| –	ɔf ˈfɪ ʃɪəl							
L12	ˈɑf fɪs	| –				ˈɔfʰ fɪ ˈʃɪəlᶠ				
L13	ˈɑfʰ ˈfɪsʰ	| |								ˈɔf fɪ kəl
L14	ˈɑf fɪs	| –		ˈɔf fɪ ʃɪəl						
L15	ˈɑf fɪs	| –								ˈɔf fɪ səl

“H” = “High proficiency group”; H01 means participant number 1 in the high proficiency group. “L” = “Low proficiency group”; L01 means participants 1 in the low proficiency group.

“BW” = “Base words”; “SW” = “Suffixed words”; “MP” = “Mispronunciation”

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

production [prə ˈdʌk ʃən] (- | -)

Patterns / participants	BW product [ˈprɒ dʌkt]		SW							MP
			- | -	| - -	- - |	| - |	| | -	- | |	| | |	
H01	ˈpro^{m} ˈdʌk^{l}	| |						prə ˈdʌk^{h} ˈʃʌn^{f}		
H02	ˈprɑ dʌkt	| –	prə ˈdʌk ʃən							
H03	ˈprɑ dək	| –	prə ˈdʌk ʃən							
H04	ˈpro^{m} ˈdʌkt^{l}	| |	pro ˈdʌk ʃən							
H05	ˈprɑ dʌk	| –		ˈˈpro dʌk ʃən						
H06	ˈprɑ dʌk	| –	prə ˈdʌk ʃən							
H07	prə ˈdʌkt	– |	prə ˈdʌk ʃən							
H08	ˈpro^{m} ˈdʌk^{h}	| |					ˈˈpro^{m} ˈdʌk^{h} ʃən			
H09	ˈprɑ dʌkt	| –	prə ˈdʌk ʃən							
H10	prə ˈdʌkt	– |	prə ˈdʌk ʃən							
H11	ˈprɑ dʌk	| –						prə ˈdʌk^{h} ˈʃʌn^{h}		
H12	ˈprɑ dʌkt	| –	prə ˈdʌk ʃən							
H13	prə ˈdʌkt	– |	prə ˈdʌk ʃən							
H14	ˈprɑ dʌkt	| –	prə ˈdʌk ʃən							
H15	ˈprɑ dʌkt	| –	prə ˈdʌk ʃən							

Patterns / participants	BW product [ˈprɒ dʌkt]		SW							MP
			- | -	| - -	- - |	| - |	| | -	- | |	| | |	
L01	ˈprɑ dʌk	| –	pro ˈdʌk ʃən							
L02	ˈprɑ^{h} po ˈti^{f}	MP								ˈprɔp^{h} tə ˈbju^{m} tə
L03	ˈpro^{m} ˈdʌk^{l}	| |						pro ˈdʌk^{h} ˈʃʌn^{f}		
L04	ˈpro^{m} ˈdʌk^{l}	| |	pro ˈdʌk ʃən							
L05	ˈprɑ dʌk	| –	pro ˈdʌk ʃən							
L06	ˈpro^{m} ˈdʌk^{l}	| |						pro ˈdʌk^{h} ˈʃʌn^{f}		
L07	ˈpro^{m} ˈdʌk^{l}	| |							ˈpro^{m} ˈdʌk^{l} ˈʃʌn^{f}	
L08	ˈprɑ dʌk	| –					ˈpro ˈdʌk ʃən			
L09	prə ˈdʌk	– |	prə ˈdʌk ʃən							
L10	ˈpro^{m} ˈdʌk^{l}	| |	pro ˈdʌk ʃən							
L11	ˈprɑ dʌks	MP	pro ˈdʌk ʃən							
L12	ˈprɑ dʌkt	| –						pro ˈdʌk^{h} ˈʃʌn^{f}		
L13	ˈprɑ dʌk	| –	pro ˈdʌk ʃən							
L14	ˈprɑ dʌk	| –	prə ˈdʌk ʃən							
L15	ˈprɑ dʌk	| –	prə ˈdʌk ʃən							

“H” = “High proficiency group”; H01 means participant number 1 in the high proficiency group. “L” = “Low proficiency group”; L01 means participants 1 in the low proficiency group.

“BW” = “Base words”; “SW” = “Suffixed words”; “MP” = “Mispronunciation”

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

billionaire [ˌbɪl jə ˈneər] (- - |) or (| - |)

Patterns / participants	BW billion [ˈbɪl jən]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
H01	bɪ ˈlɪənˡ	– |						bɪ ˈlɪəᶠ ˈneəˡ		
H02	bɪ ˈlɪənʰ	– |		ˈbi lə ˈnæ						
H03	ˈbɪlᵐ ˈlɪənᶠ	| |						bɪ ˈlɪəᶠ ˈneəᵐ		
H04	ˈbɪl jən	| –		ˈbiʰ lɪə ˈneəᵐ						
H05	ˈbɪl jən	| –						bɪ ˈlɪəᶠ ˈneəᵐ		
H06	ˈbɪl jən	| –		ˈbi lɪə ˈneə						
H07	bɪ ˈljənᶠ	– |						bɪ ˈlɪəᶠ ˈneərᵐ		
H08	ˈbɪlᵐ ˈlɪənᶠ	| |						bɪ ˈlɪəᶠ ˈneərᵐ		
H09	ˈbɪl jən	| –						bɪ ˈlɪəᶠ ˈneəᵐ		
H10	ˈbɪl jən	| –								bɪ ˈlɪəᶠ ˈnɪərᵐ
H11	bɪ ˈljənᶠ	– |		ˈbilᵐ ə ˈneəᵐ						
H12	ˈbɪl jən	| –		ˈbil jə ˈneə						
H13	ˈbɪl jən	| –	bɪl jə ˈneə							
H14	ˈbɪlʰ jən	| –		ˈbil jə ˈneə						
H15	ˈbɪl jən	| –						bɪ ˈlɪəᶠ ˈneəᵐ		

Patterns / participants	BW billion [ˈbɪl jən]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
L01	ˈbɪlᵐ ˈlɪənᶠ	| |								ˈbiʰ lɪə ˈnɪənᶠ
L02	ˈbilʰ lɪ	MP								bɪ ˈliᶠ na ˈriᶠ
L03	ˈbelᵐ ˈtʃʌnᶠ	MP								ˈbaɪᵐ ˈtʃʌnᶠ nə ri
L04	ˈbɪlʰ jən	| –								ˈbilʰ jən ˈnæʰ ri
L05	ˈbɪl jən	| –			ˈbilʰ jə neə					
L06	ˈbɪlᵐ ˈlɪənᶠ	| |								bɪ lɪ ˈnɪənᶠ
L07	ˈbiᵐ ˈtʃʌnᶠ	MP								ˈbjuᵐ ˈtʃʌnᶠ ˈnɔlᵐ
L08	ˈbɪl jən	| –		ˈbil jən ˈæːrᵐ						
L09	ˈbɪl jən	| –								ˈbil jən ˈʔæː
L10	ˈbɪlᵐ ˈlɪənᶠ	| |								ˈbil ˈrɪən ˈræː
L11	ˈbɪl jən	| –		ˈbil jə ˈneə						
L12	bɪʰ lɪ ˈtʃʌnᶠ	MP								bɪ lɪ ˈnælᶠ
L13	ˈbɪ lɔn	MP								ˈbiᶠ lɔ ˈnesˡ
L14	ˈbɪl jən	| –								bɪ lɪən ˈʔæ rɪ
L15	ˈbɪ lɔnt	MP								bɪ ˈlɔnᶠ ˈneərˡ

“H” = “High proficiency group”; H01 means participant number 1 in the high proficiency group. “L” = “Low proficiency group”; L01 means participants 1 in the low proficiency group.

“BW” = “Base words”; “SW” = “Suffixed words”; “MP” = “Mispronunciation”

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

questionnaire [ˌkwes tʃə ˈneər] (- - |) or (| - |)

Patterns / participants	BW question [ˈkwes tʃən]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
H01	ˈkweʰ tʃʌn	| –		ˈkwesʰ tʃə ˈneəᵐ						
H02	kwe ˈtʃʌnʰ	– |			ˈkwesʰ tʃə næ					
H03	ˈkweʰ tʃʌnᶠ	| –		ˈkwesʰ tʃə ˈneəᵐ						
H04	ˈkweʰ tʃən	| –		ˈkwesʰ tʃə ˈneəᵐ						
H05	ˈkwe tʃən	| –		ˈkwesʰ tʃə ˈneəᵐ						
H06	ˈkwes tʃən	| –		ˈkwes tʃə ˈneə						
H07	ˈkwe tʃən	| –		ˈkwesʰ tʃə ˈneəᵐ						
H08	ˈkweʰ tʃʌnᶠ	| –						kwes ˈtʃʌnᶠ ˈneəᵐ		
H09	ˈkwes tʃən	| –		ˈkwesʰ tʃə ˈneə						
H10	ˈkwe tʃən	| –								ˈkwes ʃə ˈneə rɪn
H11	ˈkwesʰ tʃʌnᶠ	| –								ˈkwes ʃə nə ˈriᶠ
H12	ˈkwe tʃən	| –								ˈkwes tʃə nɪə
H13	ˈkweʰ tʃən	| –		ˈkwes tʃə ˈneə						
H14	ˈkweʰ tʃən	| –								ˈkwes ʃən ˈna ri
H15	ˈkwes tʃən	| –		ˈkwesʰ tʃə ˈneəᵐ						

Patterns / participants	BW question [ˈkwes tʃən]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
L01	ˈkwesʰ tʃʌnᶠ	| –								ˈkweᶠ tʃə ˈnælᶠ
L02	ˈpjuʰ ˈtʃɜᶠ	MP								ˈkwusʰ tə tɪ na lɪ
L03	ˈkɪwᵐ ˈtʃʌnᶠ	MP								kjʊ ˈʃʌnᶠ na ˈliᶠ
L04	ˈkwesʰ tʃən	| –								ˈkweʰ tʃən ˈnæʰ rɪ
L05	ˈkwe tʃən	| –		ˈkweʰ tʃən ˈneəᵐ						
L06	ˈkwesʰ ˈtʃʌnᶠ	| |								ˈkweʰ tʃə næ ˈliᶠ
L07	ˈkwesʰ ˈtʃʌnᶠ	| |								kwɛ ˈtʃʌnᶠ na ˈriᶠ
L08	ˈkwe tʃən	| –		ˈkwe tʃən ˈneər						
L09	ˈkweʰ tʃən	| –								ˈkwe tʃən ˈnɪə
L10	ˈkweʰ tʃʌnᶠ	| –		ˈkweʰ tʃən ˈneəˡ						ˈkwe tʃən ˈnæ rɪ
L11	ˈkwe tʃən	| –								
L12	ˈkweʰ tʃʌnˡ	| –								ˈkweʰ tʃən ˈnɪəˡ
L13	ˈkwe tʃən	| –								ˈkweʰ tʃən ˈnæᶠ lɪ
L14	ˈkwesʰ tʃən	| –								kwɛ ˈtʃʌnʰ ˈnaᶠ lɪ
L15	ˈkweʰ tʃən	| –		ˈkwe tʃə ˈneərˡ						

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

commandeer [ˌkɒm ən ˈdɪər] (- - |) or (| - |)

Patterns / participants	BW command [kə ˈmɑːnd]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
H01	kɔm 'man^{m}	– |						kə 'mæn^{m} 'dɪə^{m}		
H02	kɔm 'mæn^{m}	– |		'kɔm^{h} mən 'dɪə^{m}						
H03	'kɔm^{m} 'mæn^{m}	| |		'kɔm^{m} mən 'dɪə^{m}						
H04	kɔm 'mand^{m}	– |	kəm ən 'dɪə							
H05	'kɔm^{m} 'mæn^{m}	| |		'kɔm mæn 'dɪə						
H06	kɔm 'mæn^{m}	– |		'kɔm mæn 'dɪə						
H07	'kɔm^{m} 'man^{m}	| |								kə 'man^{m} 'dɔ^{f}
H08	'kɔm^{m} 'man^{m}	| |		'kɔm^{m} man 'dɪə^{m}						
H09	'kɔm mæn	| –	kɔm mən 'dɪə^{m}							
H10	kɔm 'man^{m}	– |						kə 'man^{h} 'dɪər^{l}		
H11	'kɔm^{m} 'mænd^{m}	| |								kɔm æn 'dɪ^{f}
H12	kɔm 'mænm	– |			'kɔm æn dɪə					
H13	'kɔm^{m} 'man^{m}	| |		'kɔm mən 'dɪə^{l}						
H14	kɔm 'mænm	– |								kə 'man də
H15	'kɔm^{m} 'mænd^{m}	| |							'kɔm 'mæn 'dɪə^{l}	

Patterns / participants	BW command [kə ˈmɑːnd]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
L01	'kɔm^{m} 'man^{m}	| |		'kɔm^{m} mæn 'dɪə^{l}						
L02	'kæm mə	MP								'kæm^{h} mə 'li^{f}
L03	'kɔm^{m} 'mæn^{h}	| |								'kɔm^{m} mæn 'dɔ^{f}
L04	kɔm 'man^{m}	– |				kɔm 'mæn^{h} dɪə				
L05	kɔm 'man	– |					'kɔm^{m} 'man^{h} dɪə			
L06	'kɔm^{m} 'mæn^{h}	| |		'kɔm^{m} mæn 'dɪə^{m}						
L07	'kɔm^{m} 'man^{m}	| |								'kɔm^{m} mæn 'diː^{m}
L08	'kɔm mæn	| –								'kɔm mæn də
L09	'kɔm^{m} 'mand^{m}	| |				kɔm 'mæn dɪə				
L10	kɔm 'manm	– |								'kɔm^{m} 'mæn^{f} də
L11	'kɔm 'mæn	| |								'kɔm^{f} mæn 'dɔ^{l}
L12	'kɔm^{m} 'men^{h}	MP			'kɔm mə dɪə					
L13	'kɔm mend	MP		'kɔm^{f} mæn 'dɪə^{l}						
L14	'kɔm^{m} 'man^{m}	| |				kɔm 'mæn^{h} dɪə				
L15	kə 'mand	– |								kɔm 'mæn də

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

mountaineer [ˌmaʊn tɪ ˈnɪər] (- - |) or (| - |)

Patterns / participants	BW mountain [ˈmaʊn tɪn]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
H01	ˈmaʊʰ ˈtenˡ	| |								ˈmaʊ tə ˈnɜᶠ
H02	ˈmaʊʰ ˈtenʰ	| |		ˈmaʊ tə ˈnɪəˡ⁻ʳ						
H03	ˈmaʊʰ ˈtenᶠ	| |		ˈmaʊʰ tə ˈnɪəˡ						
H04	ˈmaʊnʰ tɪn	| –		ˈmaʊʰ tə ˈnɪəᵐ						
H05	ˈmaʊn tɪn	| –		ˈmaʊ tə ˈnɪə						
H06	ˈmaʊn tɪn	| –								ˈmaʊ tə nə
H07	ˈmaʊn tɪn	| –		ˈmaʊʰ tə ˈnɪəˡ						
H08	ˈmaʊʰ ˈtenᶠ	| |							ˈmaʊʰ ˈtenᶠ ˈnɪəˡ	
H09	ˈmaʊnʰ tən	| –								ˈmaʊ tə ˈnɜ
H10	ˈmaʊnʰ tən	| –						maʊ ˈtenʰ ˈnɪəˡ		
H11	ˈmaʊnʰ ˈtenᶠ	| |		ˈmaʊᵐ tə ˈnɪəˡ						
H12	ˈmaʊn tən	| –			ˈmaʊ tə nɪə					
H13	ˈmaʊnʰ tɪn	| –		ˈmaʊ tə ˈnɪəˡ						
H14	ˈmaʊnʰ tɪn	| –							ˈmaʊʰ ˈtenᵐ ˈnɪəᵐ	
H15	ˈmaʊn tən	| –		ˈmaʊʰ tə ˈnɪəˡ						

Patterns / participants	BW mountain [ˈmaʊn tɪn]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
L01	ˈmaʊʰ ten	| –			ˈmaʊ tə nɪə					-
L02	mo nə ˈteɪtˡ	MP								mɔ ˈnɔʰ tə ˈliᶠ
L03	ˈmaʊᵐ ˈtenʰ	| |								ˈmaʊᵐ tə ˈnɜᶠ
L04	ˈmaʊnʰ ten	| –		ˈmaʊʰ tə ˈnɪəᵐ						
L05	ˈmaʊn tən	| –		ˈmaʊʰ tə ˈnɪəᵐ						
L06	ˈmaʊᵐ ˈtrenʰ	MP								ˈmaʊʰ tren ˈnɜᶠ
L07	ˈmaʊʰ ˈtatˡ	MP								ˈmaʊʰ tə ˈniᵐ
L08	ˈmaʊn ten	| –								ˈmaʊ ˈten nə
L09	ˈmaʊnʰ ten	| –		ˈmaʊh tə ˈnɪəˡ						
L10	ˈmaʊʰ ten	| –			ˈmaʊʰ tə nɪə					
L11	ˈmaʊn tɪn	| –			ˈmaʊ tə nɪə					
L12	ˈmaʊʰ ˈtenᶠ	| |								ˈmauʰ tʃenᶠ ˈjɜᶠ
L13	ˈmaʊn tɪn	| –			ˈmaʊʰ tə nɪə					
L14	ˈmaʊn tɪn	| –								ˈmaʊʰ tə nə
L15	ˈmaʊn tɪn	| –			ˈmaʊʰ tə nɪər					

“H” = “High proficiency group”; H01 means participant number 1 in the high proficiency group. “L” = “Low proficiency group”; L01 means participants 1 in the low proficiency group.

“BW” = “Base words”; “SW” = “Suffixed words”; “MP” = “Mispronunciation”

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

refugee [ˌref ju ˈdʒiː] (- - |) or (| - |)

Patterns / participants	BW refuge [ˈref juːdʒ]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
H01	ˈreʰ fjʊ ˈgiᵐ	MP		ˈrefʰ ju ˈdʒiːᵐ						
H02	rɪ ˈfjusʰ	MP								ˈriᵐ ˈfʌkʰ gi
H03	ˈriᵐ ˈfjudʒʰ	| |		ˈriᵐ fjʊ ˈdʒiᶠ						
H04	rɪ ˈfjuˈ	MP						ri ˈfjuʰ ˈdʒiˡ		
H05	ˈri ˈfak	MP								ˈri fa ˈgiː
H06	ˈriᵐ ˈfjudʒʰ	| |				ri ˈfuʰ dʒi				
H07	rɪ ˈfju	MP								ri ˈfjuʰ gi
H08	rɪ ˈfjuʃʰ	MP						ri ˈfjuʰ ˈdʒiᶠ		
H09	ˈriᵐ ˈfjuʰ	MP								ri ˈfjuʰ ˈgiˡ
H10	ˈriʰ fjudʒ	| –								ri ˈfjuʰ ˈgiˡ
H11	ˈrɪ fʌs	MP		ˈrefᵐ ju ˈdʒiːᶠ						
H12	ˈrɪ fjudʒ	| –						ri ˈfju ˈdʒiˡ		
H13	rɪ ˈfjudʒ	– |			ˈref ju dʒi					
H14	ˈri fjʊ ˈgi	MP						ri ˈfju ˈdʒiˡ		
H15	rɪ ˈfjudʒ	– |				ri ˈfuʰ dʒi				

Patterns / participants	BW refuge [ˈref juːdʒ]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
L01	ˈriᵐ ˈfutʰ	MP	rɪ fʊ ˈdʒi							
L02	rɪ ˈfɜstʰ	MP								kə ˈfjusʰ
L03	ˈriᵐ ˈfuᵐ	MP		ˈriᵐ fʊ ˈdʒiᶠ						
L04	ˈri ˈfak	MP								rɪ ˈfʌkʰ gɪ
L05	ˈriᵐ ˈfjuʰ	MP								ˈriᵐ ˈfjuʰ ˈshiˡ
L06	rɪ ˈfauʰ	MP								rɪ ˈfʌŋsʰ
L07	ˈriᵐ ˈfuᵐ	MP		ˈriᵐ fu ˈdʒiᵐ						
L08	ˈriᵐ ˈfekˡ	MP								ˈriːᵐ ˈfekʰ dʒə
L09	rɪ ˈfjuᵐ	MP								rɪ ˈfukʰ ˈgiːᵐ
L10	rɪ ˈfʌŋʰ	MP								rɪ ˈfʌkʰ dʒɪ
L11	ˈri fu	MP								ˈriᵐ fʊ ˈgiˡ
L12	ˈri fækˈ	MP								rɪ ˈfekʰ ˈgisʰ
L13	rɪ ˈfjudʒ	– |				ri ˈfuʰ dʒi				
L14	rɪ ˈfʌdʒd	MP								rɪ ˈfaʰ dʒɪ
L15	ˈrɪ tʃænt	MP								rɪ ˈfljuʰ dʒi

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

Vietnamese [ˌvjet nə ˈmiːz] (- - |) or (| - |)

Patterns / participants	BW Vietnam [ˌvjet ˈnæm]		SW – – |	SW | – |	SW | – –	SW – | –	SW | | –	SW – | |	SW | | |	MP
H01	ˈwɪətᶠ ˈnamᵐ	| |		ˈwjetᶠ nə ˈmɪsʰ						
H02	ˈwɪətᶠ ˈnamᵐ	| |	wjet nə ˈmiːsʰ							
H03	ˈwɪətᶠ ˈnamᵐ	| |								ˈwjetᶠ ˈnaᵐ ˈmiːtʰ
H04	wjet ˈnæm	– |						wjet ˈnaʰ ˈmiːsˡ		
H05	ˈwɪətᶠ ˈnamᵐ	| |								ˈwjetᶠ ˈnamᵐ ˈnesˡ
H06	ˈwɪətᶠ ˈnamᵐ	| |			ˈwjetᶠ nʌ mɪs					
H07	ˈwɪətᶠ nam	| –			ˈwjetᶠ nʌ mɪs					
H08	ˈwɪətᶠ ˈnamᵐ	| |		ˈwjetᶠ na ˈmɪsʰ						
H09	ˈvjətᶠ nam	| –			ˈvjetᶠ nə mɪs					
H10	ˈwɪətᶠ ˈnamᵐ	| |				wjet ˈnaʰ mɪs				
H11	wjəs ˈnamᵐ	MP								ˈvjes ˈnams
H12	ˈwɪətᶠ ˈnamᵐ	| |				wjet ˈna mɪs				
H13	ˈwɪətᶠ nam	| –		ˈwjetᶠ na ˈmɪsᶠ						
H14	ˈwɪətᶠ ˈnamᵐ	| |								ˈwjetᶠ ˈnamᵐ ˈnisᶠ
H15	ˈwɪətᶠ ˈnamᵐ	| |				wjet ˈnaʰ mɪs				

Patterns / participants	BW Vietnam [ˌvjet ˈnæm]		SW – – |	SW | – |	SW | – –	SW – | –	SW | | –	SW – | |	SW | | |	MP
L01	ˈwɪətᶠ ˈnamᵐ	| |		ˈwjetʰ na ˈmisʰ						
L02	ˈwɪənᵐ ˈnaᵐ	MP								ˈwɪənᵐ na ˈliᶠ
L03	ˈwiːtʰ ˈtemᶠ	MP								wjet tə ˈmɪsˡ
L04	ˈwɪətᶠ ˈnamᵐ	| |								wjet ˈnisᶠ
L05	ˈwɪətᶠ ˈnamᵐ	| |				wjet ˈna mɪs				
L06	ˈwɪətᶠ ˈnamᵐ	| |		wjetʰ na ˈmisʰ						
L07	ˈwiʰ ˈtɪənᵐ	MP								ˈwɪtʰ ta ˈmetˡ
L08	wjet ˈnam	– |		ˈwjesᶠ na ˈmisˡ						
L09	wjet ˈnam	– |	wjet na ˈmis							
L10	wjet ˈnam	– |	wjet na ˈmis							
L11	ˈwjetᶠ ˈnamᵐ	| |								wjet nə ˈmiʃʰ
L12	ˈwɪətᶠ nam	| –								wjet ˈnamᵐ ˈmisʳ
L13	wjet ˈnam	– |	wjet na ˈmisᶠ							
L14	ˈwjətᶠ nʌm	| –	wjet nə ˈmɪsf							
L15	wɪ ˈta men	MP								wɪ ˈtɪəns

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

absentee [ˌæb sən ˈtiː] (- - |) or (| - |)

Patterns / participants	BW absent [ˈæb sənt]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
H01	æb 'sent^{h}	– |	əb sen 'ti^{f}							
H02	'æb sent	| –				æb 'sen^{h} ti				
H03	'æb sənt	| –					'æb 'sen^{h} ti			
H04	æb 'sent	– |	æb sən 'ti							
H05	'æb sənt	| –			'æb sən ti					
H06	'æb sənt	| –				əb 'sen ti				
H07	æb 'sent^{f}	– |				æb 'sen^{h} ti				
H08	'æb^{h} 'sent^{h}	| |				æb 'sen^{h} ti				
H09	'æb sənt	| –			'æb sən ti					
H10	'æb sənt	| –				əb 'sen ti				
H11	'æb^{h} 'sent^{h}	| |		'æb sən 'ti^{f}						
H12	'æb sənt	| –				əb 'sen ti				
H13	'æb sənt	| –				æb 'sen ti				
H14	'æb 'sent^{f}	| |		'æb sən 'ti^{f}						
H15	'æb sənt	| –				æb 'sen ti				

Patterns / participants	BW absent [ˈæb sənt]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
L01	'æb^{h} 'sent^{h}	| |		'æb^{h} sən 'ti^{f}						
L02	a 'bi^{h} 'get^{f}	MP								ə 'bju^{m} 'teɪt^{l}
L03	a 'bens^{h}	MP								bes^{h} 'ni^{f}
L04	'æb^{h} 'sent^{h}	| |				æb 'sen^{h} ti				
L05	'æb sənt	| –					'æb^{h} 'sen^{h} tɪ			
L06	'æb^{h} 'sent^{h}	| |	æb sen 'ti^{f}							
L07	'æb^{h} 'sent^{f}	| |					'æb^{h} 'sen^{f} ti			
L08	'æb sent	| –							'æb^{h} 'sen^{m} ti^{f}	
L09	'æb sənt	| –								æb 'seɪnt
L10	'æb^{h} sent	| –		'æb^{h} sən 'ti^{m}						
L11	'æb ses	MP								æb səs 'ti^{f}
L12	'ab^{h} 'ses^{l}	MP							'æb^{h} 'sen^{m} ti^{f}	
L13	'æb sənt	| –				æb 'sen ti				
L14	'æb sənt	| –	æb sen 'ti^{f}							
L15	'æs sənt	MP		'æb^{h} sən 'ti^{mf}						

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

auctioneer [ˌɔːk ʃə ˈnɪər] (- - |) or (| - |)

Patterns / participants	BW auction [ˈɔːk ʃən]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
H01	æk ˈʃʌnᶠ	MP								ˈæk ʃə ˈnɪə
H02	ˈæk ʃən	MP								ˈʌk ʃə ˈnɪə
H03	ˈɔkʰ ˈʃʌnᶠ ()	| |	ək ʃə ˈneəᵐ							
H04	ˈæk ʃən	MP	ˈɔk ʃə ˈneə							
H05	ˈɔk ʃən ()	– |			ˈɔ ʃə ˈnɪə					
H06	ˈak ʃən	MP								ˈak ʃə ˈnɪə
H07	ˈɔk ʃən ()	– |								ˈɔkʰ ʃə ˈneɪᵐ
H08	ˈakʰ ˈʃʌnᶠ	MP				ˈɔk ʃʌn ˈnɪə				
H09	ˈɔk ʃən ()	– |								ˈɔk ʃə ˈneə
H10	ˈak ʃən	MP								æk ˈʃʌnᶠ ˈnɪəˡ
H11	æk ˈʃʌnʰ	MP								ˈækʰ ˈʃʌnᶠ ˈnɪəᵐ
H12	ˈɔk ʃən ()	– |		ˈɔk ʃə ˈnɪə						
H13	ˈɔk ʃən ()	– |		ˈɔk ʃə ˈnɪə						
H14	æk ˈʃʌnᶠ	MP								ˈæk ʃə ˈnɪə
H15	ˈak ʃən	MP	ək ʃə ˈnɪə							

Patterns / participants	BW auction [ˈɔːk ʃən]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
L01	ˈɔk ʃən	MP		ˈɔk ʃə ˈnɪə						
L02	ˈɔʰ ɡɪ ˈlaᶠ	MP								a ˈjuʰ tə ˈnisᶠ
L03	ˈækʰ ˈʃʌnᶠ	MP								ˈækʰ ˈʃʌnᶠ ˈnɪəᵐ
L04	ˈak ʃən	MP								ˈækʰ ˈʃʌnᶠ ˈnɪəᵐ
L05	ˈak ʃən	MP								ˈæk ʃə ˈnɪə
L06	ˈɪʊᵐ ˈʃʌnᶠ	MP	ək ʃə ˈnɪə							
L07	ˈækʰ ˈʃʌnᶠ	MP								ˈækʰ ˈʃʌnᶠ ˈniᵐ
L08	ˈak ʃən	MP								æk ʃə ˈnɜrᶠ
L09	ˈɔk ʃən ()	– |								ˈak ʃə ˈnɪə
L10	ˈæʰ ˈʃʌnᶠ	MP	ək ʃə ˈnɪə							
L11	æk ˈkʌlʰ ʃən	MP								æk ˈka ʃə ˈnɪə
L12	ˈak ʃən	MP								ˈæk ʃə nɪə
L13	ˈækʰ ʃən	MP								ˈæk ʃə nɪə
L14	ˈak ʃən	MP		ˈɔk ʃə ˈnɪə						
L15	ˈæk ʃən	MP								æk ʃə ˈnɪə

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

millionaire [ˌmɪl jə ˈneər] (- - |) or (| - |)

Patterns / participants	BW million [ˈmɪl jən]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
H01	mɪ ˈlɪənˡ	– |		ˈmɪlʰ jə ˈneəᵐ						
H02	ˈmɪl jən	| |	mɪl jə ˈneə							
H03	mɪ ˈlɪənᶠ	– |		ˈmɪlʰ jə ˈneəᵐ						
H04	ˈmɪl jən	| –	mɪl jə ˈneə							
H05	ˈmɪl jən	| –		ˈmɪl jə ˈneə						
H06	ˈmɪl jən	| –	mɪl jə ˈneə							
H07	ˈmɪl jən	| –				mɪl ˈjɜ neə				
H08	mɪ ˈlɪənˡ	– |						mɪ ˈlɪəᶠ ˈneəᵐ		
H09	ˈmɪl jən	| –	mɪl jə ˈneər							
H10	ˈmɪl jən	| –				mɪl ˈjɪə neə				
H11	mɪ ˈlɪənʰ	– |						mɪl ˈjɪəᶠ ˈneəᵐ		
H12	ˈmɪl jən	| –	mɪl jə ˈneər							
H13	ˈmɪl jən	| –	mɪl jə ˈneə							
H14	ˈmɪl jən	| –	mɪl jə ˈneə							
H15	ˈmɪl jən	| –	mɪl jə ˈneə							

Patterns / participants	BW million [ˈmɪl jən]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
L01	ˈmɪlᵐ ˈlɪənᶠ	| |	mɪl jə ˈneəᵐ							
L02	ˈmɪsʰ ˈlɪᶠ	MP								ˈmɪtʰ ˈlɪᶠ ˈɔnᵐ ˈtætˡ
L03	ˈmɪʰ ro ˈʃʌnᶠ	MP								ˈmiʰ nʊə ʃə ˈlɪᶠ
L04	ˈmɪl jən	| –						mɪ ˈlɪəᶠ ˈneəᵐ		
L05	ˈmɪl jən	| –		ˈmɪl jə ˈneə						
L06	ˈmɪl jən	| –								ˈmil jə nɪə
L07	ˈmɪlᵐ ˈlɪənᶠ	| |								ˈmilᵐ ˈlɪənᶠ ˈkeəᵐ
L08	ˈmɪl jən	| –		ˈmɪl jə ˈneə						
L09	ˈmɪl jən	| –		ˈmɪl jə ˈneə						
L10	ˈmɪl jən	| –						mɪ ˈlɪəᶠ ˈneəᵐ		
L11	ˈmɪl jən	| –	mɪl jə ˈneə							
L12	ˈmɪlᵐ ˈʃʌnᶠ	MP					ˈmɪlʰ ˈjəᶠ neə			
L13	ˈmɪl jən	| –								ˈmɪl jə nɪə
L14	ˈmɪl jən	| –	mɪl jə ˈneə							
L15	ˈmɪl jən	| –		ˈmɪl jə ˈneər						

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

doctrinaire [ˌdɒk trɪ ˈneər] (- - |) or (| - |)

Patterns / participants	BW doctrine [ˈdɒk trɪn]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
H01	ˈdɔkʰ ˈtraɪnᵐ	MP		ˈdɑkʰ trɪ ˈneəᵐ						
H02	ˈdɑkʰ trɪn	| –			ˈdɔk trɪ neə					
H03	ˈdɔkʰ ˈtrɪnᶠ	| |		ˈdɑkʰ trɪ ˈneəᵐ						
H04	dək ˈtrin	– |	dɑk trɪ ˈneə							
H05	ˈdɔk ˈtraɪn	MP			ˈdɔk trɪ neə					
H06	ˈdɔk ˈtrɪn	| |		ˈdɑkʰ trɪ ˈneəᵐ						
H07	ˈdɔk ˈtrin	| |		ˈdɑk trɪ ˈneər						
H08	ˈdɔkʰ ˈtraɪnᵐ	MP								ˈdɑkʰ traɪᵐ ˈneəᵐ
H09	ˈdɑkʰ trɪn	| –	dək trɪ ˈneər							
H10	ˈdɔkʰ ˈtrinᵐ	| |						dək ˈtrɪ ˈneər		
H11	ˈdɔkʰ ˈtrɪənᶠ	MP		ˈdɑkʰ trɪ ˈneəᵐ						
H12	ˈdɑkʰ trɪn	| –	dək trɪ ˈneər							
H13	ˈdɔk ˈtrin	| |		ˈdɑkʰ trɪ ˈneəᵐ						
H14	ˈdɔkᶠ ˈteɪnᵐ	MP		ˈdɑkʰ trə ˈneəᵐ						
H15	ˈdɔk traɪn	MP								dək ˈtraɪ ˈneə

Patterns / participants	BW doctrine [ˈdɒk trɪn]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
L01	ˈdɔkʰ trɪn	| –		ˈdɑk trɪ ˈneə						
L02	ˈduʰ ˈkæᵐ ˈniᶠ	MP								ˈbɯkʰ ˈkæᵐ ˈeᵐ ˈlisᶠ
L03	ˈdɔkʰ ˈtɜnᵐ	MP								ˈdɔkʰ ˈtɜᵐ na ˈliᶠ
L04	ˈdɔkʰ ˈtraɪnᵐ	MP								ˈdɔkʰ ˈtraɪᵐ ˈneəᵐ
L05	ˈdɔkʰ ˈtrinᶠ	| |		ˈdɑk trɪ ˈneə						
L06	ˈdɔkʰ ˈtraɪnᵐ	MP								ˈdɑkʰ trɪ ˈnɪəᵐ
L07	ˈduᵐ ˈtɜᵐ ˈtinᵐ	MP								ˈdɔkʰ ˈtɜᶠ ˈnaᵐ ˈliᶠ
L08	ˈdɔkᶠ ˈtreɪnᵐ	MP		ˈdɑk trə ˈneə						
L09	ˈdɔksʰ ˈtreɪnᵐ	MP		ˈdɑks trə ˈneə						
L10	ˈdɔkˡ ˈtreɪnᵐ	MP								ˈdɑkʰ trə ˈnɪəᵐ
L11	ˈdɔkʰ ˈtreɪnᵐ	MP	dɑk trɪ ˈneər							
L12	ˈdɔk trɪn	| –								ˈdɑkʰ ˈtraɪʰ neə
L13	ˈdɔk trɪn	| –								ˈdɑk trə ˈna lɪ
L14	ˈdɔk trɪn	| –	dɑk trɪ ˈneər							
L15	ˈdɔk ˈtɪər	MP		ˈdɑk trə ˈneər						

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

engineer [ˌen dʒɪ ˈnɪər] (- - |) or (| - |)

Patterns / participants	BW engine [ˈen dʒɪn]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
H01	en ˈdʒaɪnᵐ	MP		ˈenᵐ dʒɪ ˈnɪəᵐ						
H02	ˈen dʒɪn	| –	en dʒɪ ˈnɪə							
H03	ˈen dʒɪn	| –			ˈen dʒɪ nɪə					
H04	ˈen dʒɪn	| –	en dʒɪ ˈnɪə							
H05	ˈen dʒɪn	| –		ˈen dʒɪ ˈnɪə						
H06	ˈen dʒɪn	| –	ən dʒɪ ˈnɪə							
H07	en ˈdʒinᵐ	– |	en dʒɪ ˈnɪə							
H08	ˈenᵐ ˈdʒinᵐ	| |		ˈenᵐ dʒɪ ˈnɪəᵐ						
H09	ˈenᶠ ˈdʒinˡ	| |	ən dʒɪ ˈnɪər							
H10	ˈen dʒɪn	| –			ˈen dʒɪ nɪə					
H11	ˈenᵐ ˈdʒiᶠ	MP		ˈenᵐ dʒɪ ˈnɪərᵐ						
H12	ˈen dʒɪn	| –			ˈen dʒɪ nɪə					
H13	ˈen dʒɪn	| –	en dʒɪ ˈnɪə							
H14	ˈen dʒɪn	| –	en dʒɪ ˈnɪə							
H15	ˈen dʒɪn	| –	en dʒɪ ˈnɪər							

Patterns / participants	BW engine [ˈen dʒɪn]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
L01	ˈen dʒɪn	| –		ˈenᵐ dʒɪ ˈnɪəᵐ						
L02	ˈenᵐ ˈnɪʊᵐ	MP								ˈenᵐ ˈnisʰ
L03	ən ˈdʒiᶠ	MP		ˈenᵐ dʒɪ ˈnɪəᵐ						
L04	ˈenʰ dʒɪn	| –		ˈen dʒɪ ˈnɪə						
L05	ˈen dʒɪn	| –			ˈen dʒɪ nɪə					
L06	ˈeˡ ˈdʒɪŋᶠ	MP		ˈen dʒɪ ˈnɪə						
L07	ˈenᵐ ˈdʒiᵐ	MP		ˈenᵐ dʒɪ ˈnɪəˡ						
L08	ˈenᵐ ˈdʒaɪnᵐ	MP		ˈenᵐ dʒɪ ˈnɪəᵐ						
L09	ˈenᵐ ˈdʒinᵐ	| |			ˈen dʒɪ nɪə					
L10	ˈen dʒɪ ne	MP	en dʒɪ ˈnɪə							
L11	ˈen dʒɪn	| –	en dʒɪ ˈnɪə							
L12	ˈenᵐ ˈdʒɪnᶠ	| |		ˈen dʒɪ ˈnɪə						
L13	en ˈdʒiᶠ	MP			ˈen dʒɪ nɪə					
L14	ˈen dʒɪ nə	MP	en dʒɪ ˈnɪə							
L15	ˈen dʒɪn	| –	en dʒɪ ˈnɪər							

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

Japanese [ˌdʒæ pə ˈniːz] (- - |) or (| - |)

Patterns / participants	BW Japan [dʒə ˈpæn]		SW – – |	| – |	| – –	– | –	| | –	– | |	| | |	MP
H01	dʒə ˈpæn	– |	dʒə pæ ˈnisʰ							
H02	dʒe ˈpæn	– |	dʒə pæ ˈnis							
H03	dʒe ˈpæn	– |	dʒə pæ ˈnis							
H04	dʒə ˈpæn	– |	dʒə pæ ˈnis							
H05	dʒə ˈpæn	– |	dʒə pæ ˈnisˡ							
H06	dʒe ˈpæn	– |	dʒə pæ ˈnis							
H07	dʒe ˈpæn	– |	dʒə pæ ˈnis							
H08	ˈdʒeᵐ ˈpænᵐ	| |	dʒə pæ ˈnisʰ							
H09	dʒə ˈpæn	– |	dʒə pæ ˈnis							
H10	dʒe ˈpæn	– |				dʒə ˈpæ nəs				
H11	ˈdʒeᵐ ˈpænᵐ	| |	dʒə pæ ˈnisʰ							
H12	dʒe ˈpæn	– |			ˈdʒeɪ pə nəs					
H13	dʒə ˈpæn	– |	dʒə pæ ˈnis							
H14	dʒe ˈpæn	– |	dʒe pæ ˈnis							
H15	dʒə ˈpæn	– |				dʒə ˈpæ nis				

Patterns / participants	BW Japan [dʒə ˈpæn]		SW – – |	| – |	| – –	– | –	| | –	– | |	| | |	MP
L01	dʒe ˈpænᵐ	– |	dʒə pæ ˈnis							
L02	dʒe ˈpæn	– |	dʒə pæ ˈnisʰ							
L03	ˈdʒeᵐ ˈpænᵐ	| |	ˈdʒeᵐ pæ ˈnisʰ							
L04	ˈdʒeᵐ ˈpænᵐ	| |				dʒə ˈpæ nis				
L05	dʒə ˈpæn	– |	dʒə pæ ˈnis							
L06	dʒe ˈpænm	– |	dʒə pæ ˈnis							
L07	ˈdʒeᵐ ˈpænᵐ	| |		ˈdʒeᵐ pæ ˈnisʰ						
L08	ˈdʒe pæn	| –		ˈdʒeᵐ pæ ˈnisʰ						
L09	dʒə ˈpæn	– |	dʒə pæ ˈnis							
L10	dʒe ˈpæn	– |				dʒə ˈpæ nis				
L11	ˈdʒeᵐ ˈpænᶠ	| |	dʒə pæ ˈnis							
L12	ˈdʒeᵐ ˈpænᵐ	| |	dʒə pæ ˈnisʰ							
L13	dʒe ˈpæn	– |				dʒə ˈpæ nis				
L14	dʒə ˈpæn	– |	dʒə pæ ˈnis							
L15	dʒə ˈpæn	– |				dʒə ˈpæ nis				

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

Portuguese [ˌpɔ: tʃə ˈgiːz] (- - |) or (| - |)

Patterns / participants	BW Portugal [ˈpɔ: tʃə gəl]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
H01	ˈpɔᵐ tʊ ˈgɔlᶠ	| – |		ˈpɔᵐ tʊ ˈgisʰ						
H02	ˈpɔ tʊ gəl	| – –								ˈpro tə ˈgeɪs
H03	ˈpɔᵐ tʊ ˈgɔlᶠ	| – |			ˈpɔ tʃə gɪs					
H04	ˈprɔ tʊ gəl	MP								ˈprɔ tʃə ˈgeɪs
H05	ˈpo tʊ gəl	| – –		ˈpɔ tə ˈgis						
H06	ˈpɔ tʊ gəl	| – –		ˈpɔ tʊ ˈgis						
H07	ˈprɔᵐ tʊ ˈgɔlᶠ	MP	pə tʊ ˈgis							
H08	ˈpoᵐ tʊ ˈgelᶠ	| – |		ˈpoᵐ tʊ ˈgisʰ						
H09	ˈpo tʊ gɔl	| – –	pə tʊ ˈgis							
H10	ˈpɔ tʃə gəl	| – –								pɔ ˈtʃuᶠ ges
H11	ˈpoᵐ tʊ ˈgɔlʰ	| – |		ˈpoᵐ tʊ ˈgisʰ						
H12	ˈpɔ tʃə gəl	| – –	pə tʊ ˈgis							
H13	ˈpɔ tə gəl	| – –		ˈpɔ tʊ ˈgis						
H14	ˈpoᵐ tʊ ˈgeɪtˡ	MP								ˈpo tʊ ˈgeɪ səs
H15	ˈpoᵐ tʊ ˈgɔlᶠ	| – |				pɔ ˈtuᶠ gis				

Patterns / participants	BW Portugal [ˈpɔ: tʃə gəl]		SW							MP
			– – |	| – |	| – –	– | –	| | –	– | |	| | |	
L01	ˈpoᵐ tʊ ˈgɔlᵐ	| – |								ˈpoᵐ tʊ ˈdʒɪəsʰ
L02	ˈpɔᵐ tə ˈrɔlᶠ	MP								ˈpɔrʰ tə ˈraᶠ
L03	ˈpoᵐ tʃʊ ˈgɔlᶠ	| – |								ˈpoᵐ ˈtuʰ ˈnosʰ
L04	ˈpro tʊ gɔl	| – –								ˈpro tʊ ˈgeɪs
L05	ˈpo tʊ gɔl	| – –		ˈpo tʊ ˈgis						
L06	ˈpoᵐ tʊ ˈgeɪtˡ	MP								pɔ tʊ ˈkasʰ
L07	ˈpoᵐ tʊ ˈgeɪtˡ	MP								ˈpu tʊ ˈgasʰ
L08	ˈpɔ tʊ gɪ	MP								ˈpɔᵐ tʊ ˈkesʰ
L09	ˈpoᵐ tʊ ˈgɔlᵐ	| – |	pɔ tʊ ˈgis							
L10	ˈpo tʊ gəl	| – –								ˈpoᵐ tʊ ˈgusʰ
L11	ˈpo tʊ gəl	| – –								ˈpo tʊ ˈgeɪs
L12	ˈpoᵐ tʊ ˈgɔlᶠ	| – |								ˈpoᵐ tʊ ˈgusʰ
L13	ˈpoᵐ tʊ ˈgeɪtˡ	MP		ˈpoᵐ tʊ ˈgisʰ						
L14	ˈpo tʊ gəl	| – –	pɔ tʊ ˈgis							
L15	ˈpɔ tʊ ˈgeɪtˡ	MP		ˈpɔ tʊ ˈgis						

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

abdominal [æb ˈdɒ mɪ nəl] (- | - -)

Patterns / participants	BW abdomen [ˈæb də mən]		SW									MP
			– | – –	| – – –	– – – |	| – | –	– | – |	| | – –	| – – |	– | | –	| | – |	
H01	ˈæbʰ do ˈmenᵐ	| – |							ˈæbʰ do mɪ ˈnɔlᶠ			
H02	ˈæbʰ do men	| – –							ˈæb do mɪ ˈnɔlʰ			
H03	ˈæbʰ do ˈmenᵐ	| – |							ˈæbʰ do mɪ ˈnɔlᶠ			
H04	ˈæb do ˈmen	| – |						ˈæb ˈdoʰ mɪ nəl				
H05	ˈæbʰ ˈdoᵐ ˈmenᵐ	| – |						ˈæbʰ ˈdoᵐ mɪ nəl				
H06	æb ˈdo men	– | –	æb ˈdoᶠ mɪ nəl									
H07	ˈæb ˈdo men	| | –			æb do mɪ ˈnɔlᶠ							
H08	ˈæbʰ ˈdoᵐ ˈmenᵐ	| | |							ˈæbʰ do mɪ ˈnɔlᶠ			
H09	ˈæb do men	| – –							ˈæbʰ do mɪ ˈnɔlᶠ			
H10	æb ˈdo men	– | –	æb ˈdoʰ mɪ nəl									
H11	æb ˈdo mend	MP			æb do mɪ ˈnɔlᶠ							
H12	æb ˈdo men	– | –	æb ˈdo mɪ nəl									
H13	ˈæbʰ do men	| – –	æb ˈdo mɪ nɔl									
H14	ˈæb ˈdo men	| | –						ˈæbʰ ˈdoᵐ mɪ nɔl				
H15	ˈæbʰ do men	| – –		ˈæbʰ do mɪ nəl								

Patterns / participants	BW abdomen [ˈæb də mən]		SW									MP
			– | – –	| – – –	– – – |	| – | –	– | – |	| | – –	| – – |	– | | –	| | – |	
L01	ˈæbʰ do ˈmenʰ	| – |									ˈæbʰ ˈdoᵐ mɪ ˈnɔlᶠ	
L02	a ˈdusʰ mis	MP										a ˈduʰ mə ˈliːsᶠ
L03	ə ˈbaʊʰ do ˈmenᵐ	MP										maʊʰ do ˈmænᵐ ˈnɔlᶠ
L04	ˈæbʰ do ˈmenʰ	| – |							æbʰ do mɪ ˈnɔlᶠ			
L05	æb ˈdo mən	– | –	æb ˈdoʰ mɪ nəl									
L06	ˈæbʰ ˈdoᵐ ˈmenʰ	| – |										ˈæbʰ ˈdoᵐ mɪ ˈneɪᵐ
L07	a ˈdoᵐ ˈmænᵐ	MP										ˈæᶠ ˈdoᵐ mɪ ˈnelᵐ
L08	æb ˈdo men	– | –						ˈæbʰ ˈdoᵐ mɪ nəl				
L09	ˈæbʰ do ˈmenᵐ	| – |							ˈæb do mɪ ˈnɔlᶠ			
L10	æb ˈdo men	– | –	æb ˈdo mɪ nɔl									
L11	ˈæb ˈdo men	| | –							ˈæb do mɪ ˈnɔlᶠ			
L12	ˈæb do men	| – –							ˈæbʰ do mɪ ˈnɔlᶠ			
L13	ˈæbʰ do ˈmenʰ	| – |				ˈæbʰ do ˈmiʰ nɔl						
L14	æb ˈdo men	– | –	æb ˈdoʰ mɪ nəl									
L15	ˈæb do men	| – –	æb ˈdo mɪ nɔl									

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

authority [ɔ: ˈθɒ rə ti] (- | - -)

Patterns / participants	BW authorize [ˈɔ: θə raɪz]				SW							MP
			– | – –	| – – –	– – – |	| – | –	– | – |	| | – –	| – – |	– | | –	| | – |	
H01	ɔ to ˈraɪt̚ʰ	– – |							ˈɔːᵐ θɔ rɪ ˈtiᶠ			
H02	ə to ˈraɪsʰ	– – |			ə tɔ rɪ ˈtiʰ							
H03	ˈɔᵐ to ˈrɪsʰ	MP							ˈɔːᵐ θɔ rɪ ˈtiᶠ			
H04	ˈɔ tə raɪs	| – –		ˈɔʰ tɔ rɪ tɪ								
H05	ə to ˈraɪsʰ	– – |		ˈɔʰ tɔ rɪ tɪ								
H06	ˈɔ to ˈraɪsʰ	| – |		ˈɔʰ tɔ rɪ tɪ								
H07	ˈɔ tə raɪs	| – –	ɔ ˈtɔ rɪ tɪ									
H08	ə to ˈraɪsʰ	– – |							ˈɔːᵐ θɔ rɪ ˈtiᶠ			
H09	ˈɔ to ˈraɪsʰ	| – |			ɔ tɔ rɪ ˈtiᶠ							
H10	ˈɔᵐ to ˈraɪsʰ	| – |	ɔ ˈtɔʰ rɪ tɪ									
H11	ɔ to ˈraɪsʰ	– – |							ˈɔᵐ θə rɪ ˈtiᶠ			
H12	ˈɔ tə raɪs	| – –		ˈɔᶠ tə rɪ tɪ								
H13	ˈɔᵐ to ˈraɪsʰ	| – |	ɔ ˈtɔʰ rɪ tɪ									
H14	ˈɔᵐ to ˈraɪsʰ	| – |		ˈɔᵐ tə rɪ tɪ								
H15	ˈɔᵐ ˈtoᶠ ˈraɪsʰ	| – |		ˈɔʰ tə rɪ tɪ								

Patterns / participants	BW authorize [ˈɔ: θə raɪz]				SW							MP
			– | – –	| – – –	– – – |	| – | –	– | – |	| | – –	| – – |	– | | –	| | – |	
L01	ˈɔ to ˈraɪtʰ	MP							ˈɔᵐ tɔ rɪ ˈtiᶠ			
L02	a ˈhopʰ lɪ tɪ	MP										a bɔ ˈlɪᶠ tʃɪ
L03	o to ˈsaɪtʰ	MP										ɔ ˈtoᵐ sa ˈlɪᶠ
L04	ˈɔʰ to ˈraɪsʰ	| – |				ˈɔʰ tɔ ˈriʰ tɪ						
L05	ˈɔᵐ ˈtoᶠ ˈrɪsʰ	MP	ɔ ˈtɔᵐ rɪ tɪ									
L06	ju to ˈlɪᶠ	MP										jʊ ˈtɔᵐ rɪ ˈtiᶠ
L07	a ˈtoᵐ ˈraɪtʰ	MP										a ˈtuᵐ rɪ ˈtiᶠ
L08	ɔ ˈraɪsʰ	MP	ɔ ˈtɔ rɪ tɪ									
L09	ə to ˈraɪsʰ	– – |										ɔ to ˈraɪʰ ti
L10	an ˈto rɪs	MP										a ˈto lɪ tɪ
L11	ˈaʊ to rɪs	MP										ˈɔʰ to lə tɪ
L12	uᵐ ˈtoᵐ ˈraɪt̚ʰ	MP								ɔ ˈtoᵐ ˈrɪʰ ti		
L13	ɔ ˈtoᶠ ˈsaɪtʰ	MP										ɔ ˈtoᶠ ˈraɪʰ tɪ
L14	ˈɔ to raɪs	| – –				ˈɔᵐ tɔ ˈriʰ tɪ						
L15	ˈɔ to ˈsəɪs	MP	ə ˈtɔ rɪ tɪ									

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

detoxify [di: ˈtɒk sɪ faɪ] (- | - -)

Patterns / participants	BW detox[ˈdi: tɒks]				SW							MP
			– | – –	| – – –	– – – |	| – | –	– | – |	| | – –	| – – |	– | | –	| | – |	
H01	ˈdiᵐ ˈɒkˡ	MP					di ˈɒkʰ sɪ ˈfaɪᵐ					
H02	ˈdɪ ɒks	| –					dɪ ˈɒkʰ sɪ ˈfaɪᵐ					
H03	ˈdiᵐ ˈɒksˡ	| |										ˈdeᵐ ˈɒkʰ sɪ faɪ
H04	dɪ ˈɒks	– |					dɪ ˈɒkʰ sɪ ˈfaɪ					
H05	ˈdɪ ɒk	MP	dɪ ˈɒkˡ sɪ faɪ									
H06	ˈdiᵐ ˈɒksˡ	| |							ˈdiᵐ ɒk sɪ ˈfaɪᵐ		
H07	ˈdiᵐ ˈɒkˡ	MP					dɪ ˈɒkʰ sɪ ˈfaɪᵐ					
H08	ˈdiᵐ ˈɒksˡ	| |					dɪ ˈɒkʰ sɪ ˈfaɪᵐ					
H09	ˈdɪ ɒks	| –							ˈdiʰ ɒk sɪ ˈfaɪᵐ			
H10	ˈdiʰ ɒk	MP										dɪ ˈɒkʰ sɪ fi
H11	ˈdɪ ɒks	| –										dɪ ˈɒkʰ sɪ ˈfaɪnᵐ
H12	dɪ ˈɒks	– |	dɪ ˈɒkʰ sɪ faɪ									
H13	ˈdiᵐ ˈɒksˡ	| |	dɪ ˈɒkʰ sɪ faɪ									
H14	ˈdeksʰ ˈɒksˡ	MP										ˈdeᵐ ˈɒkʰ sɪ ˈfaɪᵐ
H15	ˈdiʰ ɒk	MP	dɪ ˈɒkʰ sɪ faɪ									

Patterns / participants	BW detox[ˈdi: tɒks]				SW							MP
			– | – –	| – – –	– – – |	| – | –	– | – |	| | – –	| – – |	– | | –	| | – |	
L01	ˈdiᵐ ˈɒkˡ	MP										dɪ ˈɒkʰ ˈsiᶠ
L02	diʰ tʊə	MP										dɪfʰ fə ˈliᶠ
L03	ˈdiᵐ ˈtukʰ	MP										diᵐ tək ˈfulᵐ
L04	ˈdɪ ɒk	MP										dɪ ˈɒkʰ sɪ fi
L05	ˈdɪ ɒk	MP										dɪ ˈɒk sɪ fɪ
L06	ˈdiᵐ ˈɒkˡ	MP					dɪ ˈɒkʰ sɪ ˈfaɪᵐ					
L07	ˈdiᵐ ˈɒkˡ	MP					dɪ ˈɒkˡ sɪ ˈfaɪᵐ					
L08	ˈdɪ ɒk	MP										dɪ ˈɒk sɪ fɪ
L09	dɪ ˈɒk	MP					dɪ ˈɒkʰ sɪ ˈfaɪᵐ					
L10	ˈde ɒk	MP										deᵐ ˈɒkʰ sɪ fɪ
L11	ˈdɪ ɒk	MP										diːᵐ ˈɒkʰ sɪ ˈfiᶠ
L12	dɪ ˈɒkʰ	MP	dɪ ˈɒkʰ sɪ faɪ									
L13	ˈdɪ ɒk	MP	dɪ ˈɒkʰ sɪ fɪ									
L14	ˈdi ɒk	MP										dɪ ˈɒkʰ sɪ ˈfaɪnᶠ
L15	dɪ ˈɒks	– |										ˈdɪ ˈɒkʰ fɪ

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

solidify [sə ˈlɪ dɪ faɪ] (- | - -)

Patterns / participants	BW solid [ˈsɒ lɪd]		SW									MP
			– | – –	| – – –	– – – |	| – | –	– | – |	| | – –	| – – |	– | | –	| | – |	
H01	ˈsɒ lɪd	| –							ˈsɒ^{m} lɪ dɪ ˈfaɪ^{m}			
H02	ˈsɒ lɪd	| –		ˈsɒ lɪ dɪ faɪ								
H03	ˈsɒ lɪd	| –		ˈsɒ^{m} lɪ dɪ faɪ								
H04	ˈsɒ lɪd	| –			sɒ lɪ də ˈfaɪ							
H05	ˈsɒ lɪd	| –										ˈsɒ lɪ faɪ
H06	ˈsɒ lɪd	| –							ˈsɒ^{m} lɪ dɪ ˈfaɪ^{m}			
H07	ˈsɒ lɪd	| –			sɒ lɪ də ˈfaɪ^{m}							
H08	ˈsɒ lɪd	| –							ˈsɒ^{m} lɪ dɪ ˈfaɪ^{m}			
H09	ˈsɒ lɪd	| –							ˈsɒ lɪ dɪ ˈfaɪ			
H10	ˈsɒ lɪd	| –										ˈsɒ^{m} ˈlɪ^{h} dɪ ˈfi^{f}
H11	ˈsɒ lɪd	| –							ˈsɒ^{m} lɪ dɪ ˈfaɪ^{m}			
H12	ˈsɒ lɪd	| –		ˈsɒ lə də faɪ								
H13	ˈsɒ lɪd	| –	sɒ ˈlɪ dɪ faɪ									
H14	ˈsɒ lɪd	| –		ˈsɒ lɪ dɪ faɪ								
H15	ˈsɒ lɪd	| –							ˈsɒ^{m} lɪ dɪ ˈfaɪ^{m}			

Patterns / participants	BW solid [ˈsɒ lɪd]		SW									MP
			– | – –	| – – –	– – – |	| – | –	– | – |	| | – –	| – – |	– | | –	| | – |	
L01	ˈsɒ lɪd	| –										ˈsɒ^{m} lɪ dɪ ˈfi^{f}
L02	ˈsɒ^{m} ˈla^{f}											sɒ ˈli^{f} fə ˈli^{f}
L03	ˈsɒ leks											sə lɪ ˈdi^{f}
L04	ˈsɒ^{h} ˈlɪd^{h}	| |							ˈsɒ^{h} lɪ dɪ ˈfaɪ^{h}			
L05	ˈsɒ lɪd	| –										ˈsɒ^{m} lɪ dɪ ˈfi^{f}
L06	ˈsɒ lɪd	| –										ˈsɒ^{m} lɪ dɪ ˈfi^{f}
L07	sɒ^{m}											sɒ^{m} dɪ ˈfaɪ^{m}
L08	sɔɪd											ˈsɒ^{m} lɪ dɪ fi
L09	ˈsɒ lɪd	| –										sɒ ˈli^{h} dɪ ˈfi^{m}
L10	sɔɪ											ˈsɒ^{m} lɪ dɪ ˈfi^{f}
L11	ˈsaɒ^{h}											sɒl^{h} dɪ faɪ
L12	ˈsɒ lɪs											ˈsɒ^{m} lɪ dɪ ˈfi^{f}
L13	ˈsɒ lɪd	| –										ˈsɒ^{h} lɪ dɪ ˈfi^{f}
L14	ˈsɒ lɪd	| –										sɒl^{h} dɪ faɪ
L15	ˈsad											sɒ ˈlɪ^{h} dɪ fi

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

triangulate [traɪ ˈæŋ gjə leɪt] (- | - -)

Patterns / participants	BW triangle [ˈtraɪ æŋ gəl]		SW – | – –	SW | – – –	SW – – – |	SW | – | –	SW – | – |	SW | | – –	SW | – – |	SW – | | –	SW | | – |	MP
H01	ˈtraɪᵐ æŋ ˈɡɜlᶠ	| – |		ˈtraɪᵐ æŋ gʊ let								
H02	traɪ ˈæŋʰ ˈɡɜlʰ	– | |		ˈtraɪᵐ æŋ gʊ let								
H03	ˈtraɪᵐ æŋ ˈɡɜlᶠ	| – |		ˈtraɪᵐ æŋ gʊ net								
H04	traɪ ˈæŋʰ gəl	– | –	traɪ ˈæŋʰ gʊ leɪt									
H05	ˈtraɪ æŋ gəl	| – –		ˈtraɪᵐ æŋ gə leɪt								
H06	traɪ ˈæŋ gəl	– | –	trə ˈæŋʰ gʊ leɪt									
H07	ˈtreɪnᵐ ˈdʒelᵐ	MP										ˈtrænᵐ gʊ let
H08	ˈtraɪᵐ æŋ ˈɡɜlᶠ	| – |							ˈtraɪᵐ æŋ gʊ ˈleɪtʲ			
H09	traɪ ˈæŋ gəl	– | –	traɪ ˈæŋʰ gʊ leɪt									
H10	ˈtraɪ æŋ gəl	| – –		ˈtraɪᵐ æŋ gu let								
H11	ˈtraɪᵐ æŋ ˈɡɜlᶠ	| – |									ˈtraɪᵐ ˈæŋᵐ gʊ ˈleɪtʲ	
H12	ˈtrɪən gəl	MP										ˈtreng gʊ let
H13	traɪ ˈæŋ gəl	– | –	traɪ ˈæŋʰ gʊ leɪt									
H14	ˈtraɪ æŋ gəl	| – –						ˈtraɪᵐ ˈæŋᵐ gʊ leɪt				
H15	traɪ ˈæŋ gəl	– | –		ˈtraɪᵐ æŋ gə leɪt								

Patterns / participants	BW triangle [ˈtraɪ æŋ gəl]		SW – | – –	SW | – – –	SW – – – |	SW | – | –	SW – | – |	SW | | – –	SW | – – |	SW – | | –	SW | | – |	MP
L01	tɪenᵐ ˈdʒelᵐ	MP										ˈtrenᵐ gʊ leɪt
L02	te ro ˈkatʰ	MP										ˈtreʰ kɔ ˈlatʰ
L03	ˈtɜnᵐ ˈɡɜlᶠ	MP							ˈtraɪᵐ æŋ gʊ ˈlætʲ			
L04	ˈtreɪnʰ gəl	MP										traɪ ˈæŋʰ gʊ leɪs
L05	ˈtraɪᵐ ˈæŋʰ gəl	| | –						ˈtraɪᵐ ˈaŋᵐ gʊ let				
L06	ˈtɪenᵐ ˈdʒelᵐ	MP										ˈtrenᵐ gʊ latʰ
L07	ˈtaɪᵐ a ˈdʒenʰ	MP										ˈtraɪᵐ a ˈdʒenʰ ˈlatʰ
L08	ˈteɪn dʒəl	MP										ˈtrengʰ dʒə les
L09	ˈtrɪən dʒəl	MP										ˈtɪənʰ gʊ ˈleɪtʲ
L10	ˈteɪn gə	MP										ˈteɪnᵐ gʊ ˈleɪʰ tɪ
L11	ˈtraɪ æŋ gəl	| – –										ˈtrænʰ gʊ leɪs
L12	ˈtrɪən ˈdʒɪəl	MP										tɪən ˈdʒuːᵐ les
L13	ˈteɪn dʒəl	MP										ˈtɪənʰ ˈdʒʊ ˈlesʲ
L14	ˈtren dʒəl	MP										ˈtɪənʰ gʊ let
L15	ˈtren dʒəl	MP										ˈtrænʰ gʊ ˈleɪdʒ

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

activity [æk ˈtɪ və ti] (- | - -)

Patterns / participants	BW active [ˈæk tɪv]		SW												MP
			– | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	
H01	ˈækʰ ˈtivʲ	| |									ˈækʰ tɪ vɪ ˈtiᶠ				
H02	ˈæk tɪv	| –	æk ˈtɪ vɪ tɪ												
H03	ˈækʰ ˈtivʲ	| |					ˈæk tɪ ˈvɪ tɪ								
H04	ˈækʰ tɪv	| –	æk ˈtɪ vɪ tɪ												
H05	ˈæk tɪv	| –		ˈæk tɪ və tɪ											
H06	ˈæk tɪv	| –	æk ˈtɪ və tɪ												
H07	ˈækʰ ˈtivʲ	| |									ˈækʰ tɪ vɪ ˈtiᶠ				
H08	ˈækʰ ˈtivʲ	| |									ˈækʰ tɪ vɪ ˈtiᶠ				
H09	ˈæk tɪv	| –			æk tɪ ˈvɪ ti										
H10	ˈækʰ ˈtivʲ	| |	æk ˈtɪ və tɪ												
H11	ˈækʰ ˈtivʲ	| |	æk ˈtɪ və tɪ												
H12	ˈæk tɪv	| –	æk ˈtɪ və tɪ												
H13	ˈæk tɪv	| –	æk ˈtɪ və tɪ												
H14	ˈækʰ ˈtivᶠ	| |	æk ˈtɪ və tɪ												
H15	ˈæk tɪv	| –	æk ˈtɪ və tɪ												

Patterns / participants	BW active [ˈæk.tɪv]		SW												MP
			– | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	
L01	ˈæk tɪv	| –		ˈæk tɪ və tɪ											
L02	ˈækʰ te ˈvɪʊᵐ										ˈækʰ tɪ və ˈtiᶠ				
L03	ˈækʰ ˈtivʰ	| |													ˈækʰ ˈtɪvʰ ˈtiᶠ
L04	ˈæk tɪv	| –		ˈæk tɪ və ti											
L05	ˈæk tɪv	| –		ˈæk tɪ və tɪ											
L06	ˈækʰ ˈtivʲ	| |	æk ˈtɪ vɪ tɪ												
L07	ˈækʰ ˈtivʲ	| |									ˈækʰ tɪ və ˈtiᶠ				
L08	ˈæk tɪv	| –		ˈæk tɪ və tɪ											
L09	ˈækʰ ˈtivʲ	| |					ˈæk tɪ ˈvɪ tɪ								
L10	ˈækʰ ˈtivʲ	| |					ˈæk tɪ ˈvɪ tɪ								
L11	ˈæk tɪv	| –		ˈæk tɪ və tɪ											
L12	ˈæk tɪv	| –		ˈæk tɪ və tɪ											
L13	ˈæk tɪv	| –		ˈæk tɪ və tɪ											
L14	ˈæk tɪv	| –	æk ˈtɪ vɪ tɪ												
L15	ˈækʰ ˈtivʲ	| |					ˈæk tɪ ˈvɪ tɪ								

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

certificate [sə ˈtɪ fɪ kət] (- | - -)

Patterns / participants	BW certify [ˈsɜː tɪ faɪ]		SW												MP
			- | - -	| - - -	- - | -	- - - |	| - | -	- | - |	| | - -	- - | |	| - - |	- | | -	| | - |	| | | |	
H01	ˈsɜᵐ tɪ ˈfaɪᵐ	| - |		ˈsɜ tɪ fɪ ket											
H02	ˈsɜ tɪ faɪ	| - -		ˈsɜ tɪ fɪ keɪt											
H03	ˈsɜ tɪ faɪ	| - -		ˈsɜ tɪ fɪ ket											
H04	ˈsɜ tɪ faɪ	| - -						sə ˈtɪʰ fɪ ˈkeɪtˡ							
H05	ˈsɜ tɪ faɪ	| - -	sə ˈtɪ fɪ keɪt												
H06	ˈsɜ tɪ ˈfaɪ	| - |		ˈsɜ tɪ fɪ keɪt											
H07	ˈsɜ tə faɪ	| - -				sə tɪ fɪ ˈkeɪt									
H08	ˈsɜᵐ tɪ ˈfaɪᵐ	| - |									ˈsɜᵐ tɪ fɪ ˈkeɪtˡ				
H09	ˈsɜ tɪ faɪ	| - -	sə ˈtɪ fɪ keɪt												
H10	ˈsɜ tɪ faɪ	| - -	sə ˈtɪ fɪ keɪt												
H11	ˈsɜᵐ tɪ ˈfaɪᵐ	| - |										sə ˈtɪ ˈfɪ keɪt			
H12	ˈsɜ tɪ faɪ	| - -	sə ˈtɪ fɪ kət												
H13	ˈsɜ tɪ ˈfaɪ	| - |	sə ˈtɪ fɪ keɪt												
H14	ˈsɜᵐ tɪ ˈfaɪᵐ	| - |									ˈsɜᵐ tɪ fɪ ˈkeɪtᶠ				
H15	ˈsɜ tɪ faɪ	| - -	sə ˈtɪ fɪ keɪt												

Patterns / participants	BW certify [ˈsɜː tɪ faɪ]		SW												MP
			- | - -	| - - -	- - | -	- - - |	| - | -	- | - |	| | - -	- - | |	| - - |	- | | -	| | - |	| | | |	
L01	ˈsɜᵐ tɪ ˈfaɪᵐ	| - |									ˈsɜᵐ tɪ fɪ ˈkeɪtˡ				
L02	ˈkɪtʰ tɪ ˈfiᶠ	MP													ˈkɔrtʰ də ˈfaᵐ ˈtɜᶠ
L03	ˈsɜᵐ tɪ ˈfiᶠ	| - |													ˈkɜᵐ ˈtɪʰ ˈfiᶠ kæt
L04	ˈkɜᵐ tɪ ˈfiᶠ	MP													ˈkɜᵐ ˈtɪʰ fɪ ˈkeɪtˡ
L05	ˈsɜ tɪ ˈfaɪ	| - |									ˈsɜ tɪ fɪ ˈkeɪt				
L06	ˈsɜᵐ tɪ ˈfiᶠ	MP							ˈsɜᵐ ˈtɪʰ fɪ ket						
L07	ˈsɜᵐ tɪ ˈfaɪᵐ	| - |													ˈsɜᵐ tɪ ˈfaɪᵐ ˈkaᵐ
L08	ˈsɜᵐ tɪ ˈfiᶠ	MP									ˈsɜᵐ tɪ fɪ ˈkeɪtˡ				
L09	ˈsɜ tɪ ˈfaɪ	| - |			sə tɪ ˈfɪ keɪt										
L10	ˈsɜ tɪ ˈfaɪ	| - |			sə tɪ ˈfaɪ ket										
L11	ˈkɜ tɪ faɪ	MP													kə tɪ ˈfaɪ keɪt
L12	ˈsɜ tɪ ˈfaɪ	| - |					ˈsɜ tɪ ˈfɪ keɪt								
L13	ˈsɜᵐ tɪ ˈfiᶠ	MP									ˈsɜ tɪ fɪ ˈkeɪt				
L14	ˈsɜ tɪ faɪ	| - -	sə ˈtɪ fɪ kət												
L15	ˈkæ tɪ fi	MP													ˈkæ tɪ fɪ ket

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

community [kə ˈmjuː nə ti] (- | - -)

Patterns / participants	BW commune[ˈkɒm juːn]		SW – | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	MP
H01	ˈkɔmᵐ ˈmjunᵐ	| |									ˈkɔmᵐ mjʊ nɪ ˈtiᶠ				
H02	kəm ˈmjun	– |	kəm ˈmju nɪ ti												
H03	ˈkɔm mjun	| –	kɔm ˈmju nɪ ti												
H04	kəm ˈmjun	– |	kəm ˈmju nɪ ti												
H05	ˈkɔmᵐ ˈmjunᵐ	| |		ˈkɔm mjʊ nɪ ti											
H06	kəm ˈmjun	MP	kɔm ˈmju nɪ ti												
H07	kəm ˈmjuns	– |			kəm mju ˈnɪ ti										
H08	ˈkɔmᵐ ˈmjunᵐ	| |													ˈkɔmᵐ mɔ nə ˈtiᶠ
H09	ˈkɔm mjun	| –	kɔm ˈmju nɪ ti												
H10	ˈkɔmᵐ ˈmjunᵐ	| |	kɔm ˈmju nɪ ti												
H11	ˈkɔmᵐ ˈmjunᵐ	| |	kɔm ˈmju nɪ ti												
H12	kəm ˈmjun	– |	kɔm ˈmju nɪ ti												
H13	kəm ˈmjun	– |	kɔm ˈmju nɪ ti												
H14	kəm ˈmjun	– |	kɔm ˈmju nɪ ti												
H15	kəm ˈmjun	– |	kɔm ˈmju nɪ ti												

Patterns / participants	BW commune[ˈkɒm juːn]		SW – | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	MP
L01	ˈkɔm mʌn	MP									ˈkɔmᵐ mjʊ nɪ ˈtiᶠ				
L02	ˈkæenᵐ	MP													ˈkɔⁿ mʌn nɪ ˈtiᶠ
L03	ˈkɔmᵐ mud ˈniᶠ	MP								kɔm mjʊ ˈniᶠ ˈtiᶠ					
L04	ˈkɔmᵐ ˈmjunᵐ	| |							ˈkɔm ˈmju nɪ ti						
L05	ˈkɔm mjən	| –	kɔm ˈmju nɪ ti												
L06	ˈkɔmᵐ ˈmanʰ	MP	kɔm ˈmju nɪ ti												
L07	ˈkɔmᵐ ˈmɔnᶠ	MP													ˈkɔmᵐ ˈmɔⁿ nɪ ˈtiᶠ
L08	ˈkɔm mjun	| –									ˈkɔmᵐ mjʊ nɪ ˈtiᶠ				
L09	ˈkɔmᵐ ˈmjunᵐ	| |	kɔm ˈmju nɪ ti												
L10	ˈkɔmᵐ ˈmjunᵐ	| |		ˈkɔm mjʊ nɪ ti											
L11	ˈkɔm mjən	| –							ˈkɔm ˈmjʊ nɪ ti						
L12	ˈkɔmᵐ ˈmɔnᶠ	MP													ˈkɔm ˈmɔ nɪ ti
L13	ˈkɔmᵐ ˈmjunᵐ	| |				kəm mju nɪ ˈtiᶠ									
L14	ˈkɔm mjən	| –	kɔm ˈmju nɪ ti												
L15	kəm ˈmjun	– |	kɔm ˈmju nɪ ti												

“H” = “High proficiency group”; H01 means participant number 1 in the high proficiency group. “L” = “Low proficiency group”; L01 means participants 1 in the low proficiency group.

“BW” = “Base words”; “SW” = “Suffixed words”; “MP” = “Mispronunciation”

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

communicate [kə ˈmjuː nɪ keɪt] (- | - -)

Patterns / participants	BW commune [kɒm juːn]		SW – | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	MP
H01	ˈkɒmᵐ ˈmjunᵐ	| |									ˈkɒmᵐ mjʊ nɪ ˈkeɪtˡ				
H02	kəm ˈmjun	– |	kəm ˈmju nɪ keɪt												
H03	ˈkɒmᵐ ˈmjunᵐ	| |	kəm ˈmju nɪ ket												
H04	kəm ˈmjun	– |				kəm mju nɪ ˈkeɪt									
H05	ˈkɒmᵐ ˈmjunᵐ	| |		ˈkɒm mjʊ nɪ keɪt											
H06	kəm ˈmjun	– |	kəm ˈmju nɪ keɪt												
H07	kəm ˈmjun	– |	kəm ˈmju nɪ keɪt												
H08	ˈkɒmᵐ ˈmjunᵐ	| |									ˈkɒmᵐ mjʊ nɪ ˈkeɪtˡ				
H09	ˈkɒm mjun	| –	kəm ˈmju nɪ keɪt												
H10	ˈkɒmᵐ ˈmjunᵐ	| |	kəm ˈmju nɪ keɪt												
H11	ˈkɒmᵐ ˈmjunᵐ	| |	kəm ˈmju nɪ keɪt												
H12	kəm ˈmjun	– |	kəm ˈmju nɪ keɪt												
H13	kəm ˈmjun	– |	kəm ˈmju nɪ keɪt												
H14	kəm ˈmjun	– |	kəm ˈmju nɪ keɪt												
H15	kəm ˈmjun	– |	kəm ˈmju nɪ keɪt												

Patterns / participants	BW commune [kɒm juːn]		SW – | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	MP
L01	ˈkɒm mən	MP							ˈkɒmᵐ ˈmjuʰ nɪ keɪt						
L02	ˈkɒmᵐ ˈmʌʃʰ	MP													ˈkɔᵐ mʌn nɪ ˈsiᶠ
L03	ˈkɒmᵐ ˈmjutʰ	MP													kɒm ˈmjuʰ nɪ kæt
L04	ˈkɒmᵐ ˈmjunᵐ	| |													ˈkɒmᵐ mjʊ nɪ ˈkesʰ
L05	ˈkɒm mjən	| –									ˈkɒm mju nɪ ˈket				
L06	ˈkɒmᵐ ˈmjunᵐ	| |	kəm ˈmju nɪ keɪt												
L07	ˈkɒmᵐ ˈmɔnᶠ	MP													ˈkɒmᵐ ˈmɔnᶠ nɪ ˈkeɪtˡ
L08	ˈkɒm mjun	| –		ˈkɒm mjə nɪ keɪt											
L09	ˈkɒmᵐ ˈmjunᵐ	| |	kəm ˈmju nɪ keɪt												
L10	ˈkɒm mjun	| –									ˈkɒmᵐ mjʊ nɪ ˈkeɪtˡ				
L11	kəm ˈmjun	– |													ˈkɒm ˈmju nɪ kæt
L12	ˈkɒmᵐ ˈmjunᵐ	| |									ˈkɒmᵐ mjə nɪ ˈkeɪtˡ				
L13	ˈkɒmᵐ ˈmjunᵐ	| |									ˈkɒmᵐ mjʊ nɪ ˈkeɪtˡ				
L14	ˈkɒm mjən	| –	kəm ˈmju nɪ keɪt												
L15	ˈkɒm ˈmjun	| |	kəm ˈmju nɪ keɪt												

“H” = “High proficiency group”; H01 means participant number 1 in the high proficiency group. “L” = “Low proficiency group”; L01 means participants 1 in the low proficiency group.

“BW” = “Base words”; “SW” = “Suffixed words”; “MP” = “Mispronunciation”

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

objectify [əb ˈdʒek tɪ faɪ] (- | - -)

Patterns / participants	BW object [ˈɔb dʒɪkt]		SW – | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	MP
H01	ˈɔbʰ ˈdʒekʰ	| |													ɔb ˈdʒekʰ tɪ ˈfiᶠ
H02	ˈɑb dʒekt	| –	ɔb ˈdʒek tɪ faɪ												
H03	ˈɔbʰ ˈdʒektʰ	| |	ɔb ˈdʒek tɪ faɪ												
H04	ˈɑb dʒekt	| –	əb ˈdʒek tɪ faɪ												
H05	ˈɑb dʒekt	| –		ˈɔb dʒek tɪ faɪ											
H06	ˈɑb dʒekt	| –						əb ˈdʒek tɪ ˈfaɪ							
H07	ˈɔb ˈdʒek	| |						əb ˈdʒek tɪ ˈfaɪ							
H08	ˈɔbʰ ˈdʒekʰ	| |						ɔb ˈdʒekʰ tɪ ˈfaɪᵐ							
H09	ˈɑb dʒekt	| –	əb ˈdʒek tɪ faɪ												
H10	ˈɑb dʒekt	| –	ɔb ˈdʒek tɪ faɪ												
H11	ˈɔbʰ ˈdʒekʰ	| |							ˈɔb ˈdʒek tɪ faɪ						
H12	ˈɑb dʒekt	| –	əb ˈdʒek tɪ faɪ												
H13	ˈɑb dʒekt	| –	əb ˈdʒek tɪ faɪ												
H14	ˈɑb dʒekt	| –							ˈɔbʰ ˈdʒekʰ tɪ faɪ						
H15	ɔb ˈdʒekt	– |	ɔb ˈdʒek tɪ faɪ												

Patterns / participants	BW object [ˈɔb dʒɪkt]		SW – | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	MP
L01	ˈɑb dʒek	| –							ˈɔbʰ ˈdʒekʰ tɪ faɪ						
L02	ˈɔᵐ ˈdʒæekʰ	MP													ɔ ˈdʒesʰ tə ˈriᶠ
L03	ˈɔbʰ ˈdʒekᶠ	| |													ɔb ˈdʒekᶠ tɪ ˈfiᶠ
L04	ˈɔbʰ ˈdʒekᶠ	| |													ˈɔbʰ ˈdʒəkʰ tɪ fi
L05	ˈɑb dʒek	| –						əb ˈdʒek tɪ ˈfaɪ							
L06	ˈɔbʰ ˈdʒekᶠ	| |													əb ˈdʒek tɪ fɪ
L07	ˈɔbʰ ˈdʒekˡ	| |											ˈɔbʰ ˈdʒekˡ tɪ ˈfaɪᵐ		
L08	ˈɑb dʒek	| –									ˈɔbʰ dʒek tɪ ˈfaɪᵐ				
L09	ˈɑb dʒek	| –													əb ˈdʒek tɪ fɪ
L10	ˈɔbʰ ˈdʒekᶠ	| |													əb dʒek ˈtɪ fɪ
L11	ˈɑb dʒek	| –									ˈɔb dʒek tɪ ˈfaɪ				
L12	ˈɔbʰ ˈdʒekᶠ	| |	əb ˈdʒek tɪ faɪ												
L13	ˈɑb dʒek	| –													əb ˈdʒek tɪ fɪ
L14	ˈɑb dʒek	| –	ɔb ˈdʒek tɪ faɪ												
L15	ˈɑb dʒekt	| –													əb ˈdʒek tɪ fɪ

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

original [ə ˈrɪ dʒə nəl] (- | - -)

Patterns / participants	BW origin [ə ˈrɪ dʒən]		SW – | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	MP
H01	ˈɔᵐ rɪ ˈdʒɪnᶠ	| – |						ˈɔ rɪ ˈdʒɪnʰ ˈɔlᶠ							
H02	ˈɔ rɪ dʒɪn	| – –	ˈɔ rɪ dʒɪ nəl												
H03	ˈɔᵐ rɪ ˈdʒɪnᶠ	| – |				ˈɔ rɪ dʒɪ ˈɔlᶠ									
H04	ˈɔ rɪ dʒɪn	| – –	ˈɔ rɪ dʒɪ nəl												
H05	ˈɔ rɪ dʒɪn	| – –	ˈɔ rɪ dʒɪ nəl												
H06	ˈɔ rɪ dʒɪn	| – –	ˈɔ rɪ dʒɪ nəl												
H07	ˈɔ rɪ ˈdʒɪnᶠ	– – |						ˈɔ rɪ ˈdʒɪnʰ ˈɔlᶠ							
H08	ˈɔᵐ rɪ ˈdʒɪnᶠ	| – |						ˈɔ rɪ ˈdʒɪnʰ ˈɔlᶠ							
H09	ˈɔ rɪ dʒɪn	| – –	ˈɔ rɪ dʒɪ nəl												
H10	ˈɔ rɪ dʒɪn	| – –	ˈɔ rɪ dʒɪ nəl												
H11	ˈɔ rɪ ˈdʒɪnᶠ	– – |	ˈɔ rɪ dʒɪ nəl												
H12	ˈɔ rɪ dʒɪn	| – –	ˈɔ rɪ dʒɪ nəl												
H13	ˈɔ rɪ dʒɪn	– | –	ˈɔ rɪ dʒɪ nəl												
H14	ˈɔ rɪ dʒɪn	| – –	ˈɔ rɪ dʒɪ nəl												
H15	ˈɔ rɪ dʒɪn	| – –	ˈɔ rɪ dʒɪ nəl												

Patterns / participants	BW origin [ə ˈrɪ dʒən]		SW – | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	MP
L01	ˈɔ rɪ dʒɪn	| – –									ˈɔlᶠ rɪ dʒɪ rɪ ˈɔ				
L02	ˈɔnᵐ ˈgeʃᶠ	MP													ˈraᶠ gə ˈnʌᵐ
L03	ˈɔᵐ ˈgenᵐ	MP													ˈɔlᶠ gæ ˈɔᵐ
L04	ˈɔᵐ rɪ ˈdʒɪnʰ	| – |				ˈɔlᶠ rɪ dʒɪ rɪ ˈɔ									
L05	ˈɔ rɪ dʒɪn	| – –		ˈɔ rɪ dʒɪ nəl											
L06	ˈɔᵐ rɪ ˈdʒɪnᶠ)	| – |	ˈɔ rɪ dʒɪ nəl												
L07	ˈɔᵐ ˈdʒɪᵐ	MP													ˈɔᵐ dʒɪ ˈɔlᶠ
L08	ˈɔ rɪ dʒɪn	| – –						ˈɔ rɪʰ dʒɪ ˈɔlᶠ							
L09	ˈɔ rɪʰ ˈdʒɪnᵐ	– | –	ˈɔ rɪ dʒɪ nəl												
L10	ˈɔ rɪ dʒɪn	| – –		ˈɔ rɪ dʒɪ nəl											
L11	ˈɔ rɪ gɪn	| – –	ˈɔ rɪ gɪ nəl												
L12	ˈɔᵐ rɪ ˈdʒɪnᵐ	| – |				ˈɔlᶠ rɪ dʒɪ rɪ ˈɔ									
L13	ˈɔ rɪ dʒɪn	– | –	ˈɔ rɪ dʒɪ nəl												
L14	ˈɔ rɪ gɪn	| – –	ˈɔ rɪ dʒɪ nəl												
L15	ˈɔ rɪ gɪn	| – –		ˈɔ rɪ dʒɪ nəl											

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

personify [pə ˈsɒ nɪ faɪ] (- | - -)

Patterns / participants	BW person [ˈpɜː sən]		SW													MP
			– | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	
H01	ˈpɜᵐ ˈsɜnᶠ	| |				pə sə nɪ ˈfaɪᵐ									
H02	ˈpɜ sən	| –	pə ˈsɑ nɪ faɪ													
H03	ˈpɜᵐ ˈsɜnᶠ	| |									ˈpɜᵐ sə nɪ ˈfaɪᵐ					
H04	ˈpɜr sən	| –				pə sə nɪ ˈfaɪ										
H05	ˈpɜ sən	| –	pə ˈsɑ nɪ faɪ													
H06	ˈpɜ sən	| –						pə ˈsɑ nɪ ˈfaɪ								
H07	ˈpɜr sən	| –				pə sə nɪ ˈfaɪ										
H08	ˈpɜʰ ˈsɜnᶠ	| |									ˈpɜᵐ sə nɪ ˈfaɪᵐ					
H09	ˈpɜr sən	| –	pə ˈsɑ nɪ faɪ													
H10	ˈpɜ sən	| –				pə sə nɪ ˈfaɪ										
H11	pə ˈsɜnʰ	– |						pə ˈsɑᵐ nɪ ˈfaɪᵐ								
H12	ˈpɜr sən	| –	pə ˈsɑ nɪ faɪ													
H13	ˈpɜr sən	| –	pə ˈsɑ nɪ faɪ													
H14	ˈpɜr sən	| –	pə ˈsɑ nɪ faɪ													
H15	ˈpɜ sən	| –	pə ˈsɑ nɪ faɪ													

Patterns / participants	BW person [ˈpɜː sən]		SW													MP
			– | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	
L01	ˈpɜʰ sən	| –									ˈpɜᵐ sə nɪ ˈfaɪᵐ					
L02	pə ˈsɜlᶠ															pə ˈsoᵐ nə ˈriᶠ
L03	ˈpɜᵐ ˈsɜnᶠ	| |														pɜ ˈsɑᶠ nɪ ˈfiᶠ
L04	ˈpɜr sən	| –														ˈˈpɜᵐ ˈsɑᵐ nɪ ˈfiᶠ
L05	ˈpɜ sən	| –									ˈpɜ sə nɪ ˈfaɪ					
L06	ˈpɜᵐ ˈsɜnᶠ	| |														ˈˈpɜᵐ ˈsɑᶠ nɪ ˈfiᶠ
L07	ˈpɜᵐ ˈsʌnʲ										ˈpɜᵐ sə nɪ ˈfaɪᵐ					
L08	ˈpɜr sən	| –														ˈpɜᵐ sə nɪ ˈfiᶠ
L09	ˈpɜr sən	| –														ˈpɜ sə ˈnɪ fɪ
L10	ˈpɜ sən	| –	pə ˈsɑ nɪ faɪ													
L11	ˈpɜr sən	| –	pə ˈsɑ nɪ faɪ													
L12	ˈpɜᵐ ˈsɔnᵐ															pə ˈsonᵐ ˈnɪʰ ɪ faɪ
L13	ˈpɜ sən	| –														pə ˈso nə ˈri
L14	ˈpɜ sən	| –	pə ˈsɑ nɪ faɪ													
L15	ˈpɜ sən	| –														pə ˈsɑ nɪ fɪ

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

political [pə ˈlɪ tɪ kəl] (- | - -)

Patterns / participants	BW politic [ˈpɒ ɪ tɪk]		SW												MP
			– | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	
H01	ˈpoᵐ lɪ ˈtɪkˡ	| – |									ˈpoᵐ lɪ tɪ kɔlᶠ				
H02	pə ˈlaɪ tɪk	MP													pə ˈlaɪ tɪ kəl
H03	ˈpo lɪ tɪk	| – –				po lɪ tɪ kɔlᶠ									
H04	ˈpo lɪ tɪk	| – –	pə ˈlɪ tɪ kəl												
H05	ˈpo lɪ tɪk	| – –		ˈpo lɪ tɪ kəl											
H06	ˈpo lɪ ˈtɪk	| – –	po ˈlɪ tɪ kəl												
H07	pə ˈlaɪ tɪk	MP				pə lɪ tɪ kɔlᶠ									
H08	ˈpoᵐ lɪ ˈtɪkˡ	| – |						pə ˈlɪʰ tɪ ˈkɔlᶠ							
H09	pə ˈlɪ tɪk	– | –	po ˈlɪ tɪ kəl												
H10	ˈpo lɪ tɪk	| – –	po ˈlɪ tɪ kəl												
H11	ˈpoᵐ lɪ ˈtɪkˡ	| – |						pə ˈlɪʰ tɪ ˈkɔlʰ							
H12	ˈpo lɪ tɪk	| – –	po ˈlɪ tɪ kəl												
H13	pə ˈlɪ tɪk	– | –	po ˈlɪ tɪ kəl												
H14	pə ˈlɪ tɪk	– | –	po ˈlɪ tɪ kəl												
H15	pə ˈlɪ tɪk	– | –	po ˈlɪ tɪ kəl												

Patterns / participants	BW politic [ˈpɒ ɪ tɪk]		SW												MP
			– | – –	| – – –	– – | –	– – – |	| – | –	– | – |	| | – –	– – | |	| – – |	– | | –	| | – |	| | | |	
L01	ˈpoᵐ lɪ ˈtɪkˡ	| – |									ˈpoᵐ lɪ tɪ kɔlᶠ				
L02	ˈpoᵐ lɪ ˈtiᶠ	MP													ˈpoᵐ lɪ tɪ ˈkeɪtˡ
L03	ˈpoᵐ ˈleˢʰ ˈsɪtˡ	MP													ˈpoᵐ lɪ ˈʃɔlᶠ
L04	po ˈlɪ tɪk	– | –	pə ˈlɪ tɪ kəl												
L05	ˈpo lə tɪk	| – –	pə ˈlɪ tɪ kəl												
L06	ˈpo lɪ tɪk	| – –						pə ˈlɪʰ tɪ ˈkɔlᶠ							
L07	ˈpoᵐ lɪ ˈtɪkˡ	| – |													ˈpoᵐ lɪ tɪ tɪ ˈkɔlᶠ
L08	ˈpo lɪ tɪk	| – –											ˈpoᵐ ˈlɪʰ tɪ kɔlᶠ		
L09	pə ˈlaɪ tɪk	MP													pə ˈlaɪ tɪ kəl
L10	po ˈlɪ tɪk	– | –	pə ˈlɪ tɪ kəl												
L11	ˈpo lɪ tɪk	| – –	pə ˈlɪ tɪ kəl												
L12	ˈpoᵐ ˈlɪʰ ˈtɪkʰ	| | |												ˈpoᵐ ˈlɪʰ ˈtɪʰ ˈkɔlᶠ	
L13	ˈpo lɪ tɪk	| – –				pə lɪ tɪ ˈkɔlᶠ									
L14	po ˈlɪs tɪk	MP	pə ˈlɪ tɪ kəl												
L15	ˈpo lɪ tɪk	| – –	pə ˈlɪ tɪ kəl												

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

advantageous [ˌæd vænˈteɪ dʒəs] (- - | -) or (| - | -)

Patterns / participants	BW advantage [əd ˈvɑːn tɪdʒ]		SW										MP
			– – | –	| – | –	| – – –	– | – –	– – – |	| | – –	– – | |	– | – |	| – – |	| – | |	
H01	ˈæd˺ wæn ˈteɪt˻	MP									ˈæd˺ wæn tɛ ˈdʒɪəs		
H02	ˈæd˺ wæn ˈteɪt˻	MP									ˈæd˺ wæn tɛ ˈdʒɪəs˺		
H03	ˈæd˺ wæn ˈteɪdʒ˻	| – |									ˈæd˺ wæn tɛ ˈdʒɪəs˻		
H04	æd ˈwæn˺ ted3	– | –	æd wæn ˈteɪ dʒəs										
H05	æd ˈwæn˺ ted3	– | –			ˈæd˺ wæn tɛ dʒəs								
H06	ˈæd wæn ted3	| – –		ˈæd˺ wen ˈte dʒəs									
H07	ˈæd˺ wæn ˈteɪt˻	MP		ˈæd˺ wen ˈte dʒəs									
H08	ˈæd˺ wæn ˈteɪdʒ˻	| – |									ˈæd˺ wæn tɛ ˈdʒɪəs˻		
H09	ˈæd˺ wæn ted3	| – –		ˈæd˺ væn ˈte dʒəs									
H10	æd ˈwæn˺ ted3	– | –						ˈæd˻ ˈvæn˺ tɛ dʒəs					
H11	æd ˈvæn ted3	– | –				ə ˈvænᵐ te dʒəs							
H12	ˈæd vən tɪd3	| – –				æd ˈvæn te dʒəs							
H13	æd ˈwæn˺ ˈted3˻	– | |				æd ˈvæn˺ te dʒəs							
H14	ˈæd wæn ted3	| – –											æd ˈvan˺ ˈte˺ gə rəs
H15	ˈæd wæn ted3	| – –				æd ˈvæn te dʒəs							

Patterns / participants	BW advantage [əd ˈvɑːn tɪdʒ]		SW										MP
			– – | –	| – | –	| – – –	– | – –	– – – |	| | – –	– – | |	– | – |	| – – |	| – | |	
L01	ˈæd wən ˈtæg	MP											ˈæd˺ wan te ˈaʊs˺
L02	a ˈwɔ˺ tat	MP											ə ˈwɜː˺ tə ˈkaː ʃ˺
L03	ˈæd˻ wæn ˈget˻	MP											ˈæd˻ wæn ˈdʒe˻ ˈaʊ˺
L04	æd ˈwæn˺ tɪd3	– | –											æd ˈwæn˺ dʒə ˈaʊ˻
L05	ˈæd˺ ˈwæn˺ ted3	| | –											æd ˈwæn˺ tə ˈtʃɪəs˻
L06	ˈæd˺ wæn ˈteɪdʒ˻	| – |											ˈæd˺ wæn ˈteɪt˻
L07	ˈæd˻ ˈwænᵐ ˈteɪdʒ˻	| – |											ˈæd˺ wæn ˈteɪt˻ ˈaʊ˺
L08	æd ˈwæn ted3	– | –						ˈæd˺ ˈwæn˺ te dʒəs					
L09	æd ˈwæn˺ tʃə	MP								a ˈwen˺ te ˈdʒɪəs˻			
L10	ˈtæs˺ wæn ˈteɪdʒ˻	MP											ˈæd˺ wæn tet ˈdʒɜ˻ rəs
L11	ˈæd˻ ˈwæn˺ ted3	| | –											æd ˈwæn˺ tes ˈgɪəs˻
L12	ˈæd˻ ˈwæn˺ ted3	| | –											ˈæd˻ ˈwæn˺ tet gɪ ˈnʌs˻
L13	ˈæd˻ ˈwæn˺ ted3	| | –											æd ˈwæn˺ te ˈdʒɪən˻
L14	æd ˈwæn˺ ted3	– | –											æd ˈwænh te dʒɪ ɔs
L15	ˈæd wæn ted3	| – –											ˈæd˺ wen te əs

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

education [ˌe dʒʊ ˈkeɪ ʃən] (- - | -) or (| - | -)

Patterns / participants	BW		SW										MP
	educate [ˈe dʒu keɪt]		– – | –	| – | –	| – – –	– | – –	– – – |	| | – –	– – | |	– | – |	| – – |	| – | |	
H01	ɪ dʊ ˈkeɪtˡ	– – |							ɪ dʊ ˈkeɪᵐ ˈtʃʌnˡ				
H02	ɪ dʊ ˈkeɪtˡ	– – |	ɪ dʊ ˈkeɪ tʃən										
H03	ˈeʰ dʊ keɪt	| – –										ˈeʰ dʊ ˈkeɪᵐ ˈtʃənˡ	
H04	ˈeʰ dʊ ˈkeɪtˡ	| – |	e dʊ ˈkeɪ tʃən										
H05	ˈeʰ dʊ keɪt	| – –	e dʊ ˈkeɪ tʃən										
H06	ˈɪ dʊ ˈkeɪtˡ	| – |	ɪ dʊ ˈkeɪ tʃən										
H07	ˈeʰ dʊ keɪt	| – –	e dʊ ˈkeɪ tʃən										
H08	ˈɪᵐ dʊ ˈkeɪtˡ	| – |							ɪ dʊ ˈkeɪᵐ ˈtʃʌnˡ				
H09	ɪ dʊ ˈkeɪtˡ	– – |	e dʊ ˈkeɪ tʃən										
H10	ˈeᵐ dʊ ˈkeɪtˡ	| – |		ˈe dʊ ˈkeɪ tʃən									
H11	ˈe dʊ keɪt	| – –							e dʊ ˈkeɪᵐ ˈtʃʌnʰ				
H12	ɪ dʊ ˈkeɪtˡ	– – |	e dʊ ˈkeɪ tʃən										
H13	ˈe dʊ keɪt	| – –							e dʊ ˈkeɪʰ ˈtʃʌnˡ				
H14	ˈeʰ du ˈkeɪtˡ	| – |		ˈeʰ dʊ ˈkeɪʰ tʃən									
H15	ˈe dʊ keɪt	| – –	e dʊ ˈkeɪ tʃən										

Patterns / participants	BW		SW										MP
	educate [ˈe dʒu keɪt]		– – | –	| – | –	| – – –	– | – –	– – – |	| | – –	– – | |	– | – |	| – – |	| – | |	
L01	ɪ dʊ ˈkeɪtˡ	– – |									ˈɪᵐ dʊ ke ˈtʃʌnˡ		
L02	dɪ ˈkarʃʰ	MP											dɪ ˈkatʰ tes
L03	ɪn ˈgræsʰ	MP											ɪn ˈkræʰ ˈtʃʌnˡ
L04	ˈɪ dʊ keɪs	MP	ɪ dʊ ˈkeɪʰ tʃən										
L05	ˈɪ dʊ keɪt	| – –		ˈeʰ dʊ ˈkeɪʰ tʃən									
L06	ˈi dʊ ˈkeɪtˡ	| – |							ɪ dʊ ˈkeɪʰ ˈtʃʌnˡ				
L07	ɪ dʊ ˈkeɪtˡ	– – |											ɪn dʊ ˈkeɪʰ ˈtʃʌnˡ
L08	ˈɪ dʊ keɪt	| – –	ɪ dʊ ˈkeɪʰ tʃən										
L09	ɪ dʊ ˈkeɪtˡ	– – |	ɪ dʊ ˈkeɪ tʃən										
L10	ɪ dʊ ˈkeɪtʰ	– – |	ɪ dʊ ˈkeɪʰ tʃən										
L11	ˈɪn dʊ keɪt	MP											ɪnʰ dʊ ˈkeɪᵐ tʃən
L12	ˈɪʰ dʊ keɪt	| – –					ɪ dʊ ke ˈtʃʌnˡ						
L13	ˈe dʊ keɪt	| – –		ˈeʰ dʊ ˈkeɪʰ tʃən									
L14	ˈɪʰ dʊ keɪt	| – –	ɪ dʊ ˈkeɪʰ tʃən										
L15	ˈe dʊ keɪt	| – –	e dʊ ˈkeɪʰ tʃən										

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

situation [ˌsɪ tʃu ˈeɪ ʃən] (- - | -) or (| - | -)

Patterns / participants	BW situate [ˈsɪ tʃu eɪt]		SW – – | –	| – | –	| – – –	– | – –	– – – |	| | – –	– – | |	– | – |	| – – |	| – | |	MP
H01	ˈsɪ tʊ eɪt	| – –										ˈsɪʰ tu ˈeɪʰ ˈtʃʌnᶠ	
H02	ˈsɪ tʊ eɪt	| – –							sɪ tu ˈeɪʳ ˈtʃʌnʰ				
H03	ˈsɪʰ tʊ ˈeɪtʲ	| – |										ˈsɪʰ tu ˈeɪᵐ ˈtʃʌnᶠ	
H04	ˈsɪsʰ tʊ eɪt	MP		ˈsɪ tu ˈeɪʰ tʃən									
H05	ˈsɪʰ tʊ ˈeɪtʲ	| – |		ˈsɪ tu ˈeɪʰ tʃən									
H06	ˈsɪʰ tʊ ˈeɪtʲ	| – |		ˈsɪ tu ˈeɪʰ tʃən									
H07	ˈsɪʰ tʊ eɪt	| – –	sɪ tu ˈeɪʰ tʃən										
H08	ˈsɪʰ tu ˈeɪtʲ	| – |										ˈsɪʰ tu ˈeɪᵐ ˈtʃʌnᶠ	
H09	ˈsɪ tʊ eɪt	| – –	sɪ tu ˈeɪʰ tʃən										
H10	ˈsɪ tʊ eɪt	| – –		ˈsɪtʲ tu ˈeɪʰ tʃən									
H11	ˈsɪʰ tʊ ˈeɪtʲ	| – |							sɪ tu ˈeɪᵐ ˈtʃʌnᶠ				
H12	ˈsɪ tʊ eɪt	| – –	sɪ tu ˈeɪ tʃən										
H13	ˈsɪ tʊ eɪt	| – –	sɪ tu ˈeɪʰ tʃən										
H14	ˈsɪʰ tʊ ˈeɪtʲ	| – |		ˈsɪʰ tu ˈeɪʰ tʃən									
H15	ˈsɪ tʊ eɪt	| – –		ˈsɪʰ tu ˈeɪʰ tʃən									

Patterns / participants	BW situate [ˈsɪ tʃu eɪt]		SW – – | –	| – | –	| – – –	– | – –	– – – |	| | – –	– – | |	– | – |	| – – |	| – | |	MP
L01	ˈsɪʰ tʊ ˈeɪtʲ	| – |									ˈsɪʰ tʊ ə ˈtʃʌnᶠ		
L02	ˈsɪsʰ tʊ ra tɪ	MP											sə ˈtaːᵐ ˈlɪᶠ
L03	ˈsaɪ tɪ	MP											ˈsaɪᵐ ta ˈtʃʌnᶠ
L04	sɪ tʊ ˈeɪt	– –|		ˈsɪʲ tʊ ˈaʰ tʃən									
L05	ˈsɪ tʊ eɪt	| – –	sɪ tʊ ˈeɪʰ tʃən										
L06	sɪʰ ˈtuaᵐ	MP					sɪ tʊ ə ˈtʃʌnᶠ						
L07	ˈɪnᵐ tʊ ˈeɪtʲ	MP											ˈsɪʰ ˈtuːᵐ ˈtʃʌnᶠ
L08	ˈsɪ tʊ eɪt	| – –		ˈsɪ tʊ ˈeɪʰ tʃən									
L09	ˈsɪʰ tʊ ˈeɪtʲ	| – |		ˈsɪʰ tʊ ˈeɪʰ tʃən									
L10	sɪ ˈtʃʊə redʒ	MP	sɪ tʊ ˈeɪʰ tʃən										
L11	ˈsɪsʰ əl	MP											ˈsaɪᵐ ˈtuːᵐ tʃən
L12	sɪ ˈtuʰ res	MP											ˈsɪʰ ˈtuːᵐ ˈtʃʌnᶠ
L13	ˈsɪʰ tʊ ˈeɪtʲ	| – |		ˈsɪʰ tʊ ˈeɪʰ tʃən									
L14	sɪ tʊ ˈeɪt	– –|	sɪ tʊ ˈeɪʰ tʃən										
L15	ˈsɪ tul	MP											sɪ ˈtuːʰ ɪ tʃən

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

instantaneous [ˌɪn stən ˈteɪ niəs] (- - | -) or (| - | -)

Patterns / participants	BW instant [ˈɪn stənt]		SW											MP
			– – | –	| – | –	| – – –	– | – –	– – – |	– | | –	– – | |	– | – |	| – – |	– | | |	| – | |	
H01	ɪn ˈstænʰ	– |								ɪn ˈstænᵐ ta ˈnɪəsʰ				
H02	ɪn ˈstænt	– |									ˈɪn stæn tə ˈnɪəs			
H03	ˈɪnᵐ ˈstænʰ	| |				ɪn ˈstænʰ tə nɪəs								
H04	ˈɪnᵐ ˈstæntʰ	| |								ɪn ˈstænʰ tə ˈnɪəsᶠ				
H05	ˈɪn stænt	| –		ˈɪn stæn ˈta nɪəs										
H06	ˈɪn stænt	| –				ɪn ˈstænʰ tə nɪəs								
H07	ɪn ˈstæn	– |					ɪn stæn tə ˈnɪəs							
H08	ˈɪnᵐ ˈstanʰ	| |								ɪn ˈstænʰ tə ˈnɪəsʰ				
H09	ˈɪn stænt	| –												ɪn ˈstænʰ ˈnɪəsᶠ
H10	ɪn ˈstæntʰ	– |												ɪn ˈstænʰ nɪəs
H11	ɪn ˈstæntʰ	– |								ɪn ˈstænʰ tə ˈnɪəsᶠ				
H12	ˈɪn stænt	| –		ˈɪn stæn ˈteɪ nɪəs										
H13	ɪn ˈstænt	– |				ɪn ˈstænʰ tə nɪəs								
H14	ɪn ˈstæntʰ	– |												ɪn ˈstæn ta ə ˈrʌs
H15	ɪn ˈstænt	– |						ɪn ˈstæn ˈteɪ nɪəs						

Patterns / participants	BW instant [ˈɪn stənt]			SW										MP
			– – | –	| – | –	| – – –	– | – –	– – – |	– | | –	– – | |	– | – |	| – – |	– | | |	| – | |	
L01	ɪn ˈstænʰ	– |								ɪn ˈstænʰ te ˈnɪəsʰ				
L02	ɪn ˈsteɪtʲ	MP												ɪn ˈsteɪs rə
L03	ɪn ˈstenʰ	MP												ɪn ˈtensʰ ˈnuəᵐ
L04	ˈɪnᵐ ˈstænʰ	| |										ɪn ˈstænʰ taʰ ˈnɪəsᶠ		
L05	ɪn ˈstæn	– |												ɪn ˈstæn nɪəs
L06	ˈɪnᵐ ˈstænʰ	MP												ɪn ˈstænʰ te ˈnuəᶠ
L07	ˈɪnᵐ ˈtat	MP												ɪn ˈtakʰ ʃɪ ˈʌsʰ
L08	ˈɪnᵐ ˈstæntʰ	| |												ɪn ˈstænʰ ˈteɪnᵐ ˈʌsᶠ
L09	ˈɪnᵐ ˈstænʰ	| |												ɪn ˈstænʰ ʃɪəl
L10	ˈɪnᵐ ˈstænʰ	| |		ˈɪnᵐ stæ ˈteɪᶠ nəs										
L11	ˈɪnᵐ ˈstænʰ	| |												ɪn ˈstænʰ nəʃ
L12	ˈɪnᵐ ˈsteɪtʰ	MP												ɪn ˈstænᵐ tænᵐ ˈʌsʰ
L13	ˈɪnᵐ ˈstænʰ	| |												ɪn ˈstænᵐ tə ˈʃɪənᶠ
L14	ɪn ˈstæn	– |						ɪn ˈstæn teɪ nɪəs						
L15	ɪn ˈtrænt	MP												ɪn træn ˈtɪəs

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

intellectual [ˌɪn tə ˈlek tʃuəl] (- - | -) or (| - | -)

Patterns / participants	BW		SW											MP
	intellect [ˈɪn tə lekt]		– – | –	| – | –	| – – –	– | – –	– – – |	– | | –	– – | |	– | – |	| – – |	– | | |	| – | |	
H01	ˈɪnᵐ tel ˈlekˡ	| – |								ɪn ˈtelᵐ lek ˈʃʊəlᶠ				
H02	ˈɪn təl lek	| – –				ɪn ˈtel lek ʃʊəl								
H03	ˈɪnᵐ tel ˈlekʰ	| – |							ɪn tə ˈlekʰ ˈʃʊəlᶠ					
H04	ˈɪn təl ˈlek	| – |	ɪn tə ˈlek ʃʊəl											
H05	ˈɪn təl lek	| – –			ˈɪn tə lek ʃʊəl									
H06	ˈɪn tel ˈlæk	MP	ɪn tə ˈlek ʃʊəl											
H07	ˈɪnᵐ tel ˈrekʰ	MP												ɪn tə ˈlek ʃər
H08	ˈɪnᵐ təl ˈlekʰ	| – |												ɪn tə ˈlekʰ ˈʃʊənᶠ
H09	ˈɪn təl lek	| – –	ɪn tə ˈlek ʃʊəl											
H10	ˈɪn təl ˈlekt	| – |	ɪn tə ˈlek ʃʊəl											
H11	ˈɪnᵐ tel ˈlekʰ	| – |							ɪn tə ˈlekʰ ˈʃʊəlᶠ					
H12	ˈɪn təl lekt	| – –		ˈɪn tə ˈlek ʃʊəl										
H13	ɪn ˈtel lek	– | –	ɪn tə ˈlek ʃʊəl											
H14	ˈɪn təl ˈlekt	| – |												ˈɪn tə ˈlek ʃə rəl
H15	ɪn ˈtel lekt	– | –				ɪn ˈtel lek ʃʊəl								

Patterns / participants	BW		SW											MP
	intellect [ˈɪn tə lekt]		– – | –	| – | –	| – – –	– | – –	– – – |	– | | –	– – | |	– | – |	| – – |	– | | |	| – | |	
L01	ˈɪnᵐ təl ˈlekʰ	| – |								ɪn tə ˈlekʰ ˈʃʊəlᵐ				
L02	ˈɪnᵐ ˈtelˡ ˈlasʰ	MP												ɪn tə ˈtɛɪtˡ ˈkɔmᵐ ˈʌnᵐ
L03	ˈɪnᵐ ˈtelᵐ ˈsɪsʰ	MP												ɪn ˈtelᵐ ˈsɪsʰ ˈtɔlᶠ
L04	ɪn ˈtel lek	– | –				ɪn ˈtel lek ʃʊəl								
L05	ɪn ˈtel lek	– | –				ɪn ˈtel lek ʃʊəl								
L06	ˈɪnᵐ ˈtelᵐ ˈlekˡ	| | |				ɪn ˈtel lek ʃʊəl								
L07	ˈɪnᵐ ˈtelᵐ lek	MP												ɪn tə ˈlɛɪtˡ ˈdʒɜˢ
L08	ˈɪnᵐ ˈtelᵐ lek	MP												ˈɪnʰ tel ˈekʰ ʃə
L09	ˈɪn təl ˈleks	MP	ɪn tə ˈlek ʃʊəl											
L10	ɪn təl ˈlekʰ	– – |	ɪn tə ˈlek ʃʊəl											
L11	ɪn ˈtel leks	MP				ɪn ˈtel lek ʃʊəl								
L12	ˈɪnᵐ təl ˈlekʰ	| – |	ɪn tel ˈlek ʃʊəl											
L13	ˈɪn təl ˈlek	| – |	ɪn tə ˈlek ʃʊəl											
L14	ˈɪn təl lek	| – –	ɪn tə ˈlek ʃʊəl											
L15	ˈɪn təl ˈlek	| – |												ˈɪn tə lek təl

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

population [ˌpɒp jə ˈleɪ ʃən] (- - | -) or (| - | -)

Patterns / participants	BW populate [ˈpɒp jə leɪt]		SW – – | –	| – | –	| – – –	– | – –	– – – |	– | | –	– – | |	– | – |	| – – |	– | | |	| – | |	MP
H01	ˈpɒpʰ ə ˈleɪtˡ	| – |									ˈpɔʰ pə leɪ ˈʃʌnᶠ			
H02	ˈpɒp jə leɪt	| – –	pɒp jə ˈleɪ ʃən											
H03	ˈpɒpʰ ə ˈleɪtˡ	| – |									ˈpɔʰ pə le ˈʃʌnᶠ			
H04	ˈpɒp jə leɪt	| – –	pɒp jə ˈleɪ ʃən											
H05	ˈpɒp jə leɪt	| – –		ˈpɒp jə ˈleɪ ʃən										
H06	ˈpɒpʰ ə ˈleɪtˡ	| – |	pɒp jə ˈleɪ ʃən											
H07	ˈpɒp jə leɪt	| – –	pɒp jə ˈleɪ ʃən											
H08	ˈpɒpʰ ə ˈleɪtˡ	| – |							pɒp jə ˈleɪʰ ˈʃʌnᶠ					
H09	ˈpɒp ˈju leɪt	– | –	pɒp jə ˈleɪ ʃən											
H10	ˈpɒp jə leɪt	| – –	pɒp jə ˈleɪ ʃən											
H11	ˈpɒp jə leɪt	| – –							ˈpɔʰ pə leɪ ˈʃʌnʰ					
H12	ˈprɒp jə leɪt	| – –	pɒp jə ˈleɪ ʃən											
H13	ˈpɒp jə leɪt	| – –	pɒp jə ˈleɪ ʃən											
H14	ˈpɒp jə leɪt	| – –		ˈpɒp jə ˈleɪ ʃən										
H15	ˈpɒp jə leɪt	| – –	pɒp jə ˈleɪ ʃən											

Patterns / participants	BW populate [ˈpɒp jə leɪt]		SW – – | –	| – | –	| – – –	– | – –	– – – |	– | | –	– – | |	– | – |	| – – |	– | | |	| – | |	MP
L01	ˈpɒp jə leɪt	| – –		ˈpɒp jə ˈleɪ ʃən										
L02	ˈpɔʰ pə ˈlɜᶠ	MP												ˈpɒp jə ˈlɜ ʃə
L03	ˈpoᵐ pʊ ˈlesʰ	MP									ˈpɔᵐ pə le ˈʃʌnᶠ			
L04	ˈpɒpʰ ə ˈleɪtˡ	| – |		ˈpɒp jə ˈleɪ ʃən										
L05	ˈpɒp jə leɪt	| – –		ˈpɒp jə ˈleɪ ʃən										
L06	ˈpɒp jə leɪt	| – –		ˈpɒp jə ˈleɪ ʃən										
L07	ˈpɒpʰ ə ˈleɪtˡ	| – |											ˈpɔʰ pə ˈleɪᵐ ˈʃʌnᶠ	
L08	ˈpɒp jə leɪt	| – –		ˈpɒpʰ jə ˈleɪʰ ʃən										
L09	ˈpɒpʰ ə ˈleɪtˡ	| – |	pəp jə ˈleɪ ʃən											
L10	ˈpɒp jə leɪt	| – –	pɒp jə ˈleɪ ʃən											
L11	ˈpɒp jə leɪs	MP												pə pə tə ˈleɪ ʃən
L12	ˈpɒpʰ ə ˈleɪtˡ	| – |											ˈpɔʰ pə ˈleɪᵐ ˈʃʌnᶠ	
L13	ˈpɒp jə leɪt	| – –		ˈpɒp jə ˈleɪ ʃən										
L14	ˈpɒp jə leɪt	| – –	pəp jə ˈleɪ ʃən											
L15	ˈpɒp jə leɪt	| – –		ˈpɒp jə ˈleɪ ʃən										

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

agricultural [ˌæ grɪ ˈkʌl tʃə rəl] (- - | - -) or (| - | - -)

Patterns / participants	BW		SW										MP
	agriculture [ˈæ grɪ kʌl tʃər]		– – | – –	| – | – –	| – – – –	– | – – –	– – – – |	| – – | –	– – | – |	– | | – –	| – | – |	– | | – |	
H01	ˈæʰ grɪ kʌl ˈdʒɜᶠ	| – – |							a grɪ ˈkʌlᵐ tʃə ˈɔlʳ				
H02	æ grɪ ˈkʌlʰ dʒə	– – | –							a grɪ ˈkʌlᵐ tʃə ˈɔlʰ				
H03	æ grɪ ˈkʌlʰ dʒɜᶠ	– – | –										a ˈgrɪᵐ ˈkʌlʰ tʃə ˈɔlʳ	
H04	a ˈgriʰ kʌl dʒə	– | – –								a ˈgrɪᵐ ˈkʌlʰ tʃə rəl			
H05	a ˈgri kʌl dʒə	– | – –	a grɪ ˈkʌl tʃə rəl										
H06	ˈæʰ grɪ ˈkʌlʰ dgə	| – | –		ˈeᵐ grɪ ˈkʌlʰ tʃə rɔl									
H07	æ grɪ ˈkʌlʰ dgə	– – | –	a grɪ ˈkʌlʰ tʃə rəl										
H08	æ grɪ kʌl ˈdʒɜᶠ	– – – |									ˈaᵐ tɪ ˈkʌlᵐ tʃə ˈɔlʳ		
H09	æ grɪ ˈkʌlʰ tɪ	MP											ˈaᵐ gɪ ˈkʌnʰ tə ˈɔlʳ
H10	ˈaᵐ grɪ ˈkʌlʰ tʃə	| – | –	a grɪ ˈkʌlʰ tʃə rəl										
H11	æ grɪ kʌl ˈdʒʰ	– – – |					a grɪ kʌl tʃə ˈɔlʰ						
H12	ˈæ dʒɪ kʌl tʃə	MP		ˈæʰ dʒɪ ˈkʌlᵐ tʃə rəl									
H13	æ grɪ ˈkʌlʰ dgə	– – | –	a grɪ ˈkʌlʰ tʃə rəl										
H14	ˈa grɪ kʌl tʃə	| – – –		ˈa grɪ ˈkʌlʰ tʃə rəl									
H15	ˈæ grɪ ˈkʌl dgə	| – | –	a grɪ ˈkʌlʰ tə rəl										

Patterns / participants	BW		SW										MP
	agriculture [ˈæ grɪ kʌl tʃər]		– – | – –	| – | – –	| – – – –	– | – – –	– – – – |	| – – | –	– – | – |	– | | – –	| – | – |	– | | – |	
L01	a ˈgriᵐ kʌn ˈtuᵐ	MP											a ˈgiːᵐ ˈkʌnᵐ tʊ ˈɔlʳ
L02	a ˈgratʰ tʃolʳ	MP											a ˈgʌtʰ tʃə ˈlɪʳ
L03	a ˈgætʰ ˈtulᵐ	MP											a ˈkætʰ tə ˈɔlʳ
L04	a rɪ ˈkʌlh dʒə	MP											ˈaᵐ rɪ ˈkʌlʰ tʊ ˈɔlʳ
L05	ˈægʰ lɪ ˈkɪw tʃə	MP						ˈæᵐ grɪ kəl ˈtʃʊᵐ rəl					
L06	a dʒɪ ˈkulᵐ tʃɜᶠ	MP											a dʒɪ ˈkulᵐ tʊ ˈɔlʳ
L07	a ˈgriᵐ kʌn ˈtʃɜᶠ	MP											a ˈgiːⁿ kʌn ˈtuːᵐ ˈlaːˡ
L08	a grɪ ˈkɪlʰ tʃə	MP											a ˈgiːlᵐ ˈkʌlʰ tʃʊ rəl
L09	a grɪ ˈkʌlʰ tʃə	– – | –								a ˈgriːⁿ ˈkʌlʰ tʃʊ rəl			
L10	a grɪ ˈkʌlʰ tʃə	– – | –											a ˈgɜːⁿ kʊl tʃʊ ˈɔlʳ
L11	a ˈgenʰ ˈkʌl tu	MP											a ˈgenᵐ ˈkʌlʰ tʊ rəl
L12	a ˈdʒenʰ lɪk ˈtɔlʳ	MP											a ˈgenʰ lɪ ˈkuːⁿ tu ˈɔlʳ
L13	ˈe dʒet ˈkʌlʰ dʒə	MP											ˈerᵐ gɪən ˈkʌlʰ tu ˈɔlʳ
L14	a ˈgriʰ kəl tʃə	– | – –				a ˈgriʰ kʌl tʃə rəl							
L15	e dʒʊ ˈklu tʃən	MP											a dʒɪ ˈkulʰ tʃə rəl

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

differentiate [ˌdɪ fə ˈren ʃi eɪt] (- - | - -) or (| - | - -)

Patterns / participants	BW different [ˈdɪ fə rənt]		SW – – | – –	| – | – –	| – – – –	– | – – –	– – – – |	| – – | –	– – | – |	– | – –	| – | – |	– | | – |	MP
H01	ˈdɪfʰ fə ˈrenʰ	| – |		ˈdɪfʰ fə ˈrenʰ tɪ eɪt									
H02	ˈdɪf fə rənt	| – –											ˈdɪfʰ fə ren ˈtɪəsʰ
H03	ˈdɪfʰ fə ˈrenʰ	MP		ˈdɪfʰ fə ˈrenʰ tʃɪ eɪt									
H04	ˈdɪf fə rent	| – –		ˈdɪfʰ fə ˈrenʰ tɪ et									
H05	ˈdɪf fə rent	| – –		ˈdɪf fə ˈrenʰ tɪ et									
H06	ˈdɪfʰ fə ˈrentʰ	| – |		ˈdɪfʰ fə ˈrenᵐ tʃɪ eɪt									
H07	ˈdɪf fə rənt	| – –		ˈdɪfʲ fə ren tʃɪ eɪt									
H08	ˈdɪfʰ fə ˈrenʰ	MP									ˈdɪfʰ fə ˈrenʰ tɪ ˈeɪtˡ		
H09	ˈdɪf fə rənt	| – –											ˈdɪf fə ren teɪt
H10	ˈdɪf fə rent	| – –	dɪf fə ˈrenʰ tɪ et										
H11	dɪf fə ˈrentʰ	– – |	dɪf fə ˈren tɪ eɪt										
H12	ˈdɪf fə rənt	| – –			ˈdɪf fə ren tʃɪ eɪt								
H13	ˈdɪf fə rent	| – –		ˈdɪfʰ fə ˈrenʰ tɪ eɪt									
H14	ˈdɪf fə rent	| – –									ˈdɪfʰ fə ˈrenᵐ tɪ ˈeɪtˡ		
H15	ˈdɪf fə rənt	| – –	dɪf fə ˈrenʰ tɪ et										

Patterns / participants	BW different [ˈdɪ fə rənt]		SW – – | – –	| – | – –	| – – – –	– | – – –	– – – – |	| – – | –	– – | – |	– | | – –	| – | – |	– | | – |	MP
L01	ˈdɪfʰ fə ˈrenʰ	| – |											ˈdɪfʰ fə ˈrenʰ ˈtɪə̃ˡ
L02	dɪ ˈfjuʰ lɪ	MP											dɪf ˈfɔᵐ ra ˈtaːtʰ
L03	ˈrɪʰ fɔ ˈren	MP											dɪf fo ˈrenʰ ˈtɔlˡ
L04	ˈdɪfʰ fə ˈrenʰ	| – |		ˈdɪfʰ fə ˈrenʰ tɪ ət									
L05	ˈdɪf fə rənt	| – –						ˈdɪfʰ fə ren ˈtɪ ət					
L06	ˈdɪfʰ fə ˈrenʰ	| – |											ˈdɪfʰ fə ren ˈteɪtˡ
L07	ˈdɪfʰ fɪ ˈrenʰ	MP									ˈdɪfʰ fɪ ˈrenʰ tɪ ˈeɪt̃ˡ		
L08	ˈdɪfʰ fə ˈrenʰ	| – |		ˈdɪfʰ fə ˈrenʰ tɪ et									
L09	ˈdɪfʰ fə ˈrenʰ	| – |							dɪf fə ˈrenʰ tɪ ˈeɪt̃ˡ				
L10	ˈdɪfʰ fɪ ˈrenʰ	MP											ˈdɪfʰ fə ren ˈtɔˡ teɪt
L11	ˈdɪfʰ fə ˈrenʰ	| – |											ˈdɪfʰ fə ˈrenʰ teɪt
L12	ˈdɪfʰ fə ˈrenʰ	| – |											dɪf fə ˈrenʰ tet
L13	ˈdɪfʰ fə ˈrenʰ	| – |											ˈdɪfʰ fə ˈrenʰ tet
L14	ˈdɪf fə rənt	| – –		ˈdɪfʰ fə ˈrenʰ tɪ et									
L15	ˈdɪf fə rənt	| – –											ˈdɪfʰ fə ˈrenʰ tet

"H" = "High proficiency group"; H01 means participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means participants 1 in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

particularly [pə ˈtɪ kjə lə li] (- | - - -)

Patterns / participants	BW particular [pə ˈtɪ kjə lər]		SW – | – – –	| – – – –	– – | – –	– – – | –	– | – | –	– | – – |	| – | – –	| – – | |	| | – – |	MP
H01	ˈpa^{m} ˈtɪ^{h} kʊ ˈla^{f}	| | – |					pa ˈtɪ^{h} kə ˈla^{h} li					
H02	pə ˈtɪ kə la	– | – –				pə tɪ kjə ˈla^{h} li						
H03	ˈpa^{m} ˈtɪ^{h} ˈku^{m} ˈla^{f}	| | | |						pa ˈtɪ^{h} kə la ˈli				
H04	ˈpa^{h} tɪ kʊ la	| – – –		ˈpa^{h} tɪ kə la li								
H05	pə ˈtɪ kə la	– | – –				pa tɪ ku ˈla li						
H06	ˈpar tɪ kʊ la	| – – –					pa ˈtɪ ku ˈla li					
H07	pə tɪ ˈku^{h} la	– – | –				pa tɪ kjə ˈlah li						
H08	pa tɪ ku ˈla^{f}	– – – |								ˈpa^{m} tɪ kə ˈla^{m} ˈli^{f}		
H09	ˈpa tɪ ˈkju la	| – | –			pa tɪ ˈkju^{h} lə li							
H10	pa ˈtɪ ku ˈla	– | – |				pa tɪ ku ˈla li						
H11	pa ˈtɪ ku ˈla^{f}	– | – |				pə tɪ kə ˈla li						
H12	pə ˈtɪ kə la	– | – –	pa ˈtɪ^{h} kjə la li									
H13	pə ˈtɪ kə la	– | – –	pa ˈtɪ^{h} kjə la li									
H14	pə ˈtɪ kjə la	– | – –					pa ˈtɪ^{h} ku ˈla^{f} li					
H15	pə tɪ ˈku^{h} la	– – | –				pa tɪ kə ˈla^{h} li						

Patterns / participants	BW particular [pə ˈtɪ kjə lər]		SW – | – – –	| – – – –	– – | – –	– – – | –	– | – | –	– | – – |	| – | – –	| – – | |	| | – – |	MP
L01	ˈpa^{m} tɪ kʊ ˈla^{f}	| – – |									ˈpa^{m} ˈtɪ^{h} ku la ˈli^{f}	
L02	ˈpat^{h} tə la^{f}	MP										pa ˈtɜ^{m} la ˈli^{f}
L03	pə ˈni^{h} ˈkʊə^{m}	MP										ˈpɜ^{m} ˈtɪ^{h} kə la ˈli^{f}
L04	ˈpa^{m} tɪ ˈku^{h} la	| – | –							ˈpa^{m} tɪ ˈku^{h} la li			
L05	pa tɪ ˈku^{h} la	– – | –							ˈpa^{m} tɪ ˈku^{h} la li			
L06	pa ˈtɪ^{h} kʊ ˈla^{f}	– | – |					pə ˈtɪ^{h} kʊ ˈla li					
L07	ˈpa^{m} ˈtɪ^{h} kʊ ˈla^{f}	| | – |										ˈpɜ^{m} tɪ kʊ ˈla^{f} ˈli^{f}
L08	ˈpa^{m} ˈtɪ^{h} sʊ la	MP										pa ˈtɪ^{h} ˈsu^{m} la li
L09	pa ˈtɪ kə la	– | – –					pə ˈtɪ^{h} kʊ ˈla^{m} li					
L10	ˈpa tɪ ˈku la	| – | –										ˈpɜ^{m} tɪ kʊ ˈla^{f} li
L11	pə ˈtɪ kə ˈla	– | – |										pə tɪ kʊ ˈla rɪ ti
L12	ˈpɜ^{m} ˈtɪ^{h} ku la	MP										ˈpɜ^{m} ˈtɪ^{h} ˈku^{m} ˈla^{h} li
L13	ˈpa^{h} tɪ ku la	| – – –				pə tɪ kʊ ˈla li						
L14	pə ˈtɪ kə la	– | – –				pə tɪ kʊ ˈla li						
L15	ˈpar^{h} tɪ ˈkɔl^{l}	MP										ˈpæ tɪ ˈkɔl li

“H” = “High proficiency group”; H01 means participant number 1 in the high proficiency group. “L” = “Low proficiency group”; L01 means participants 1 in the low proficiency group.

“BW” = “Base words”; “SW” = “Suffixed words”; “MP” = “Mispronunciation”

The column(s) with grey shading = the expected pattern(s) or pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

responsibility [rɪs ˌpɒn sɪ ˈbɪ lə ti] (- - - | - -) or (- | - | - -)

Patterns / participants	BW responsible [rɪs ˈpɒn sə bəl]		SW – – – | – –	– | – | – –	– | – – – |	| – – – – |	| | – – – –	| | – – – |	| | – | – –	MP
H01	'res^{h} pɒn sɪ 'bəl^{f}	| – – |								'res^{h} 'pɒn^{m} sɪ bɔ lɪ 'ti^{f}
H02	'res^{h} pɒn sɪ 'bəl^{h}	| – – |				'res^{h} pɒn sɪ bɪ lɪ 'ti^{h}				
H03	'res^{h} pɒn sɪ 'bəl^{f}	| – – |						'res^{h} 'pɒn^{m} sɪ bɪ lɪ 'ti^{f}		
H04	res 'pɒn sɪ bəl	– | – –		res 'pɒn^{h} sɪ 'bɪ lɪ ti						
H05	'res^{h} 'pɒn^{h} sɪ bəl	| | – –					'res^{h} 'pɒn^{m} sɪ bɪ lɪ ti			
H06	'res^{h} 'pɒn^{h} sɪ bəl	| | – –					'res^{h} 'pɒn^{h} sɪ bɪ lɪ tɪ			
H07	'res^{h} 'pɒn^{h} sɪ 'bəlf	| | – |						'res^{h} 'pɒn^{h} sɪ bə lɪ 'ti^{f}		
H08	'res^{h} pɒn sɪ 'bəl^{f}	| – – |						'res^{h} 'pɒn^{m} sɪ bɪ lɪ 'ti^{f}		
H09	'res^{h} pɒn sɪ 'bəl^{f}	| – – |						'res^{h} 'pɒn^{m} sɪ bɪ lɪ 'ti^{f}		
H10	'res^{h} 'pɒn^{h} sɪ bəl	| | – –		res 'pɒn^{h} sɪ 'bɪ lɪ ti						
H11	'res^{h} pɒn sɪ 'bəl^{f}	| – – |			res 'pɒn^{m} sɪ bɪ lɪ 'ti^{f}					
H12	'res^{h} 'pən sɪ bəl	| | – –	rɪs pən sɪ 'bɪ lɪ tɪ							
H13	res 'pɒn sɪ bəl	– | – –							'res^{h} 'pɒn^{m} sɪ 'bɪl^{h} ə tɪ	
H14	'ris^{m} 'pɒn^{h} sɪ 'bəl^{f}	MP						'ri^{m} 'spɒn^{h} sɪ bɪ lɪ tɪ		
H15	'res^{h} 'pən sɪ bəl	| | – –							'res^{h} 'pɒn^{h} sɪ 'bɪ^{h} lɪ tɪ	

Patterns / participants	BW responsible [rɪs ˈpɒn sə bəl]		SW – – – | – –	– | – | – –	– | – – – |	| – – – – |	| | – – – –	| | – – – |	| | – | – –	MP
L01	'res^{h} pɒn sɪ 'bəl^{f}	| – – |								'res^{h} 'pɒn^{m} sɪ lɪ bɪ 'ti:^{f}
L02	'ri^{h} 'po^{m} ret	MP								'lɪ^{h} 'po:^{m} 'wi^{h} lɪʃ
L03	re 'po^{h} tʃən 'bəl^{f}	MP								'reɪt͡^{h} 'pɔs^{h} bɪ lɪ 'ti^{f}
L04	res 'pɒn sɪ bəl	– | – –								'ret͡^{h} 'pos^{h} sɪ bɪ lɪ 'ti:^{f}
L05	'res^{h} 'pən sɪ bəl	| | – –						'res^{h} 'pɒn^{h} sɪ bɪ lɪ 'ti:^{f}		
L06	'res^{h} pɒn sɪ 'bəl^{f}	| – – |						'res^{h} 'pɒn^{m} sɪ bɪ lɪ 'ti:^{f}		
L07	'ris^{m} pɒn sɪ 'bəl^{f}	| – – |								'ri^{m} 'spɒn^{h} sɪ 'bi^{m} lɪ la 'ti^{f}
L08	res 'pɒn^{h} sɪ bəl	– | – –								res 'pɒn^{h} sɪ 'bɔ^{m} lɪ tɪ
L09	re 'pɒn^{h} sɪ bəl	MP								rɪ 'pɒn^{h} sɪ bə 'lɪ tɪ
L10	res 'pɒn^{h} sɪ 'bəl^{f}	– | – |		res 'pɒn^{m} sɪ 'bi lɪ tɪ						
L11	rɪ 'po^{h} saɪ 'bəl^{f}	MP								lɪ po 'saɪ^{m} lɪ bɪ 'ti^{f}
L12	re^{h} 'po^{m} sɪ 'bəl^{f}	MP								res^{h} po sɪ 'bɪ^{h} lə tɪ
L13	'res^{h} pɒn sɪ 'bəl^{f}	| – – |				res^{h} pɒn sɪ bɪ lɪ 'ti^{f}				
L14	'res' 'pɒn^{h} sɪ bəl	| | – –		res 'pɒn^{m} sɪ 'bɪ^{h} lɪ tɪ						
L15	re 'pɒn sɪ bəl	MP								'res^{h} 'pɒn^{m} sɪ lɪ bɪ 'ti:^{f}

"H" = "High proficiency group"; H01 means the participant number 1 in the high proficiency group. "L" = "Low proficiency group"; L01 means the participants in the low proficiency group.

"BW" = "Base words"; "SW" = "Suffixed words"; "MP" = "Mispronunciation"

The column(s) with the grey shading = the expected pattern(s) or the pattern(s) expected to be in accordance with the English accentual system affected by suffixes.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

VITA

NAME	Chedtinee Piyapattaranop
DATE OF BIRTH	13 November 1992
PLACE OF BIRTH	Bangkok, Thailand
INSTITUTIONS ATTENDED	English as an International Language Program, Graduate School, Chulalongkorn University
HOME ADDRESS	155/8 Moo 6 Petchkasem Road, Klongmai Sub-district, Sampran District, Nakornpathom Province 73110

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY