2023

From potential words to actual words: Supporting adult ESL learners to develop productive oral vocabulary

Bianca Mister

Follow this and additional works at: https://ro.uow.edu.au/theses1

Copyright Warning
University of Wollongong
Copyright Warning

You may print or download ONE copy of this document for the purpose of your own research or study. The University does not authorise you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site.

You are reminded of the following: This work is copyright. Apart from any use permitted under the Copyright Act 1968, no part of this work may be reproduced by any process, nor may any other exclusive right be exercised, without the permission of the author. Copyright owners are entitled to take legal action against persons who infringe their copyright. A reproduction of material that is protected by copyright may be a copyright infringement. A court may impose penalties and award damages in relation to offences and infringements relating to copyright material. Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

Unless otherwise indicated, the views expressed in this thesis are those of the author and do not necessarily represent the views of the University of Wollongong.

Research Online is the open access institutional repository for the University of Wollongong. For further information contact the UOW Library: research-pubs@uow.edu.au
From potential words to actual words: Supporting adult ESL learners to develop productive oral vocabulary

Bianca Mister

Supervisors
Associate Professor Amanda Baker
Professor Honglin Chen

University of Wollongong
Faculty of The Arts, Social Sciences, and Humanities
School of Education

This thesis is presented as part of the requirement for the conferral of the degree:

Doctor of Philosophy (Integrated)
Certification

I, Bianca Mister, declare this thesis, submitted in fulfilment of the requirements for the conferral of the Doctor of Philosophy (Integrated) from the University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualifications at any other academic institution.
Abstract

A limited productive oral vocabulary can cause a significant level of frustration for learners of English. Words carry the foundational information required to communicate thoughts and participate in meaningful conversations and, without sufficient word knowledge, communication is limited. Moreover, participating in conversation requires an ability to understand words that are heard, but also the ability to use words appropriately in speech. Yet, it is generally accepted that learners’ receptive vocabulary (i.e., words understood in reading and listening) is significantly larger than their productive vocabulary (i.e., words used in writing and speaking) (Laufer, 1998; Waring, 1997; Webb, 2008b). Further problematic is that the transformation of adult learners’ vocabulary from receptive to productive can be a challenging task and more research into the types of activities that second language (L2) teachers can use to support such a transformation is needed. To date, only one study has examined the development of productive vocabulary (Teng & Xu, 2022); however, their study focused on written modes and no studies to date have investigated productive oral vocabulary development.

This thesis addresses this research gap and provides insights into the types of classroom activities that can be used to develop adult learners’ productive oral vocabulary knowledge. The present study offers a new and innovative pronunciation-integrated teaching model to facilitate productive oral vocabulary development. In teaching English as a Second Language, vocabulary teaching and pronunciation training are frequently viewed as discrete areas of teaching and the value of metalinguistic awareness, which is the ability to consciously reflect on and manipulate language (Tunmer, Herriman, & Nesdale, 1988), of target words is rarely acknowledged. This thesis proposes that, in the context of developing learners’ productive oral vocabulary, vocabulary teaching, pronunciation training and metalinguistic awareness of target words are highly complementary.

To demonstrate the benefits of embedding pronunciation training into vocabulary-focused lessons, the present study used a Design-based Research (DBR) methodology to examine the effectiveness of a pronunciation-integrated model for teaching oral vocabulary knowledge. To do this the researcher first consulted existing literature, undertook a pilot study with students and
interviewed ESL teachers at the research site, which provides educational services to international students in an ESL context, in Sydney, Australia. Based on the findings of this preliminary investigation, the researcher drafted a set of Draft Design Principles and designed a four-stage teaching model. The teaching model targeted adult learners at intermediate level (i.e., B1 level of the Common European Framework of Reference for Languages). The final model included a critical bridge that activates receptive vocabulary knowledge to become productive. The teaching model was then implemented into a real-world ESL classroom at the research site and tested in two iterative rounds. The objective of each iteration was to determine its effectiveness as a solution to the identified problem, namely the effectiveness of classroom teaching techniques in promoting productive oral vocabulary development, in a real-world context. Refinements to the teaching model were made after each round of iterative testing. Four data sources were used for each iterative round of testing including: teacher focus groups, student focus groups, classroom observations, and student learning data. The data was then analysed to identify findings and draw conclusions that informed the formation of final design principles.

Overall, the findings demonstrated that several factors contributed to the development of metalinguistic awareness and that this awareness enhanced learners’ productive oral vocabulary knowledge. Findings resulted in the creation of five principles that can be used as a guide by teachers designing learning environments targeting the development of productive oral vocabulary. The principles, which are founded in literature and informed by the results of this study are:

1. Anchor and index vocabulary knowledge with images related to a meaningful narrative
2. Develop semantic and grammatical word knowledge through exposure to various encounters with words in rich and meaningful contexts
3. Incorporate haptic procedures and exposure to rich and meaningful input into pronunciation training
4. Encourage learners to experiment with and discuss target word use in communicative tasks
5. Provide learners with opportunities to use words in increasingly freer outputs and encourage learners to use target in ways that elaborate core lexical meaning.

The innovativeness of the teaching model presented in this thesis is the integration of pronunciation training into vocabulary-focused lessons. Ultimately, the contribution is the
development of a practical guide for teachers to use in the creation of activities to be used for classroom teaching of productive oral vocabulary.

Acknowledgements

I would like to begin by acknowledging the Gubbi Gubbi people, who are the Traditional Custodians of the lands located on the Sunshine Coast in Queensland, Australia. Lands from which I work, rest, and learn and I would like to extend that respect to the Traditional Custodians of the lands on which this research was conducted. For Aboriginal peoples, Country is a set of ancient interconnected and sophisticated relationships. Country is all lands, waters, sky, trees, plants, animals, birds, fish, rocks, mountains, and all peoples. I pay my respects to Aboriginal Elders past, present, and emerging as the knowledge holders and teachers.

I find great joy in communicating with people from around the world and connecting with foreign cultures. Travelling around the world and keeping close circles of friends from non-English speaking backgrounds profoundly and positively affected this thesis and who I am. At various times, during the creation of this thesis, I have spent periods of time working abroad and rejuvenated by the rich cultures of the places I visited. While connecting with my foreign friends, family and various people in the streets of foreign lands, I have enriched my understanding about my research, and insights have arisen about my topic. I am grateful for these experiences and how time spent with people of different cultures enriches my soul and broadens my view of the world in which we all live.

There are a range of people who have supported me throughout my research journey. First of all, I would like to extend my sincerest gratitude to my supervisors, Amanda Baker and Honglin Chen, thank you for your resolute belief in me as a researcher! It has been an empowering and thoroughly enjoyable experience to work alongside both of you. I will be forever grateful for accepting me as a candidate, for offering bottomless reserves of encouragement and for what you have both done for me and with me. To the participants in my research, thank you for taking the time to share your experiences and perspectives with me. Thank you to those who gave valuable feedback and recommendations on my publications and presentations, I am particularly grateful

Over the past seven and a half years, it has been my pleasure to meet and connect with some truly wonderful researchers and share my research with friends who would listen. Thank you to Birgit and Anne Sofie for taking me under your wings at Vocab@Tokyo and inspiring me to embark on my PhD journey. Thank you to Solene, Ines and Viviane for the time we spent together at PSLLT in Arizona – our friendships have been uplifting and delightful, and I look forward to our ongoing conversations! Thank you to all my friends and family who have always provided endless support and encouragement in all facets of my life. I especially appreciate the encouragement I received from my dear friends Suze and Mel, the EXIT crew, I thank you for always being excited to hear about my work and for amplifying my accomplishments.

Finally, to Jose Alejandro: My biggest fan. You are patient and soothing, yet firm when I need it. Thank you for pushing me to keep going when all I wanted to do was quit, and for convincing me that it’s all going to be okay; to just sit with it and let it all happen.
Statement of Thesis by Compilation

The manner in which this thesis is written adheres to the guidelines for compilation set by the University of Wollongong. It consists of several parts, including an introduction, a review of relevant literature, a research design, four articles that the author worked on during their candidature, and a reflection or conclusion. The specifics of each journal article are outlined below.

Chapter 4:

**Authorship:** Bianca Mister (80%), Amanda Baker (10%), Honglin Chen (10%)

Chapter 5:

**Authorship:** Bianca Mister (80%), Honglin Chen (10%), Amanda Baker (10%)

Chapter 6:
Mister, B. (under review). Bridging the gap: The role of pronunciation-related episodes (PREs) in developing productive oral vocabulary knowledge.

Chapter 8:
Mister, B. (under review). From potential words to actual words: A pronunciation-integrated teaching model to facilitate the development of productive oral vocabulary.
# Table of Contents

Abstract .......................................................................................................................... 2  
Acknowledgements ........................................................................................................ 5  
Statement of Thesis by Compilation ............................................................................ 7  
Table of Contents ........................................................................................................... 8  
List of Tables .................................................................................................................. 12  
List of Figures ................................................................................................................ 13  
Abbreviations Used in This Thesis ............................................................................... 14  
Chapter 1: Introduction ................................................................................................. 15  
  1.1 Background ............................................................................................................ 15  
  1.2 Significance of the study and research questions .................................................. 20  
  1.3 Personal impetus .................................................................................................... 21  
  1.4 Overview of the thesis ............................................................................................ 22  
Chapter 2: Literature Review ......................................................................................... 28  
  2.1 Breadth and depth of vocabulary knowledge ......................................................... 28  
  2.1.1 Aspects of vocabulary knowledge .................................................................... 29  
  2.1.2 Tri-continua model of vocabulary development .............................................. 31  
  2.2 The distinction between receptive and productive vocabulary ............................. 33  
  2.3 Productive oral vocabulary knowledge .................................................................. 35  
  2.4 Lexical choice ....................................................................................................... 38  
  2.5 Incidental and deliberate vocabulary learning ....................................................... 41  
  2.6 Vocabulary learning with productive tasks ........................................................... 43  
  2.7 Theoretical framework .......................................................................................... 45  
Chapter 3: Research Design ............................................................................................ 50  
  3.1 Research Context ................................................................................................... 54  
  3.1.1 Teacher and student participants ..................................................................... 54  
  3.1.2 Consent of the participants .............................................................................. 56  
  3.1.3 Researcher’s Role .............................................................................................. 57  
  3.2 Phase 1: Preliminary consultation with stakeholders .............................................. 57  
  3.3 Phase 2: Draft Design Principles .......................................................................... 61
3.3.1 DDP 1: Employ imaging to conceptualise the meaning of words ........................................... 61
3.3.2 DDP 2: Develop learner knowledge of word meaning and lexical networks ............................. 64
3.3.3 DDP 3: Enhance learner ability to control accurate production of target words ......................... 65
3.3.4 DDP 4: Encourage learners to experiment with word use in controlled tasks ............................. 67
3.3.5 DDP 5: Encourage learners to repeatedly use target words in communicative tasks ................. 70

3.4 Phase 2: An educational solution ........................................................................................................ 71
3.4.1 The innovative teaching model ........................................................................................................ 71
3.4.2 Target vocabulary .............................................................................................................................. 72
3.4.3 Outline of the productive vocabulary workshop .............................................................................. 74

3.5 Phase 3: Iterative cycles of testing ....................................................................................................... 89
3.6.1 Data collection ........................................................................................................................................ 89
3.6.2 Data Analysis ........................................................................................................................................ 92
3.6.3 Rigor of the analysis ............................................................................................................................ 96

Foreword to Study 1 ................................................................................................................................... 97

Chapter 4: Study 1 — “Punching Through the Barrier: Using Gesture to activate Productive Oral Vocabulary” .......................................................................................................................... 98

4.1 Abstract .............................................................................................................................................. 98
4.2 Introduction .......................................................................................................................................... 98
4.2.1 Oral Production Whilst Making Gestures ....................................................................................... 99

4.3 The present study .................................................................................................................................. 100
4.3.1 Site and participants ......................................................................................................................... 101
4.3.2 The workshop ..................................................................................................................................... 103
4.3.3 Haptic Rhythm Fight Club ............................................................................................................. 105
4.3.4 Target vocabulary .............................................................................................................................. 106

4.4 Research Design ................................................................................................................................. 108
4.4.1 Data and analysis ............................................................................................................................. 109

4.5 Findings and Discussion ....................................................................................................................... 110
4.5.1 Deconstructing English stress ....................................................................................................... 110
4.5.2 Reconceptualising English stress ..................................................................................................... 112
4.5.3 Stabilisation of productive output .................................................................................................... 113

4.6 Conclusion .......................................................................................................................................... 121

Foreword to Study 2 ................................................................................................................................... 123

Chapter 5: Study 2 — “Putting it into context: How exposure to rich and meaningful contexts can activate productive oral vocabulary” ........................................................................................................ 124

5.1 Abstract .............................................................................................................................................. 124
5.2 Introduction .......................................................................................................................................... 124

5.3 Literature review .................................................................................................................................. 125
5.3.1 Productive oral vocabulary ............................................................................................................. 126
5.3.2 Facilitating productive oral vocabulary learning in classroom environments ............................. 127

5.4 The present study .................................................................................................................................. 129
5.4.1 Methodology ....................................................................................................................................... 129
5.4.2 Site and participants ......................................................................................................................... 129

5.5 Data and analysis .................................................................................................................................. 130

5.6 The vocabulary workshop .................................................................................................................. 132
Chapter 8: Final Framework – A pronunciation-integrated teaching model to facilitate productive oral vocabulary development

8.1 Abstract ................................................................. 189
8.2 Introduction ............................................................ 189

Foreword to Chapter 8 .................................................. 188

Chapter 7: Phase 4 – Reflection ........................................... 166

7.1 Overview of the findings .............................................. 166

7.2 Discussion of the findings ........................................... 169

7.2.1 The relationship between pronunciation training and meaningful input ........................................ 169
7.2.2 Effects of productive learning ................................... 172
7.2.3 Development of productive oral vocabulary knowledge ................................................................. 175

7.3 Final design principles ................................................ 179

7.3.1 Final Principle 1: Anchor and index vocabulary knowledge with images related to a meaningful narrative ................................................................. 180
7.3.2 Final Principle 2: Develop semantic and grammatical word knowledge through exposure to various encounters with words in rich and meaningful contexts ................................................................. 181
7.3.3 Final Principle 3: Incorporate haptic procedures and exposure to rich and meaningful input into pronunciation training ................................................................. 183
7.3.4 Final Principle 4: Encourage learners to experiment with and discuss target word use in communicative tasks ................................................................. 184
7.3.5 Principle 5: Provide learners with opportunities to use words in increasingly freer outputs and encourage learners to use target vocabulary in ways that elaborate core lexical meaning ................................................................. 186

Foreword to Study 3 .......................................................... 144

Chapter 6: Study 3 – “Bridging the gap: The role of pronunciation-related episodes (PREs) in developing productive oral vocabulary knowledge” ................................................................. 145

6.1 Abstract ................................................................. 145

6.2 Introduction ............................................................ 145

6.3 The present study ..................................................... 150

6.3.1 Site and participants .............................................. 151
6.3.2 Target vocabulary ................................................ 152
6.3.3 The learning materials .......................................... 152

6.4 Data collection and analysis ......................................... 155

6.5 Results and discussion .............................................. 158

6.5.1 The relationship between spoken form and grammatical function .................................................. 160
6.5.2 The relationship between spoken form and collocation ................................................................. 163
6.5.3 The relationship between spoken form and word parts ................................................................. 164

6.6 Conclusion ............................................................. 164

Chapter 5: Learning trajectories of other students ................. 139

5.8 Learning trajectories of other students .......................... 139

5.9 Conclusion ............................................................. 142

Foreword to Chapter 8 .................................................. 135

5.7 Findings and discussion .............................................. 135

5.7.1 Vignette 1: Boris and target word shocked ................. 135
5.7.2 Vignette 2: Sofia and target phrase at each other’s throats ................................................................. 137

Chapter 7: Final Framework – A pronunciation-integrated teaching model to facilitate productive oral vocabulary development

8.1 Abstract ................................................................. 189
8.2 Introduction ............................................................ 189
8.3 A pronunciation-integrated teaching model to facilitate productive oral vocabulary development .......................................................................................................................... 191
  8.3.1 Focus on Conceptualisation ..................................................................................... 192
  8.3.2 Develop Internal Network ....................................................................................... 193
  8.3.3 Proceduralise Output ............................................................................................. 194
  8.3.4 Focus on Productive Use ....................................................................................... 196

8.4 Conclusion ..................................................................................................................... 197

Chapter 9: Concluding remarks .......................................................................................... 198

9.1 Overall conclusion ........................................................................................................ 198

9.2 Limitations of the study ............................................................................................... 198

9.3 Recommendations for future study ............................................................................. 200

Appendices .......................................................................................................................... 200

Appendix 1: Aspects of knowing a word (Adapted from Nation, 2013, p. 49) ...................... 202
Appendix 2a: Information provided to student participants .................................................. 203
Appendix 2b: Information provided to teacher participants ................................................ 206
Appendix 3a: Student participant consent form .................................................................. 209
Appendix 3b: Teacher participant consent form .................................................................. 211
Appendix 4: List of sentences and images used for each target word in first iteration .......... 213
Appendix 5: List of collocations and associated images used in first iteration .................... 217
Appendix 6: Full list of sentences used during RFC in first iteration ................................. 226
Appendix 7: Topic used for 2/2/2 activity in first and second iterations ............................. 227
Appendix 8: Transcript of story and respective images used in second iteration ............... 228
Appendix 9: Full list of cards provided for matching activity after listening to story in second iteration ................................................................. 229
Appendix 10: Full list of sentences used during RFC in second iteration ......................... 233
Appendix 11: Set of Taboo game cards used in second iteration ....................................... 236
Appendix 12: Set of Collective Story game cards used in second iteration ........................ 237
Appendix 13: Frequency of target word production distributed across student group ........ 239

References ........................................................................................................................... 241
List of Tables

Table 1: Teacher and student participants
Table 2: Average student rating of 68 S3 words
Table 3: Target words used in each iteration of this study
Table 4: Iteration 1 – Balancing the four strands and workshop structure
Table 5: Summary of Draft Design Principles used in the first and second iterations
Table 6: Iteration 2 – Balancing the four strands and workshop structure
Table 7: Outline of data instruments used and analyses
Table 8: Teacher and student participants
Table 9: The 5-day classroom workshop
Table 10: Average student rating of the chosen 68 words
Table 11: Summary of participants
Table 12: The 5-day classroom workshop
Table 13: Meaning-focused input of the target idiom “at each other’s throats”
Table 14: Tracking learner engagement with target words through the stages of development
Table 15: Summary of participants
Table 16: Analysis of LREs
Table 17: Analysis of pronunciation-related episodes
Table 18: Principle 1 in action
Table 19: Principle 2 in action
Table 20: Principle 3 in action
Table 21: Principle 4 in action
Table 22: Principle 5 in action
List of Figures

Figure 1: The DBR research model (Reeves, 2006, p. 59)
Figure 2: Application of the DBR research model in this study
Figure 3: Roles of observers (Kervin et al., 2006, p. 85)
Figure 4: Iterative cycle of testing summary
Figure 5: Interactive model of data analysis, adapted from Miles and Huberman (2019, p. 10)
Figure 6: AntWordProfiler example analysis
Figure 7: Example summary of lexical coverage for a student’s output during the 2/2/2 task
Figure 8: An example of target word uses during the Taboo activity for a sample student
Figure 9: An example of a student’s use of the target word ‘enjoyable’ within the 2/2/2 activity
Figure 10: The DBR research model (Reeves, 2006, p. 59)
Figure 11: Output prior to any RFC practice
Figure 12: Output after 30min RFC practice on previous day and 10 min on this day
Figure 13: Output after discussions/negotiations on previous day plus an additional 10 min RFC practice on this day
Figure 14: Output after no additional RFC practice
Figure 15: Output after no focus on target words in classroom for 3 weeks
Figure 16: The DBR research model (Reeves, 2006, p. 59)
Figure 17: A Pronunciation-integrated Teaching Model to Facilitate Productive Oral Vocabulary Development
# Abbreviations Used in This Thesis

<table>
<thead>
<tr>
<th>Term</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Language</td>
<td>L1</td>
</tr>
<tr>
<td>English as a Second Language</td>
<td>ESL</td>
</tr>
<tr>
<td>Second Language</td>
<td>L2</td>
</tr>
<tr>
<td>Design-Based Research</td>
<td>DBR</td>
</tr>
<tr>
<td>Draft Design Principle</td>
<td>DDP</td>
</tr>
<tr>
<td>Final Design Principle</td>
<td>FDP</td>
</tr>
<tr>
<td>Rhythmic Fight Club</td>
<td>RFC</td>
</tr>
<tr>
<td>General Service List</td>
<td>GSL</td>
</tr>
<tr>
<td>Academic Word List</td>
<td>AWL</td>
</tr>
<tr>
<td>Common European Framework of Reference for languages</td>
<td>CEFR</td>
</tr>
<tr>
<td>Cambridge and Nottingham Corpus of Discourse in English</td>
<td>CANCODE</td>
</tr>
<tr>
<td>British National Corpus</td>
<td>BNC</td>
</tr>
<tr>
<td>Journal of Second Language Pronunciation</td>
<td>JSLP</td>
</tr>
<tr>
<td>Australian Review of Applied Linguistics</td>
<td>ARAL</td>
</tr>
<tr>
<td>English Language Intensive Course for Overseas Students</td>
<td>ELICOS</td>
</tr>
</tbody>
</table>
Chapter 1: Introduction

1.1 Background

For some time, it has been acknowledged that individuals who are learning a second language (L2) possess a greater understanding of words in a receptive manner (i.e., ability to comprehend words in listening and reading) compared to their ability to produce those same words (i.e., ability to use words in writing and speaking) (Laufer, 1998; Waring, 1997; Webb, 2008b). Since words contain the fundamental information that a person wants to communicate (Read, 2004), having a limited productive vocabulary knowledge would reduce a learner’s ability to participate in meaningful conversations. Such a limitation has long been identified as the leading cause of frustration in adult learners of English (Horwitz, Horwitz, & Cope, 1986; MacIntyre & Serroul, 2015). In fact, learners claim that this is the biggest problem they are faced with in learning English (Deveci & Saleem, 2022; Green & Meara, 1995), perhaps recognizing the need for more precise words to convey their mature thoughts and conceptual ideas effectively. Although it has been acknowledged that L2 learners face significant challenges in developing productive vocabulary (Waring, 1997; Webb, 2008b), research focusing on how to successfully support their productive mastery of learned words is lacking (Teng & Xu, 2022).

A potential issue affecting the facilitation of productive vocabulary development is the dichotomous view of vocabulary knowledge. Such views of simply knowing or not knowing words significantly oversimplify the nature of vocabulary development (Teng & Xu, 2022). Therefore, adopting an approach which acknowledges the complex and multifaceted nature of vocabulary development is more appropriate. Nation’s (2013a) commonly accepted framework delineates nine aspects of vocabulary knowledge grouped into three categories, form, meaning and use, each with receptive and productive levels of mastery. Despite broad acceptance of this multi-dimensional view of vocabulary knowledge, research focusing on the receptive-productive qualities of the aspects of vocabulary knowledge is limited. In their recent study investigating the order in which the nine aspects are acquired, González-Fernández and Schmitt (2020) found that all aspects were generally acquired simultaneously and that receptive versus productive knowledge was the only characteristic of word knowledge that did not develop simultaneously. As a result, the authors suggest that pedagogy needs to be focused on driving productive mastery...
of words rather than developing a broad knowledge of words. Despite this fact, there has been a notable lack of research regarding how to enhance the ability to produce words in a classroom setting.

Of the existing studies, the majority have focused on productive word knowledge in written modes. Findings have shown that learners who avoid experimentation with words in writing are unlikely to activate their productive vocabulary knowledge, which will consequently forever remain receptive (Henriksen & Danelund, 2015). Of these studies, Teng and Xu (2022) is the only study to investigate the types of tasks that can facilitate the transition of receptive vocabulary to become productive in written modes. They reported that productive learning tasks (e.g., sentence writing and sentence translation) were better able to transform words to become productive than receptive learning tasks (e.g., gap fill and multiple choice). Lee and Muncie (2006) further reported three conditions that led to newly learned words being used in subsequent writing tasks. The first condition was the teacher’s explanation of target words, the second was specific instruction to use the newly learned words, and the third was a pre-planning activity in which they noted words they would use in various sections of their composition. The authors’ findings support a large body of research which claims that pre-planning time has significant beneficial effects on oral output, including structural complexity, lexical sophistication and accuracy (Skehan & Foster, 2012).

Even though there is still inadequate knowledge on how to improve productive oral vocabulary, recent studies confirm the significance of having productive vocabulary knowledge in developing oral proficiency (de Jong, Steinel, Florijn, Schoonen, & Hulstijn, 2012; Koizumi & In'nami, 2013; Uchihara & Saito, 2016). A thorough review of existing literature is presented in Chapter 2, which synthesises a wide range of studies, encompassing diverse fields such as phonetics, vocabulary studies, TESOL, psycholinguistics, and second language acquisition; the objective of the background presented here is to provide a general overview. Firstly, Fukuta (2016) established that repeated retrieval of words can enhance the development of long-term productive vocabulary. However, his study has yet to offer recommendations for the effectiveness of different classroom teaching techniques to trigger such repeated retrieval of words. Uchihara and Saito (2016) propose that productive vocabulary knowledge may predict speaking fluency. They claim that learners with a larger, well-organised lexicon can more easily retrieve words for use in spontaneous speech. Therefore, one may assume that productive
learning tasks which focus on enriching learners’ lexicon whilst allowing for repeated experimentation with word use can lead to an enhanced ability to use words in oral communication. Despite such indications, more research is needed investigating the types of productive learning tasks and learning environments that have been effective in developing learners’ productive oral vocabulary.

Another important consideration in teaching productive oral vocabulary is understanding the ideal number of words needed to participate effectively in English conversations. To comprehend English speech effectively, learners must know at least 95% of lexical input (Nation, 2013a). However, their lexical production would not necessarily need to meet these levels since receptive vocabulary is known to be larger than productive (Nation, 2006; Schmitt & Schmitt, 2014). Historical evidence has led to the widespread belief that knowledge of the most frequent 2,000-word families results in 99% lexical coverage of spoken English (Adolphs & Schmitt, 2003; Read & Nation, 2002; Schmitt & Schmitt, 2014). This figure, however, is hugely overstated given that it was provided by a study conducted at a time when computerised analyses were unavailable and utilised a corpus of only 512,647 words (Schonell, Meddleton, & Shaw, 1956). This is a relatively small size when compared to modern corpuses. As an illustration, the Cambridge and Nottingham Corpus of Discourse in English (CANCODE) is comprised of 5 million words (McCarthy & Carter, 2001), while the British National Corpus (BNC) contains approximately 100 million words, with around 10 million of them being relevant to spoken data (Leech, 1992).

More recent evidence using the CANCODE and the BNC’s spoken component demonstrated that 2,000 word families would result in less than 95% coverage (Adolphs & Schmitt, 2003). Nation (2006) subsequently used the Wellington spoken corpus to demonstrate that participation in basic, everyday informal conversation would require knowledge of between 2,000 – 3,000 word families for 95% lexical coverage and 6,000 – 7,000 for 98% lexical coverage. An important caveat is that even 95% of learners would still encounter a significant number of unknown words; for example, at a speech rate of 150 words per minute, this level would result in seven unfamiliar words per minute (Nation, 2006; Read & Nation, 2002; Schiller & Verdonschot, 2015). Despite this, 3,000-word families is a recommended minimum foundation for participation in English discourse (Adolphs & Schmitt, 2003; Nation, 2006; Read & Nation,
In relation to productive oral vocabulary, a required vocabulary level for oral communication needs to be clarified. In the context of productive vocabulary development, vocabulary targets need to be calculated using lemmas or flemmas rather than word families (Dale Brown, Stoeckel, McLean, & Stewart, 2022; McLean, 2018; Nation, 2013a). The reason for this is that lemmas and flemmas recognise inflections of words with the same stem as individual items, whereas word families group all forms derived from the same stem as a single item. For example, the words happy, unhappy and happiness would be counted as three individual lemmas, but only a single word family. Research shows that, when focusing on productive word knowledge, lemmas or flemmas must be counted because it cannot be assumed a learner who can use one word productively is also able to use other forms within that word family with similar proficiency (Lindqvist, Gudmundson, & Bardel, 2013; Nation, 2013b; Nation & Webb, 2011). Moreover, McLean (2018) found that, although the participants in his study had a good understanding of basic words, their ability to comprehend related derivative forms was quite limited. Therefore, it was observed that using the concept of "flemma" as a unit for counting words was more suitable than word families. Furthermore, the use of lemmas and flemmas has become increasingly popular because, when focusing on a relatively small and manageable group of families, learners can achieve a significant level of coverage (Dale Brown et al., 2022). Accordingly, it has been advised that a reasonable vocabulary target for learners might be 5,000 lemmas (Schmitt, Dunn, O'Sullivan, Anthony, & Kremmel, 2021). Yet, a study by Uchihara and Clenton (2020) found that few words are necessary. By measuring the role of vocabulary size in the speaking proficiency of 46 advanced L2 learners, they found that the most frequent 2,000 words accounted for approximately 95% of speech output. As such, there appears to be a significant variation between the expected vocabulary levels required for participation in oral communication and the actual output produced by learners. Such discrepancies could be attributed to the difficulty in measuring learners’ existing productive vocabulary compared to what they are willing to use in oral communication.

Not only is there discordance in the literature, but there is also a misalignment between standards and teaching practice. Although the Common European Framework of Reference for languages (CEFR) defines expected foundations of vocabulary knowledge for each stage of development, it
does not recommend a specific word list that teachers and resource developers should use to determine high frequency vocabulary. The CEFR states that learners at the Basic User Waystage level (A2) need to focus on developing vocabulary within the most frequent 1,500 - 2,500 words (Council of Europe, 2001). Comparatively, it states that learners at Independent User Threshold (B1) and Vantage (B2) need to focus on the most frequent 2,750 - 3,250 words and the most frequent 3,250 - 3,750 words, respectively (Council of Europe, 2001). Yet, an investigation into the vocabulary content of ESL course books has revealed that they do not sufficiently cover the required vocabulary levels. For example, Matsuoka and Hirsch (2010) explored the vocabulary content of the popular New Headway Upper-intermediate student book (targeting B2 level) to evaluate if repetition of high-frequency vocabulary was sufficient. In their definition of high frequency vocabulary, Matsuoka and Hirsch included: the first 2,000 word families from the General Service List (GSL), words on the Academic Word List (AWL), common names of people and places (proper nouns), and 32 other word families which were assumed to be known (such as technology words). Results showed 95.5% of the course book was made up of this high-frequency vocabulary and that repetitions were insufficient for adequate learning. They identified that most words occurred only once, and only two appeared with at least 12 repetitions (jet and fantasy), a number of repetitions which is deemed sufficient for words to be learned (Nation, 2014; Nation & Wang, 1997; Webb, 2007). The remaining 4.5% comprised 1,005-word families outside what they defined as high frequency, 156 of which were of the 2,000 – 2,999 frequency band. Another study by O’Loughlin (2012) found that the first three levels (elementary, pre-intermediate and intermediate) of New English File (targeting B1 – B2 levels) exposed learners to less than 1,500 of the most frequent word families from the GSL. However, the CEFR defines vocabulary targets for this level of learners to be the most frequent 2,750 - 3,750 words. The books also included words outside the most frequent two thousand words, but these additional words only appeared once and many were identified as highly irrelevant low frequency words such as mallet, matriculate and spire. Consequently, it appears that course books do not adequately support students in reaching required vocabulary levels for their level.

This deficiency requires teachers to be equipped with additional resources and strategies to prepare students to acquire more advanced vocabulary successfully. Thus, further research is needed to identify teaching practices that effectively use classroom time to advance productive oral vocabulary to adequate levels. Nation (2020) has noted that such investigations do not need
to be longitudinal and that short studies examining how word knowledge develops over short periods can provide valuable insight to support teachers in designing classroom activities.

1.2 Significance of the study and research questions

Although it is generally accepted that there is a large gap between the size of receptive and productive vocabulary (e.g., Fan, 2000; Laufer, 1998; Nation, 2013a; Webb, 2008b; Yamamoto, 2011), further research is needed to understand the types of classroom activities and environments that support the development of receptive vocabulary to become productive (Schmitt, 2019). In addition, some studies have provided insight into the development of vocabulary to be used in writing (Elgort, Candry, Boutorwick, Eyckmans, & Brysbaert, 2018). Yet there has been far less work done to understand the development of productive oral vocabulary (Shintani, 2013) or on the effects of pronunciation training on the development of productive oral vocabulary (Darcy, Rocca, & Hancock, 2021).

Productive oral vocabulary knowledge is a predictor of oral proficiency. Specifically, oral proficiency is improved by enhanced knowledge of the phonological form of target words. Needless to say, productive oral vocabulary knowledge is complex. It consists of the ability to recall phonological form from memory, construct a message incorporating knowledge of word class, collocation, synonyms, and grammatical function, and then control oral production of that word in speech (Nation, 2013a; Nation & Meara, 2010; Wray & Fitzpatrick, 2009). Various studies have focused on understanding the relationship between productive vocabulary knowledge and oral proficiency (e.g., de Jong et al., 2012; Koizumi & In'nami, 2013; Uchihara & Clenton, 2022; Uchihara & Saito, 2016) and it seems that productive oral vocabulary knowledge can predict speaking fluency (Uchihara & Saito, 2016, 2019Double2) and has been reported to have either medium or significant correlations with pronunciation (Mairano & Santiago, 2020; Miralpeix & Muñoz, 2018; Uchihara & Clenton, 2022). The importance of pronunciation concerning oral communication has been noted (e.g., Baker, 2021; Fraser, 2001; Jenkins, 2002; Miller, 2006; Sicola & Darcy, 2015); with recommendations for explicit pronunciation instruction to be integrated into existing vocabulary-focused lessons Darcy et al. (2021).

Thus, the purpose of this study was to investigate the effectiveness of pedagogy that utilises pronunciation training embedded within vocabulary-focused lessons in developing productive
oral vocabulary knowledge in the context of adult intermediate-level ESL learners. With this aim in mind, the present study was guided by the following research questions:

**Overarching research question:**
How can adult ESL learners be successfully supported in developing productive oral vocabulary knowledge of target vocabulary?

**Secondary research questions:**
1. What principles inform the design of teaching productive oral vocabulary?
2. What elements of the designed learning environment contribute to L2 learners’ development of productive oral vocabulary?
   a. How does repeatedly producing target words with gesture and touch help to develop productive control of those words when speaking English?
   b. How does repeated exposure to target vocabulary embedded in various meaningful contexts affect subsequent productive knowledge of those words?
   c. How does classroom instruction of phonological form affect productive oral vocabulary knowledge of target words?

1.3 Personal impetus
After a ten-year career in the marketing and advertising industry, I felt that I was not contributing to society in a meaningful way, so I travelled to Cambodia and undertook a volunteer position teaching Developing Economics at a local university. The experience ignited a desire to work in the adult education sector. So, I returned to Australia and completed a master’s degree in communications, which consisted of three units in applied linguistics and cross-cultural communications. In these units, I discovered a passion for second language acquisition. Upon completing this degree, I travelled to Argentina to obtain a CELTA certificate. I decided to learn Spanish so that I could completely understand the experiences of a L2 learner. As the daughter of immigrants, I have been bilingual since birth, knowing both English and Serbo-Croatian. Nevertheless, I had never formally studied a second language. Instead, my knowledge of Serbo-Croatian was either acquired orally through speaking or self-taught with regard to written knowledge of the language. For this reason, I wanted to go through the process of learning another language as an adult in an academic setting.
My experience in learning Spanish encouraged me to reflect on my needs as a language learner. During my studies, I kept a reflective journal which revealed an inability to access vocabulary when needed in speaking. I was acutely aware of my lack of productive vocabulary knowledge. Various journal entries stated that I felt my language learning was stunted and I was exhausted by my lack of words, resulting in a need to explain concepts when I knew there was a single word I could be using. Later as I continued to teach ESL in an Australian context, my students echoed this same frustration. Too often, when I asked my students what they would most like to improve about their English skills, their typical response was that they wanted to learn more words. Students often commented that they found it hard to practice new words in speaking because they socialised in circles of people who shared their L1 or communicated in work contexts where the same vocabulary was repeated.

When I searched the literature for insight into this problem, I found this to be a common concern. Although learners acknowledge that insufficient vocabulary knowledge is a core factor inhibiting effective communication (MacIntyre & Serroul, 2015), productive vocabulary knowledge is notoriously difficult to develop (Nation, 2013a). Repeated practice with using words in speech can help (Fukuta, 2016). Nonetheless, there are limited classroom resources that teachers can use to support learners to develop productive oral vocabulary knowledge. The objectives of this research were, therefore, borne out of not only the theoretical underpinnings but also personal learning gained through ten years of teaching ESL to speakers of at least 20 different first languages.

1.4 Overview of the thesis

The format of this thesis is ‘by compilation’, which means that some of the chapters were written as manuscripts. The four manuscripts in this study each had a specific focus that contributed to the overall research aims. The first two manuscripts on the below list have been published in the journals specified and the remaining two are currently under review. This collection of published articles and manuscripts is intended to be viewed as presenting the core findings and discussion of this thesis. The articles and manuscripts have been assembled with traditional thesis chapters (i.e., Introduction, Literature Review, Research Design, and Conclusion). These traditional thesis chapters serve as a framework for organising the individual articles and forming a coherent and
cohesive whole. Each chapter’s specific format and structure may vary, depending on the requirements of the journals for which they were prepared.

   - Focus: The impact of pronunciation training on learners’ development of productive oral vocabulary knowledge.
   - Published article: A peer-reviewed journal article in *Journal of Second Language Pronunciation (JSLP)* (a scholarly journal devoted to research into the acquisition, perception, production, teaching, assessment, and description of prosodic and segmental pronunciation of second languages in all contexts of learning.)

   - Focus: The impact of exposure to meaningful input on the development of productive oral vocabulary knowledge.
   - Accepted article: A peer-reviewed journal article in *Australian Review of Applied Linguistics (ARAL)*, which is a Quartile 1 journal in Linguistics and Language and a significant accomplishment for the researcher. Quartile 1 journals are the most highly regarded and are the top 25% of journals in terms of impact (i.e., a measure of the frequency with which an average article in a journal has been cited in a particular year).

3. **Mister, B.** (under review). Bridging the gap: The role of pronunciation-related episodes (PREs) in developing productive oral vocabulary knowledge.
   1. Focus: The effect of pronunciation-related episodes (PREs) on the development of productive oral vocabulary knowledge.

4. **Mister, B.** (under review). From potential words to actual words: A pronunciation-integrated teaching model to facilitate the development of productive oral vocabulary.
2. Focus: To present a pedagogically informed and empirically tested method of teaching productive oral vocabulary.

The publications have been slightly modified to create a coherent thesis. For example, the term ‘a learning cycle’ was used in the published articles Mister, Baker, and Chen (2021) and Mister, Chen, and Baker (2022); however, this has since been changed to a ‘teaching model’. The reason for this change is that subsequent reflection of the pedagogy used in this thesis has highlighted that the four-stage model described in this thesis is more focused on teaching techniques than learning stages. To ensure that analyses of the same students are referred to consistently throughout the thesis, the pseudonym ‘Joao’ has been updated in all instances within this thesis to appear as the pseudonym ‘Gianni’. The table and figure numbers have been revised to ensure continuous numbering throughout the thesis, and the formatting has been standardised across all chapters. Additional information regarding the formatting guidelines for this thesis by compilation can be found in the 'Thesis by compilation' section at the beginning of the document.

The thesis has the following structure:

**Chapter 1: Introduction**

The initial chapter of this thesis provided a summary of the entire document, including a discussion of the background and problem statement that the researcher aimed to address. It also outlined the significance of the study, identified specific research questions that were pursued and provided a description of the personal motivation, inspiration, and driving forces behind the selection of this particular research topic and desire to conduct this research.

**Chapter 2: Literature review**

This chapter presents a detailed literature review that provides an overview of literature and theories of vocabulary development. This begins with a survey of Nation’s (2013a) aspects of vocabulary knowledge and Henriksen’s (1999) *tri continua* model of vocabulary development. The literature review then explores the distinction between receptive and productive vocabulary, productive oral vocabulary knowledge, lexical choice, and incidental and deliberate learning and finishes with a focus on vocabulary learning with productive tasks. At the end of the literature review is an overview of the theoretical framework for this thesis.
Chapter 3: Research design
This chapter outlines the research design by describing the Design Based Research (DBR) methodology used for this study. Within this chapter the initial stages of the methodology are described in detail. This begins with an overview of DBR Phase 1, preliminary consultation with stakeholders which was done by conducting a pilot study with students at the participant site. This overview is followed by an outline of the first part of DBR Phase 2, which consisted of drafting the design principles. This section describes five draft principles which were drafted as a result of initial consultation with the literature and stakeholders and were used to inform this study. This chapter outlines the second part of DBR Phase 2, which consisted of designing a solution informed by the draft design principles. This section describes a four-stage teaching model as a solution to the defined educational problem. The final section in this chapter is a description of DBR Phase 3, iterative cycles of testing. This section includes an overview of the research context, teacher and participants, consent of the participants, the researcher’s role, data collection, data analysis, and trustworthiness of the analysis.

Chapter 4: Study 1 – “Punching through the barrier: Using gesture to activate productive oral vocabulary”
This chapter presents the findings of two iterative rounds of testing with relation to research question 2a “How does repeatedly producing target words with gesture and touch help to develop productive control of those words in speaking?”. These findings have been published in a peer-reviewed journal, Journal of Second Language Pronunciation. The objective of this paper was to provide pronunciation and vocabulary teachers, teacher educators and researchers with insight into the effectiveness of the Rhythmic Fight Club (RFC) technique (Burri, Baker, & Acton, 2016) used in this study (Mister et al., 2021). This paper’s implication is to provide valuable insight into using haptic pronunciation techniques as an effective classroom activity to develop learners’ productive oral vocabulary knowledge.

Chapter 5: Study 2 – “Putting it into context: Exposing learners to rich and meaningful contexts to activate productive oral vocabulary”
This chapter presents the findings of two iterative rounds of testing with relation to research question 2b “How does repeated exposure to target vocabulary embedded in various meaningful contexts affect subsequent productive knowledge of those words?”. These findings have been published in a Q1 peer-reviewed journal, Australian Review of Applied Linguistics. The objective
of this paper was to provide ESL teachers, teacher educators and researchers with insight into the effect of exposure to target words embedded into various rich and meaningful contexts (Mister et al., 2022). This paper’s implication is to provide evidence to suggest that enhanced metalinguistic awareness of target words can facilitate the development of productive oral vocabulary.

**Chapter 6: Study 3 – “Bridging the gap: The role of pronunciation-related episodes (PREs in developing productive oral vocabulary knowledge”**

This chapter presents the findings of two iterative rounds of testing with relation to research question 2c “How does a classroom instruction of phonological form affect productive oral vocabulary knowledge of target words?”. These findings were written as a manuscript currently under peer review. This paper aimed to provide ESL teachers, teacher educators and researchers with insight into the effect of classroom instruction of phonological form on subsequent productive oral vocabulary development. The paper highlights the value of classroom instruction of phonological form followed by communicative activities in promoting discussion of target words and subsequent development of productive oral vocabulary.

**Chapter 7: DBR Phase 4 – Reflection**

This chapter provides an overview of DBR Phase 4, which reflects the previous DBR phases to produce final principles for developing L2 learners’ productive oral vocabulary. This chapter begins with an extended context statement demonstrating the relationship between Chapters 4, 5 and 6. The outcome of each paper is first summarised before an overall discussion of findings from the three journal articles/manuscripts is presented. Finally, this chapter ends with an outline of the five final design principles. It delivers a final framework that is proposed for classroom instruction that aims to develop L2 learners’ productive oral vocabulary.

**Chapter 8: Final framework**

This chapter presents a final framework for a pronunciation-integrated teaching model to facilitate the development of productive L2 oral vocabulary. The framework is the result of analysing specific findings reported in Chapters 4, 5 and 6 and consolidating the final principles provided in Chapter 7. The provision of a final framework is helpful because Chapters 4, 5 and 6 have their research focus, therefore, the cumulative and sequential nature of the framework is not immediately evident when Chapters 4, 5 and 6 are read individually. Therefore, presenting the
final framework in a single visualisation illuminates the staged approach proposed in the suggested model. The final framework was written as a manuscript currently under peer review to provide ESL teachers, teacher trainers and researchers with insight into a pedagogical model that can be used to facilitate the development of productive oral vocabulary.

Chapter 9: Concluding remarks
This final chapter summarises the key findings of this thesis in the form of a four-stage teaching model that can be used as an innovative solution for teaching L2 productive oral vocabulary in a classroom context. This chapter also presents recommendations for future research and acknowledges the limitations of this thesis.

Following the conclusion of Chapter 9, a comprehensive reference list is included that incorporates all cited sources, including those that were used in published journals. Additionally, a list of appendices is provided at the end of the thesis to supply supplementary documentation for reference and clarification purposes.
Chapter 2: Literature Review

This thesis has been situated within a personal context, and therefore the following section presents an overview of the most pertinent issues discussed in the literature regarding the development of productive oral vocabulary knowledge. It is worth noting that Chapters 4, 5, 6, and 8 contain additional and extensive literature reviews that are relevant to each journal article. As this is a thesis by compilation, there is an unavoidable overlap between this literature review and the subsequent literature reviews contained within the individual journal articles that constitute Chapters 4, 5, 6, and 8 of the thesis. However, the separate literature reviews included in each of those manuscripts offer distinct critical perspectives regarding the research questions that are the focal points of those individual papers.

2.1 Breadth and depth of vocabulary knowledge

For the purposes of vocabulary development, it has been said that a deeper understanding of words is more beneficial than having shallow knowledge of a larger bank of words (e.g., Nation, 2013a). Vocabulary knowledge is typically broken down into two parts, namely breadth and depth of knowledge. Breadth of knowledge is defined by the number of known words (i.e., vocabulary size), and this thesis has already identified that knowledge of the 5,000 most frequent lemmas is recommended for participation in oral communication. On the other hand, depth of knowledge relates to the quality and scope of one’s understanding of words (Nation, 2013a). It is generally agreed that words are not isolated entities and that a depth of knowledge recognizing the inter-locking properties of words is required (Aitchison, 1994; Chapelle, 1994; Haastrup & Henriksen, 2000; Laufer, 1997; Nation, 2013a; Wesche & Paribakht, 1996). However, González-Fernández & Schmitt (2017) argue that the development of depth and breadth of vocabulary does not occur concurrently. They contend that the development of depth of knowledge is more complex and therefore grows at a slower rate than does the size of the vocabulary. Therefore, it may be important for teachers to support learners in the development of this complex knowledge by dedicating classroom time to enriching vocabulary knowledge rather than expanding vocabulary size. There are two widely recognised frameworks that acknowledge the significance of depth of vocabulary knowledge, namely Nation’s (2013a) aspects of knowing a word and Henriksen’s (1999) *tri-continua* model of vocabulary development.
2.1.1 Aspects of vocabulary knowledge

In his model of vocabulary knowledge, Nation (2013a) outlines nine aspects of vocabulary knowledge, which are grouped into three categories: form, meaning and use. The following paragraphs will provide an overview of these aspects of knowledge, whilst Appendix 1 provides a visual overview of the model.

The first category of word knowledge in Nation’s (2013a) framework is form. The first two aspects relating to form are spoken form and written form. Spoken form relates to pronunciation, including segmental features such as the production of individual phonemes (e.g., consonants and vowels), combinations of phonemes (e.g., consonant clusters and diphthongs), and suprasegmental features such as word stress, rhythm and intonation (Celce-Murcia, Brinton, Goodwin, & Griner, 2010). Problems in segmental form may arise if a learner’s first language (L1) does not contain the same phonological or phonotactic features as English (Laufer, 1997). Simultaneously, word stress plays a crucial role in English pronunciation. As a result, individuals who can use word stress accurately in spoken communication are more likely to enhance their productive vocabulary (Murphy & Kandil, 2004). Conversely, written form pertains to the spelling of words and is associated to pronunciation in that the spelling of words may or may not offer clues to how those words are pronounced. The third aspect within the category of form is word parts. Word parts are an aspect that recognises basic free morphemes, derivations and inflections. A learner’s ability to deconstruct words into morphemes is said to enhance the learner’s skills to produce related new words (Nation, 2013a). Thus, a learner’s vocabulary knowledge will be improved by understanding that the root meaning of words within a family is borne of the same concept. Such an understanding will result in the ability to transform ‘friend’ into ‘friendly’, and then into ‘unfriendly’, and so on (Laufer, 1997; Nation, 2013a).

The second category of word knowledge in Nation’s (2013a) framework is meaning. This includes knowledge that goes beyond simply knowing what a word means. The first aspect in this category is form and meaning. Gaining knowledge of form and meaning is a crucial developmental phase of word knowledge. The premise of connecting form and meaning lies in the understanding that it is possible to know that a concept exists and be familiar with a word but not be able to connect the two. As a result, a learner might understand that a large cup for
drinking coffee exists and be aware of the word *mug*, but not connect the two (Nation, 2013a). The second aspect of *meaning* is *concept and referents*, which specifically relates to words with multiple meanings. In other words, knowledge of *concept and referents* refers to the ability to use the same label for varied concepts such as using the lexical form *hot* in its varied senses (i.e., temperature and spicy). Learners tend to pass through stages of both overextension, where they may use a word to represent too many concepts, and underextension, where they may only use a word in a single sense and never extend it to varied meanings (Henriksen, 1999). The final aspect of *meaning* is *associations* and lexical relations with other words, such as hyponymy, antonymy and synonymy (Laufer, 1997; Nation, 2013a). Such *associations* have been referred to as *network building* which is a prolonged process. It seems that the initial growth of a lexical store builds rapidly, and then as network building occurs, the process slows down dramatically (Nation, 2013a). Perhaps this is because, as learners expand their vocabulary, they continue to restructure their semantic network (Fitzpatrick & Clenton, 2017). With specific relation to oral vocabulary knowledge, L2 learners structure lexical networks phonologically and then as they become more advanced, they reorganise them semantically (Chapelle, 1994; Haastrup & Henriksen, 2000; Henriksen, 1999; Wesche & Paribakht, 1996).

The third category of word knowledge in Nation’s (2013a) framework is *use*. *Use* relates to the ability to use a word in spoken and written modalities. The first aspect of *use* is *grammatical functions*, which relate to how lexical choices relate to the construction of the whole sentence. For example, if a learner chooses to use the noun *memory* (‘My earliest childhood *memory* is…’) in place of the verb *to remember* (‘The first thing I *remember* about my childhood is…’) the whole sentence would need to be restructured accordingly. For learners to make such lexical choices, they need specific knowledge of *grammatical functions* to rearrange utterances (Nation, 2013a). The second aspect of *use* is *collocations*, which is knowing which words typically appear together. Knowledge of *collocations* can affect fluency in that the memorisation of ready to use lexical chunks reduces the burden of constructing such formations at the time of speaking (Fitzpatrick & Wray, 2006; Thomson, 2015; Wray & Fitzpatrick, 2009). The final aspect of *use* is *constraints on use*, typically dictated by sociolinguistic factors. These factors are varied, and the failure to adhere to restrictions can lead to inappropriate word use. For example, in some cultures, calling someone *fat* is considered a compliment, but in English, this may be construed as rude (Nation, 2013a). Therefore, knowledge of cultural influences in English is required to understand constraints on use.
It is crucial to acknowledge that these aspects of knowledge are interconnected and should not be perceived as separate components. Vocabulary development appears to be an incremental process with significant parallel learning. Therefore, developing knowledge of one aspect will facilitate the development of knowledge related to other elements (González-Fernández & Schmitt, 2020; Webb, 2007). Furthermore, González-Fernández and Schmitt (2020) found, with statistical reliability, that the development of productive vocabulary knowledge occurs after receptive.

2.1.2 Tri-continua model of vocabulary development

Many argue that the gap between productive and receptive knowledge is not to be viewed as a continuum that changes according to linguistic and pragmatic factors (e.g., de la Fuente, 2002; Fan, 2000; Henriksen, 1999; Laufer, 1997; Laufer & Paribakht, 1998; Lee & Muncie, 2006; Meara & Alcoy, 2010; Melka, 1997; Zhong, 2011). Henriksen (1999) further advocates the use of a tri-continua model, which identifies three distinct continua in the development of vocabulary: (1) the partial-precise continuum, (2) the depth of knowledge continuum, and (3) the receptive-productive continuum.

Henriksen (1999) states that the partial precise continuum is a continuum of knowledge. In other words, learners will have varying levels of understanding lexical meaning, within which learners move through levels of understanding from recognition to “finer shades of meaning” (p. 311). In relation to Nation’s (2013a) aspects of knowledge framework, presumably, this will correlate with knowledge of form-meaning, concept and referents and word parts to varying degrees. Furthermore, Schmitt (2010) defines the gradual progression of vocabulary development as acquiring different aspects of vocabulary knowledge as learners advance from zero to partial and eventually to precise knowledge.

Henriksen’s (1999) second continuum is the depth of knowledge continuum. This is also defined as a continuum of knowledge, within which learners will develop the quality of their word knowledge within this continuum. It is at this point that the development of not only meaning but paradigmatic use (that is, knowledge of, hyponymy, antonymy, gradation and synonymy) and syntagmatic relations (that is collocational restrictions) occurs (Henriksen, 1999, pp. 305-306). In other words, learners will develop lexical relationships between words to enrich lexical networks. In relation to Nation’s (2013a) aspects of knowledge framework, this will undoubtedly include
the development of knowledge of associations, and collocations and, to some degree, the development of knowledge of the grammatical function and word parts.

Henriksen’s (1999) third continuum is the receptive-productive continuum, which is distinct from the first two in that it is a continuum of control and relates to how much control a learner has over the use of a word. Henriksen (1999) explains that a learner moves along both the partial-precise continuum and depth of knowledge continua simultaneously because, as knowledge of word meaning increases, so does the comprehension of a word's association with the words surrounding it. In contrast, the ability to produce a word is primarily a result of a learner’s control of the word rather than their knowledge of it. Therefore, learners will move along the receptive-productive continuum separately from the other two continua. This significantly impacts the development of productive oral vocabulary. Since lexical production is determined by learners’ control of words, the development of productive oral vocabulary will not depend on additional knowledge of words, but enhanced control of them. Presumably, this continuum of control will permeate all aspects of knowledge as defined by Nation (2013a).

According to Nation (2013a) the capacity to control the use of words in speech will involve various aspects of knowledge, including spoken form requiring the capacity to say a word using correct pronunciation and stress. Then, control of word parts implies that a learner has control over the construction of words, including changes to the stress and pronunciation of the stem word when an affix is added. At the same time, control of grammatical function is needed to construct original sentences using a word correctly with accurate placement of lexical stress according to situational contexts and needs.

In sum, word knowledge consists of multiple aspects transcending that of individual lexical items to include an understanding of complex relationships between words. If the word is of any value, the meaning must first be known receptively, but then aspects of form and use must be mastered if it is to be employed in communication (Schmitt, 2000). Therefore, a degree of control over receptive knowledge is needed to activate productive word knowledge. Controlled use of lexis can shift learners along a continuum from receptive to productive word knowledge. Concerning productive oral word knowledge, this means that productive knowledge will encapsulate receptive knowledge and then go further for words to be retrieved and mastered orally so that they can be used in speaking (Nation, 1990; Schmitt, 2000). Thus, learners’ ability to control the use of target lexis in speech is central to developing productive oral vocabulary.
2.2 The distinction between receptive and productive vocabulary

A number of studies have reported that the ability to use new words productively is more challenging than simply understanding their meanings (i.e., developing receptive vocabulary knowledge). Melka (1997) highlights various studies reporting that receptive vocabularies can be anywhere from two up to five times larger than productive vocabularies; however, Fan (2000) claims that generalised figures such as these should be interpreted carefully. They do not account for the varied and complex knowledge of individual students. Nonetheless, Nation (2013a) attributes vocabulary gaps to the notion that a deeper level of knowledge is required to develop productive vocabulary and that learners are faced with competing information if they use words productively. Nation (2013a) asserts that learning productive vocabulary can be between 50% to 100% more difficult than learning receptive vocabulary. He further highlights that two languages are likely to share a significant amount of knowledge related to word meaning, which allows for the translation of foreign words into an L1; but it is far less likely that knowledge of lexical form will be shared across languages. At the same time, Schmitt (2000) explains that the brain has an immense capacity to store information but far less capability to process this information in real-time. Since lexical retrieval is a sub-process of production, developing productive vocabulary knowledge is seen as a highly effortful undertaking because significant demand will be placed on short-term memory (Snellings, van Gelderen, & de Glopper, 2002). As such, productive word knowledge requires a higher level of proficiency than receptive, therefore, it requires more time and effort to develop (Read, 2000).

Productive vocabulary is often viewed as requiring more complete knowledge than does receptive vocabulary. It seems that receptive vocabulary knowledge can be achieved by knowing form-meaning links, whilst productive vocabulary knowledge requires simultaneous knowledge of various other aspects, including word class, collocation, synonyms, and grammatical function (Nation, 2013a; Schmitt, 2014). Therefore, even if a word is only partly known, it can still be understood receptively. For a learner to employ a word in writing or speaking, on the other hand, they will require complete knowledge of it (Melka, 1997; Schneider, Healy, & Bourne, 2002). An example of this is the bathtub effect, which demonstrates that it is not always necessary for a listener to have the complete form of a word for it to be recognised (Aitchison, 1994). Aitchison established that people could identify a word if only the beginning and end of the word were
heard, with the middle clusters being largely inconsequential to word recognition. Although productive word knowledge requires more complete knowledge than receptive, learner experimentation with the use of words can be a sign of becoming more productive. Two examples of such experimentations include borrowings and coinages, defined as the incorporation of unmodified L1 words in L2 text and the invention of non-existing L2 words, respectively (Henriksen & Danelund, 2015). Although it may not be appropriate to deem these examples as successful production, as productive communication strategies, they are noteworthy.

When we consider such partial learning of words that allows learners to understand words but not use them, the complex nature of vocabulary development becomes particularly salient. Acknowledging partial learning of vocabulary development must be viewed as occurring on a continuum. The simple distinction of receptive and productive vocabulary as two domains does not allow us to acknowledge grades of word knowledge. Within this dichotomous view of word knowledge, there is no clear distinction that accounts for the complexity of lexical items, nor is there an acknowledgment of the association between depth of knowledge and the capacity to use words. However, suppose vocabulary knowledge was thought of as occurring on a continuum. In such a case, we can more easily explain the shades of knowledge between simply understanding a word and having the ability to utilise it with varying degrees of automaticity. Færch, Haastrup, and Phillipson (1984) suggested that at one end of the continuum would be some vague knowledge of word form (i.e., a learner knows that the form is a word); and at the other end, would be the capacity to use a word correctly and freely in communication. Laufer and Paribakht (1998) were the first to provide insight into such shades of knowledge. They examined three categorisations of word knowledge: controlled active (i.e., cued recall of word form), passive (i.e., receptive) and free active (i.e., voluntary choice to use a word in production). Not surprisingly, they discovered that passive vocabulary developed quicker than did active vocabulary, particularly accessible and active, supporting Nation’s (2013a) claim that it is easier to develop receptive vocabulary. Therefore, viewing vocabulary knowledge as developing on a continuum from receptive to productive knowledge is a far more reasonable view of vocabulary development.

Furthermore, it is vital for research investigating vocabulary development to provide a clear definition of knowledge so that the knowledge can be appropriately measured. In particular, Laufer and Paribakht (1998) raised concerns that many vocabulary tests do not adequately or
appropriately measure the knowledge being studied. They warn against vocabulary tests need to allow learners to mark words as ‘known’ simply because they know the word exists but are not aware of the word’s real meaning. At the same time, the authors highlight the shortcomings of vocabulary tests in which learners can mark a word as ‘not known’ simply because they cannot use the word in a sentence but know the meaning of the word. Laufer and Paribakht (1998) advise caution in accepting tests that do not adequately measure grades of knowing words. Therefore, if productive oral vocabulary is to be investigated, then relevant measures need to be implemented that acknowledge vocabulary development as occurring on a continuum.

2.3 Productive oral vocabulary knowledge

According to Levelt’s (1989) theory of speech development, L2 speech production is a lexical-driven process because morphology, phonology and grammar will all be determined by the words selected. The speech will begin with learners’ conceptualisation of what they want to say (i.e., pre-verbal message), after which they construct the message and retrieve the required target items from memory before ultimately conveying that message in L2 speech (Levelt, 1989).

Since a word’s availability dictates the ability to use a word in speech, productive oral vocabulary knowledge must begin with understanding retrieval processes. The working memory (i.e., short-term memory) temporarily stores information received via two domains: the visuo-spatial sketchpad and phonological loop (Logie, 1995). Logie (1995) defines the visuo-spatial sketchpad as processing visual information (such as written words) and the phonological loop as processing aural information. The critical function of the phonological loop is not to remember known words but to learn new words by providing temporary storage while more permanent lexical representations are formed. Therefore, it has been identified as a vital component of successful L2 vocabulary acquisition in adults (Baddeley, Papagno, & Gathercole, 1998). The information in the phonological loop is strengthened by overt or sub-vocal repetition (Baddeley et al., 1998), which prevents the deterioration of verbal information by refreshing phonological traces so that information can be preserved in the short-term memory (Papagno & Vallar, 1992). Ellis and Beaton (1993) state that the vocalisation of words through imitation or rote rehearsal plays a significant role in language learning. Therefore, as the fundamental link between vocabulary learning and phonological memory, the phonological loop plays a key role in transforming receptive vocabulary to productive.
Furthermore, with the provision of opportunities to repeatedly retrieve phonological forms from memory, the phonological loop can be used to strengthen form-meaning links. Since information stored in the phonological loop is more durable than information that has been stored with semantic representations alone (Perfetti, Liu, & Tan, 2005), this procedure can be beneficial for learners’ development of productive oral vocabulary. Papagno and Vallar (1992) reported that the phonological loop could facilitate lexical recall during the early stages of vocabulary acquisition when no prior lexical-semantic representation is available in long-term memory. This can be explained by the primary functions of the phonological loop, which are to temporarily store phonological information and prevent the decay of information through repeated verbal rehearsal (Baddeley, 1986, 1990; Baddeley et al., 1998). To activate this procedure, students need to repeat newly learned words aloud so that phonological information is more easily accessed in future retrievals (Baddeley et al., 1998). Therefore, learners must be provided with opportunities for repeated retrieval and overt articulation of target words as they attempt to strengthen form-meaning links and enhance productive oral vocabulary knowledge.

Even in appreciating the importance of retrieval procedures, the exact connection between oral proficiency and productive vocabulary knowledge remains unclear. Contemporary frameworks of L2 speech have defined L2 oral ability as comprising four aspects: fluency, lexical richness, pronunciation, and global features such as lexico-grammatical knowledge (Crossley, Salsbury, & Menamara, 2015; de Jong et al., 2012; Saito, Trofimovich, & Isaacs, 2017). In recent years, there has been a revived interest in understanding the correlation between one's proficiency in speaking and their vocabulary knowledge. Various reports have identified correlations between vocabulary knowledge and oral proficiency. de Jong et al. (2012) was the first study to recognise that productive vocabulary knowledge is a general predictor of oral proficiency. This was followed by Milton (2013) who reported a statistically significant positive correlation between word knowledge and oral proficiency. While these formative studies reported on general speaking proficiency, subsequent studies have focused on specific aspects of oral proficiency. Most recently, Uchihara and Clenton (2022) found that oral proficiency correlated with pronunciation, grammar and vocabulary, but failed to identify a correlation with fluency. Conversely, several studies have identified a positive correlation between productive oral vocabulary knowledge and speaking fluency (Uchihara &
Saito, 2016) and that learners with smaller productive vocabularies produce speech with more frequent and prolonged pauses (Uchihara, Saito, & Clenton, 2020). Liu (2020) also found that L2 vocabulary retrieval significantly correlates with oral proficiency, including fluency, accuracy and complexity. Her results showed that efficient lexical retrieval led to enhanced lexico-grammatical and morpho-phonological encoding, which can be explained by the significant cognitive demands of L2 speech production. It is generally accepted that learners with lower L2 proficiency will have a reduced capacity to process lexical, syntactic and phonological knowledge, ultimately leading to reduced oral fluency (Kormos, 2014). Still, in all these studies, little comment has been made with relation to the types of classroom activities and teaching techniques that might take advantage of the correlation between vocabulary knowledge and oral proficiency to develop learners’ productive oral vocabulary.

In addition to the evident relationship between vocabulary knowledge and oral proficiency there appears to be a more specific relationship between vocabulary knowledge and pronunciation. Therefore, research has led to calls for pronunciation training to be embedded into vocabulary-focused lessons. Various studies have reported medium or significant correlations between vocabulary knowledge and pronunciation (Mairano & Santiago, 2020; Uchihara & Clenton, 2022; Uchihara & Saito, 2019; Uchihara et al., 2020). Although Mairano and Santiago (2020), did not report correlations between pronunciation and vocabulary knowledge, their study focused on Italian learners of French; therefore, findings should be interpreted with caution in an ESL context. In an English L2 context, various studies have identified a relationship between oral comprehensibility, as a global feature, and vocabulary knowledge (Saito, 2019; Saito et al., 2017; Saito, Webb, Trofimovich, & Isaacs, 2016; Trofimovich & Isaacs, 2012; Uchihara et al., 2020). The importance of comprehensibly pronunciation with respect to oral communication has been aptly highlighted by Jones (2018) who stated that “while other linguistic inadequacies may make an exchange difficult, incomprehensible pronunciation will literally stop the conversation” (p. 370). Yet, teachers have been shown to dedicate the majority of classroom time to grammar and vocabulary instruction and neglect explicit teaching of pronunciation (Foote, Trofimovich, Collins, & Urzúa, 2016). Therefore, to ensure that pronunciation is not completely overlooked Darcy et al. (2021) have recommended that explicit pronunciation instruction is integrated into existing vocabulary-focused lessons (Darcy, Rocca, & Hancock, 2021). As a result, there is a need for studies investigating the types of pronunciation instruction that can be embedded into vocabulary-focused lessons to develop learners’ productive oral vocabulary.
2.4 Lexical choice

Gaining an understanding of the process related to accessing words in speech is crucial to effectively address the difficulties of making lexical selections. To understand this process, we will refer to Levelt’s (1989) theory of speech development and L2 speech production. In this model, lexical access is generally accepted as a two-step process. The first step is lexical selection, which is initiated by the desire to communicate a message (conceptualisation). Lexical selection is defined as the retrieval of appropriate words from the thousands of options available in a mental lexicon. Lemmas are subsequently retrieved according to semantic conditions required to communicate the desired message and will drive grammatical encoding that leads to the construction of phrases. The second step of lexical access is phonological encoding which is retrieving the sounds, or phonological shape, of the selected word. Levelt (1992) refers to an imitation phenomenon to state that the fluency of this formulation process will be enhanced by recycling recently activated words, such as words recently used by a speaker or interlocutor.

There has been some debate concerning the relationship between lexical selection and phonological encoding. Some explanations assume the process to occur in discrete stages whereby words are first selected before phonological encoding is activated and that semantic foundations of words will not be considered during phonological encoding (Bock, Levelt, & Gernsbacher, 2002; Levelt, 1989; Roelofs, 1996, 1997; Schriefers, Meyer, & Levelt, 1990; van Turennout, Hagoort, & Brown, 1997). Yet, this seems unlikely, given that learners may abandon word use if they encounter difficulties accessing phonological information (Laufer, 1997). To support this view, some studies suggested that lexical selection does not need to be complete before phonological encoding begins (Cutting & Ferreira, 1999; Peterson & Savoy, 1998). Consequently, it must be considered that the choice to use words is not necessarily modular. That lexical selection will span from semantic needs to lemma selection to creating a pronounceable phonetic pattern of the selected word.

It is just as important to consider why learners may avoid using particular words as it is to consider why they will choose to use specific words. Laufer (1997) refers to three variations in the ability to produce a word: some with effort, some momentarily inaccessible (i.e., the tip-of-the-tongue phenomenon), and others instantaneously. She highlights that if learners are faced
with difficulty producing words, they may avoid them altogether. Problems leading to avoidance may include a lack of complete understanding, such as uncertainty about a word’s pronunciation (Laufer, 1997). Melka (1997) has further suggested two distinct types of avoidance. First, she specified that actual avoidance occurs for cultural reasons, and apparent avoidance is the refusal to use a word because it is perceived to be difficult. Similarly, Fitzpatrick and Wray (2006) found that learners sometimes deliberately choose to produce language that is not correct to maintain a foreign identity. Therefore, although the ability to create lexically rich discourse is a standard measure of language proficiency, lexical errors in speech may not always be due to issues related to retrieval or reduced language proficiency and may be a deliberate choice.

There are several conditions which facilitate lexical access and may make the deliberate choice to use words easier. Firstly, using memorised prefabricated language could help enhance the process of lexical access in speech production. Ding (2006) identified the benefits of using memorised chunks of language in speech with results that showed the verbatim memorisation of chunks of speech can enhance speech fluency and the ability to use collocations and formulaic sequences. In his study, one participant stated that when other students produced, “Family is very important”, she was able to produce lexically richer speech by repeating a memorised phrase “Nothing can be compared with the importance of family” (Ding, 2006, p. 277). Interestingly, recent research has suggested that learners with a large bank of multiword units can retrieve chunks of language with the same efficiency and processing load as needed to retrieve single-word items (Tavakoli & Uchihara, 2020). At the same time, there is a correlation between the quality of speech and the use of prefabricated chunks, which can be explained by the increased margin of error when less proficient learners rely on the selection of individual words to construct phrases rather than using prefabricated language (Boers, Eyckmans, Kappel, Stengers, & Demecheleer, 2006). At the same time, research has demonstrated that the repetition of oral narratives might: assist in lexical selection by reducing cognitive burden; lead learners to make more sophisticated lexical choices; and improve their speech accuracy (Boers, 2014; de Jong & Perfetti, 2011; Fukuta, 2016; Salsbury, Crossley, & McNamara, 2011; Thai & Boers, 2016). Furthermore, re-using recently produced speech seems to make transforming ideas into speech in the moment of speaking a more efficient process (Ding, 2006; Fitzpatrick & Wray, 2006; Nation & Chung, 2009; Tavakoli & Uchihara, 2020; Wray & Fitzpatrick, 2009). As a result, repetition of speech and memorisation of language chunks may enhance the fluency of lexical access.
Another critical function of efficient lexical retrieval is a well-organised lexical network. With specific reference to real-time communication, well-organised lexical networks might make words immediately accessible with greater speed and efficiency (de Bot, 1992; Kormos, 2014; Skehan, 1996). Research into ‘slips of the tongue’ has further highlighted the importance of a well-organised lexical network in efficient lexical access. For example, speakers have been shown to replace items with words that are either phonetically similar (such as replacing *kitchen* for *chicken*), semantically related (such as replacing *lunch* for *breakfast*), or with words that are both semantically and phonetically similar (such as replacing *cat* for *rat*) (Aitchison, 1994).

Coupled with research suggesting that, as vocabulary size increases, networks become more organised (Meara, 1990, 2006), there is a clear relationship between oral proficiency, organisation of lexical information and word use. Ultimately, learners need to utilise well-organised lexical networks to expedite lexical retrieval procedures to enhance their spoken proficiency.

Similarly, producing lexically rich discourse signifies an enlarged productive vocabulary. Although most studies have focussed on written vocabulary knowledge, they report correlations between vocabulary size and lexical richness in produced language. For example, Zheng (2012) found that learners appear prone to using a limited range of basic words instead of choosing more advanced academic words. However, the study does not make it clear if learners are using simple words as a stylistic choice (e.g., for socio-cultural reasons) or if they choose simple words because they have a higher level of control over them. At the same time, Henriksen and Danelund (2015) identified a correlation between vocabulary size and lexical richness. They reported that learners with smaller productive vocabularies tended to rely on less sophisticated words as a playing-it-safe strategy, using well-known words that resembled L1 words, or high-frequency words. On the other hand, learners with even marginally larger productive vocabularies improved lexical variation, such as using less systematic or academic vocabulary. Similar correlations between vocabulary size and lexical richness exist in oral modalities as well.

At any rate, learners must be pushed to produce lexically rich speech to enhance their productive oral vocabulary knowledge. Lee and Muncie (2006) suggest that learners need to be explicitly instructed to use as many words as possible, resulting in a push to use richer lexical items. At the beginning of language production, learners tend to focus on meaning, but subsequent lexical repetitions allow them to focus on improved lexical selection (Fukuta, 2016). This implies that
teachers need to encourage learners to go beyond using commonly used words, and to strive for a higher level of language proficiency (Laufer, 1998; Zheng, 2012). Laufer (1998) warns that learning environments focused on communicative abilities, in which teachers are satisfied that meaning was conveyed, provide no incentive for learners to experiment with advanced lexical items. Such a learning environment can stunt productive vocabulary development because learners are not pushed to take language risks and use lesser-known words, which, if used, would lead to free active vocabulary development (Laufer, 1998; Swain, 1996; Swain & Lapkin, 1995). Interestingly, Heidari (2019) reported a correlation between the size of the learner’s productive vocabulary and willingness to communicate, but the test instruments used to measure productive vocabulary size are unclear. Ultimately, learners need to perceive vocabulary gains earned during an activity to be adequate so that their evaluation of the learning experience is positive and they continue to use lexical items in the future (Tseng & Schmitt, 2008). In conclusion, it is important to acknowledge that learner failure to produce lexically rich text is not only attributed to inadequate vocabulary knowledge but that it might also result from varied influences such as motivation, avoidance strategies and willingness to communicate. All things considered, it is recommended that learners be rewarded for making advanced lexical choices in oral output so that they may have the opportunity to enhance their oral proficiency.

2.5 Incidental and deliberate vocabulary learning

There are two main ways words can be learned: deliberately and incidentally. Incidental learning occurs through exposure to words in meaning-focused activities, whereas deliberate learning occurs due to the explicit teaching of lexical knowledge (Nation, 2021). Although more research is needed to understand how classroom activities promote productive vocabulary knowledge (Schmitt, 2019), there is evidence to suggest that both incidental and explicit instruction are beneficial. Erlam and Ellis (2018) found that for learners’ productive vocabulary knowledge to be enhanced through input alone, learners must be consciously aware of target linguistic forms. This is founded on the premise that learners may perceive linguistic features of input without conscious attention. Still, for that knowledge to be stored in long-term memory, it must be attended to consciously (Schmidt, 2001). Despite the gains made with incidental learning, explicit instruction of target items, followed by opportunities to practise using words in speaking, has been shown to result in the ability to use learned vocabulary in subsequent communication (Shintani, 2013). Therefore, both incidental and deliberate methods of word learning can facilitate the development of productive oral vocabulary knowledge.
Whether it is incidental or explicit instruction, key considerations regarding how words are introduced and what learners do after they are introduced, need to be made. Regarding incidental instruction, it has been proposed that the foundation of developing lexical knowledge might be how learners respond to words (Webb, 2020). Consider that discussing target items with peers or teachers after exposure to words is likely to enhance the development of those words. Then, according to Lindstromberg (2020), learners will become aware of a retrieval cue when engaged in deliberate word learning. This retrieval cue will prompt the learner to mentally search for a target word form. While searching, learners will either retrieve the lexical form or will not. Lindstromberg (2020) states that even if learners cannot retrieve a target lexical form, their knowledge of the form will be enhanced by cognitive feedback during the search for the lexical item. In other words, it is not the specific retrieval of lexical form during deliberate vocabulary instruction that promotes learning but the process of a cognitive search for words that strengthens lexical relationships in the memory.

Nonetheless, it would be challenging to develop productive oral vocabulary knowledge through incidental learning alone. It is generally accepted that, for vocabulary knowledge to be developed, it is necessary to complement incidental vocabulary learning with deliberate vocabulary learning (e.g., Boers, 2015; de Keyser, 2002; Hulstijn, 2005; Sanz & Leow, 2011; Schmitt, 2000) and that learning needs to encourage meaning-focused use (Laufer, 2005; Schmitt, 2008). Recent research demonstrated the positive effect of watching videos with a specific focus on vocabulary (i.e., incidental learning supported by deliberate learning) when compared to watching videos without any focus on vocabulary (i.e., incidental learning alone) (Wong, Flynn, & Neuman, 2021). Furthermore, there seems to be a correlation between vocabulary size and the effectiveness of incidental learning. When learning vocabulary incidentally, it is crucial that the text contains a low number of unfamiliar words; otherwise, learners may find it challenging to retain the new vocabulary. (Montero Perez, 2020; Teng, 2019, 2020; Webb & Chang, 2015). The amount of input needed to expand one’s vocabulary increases exponentially with vocabulary size (Nation, 2013a). Nation (2013a) states that, to learn a word incidentally, a learner with a vocabulary of 1,000 words would need to encounter a text of approximately 10,000 words, and a learner with a vocabulary knowledge of 2,000 words would require a text of about 20,000. Therefore, it would not be feasible for learners to be exposed to
such a vast amount of input during class time alone. Deliberate learning during class time supported by teacher guidance thus becomes essential.

When learning is focused on transforming receptive vocabulary knowledge into productive vocabulary knowledge, deliberate word learning becomes particularly beneficial. Although this relationship has only been investigated in written modes, findings consistently show the benefits of deliberate word learning. Firstly, Muncie (2002) found that redrafting written compositions without a focus on vocabulary did not lead to enhanced lexical sophistication. Comparatively, Lee (2003) found that reading instruction followed by a composition writing task resulted in only 13.2% of target words being known productively. Notably, when deliberate word learning was added to the learning condition, this percentage increased to 63% and was sustained in a delayed writing task. Similarly, Lee and Muncie (2006) identified an enhanced productive use of less frequent words when learners engaged in a reading task supplemented by deliberate vocabulary learning, further identifying that productive word knowledge was sustained in delayed writing tasks. Finally, Yamamoto (2011) found that writing tasks without a specific focus on vocabulary learners lead to productive vocabulary gains. As a result, there are clear benefits of supporting incidental learning with deliberate learning in written modes and, presumably, these benefits would also transfer to vocabulary learning in spoken modes.

2.6 Vocabulary learning with productive tasks

The literature strongly advocates consideration of task type when developing productive vocabulary knowledge. In general, productive learning tasks would be more effective at promoting productive vocabulary knowledge than receptive learning tasks. In this discussion, productive learning tasks are defined as those that focus attention on producing linguistic output, and receptive learning tasks are defined as those focused on comprehending linguistic input. Webb (2005) states that most vocabulary learned in a classroom context is learned through receptive tasks, and rarely are students asked to write using given words (i.e., productive learning), suggesting that this might be because receptive tasks are easier to design and assess. Yet, for learners to achieve productive mastery of words, they need to practice using words productively (Laufer, 2005; Schmitt, 2019). Yamamoto (2011) attributes this requirement to the theory that, in productive tasks, learners develop associative links between form, meaning and function, making words more available for communication. Teng and Xu (2022) investigated the
effectiveness of three task types, sentence translation and sentence writing, as productive tasks, compared to gap-fill and multiple choice as receptive tasks. The authors reported that the effectiveness of the productive learning activities significantly surpassed the receptive tasks. Moreover, various studies have identified that productive tasks develop both receptive and productive word knowledge (Namaziandost, Dehkordi, & Shafiee, 2019; Shintani, 2011; Teng & Xu, 2022). At the same time, Shintani (2011) highlighted the importance of input-based tasks in providing opportunities for richer engagement with words. In sum, both receptive and productive tasks are beneficial to vocabulary learning, but learners need to practise using words if they are to develop productive vocabulary knowledge.

Regarding productive tasks alone, reports of the effectiveness of different task types have been varied. Kim (2008) and Bao (2015) found that two productive task types, composition writing and sentence writing, were equally effective in promoting word learning. Conversely, Zou (2017) found that the composition writing task was significantly more effective at improving productive vocabulary knowledge than the sentence writing task. An important aspect to consider is time on task. Webb (2005) reported that when given equal time to complete both receptive and productive language tasks, individuals demonstrated improvements in both productive and receptive word knowledge. Conversely, when he repeated the experiment without any time limits, the productive learning group significantly outperformed in all assessments of vocabulary knowledge. As a result, productive tasks seem to be superior to receptive tasks in conditions that allow for unlimited time.

A final consideration to make in learning with productive tasks is the effectiveness of task repetition. As identified by Uchihara, Webb, and Yanagisawa (2019), studies investigating the impact of repetition in vocabulary acquisition has tended to focus on incidental learning. However, Teng and Xu (2022) identified the benefits of repetition in deliberate word learning in both receptive and productive tasks in written modes. They found that, while receptive tasks are not as effective as productive tasks, there was a cumulative advantage when either task type was repeated three to four times. Interestingly, they identified that this advantage began to decline after three to four retrievals. Taken together, there are some benefits of repeating both receptive and productive tasks, but task efficiency decreases after the first several repetitions. The benefits of repeating productive tasks can be explained by the theory of pushed output, which will enhance the learner’s capacity to control vocabulary in speech. The concept of pushing output
has evolved from the notion that L2 knowledge does not transfer from reception (semantic decoding) to production (syntactic processing) automatically (Nation & Chung, 2009). If learners are pushed to use language communicatively, they may become aware of their language gaps. Firstly, through negotiating output, it is essential for learners to identify any disparities between their intended expression and their actual ability to articulate their thoughts (de la Fuente, 2002; Shintani, 2013). Then, pushed output allows learners to test their vocabulary knowledge and try out language ideas as they modify output until success is reached (Henriksen & Danelund, 2015; Swain, 1985; Swain & Lapkin, 1995). Therefore, through repeated output, learners must experiment and reflect on their use of L2 vocabulary, which will lead to enhanced control of productive vocabulary knowledge.

2.7 Theoretical framework

Vygotsky’s sociocultural theory of concept formation is founded on the idea that society strongly influences how we interpret the world around us, which manifests in unique linguistic systems (Vygotsky, 1978, 1979, 1986). Vygotsky states that language is a way for people to categorise their thoughts about what they observe in the physical world and that concepts are psychological structures that provide a foundation for words to be used meaningfully in communication. Once individuals consciously perceive a concept in their environment, they begin to internalise it by building internal linguistic representations. First, these internal representations originate as decontextualised relationships between individual words, and then, as concepts mature, relationships between words become increasingly contextualised. Finally, words become available for communication and problem-solving as internal representations grow. Nevertheless, such psychological processes are secondary to the social processes which shape one’s initial perception of their environment. Therefore, Vygotsky claims that language has the power to shape the minds of those within society to view the world according to the structure of that language. As such, words used to represent concepts vary considerably between cultures and across historical periods. Therefore, learners of any L2 need to be aware that each language has a unique categorisation of the world, and the process of learning a new language requires learners to re-conceptualise their view of the world (Nation, 2013a).

Then, for oral production, there needs to be a logical internal representation of real-world concepts. In other words, for a word to be used in communication the concept of that word needs
to be perceived and internalised (Vygotsky, 1986). Past research demonstrated such a phenomenon with children who were taught *chromium* as the word for the colour olive (Swingley, 2010). It showed that the children could not produce the word until they understood that olive belonged to a different conceptual domain than green or brown and that it is a colour with a name. In other words, it would be difficult for learners to produce the word olive in speech if they had not first built an inner visual representation linking the word olive with the colour as we perceive it in reality (Vygotsky, 1986). As a result, oral production stems from an internal thought process that creates internal visualisations of concepts which are then communicated through a linguistic system.

ESL learners will already have existing concept domains shaped by their L1 cultures. These need to be reorganised so that new L2 labels can be attached according to how English cultures categorise the world. According to Vygotsky (1979), speech is a response triggered by environmental stimuli, complicated by the fact that different languages classify concepts according to how a particular culture views the world. In other words, the same stimuli will trigger the retrieval of specific words for speakers with various backgrounds, but a speaker will only achieve their communication goal if the words they use evoke similar images in the listener’s mind (Riemer, 2015). For example, in English, the word *wine* is predominantly categorised into red and white varieties but in the Serbian language these two varieties are defined as *crno* (black) and *belo* (white). A communication breakdown is likely if a speaker of Serbian produces the collocation of *black wine* with a native English-speaking listener. For the concept of red wine to be evoked in the mind of an English speaker, the production of the words *red wine* must be understood. Therefore, vocabulary learning is not the simple addition of new knowledge to fit existing knowledge but “a way of coordinating (updating, revising, cancelling) the representations we store in our memory about the way things are” (Riemer, 2015, p. 312). In sum, ESL learners need to restructure internal representations of concepts to suit a novel culture and then attach learned L2 words accordingly.

Vygotsky’s notion of concept development provides a valuable lens for understanding L2 learners’ vocabulary knowledge development. However, it has not been used as a theoretical framework in investigating L2 vocabulary development. Therefore, this thesis draws on Vygotsky’s theory of concept formation as a foundation and is based on the belief that learners
need to reorganise existing conceptual domains and then attach new labels to suit the English linguistic system. Using this theoretical framework as a lens, this study proposes that Vygotsky’s socio-cultural theory of concept formation is valuable in contexts focused on productive oral vocabulary development.

Within Vygotsky’s (1986) sociocultural framework of concept formation, words are organised in mind according to their overarching conceptual domains. Vygotsky (1986) states that the development of semantic foundations is fundamental in the early stages of concept formation. Then, as knowledge matures, direct experience with concepts facilitates the storage of knowledge in the memory, including connections between ideas. For example, an individual may see some birds and observe that they have wings that enable them to fly and thus, this observation develops a concept of ‘birds’ that conjures connections between birds, wings and fly (verb). This is a notion that is reflected in L2 vocabulary development in that a learner first develop knowledge of word form (i.e., spelling or phonological form) and then, as knowledge is consolidated, lexical form is attached to word meaning (Pigada & Schmitt, 2006; Read, 2000). Notably, incidental acquisition of lexical knowledge can occur through direct experience with words during reading by noticing the patterns within which words occur (Elgort et al., 2018; Webb, 2008a). The further acquisition of lexical meaning is likely to occur if there are rich contextual clues surrounding the target word (Teng, 2019; Webb, 2008a). At the same time, focusing the learner’s attention on understanding the relationships with other words, such as synonymy and antonymy, facilitates the development of vocabulary knowledge by developing logical connections between words according to word meaning (Nation, 2013a). Such maturing of lexical networks to include associations between words and analysing parts will result in enriched conceptual domains of target words.

Just as the learner gradually makes authentic connections between ideas, so do they slowly cultivate their ability to control repeated successful reproduction (Karmiloff-Smith, 1986). In the beginning, learners still have a fragile picture of phonological form in their mind’s eye and are dependent on external stimuli, which results in the unstable reproduction of linguistic terms (Karmiloff-Smith, 1986). The productive linguistic development of words begins with an imitation of speech input, and output is primarily defined as speech imitation (Karmiloff-Smith, 1986). However, as learner proficiency increases, learners undertake self-correction strategies to regulate verbal output. Self-correction can be seen as a form of repetition to unify the production
process so that the link between external stimuli and production is internalised (Karmiloff-Smith, 1986). This is akin to what Vygotsky (1986) refers to as verbal thinking, which occurs as verbal connections are created between objects to achieve a communicative goal.

Vygotsky (1986) theorises that concept formation will mature to a point where internal representations can be used in speech for communication. Furthermore, Vygotsky (1986) states that learners will become able to use their thought processes to construct original ideas representing their perception of relationships between concepts. Therefore, using concept formation as a lens in the context of developing productive oral vocabulary knowledge indicates that learners need to begin their vocabulary learning journey by gaining control of speech production by deliberately focusing attention on phonological form. To do this, learners need to regulate the production of difficult phonemes, word stress and prominence in continuous speech (Jenkins, 2002). Part of mastering phonological form will also include conceptualising the English sound system (Fraser, 2001) and understanding how words change when incorporated into connected speech (Alameen & Levis, 2015; J. D. Brown & Kondo-Brown, 2006). After phonological form has been mastered, learners must engage in controlled output of the target language allowing for self-correction strategies. Although initial language productions may not yet be stable, with repeated output, speakers will gain increasing control of speech output (Altman, 1997; Karmiloff-Smith, 1986). Finally, learners need to aim to improve communicative abilities by producing speech in freer contexts, a procedure which is advocated for by academics (e.g., Baker, 2021).

At the peak of concept formation, Vygotsky (1986) asserts that the learner will gain control of internal mental networks so that concepts can be linked to linguistic production (Vygotsky, 1986). Regarding speech production, this is the highest level of self-mastery that enables the development of stable control of productive output (Karmiloff-Smith, 1986). For this self-mastery to occur, language output needs to include sufficient linguistic context so that meaning can be conveyed without the assistance of non-verbal signs, such as pointing or visual devices (Vygotsky, 1986). Therefore, to gain mastery of oral production, learners need to focus on consolidating all aspects of lexical knowledge and developing an ability to convey independent thoughts in the form of speech. Learners may initially overuse newly learned words, but as lexical output slowly stabilise, they will learn to use words more appropriately (Laufer, 1998). To become more proficient users of lexical items, learners will require repeated opportunities to
experiment with word use as they communicate original ideas in speech (Swain & Lapkin, 1995). It is expected that repeated output will lead to a continual consolidation of word knowledge, resulting in increased proficiency that leads to the production of gradually larger units of language (i.e., moving from the production of single sentences to longer stretches of speech). In sum, using Vygotsky’s (1986) theory of concept formation in the context of productive oral vocabulary development informs the process by which learners’ may attach words to concepts so that novel ideas can be conveyed through speech.
Chapter 3: Research Design

This chapter presents a summary of the research design and its rationale. The study adopted a Design-Based Research (DBR) approach, which was deemed appropriate for investigating practical instructional strategies and tools that can address real-world educational issues (van den Akker, 2006). The core of DBR is to comprehend how, when, and why educational innovations can effectively address problems encountered in practice, enabling educational reforms to be implemented (The Design-Based Research Collective, 2003). As suggested by Anderson and Shattuck (2012), this study prioritises both the advancement of knowledge and the enhancement of practice. The research design was guided by five key DBR characteristics: (i) employing real educational settings; (ii) developing and evaluating a significant intervention; (iii) utilising mixed-methods analysis; (iv) testing the best possible intervention design through multiple iterations; and (v) fostering collaboration between researchers and practitioners (Anderson & Shattuck, 2012).

As outlined in the preceding chapters, there is a gap in existing literature relating to how productive oral vocabulary develops and how classroom time can be used to advance such development. Therefore, a DBR approach was selected because it allows the researcher to stay closely connected to the classroom context and understand teachers’ real-world challenges. The iterative design process ensures that the proposed solutions are practical, relevant, and effective in addressing identified teaching challenges (Reeves, 2006). The researcher can test the design in a real-world setting and make necessary adjustments based on the feedback received and analysis of data collected (McKenney & Reeves, 2018). This leads to a set of principles that are more likely to be successful in improving teaching practice (McKenney & Reeves, 2018).

Furthermore, DBR encourages collaboration between researchers and practitioners, which is important for ensuring the relevance and practicality of the proposed solutions. The researcher can work together with teachers to design and implement innovative approaches to teaching and learning. This close collaboration helps to build trust and relationships between researchers and practitioners, which is important for ensuring the uptake and sustainability of the research findings. Teachers can also provide valuable insights into the practical challenges of
implementing the design, and the researcher can use this information to refine the design and make it more effective. Finally, a DBR approach provides a structured and systematic approach to improving teaching practice. The researcher can rigorously test and evaluate the effect of the design learning outcomes, offering understanding or perspectives on its effectiveness. This approach allows the researcher to build evidence-based best practices for teaching and learning, which can be used to inform future research and practice.
In addressing this problem, the researcher engaged in the four phases of DBR as proposed by Reeves (2006), outlined in Figure 1 below, to investigate classroom techniques used for the enhancement of productive oral vocabulary in practice. The aforementioned characteristics were put into action in multiple phases.

**Figure 1**

The DBR research model (Reeves, 2006, p. 59)

The specific implementation of the four phases in the present study is represented in Figure 2 below and each phase is described in the following paragraphs.

**Figure 2**

Application of the DBR research model in this study
As defined by Reeves (2006), the purpose of **Phase 1** is the identification of real-world problems which, if solved, would result in significant educational improvement. In this phase, it is common for researchers to use their personal experience as practitioners in the field to consult with other practitioners and to conduct an extensive literature review so that a comprehensive exploration of the problem is undertaken. Figure 2 above describes the five key themes that were uncovered in Phase 1: Breadth and depth of knowledge; the distinction between receptive and productive vocabulary; productive oral vocabulary knowledge; lexical choice; incidental and deliberate vocabulary learning; vocabulary learning with productive tasks; and the theoretical framework. As part of Phase 1, a pilot study was also conducted to gain insight into students’ experiences concerning the research problem.

After identifying the problem in this initial investigation, a more extensive inquiry into existing literature is undertaken as part of **Phase 2**. This phase aims to examine existing principles or theoretical frameworks based on the problem area uncovered in Phase 1 and relate them to the setting in question. This phase results in the generation of draft design principles addressing the target problem and use them to develop a solution or educational ‘intervention’ to be implemented in Phase 3. The five design principles are explained in detail in Section 3.3 of Chapter 3. As defined in Figure 2 above, the educational solution consisted of a teaching model manifested in a productive oral vocabulary workshop held over five days.

After the draft design principles have been developed, the educational solution is created, tested and refined as part of **Phase 3**. During this phase, the intervention is tested in iterative rounds, and each iteration’s objective is to implement a proposed solution to the identified problem in a real-world context. In addition, iteration is used to gather evidence concerning the effectiveness of the proposed resolution in solving the problem situation (Reeves, 2006). After each round of iterative testing, refinements are made to the design principles and learning environment to improve further its ability to solve the real-world problem. Data is collected and analysed according to the guiding research questions to achieve this. As outlined in Figure 2 above, there were four data sources in this study: teacher focus groups, student focus groups, classroom observations, and student learning data (further detailed in chapter 4).

In the final **Phase 4**, a final reflection of data analysis is completed by researchers, and their experience and outcome of the research manifest in the form of final design principles to guide
future educational practice. Then, if relevant, a prototype of the educational solution is created, which would support future practitioners in implementing a learning environment to address the identified problem. Consequently, the product of the research is to contribute equally to theory and practice. As outlined in Figure 2 above, the outcomes of this study are five final design principles of mastering productive oral vocabulary and a proposed teaching model.

### 3.1 Research Context

The language school chosen for this study was an institution in Sydney, Australia, that provides educational services to international students in an ESL context. The institution was chosen for its strong focus on English Language Intensive Courses for Overseas Students (ELICOS). Moreover, the school's natural environment allowed instructors and students to act and behave in their typical manner, which is a vital component of qualitative research (Creswell, 2014). The institution was the researcher’s workplace at the time of the study, so there was an existing relationship with the institution allowing access to the natural educational setting (Creswell, 2012). When conducting studies in the researcher’s practice, it is vital to ensure that the researcher’s existing relationship with the institution does influence research interpretations (McKenney & Reeves, 2018). Therefore, member checking was included in the research process to ensure that such relationships did not affect the researcher in this study. Member checking in this study involved presenting the teacher participants with the collected data, analyses, interpretations, and conclusions for their evaluation. Then, information about the study was presented using detailed descriptions, defined by high levels of illumination and detail of the participants and the setting to allow readers to make decisions regarding the transferability of the findings. Finally, an understanding of the researcher’s expected gains from the study (reciprocity) was made clear to all participants before the study took place (Creswell, 2012).

#### 3.1.1 Teacher and student participants

Teachers with higher levels of experience and qualifications were sought out to participate in this study for their ability to contribute valuable knowledge gained through practice. Students of the participant teachers were subsequently recruited. Only teachers of classes at a minimum A2 level following the Common European Framework of Reference for Languages (CEFRL) were eligible to participate. This level states that learners have a receptive knowledge of the highest frequency vocabulary (Council of Europe, 2001). Therefore, focusing on the most frequent 3,000
words is relevant to this group of learners, and for that reason, this level was focused on in this study.

The study involved two experienced teachers and their classes at the intermediate level. While both teachers participated in the initial iteration of the study, only one teacher could take part in the second iteration due to a decrease in student enrolment. Each teacher participant had relevant experience and qualifications, one with more experience and the other with more capabilities (see Table 1 below for details).

Table 1
Teacher and student participants

<table>
<thead>
<tr>
<th>Iteration</th>
<th>Teacher Pseudonym</th>
<th>Number of student participants in cohort</th>
<th>Country of origin</th>
<th>Student L1</th>
<th>Qualifications</th>
<th>Years of experience teaching ESL</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Lynn</td>
<td>11</td>
<td>South Korea x 2</td>
<td>Korean</td>
<td>Bachelor of Communications / Master of International Relations / Postgraduate Certificate in TESOL / Master of Applied Linguistics / Certificate IV in Training and Assessment</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Japan x 5</td>
<td>Japanese</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Brazil x 1</td>
<td>Portuguese</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bulgaria x 1</td>
<td>Bulgarian</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Italy x 1</td>
<td>Italian</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Thailand x 1</td>
<td>Thai</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td></td>
<td>14</td>
<td>Israel x 1</td>
<td>Hebrew</td>
<td>CELTA / Bachelor of Arts (Communication) / Certificate IV in Training and Assessment</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Portuguese</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Brazil x 6</td>
<td>Spanish</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Colombia x 4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.1.2 Consent of the participants

Both teacher participants volunteered for the study without being recruited. Subsequent participation by their student cohorts was also voluntary. Before the research commenced, information about the study was provided to all teachers, and student participants (see Appendix 2) and their written consent were obtained (see Appendix 3). In the first iteration, all students enrolled in the targeted classes agreed to participate; however, in the second iteration, two students chose not to participate. All research objectives and confidentiality of data collected was provided in these consent forms, which also explicitly stated that participants had the right to decline participation and could withdraw from the study and any related data at any point. It was
also made clear to all participants that their decision not to participate or to withdraw from the study would not impact their relationship with the institution, academic results, or treatment.

### 3.1.3 Researcher’s Role

The researcher was not a participant teacher in this study and did not engage with student participants while implementing the vocabulary workshop. Instead, the researcher was present in classroom observations as a non-participant to watch, take field notes and manage the logistics of audio recording. The advantage of the researcher’s presence in the classroom was that the researcher was able to witness activities first-hand with the opportunity to notice unusual aspects that may not be salient in audio recordings (Creswell, 2012). As outlined by Kervin, Vialle, Herrington and Okely (2016), a researcher may assume five different roles while observing (see Figure 3).

![Figure 3](Roles of observers (Kervin et al., 2006, p. 85))

Throughout this study, the researcher had a limited role in terms of interaction with the participants (Kervin et al., 2016). Consequently, the participants were familiar with the identity of the researcher, and the researcher limited interactions with students during classroom observation to clarification of the task instructions when needed and to distribute audio recorders to students. Observation is a primary instrument for data collection in qualitative research providing vast amounts of descriptive data (Creswell, 2014). Dornyei (2007) explains that observations enable data collection employing non-interventionism and therefore are more objective than data collected through self-reports.

### 3.2 Phase 1: Preliminary consultation with stakeholders

A single focus group of approximately two hours was held at the participant site with teacher participants to gain insight into teaching practices aimed at developing productive oral
vocabulary. Teacher participants were determined to be specialist practitioners of their high levels of experience and qualifications. Teachers were presented with the research problem and asked to discuss the issue openly and offer personal experiences related to the problem. The focus group was facilitated by the researcher, who took field notes for later reflection, and was also digitally recorded and transcribed. The objective of this focus group was for teachers to provide meaningful contributions regarding their perspectives and experiences in teaching productive oral vocabulary. This discussion offered insight into existing practice to establish a strong foundation for investigating themes in the literature review. Such collaboration with practitioners working in the context of the problem area is strongly advocated for in DBR investigations (Herrington, McKenney, Reeves, & Oliver, 2007).

After this consultation with specialist practitioners, an initial literature review was conducted to explore the identified themes further. In DBR, a literature review provides additional functions to a typical literature review that aims to identify and analyse relevant documents related to the research problem, build a logical framework, and identify gaps in research (Herrington et al., 2007). Herrington et al. (2007) emphasise that reviewing existing literature in DBR is crucial because it informs the creation of preliminary guidelines for designing and developing an intervention that aims to solve a specific problem. The literature review conducted in this phase revealed clear patterns in theoretical underpinnings that informed the educational problem. The identified patterns are specifically related to a lack of explicit pronunciation teaching and incorporating productive vocabulary learning in the learning environment. In the DBR process, confirming an identified problem's significance is a crucial step because problems that are considered insignificant by the research community may not require this type of research. In such cases, less rigorous methods can be employed to make decisions based on data (Ma & Harmon, 2009). To do this, a pilot study was also implemented as part of Phase 1. The pilot study was conducted over three consecutive days using the same teacher participants as the first iteration. During the pilot study, the teacher participants engaged in three activities of varying lengths: Lesson 1 was 20 minutes, lesson 2 was 45 minutes, and lesson 3 was 30 minutes. However, the researcher remained an observer for two hours to observe the effects on the classroom environment before and after the experimental lessons. The overall outcomes of the pilot study were then analysed by the researcher and her two supervisors as specialist practitioners, Honglin Chen and Amanda Baker, which is typical of DBR (Herrington et al., 2007). This analysis confirmed the significance and is further detailed in the following paragraphs.
The first lesson of the pilot study consisted of an adapted version of Paribakht and Wesche’s (1996) Vocabulary Knowledge Scale (VKS) to gauge the level of knowledge that learners had of a selection of high frequency words taken from the Longman Communication 3,000. Although the VKS has been criticised for oversimplifying linguistic knowledge, it was chosen for the pilot study precisely because of its simplicity. Critiques of the VKS have stated that it does not reflect authentic language contexts, which is important for learners to demonstrate a deeper understanding of word meanings, collocations, and pragmatic usage (Bruton, 2009). However, demonstrating deeper linguistic and phonological knowledge of target words would be established through a variety of activities within the intervention. Therefore, the inability of the VKS to measure deeper linguistic knowledge did not limit the objective of the tool in the pilot study.

Therefore, using the VKS would assist in selecting the most appropriate target words to be used in the subsequent iterations of testing. The two classes of intermediate level learners that participated in the pilot study consisted of 20 students. The participants in the study were requested to evaluate a group of 68 S3 words, which are part of the third 1000 most commonly used spoken words, ranging from 2,001 to 3,000 words. The outcomes of the preliminary investigation demonstrated that the group of students had productive knowledge of only 56% of the selected S3 words (see Table 2). Therefore, focusing on developing productive knowledge of S3 words from the Longman Communication 3,000 was considered the most beneficial for this group of learners.

Table 2
Average student rating of 68 S3 words

<table>
<thead>
<tr>
<th>VKS rating</th>
<th>Student response</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) I know what this word means, and I can use it in a sentence. (Productive knowledge)</td>
<td>38 of 68 words (56%)</td>
</tr>
<tr>
<td>b) I know what this word means, but I’m not sure how to use it. (Receptive knowledge)</td>
<td>8 of 68 words (12%)</td>
</tr>
</tbody>
</table>
The second lesson of the pilot study was aimed at observing the effects of using technology in the learning environment. To do this, the teacher used the school’s computer labs. The computer labs allow students to be seated at a personal desktop computer and are equipped with a computer for the teacher that is connected to a digital projector. In this lesson, the teacher guided students as they created a deck of flashcards using the digital app Quizlet, which has been suggested to be useful in facilitating learner autonomy (Cunningham, 2017). Quizlet is an Artificial Intelligence (AI) study tool that makes games and interactive activities to help students learn vocabulary using flashcards. The paid version of Quizlet includes incorporating an image to be added to the definition side of the flashcard. Teachers were provided with a paid subscription to Quizlet so that students could create their own flashcards using an image selected by the student. Students were then instructed to download the app to their mobile devices and study the set of flashcards in their own time. Surprisingly, it was identified in this lesson that the learning environment should not depend too heavily on technology. The pilot study revealed that not all students had access to personal devices that would support the use of technology or did not have sufficient levels of digital literacy. Of the 20 students participating in the pilot study, it was revealed that eight students had never used a PC or smart phone before, which resulted in the teacher spending unreasonable amounts of time to support those students at the neglect of other students.

Finally, the third lesson of the pilot study focused on explicit pronunciation teaching. To do this, the teachers used the Rhythmic Fight Club (RFC) technique, a pronunciation training technique that has been suggested to also promote vocabulary learning (Burri et al., 2016). The RFC technique is described in Section 3.4.3 of Chapter 3, Outline of the productive oral vocabulary workshop. The pilot study revealed that this was a highly engaging technique. Students were observed to enjoy the activity with high levels of laughter whilst remaining focused on producing the target phonological forms. After this pilot study further literature review was undertaken and key themes were further refined to inform the drafting of design principles in Phase 2.
3.3 Phase 2: Draft Design Principles

After key themes and underpinning theory were identified in Phase 1, Draft Design Principles (DDP) were developed to provide a systematic and holistic solution to the research problem. DBR is based on a practical philosophy which values theories based on their ability to bring about changes in the real world. Therefore, researchers using DBR should first explain theoretical foundations upon which a proposed solution has been based and continue to use the theoretical foundation as a basis for subsequent research phases (Herrington et al., 2007). In the present study, theoretical underpinnings have determined that productive linguistic development moves from simple imitation of aural input (procedural phase) to eventual control of productive output (conceptual phase) (Karmiloff-Smith, 1986). Then, for that to occur, the concept development process must simultaneously develop to a point where conceptual ideas are internalised through verbal thought to be transformed into speech (Vygotsky, 1986). Similarly, in the learning of a second language, vocabulary knowledge must move along two defined continua encapsulating nine aspects of productive word knowledge before lexis can become helpful in speech (Henriksen, 1999; Nation, 2001). The commonality of these processes is that with each stage of advancement, linguistic knowledge becomes internalised and less dependent on external stimuli, resulting in an increased ability to control output. Therefore, increasing control in oral production through internalising conceptual ideas and linguistic knowledge has underpinned the five DDP described here.

3.3.1 DDP 1: Employ imaging to conceptualise the meaning of words

The process of concept formation with the view to developing productive aspects of word knowledge begins with constructing form-meaning links. At this early stage of development, a foundation of knowledge is necessary upon which further world knowledge can be built. Understanding the meaning of a word is essential for words to be valid. Therefore, form-meaning links are a foundation of vocabulary teaching (Melka, 1997).

Furthermore, form-meaning links can be explored in relation to productive oral vocabulary knowledge. In this sense, learners need to develop phonological form-meaning links that connect lexical meaning to phonological form. As was discussed in the literature review, it is possible for learners to know what a word sounds like or how to pronounce it and to be familiar with the
concept of a word, but not necessarily how to link the two (Nation, 2013a). However, for words to be helpful in speech, learners require phonological form-meaning links that allow the words to be drawn from memory and used in oral output. Images can foster direct access to target word meaning. Creating phonological form-meaning links with images can be helpful in the subsequent productive recall of phonological form (Boddaert, Casalis, & Mahé, 2021). In addition, Baddeley (1990) found that the opportunity to retrieve phonological structure repeatedly strengthens the connections between its form and meaning, which in turn facilitates its retrieval in future instances. The images would, therefore, become a potential aid for developing productive oral vocabulary by providing students with images as cues to retrieval of phonological form so that words can be used in speaking tasks.

Images can also be a highly effective tool for developing semantic word knowledge in the early stages of learning. Creating strong form-meaning links need to include forming rich conceptual domains for target words and knowing which words can represent respective concepts. Although words with more concrete meanings (such as tree) are more readily visualised, abstract words (such as nature) can also benefit from using images to help remember words (Boers, 2015). Evidence that mental lexicon is organised semantically (particularly for more advanced learners) supports the argument that creating concrete visual images assists in word memory (Aitchison, 1994; Ishii, 2015; Nicolaidis & Mattheoudakis, 2012; Read, 2000). However, Boers (2015) affirms that the foundation of imaging is the prioritisation of meaning over form, leading to solid retention of meaning but not necessarily of form. Presumably, the development of phonological form-meaning links can be achieved through learning with images with the support of an explicit focus on developing knowledge of phonological form.

Therefore, simultaneous visual and linguistic input can be considered a method of developing phonological form-meaning links. Paivio (1971) established a now widely researched phenomenon known as dual-coding, which involves presenting visual and verbal information simultaneously. According to Paivio (1971), the human mind processes visual and verbal information separately in different domains, and for this reason, processing dual codes does not result in a cognitive burden. It has since been found that learners can achieve greater retention with a dual presence of linguistic and visual information (Cuevas & Dawson, 2017). Hsu (2013) demonstrated this phenomenon by using video input with various combinations of captions and sound, concluding that word learning would be improved as long as there were no more than two
inputs. Therefore, it seems that the deep, elaborate processing which occurs with dual coding leads to the generation of a resilient memory trace (Boers, 2015; Hsu, 2013).

Furthermore, there is evidence that simultaneous aural (linguistic) and textual (visual) input can not only lead to enhanced memory for spoken words (Bird & Williams, 2002), but also enhanced learning of word meanings (Syodorenko, 2010). This can be explained by Mayer’s (2014) theory of multimedia learning which claims that using pictures as visual support to aural information leads to deeper learning because learners can establish mental connections between the two types of information. Despite the benefits of dual coding in word learning, Boers (2015) emphasises that words must be remembered well during stages of learning for them to be recalled later.

In the context of a multi-lingual ESL classroom, deliberate word learning using L1-L2 translation is often difficult to manage. As remediation, the L2-picture association is a highly effective word learning strategy (Barcroft, 2007, 2009; Yeh & Wang, 2003). A recent study by Boddaert, Casalis and Mahé (2021) showed that L2 picture association resulted in better L2 word learning with fewer errors than in L1-L2 translation tasks. However, the study focused on children, so assumptions of the same results occurring for adult learners should be made carefully. With regard to aural linguistic input, Hsu (2013) found that listening to audio without the support of visual input led to anxiety and an inability to conjure clear mental images to support the audio. Yet, while dual coding may be beneficial, it is not without its drawbacks. Educators need to be careful not to present excessive information within a single domain, which has been found to result in learners ignoring information from other domains (Hsu, 2013). Therefore, simultaneous visual and linguistic input needs to be carefully measured and implemented to ensure that learning is adequately supported by the tools used.

In conclusion, DDP 1 outlines that productive oral vocabulary development should begin with the development of phonological form-meaning links that incorporate images as an anchor for semantic knowledge. Using linguistic, audio and visual input will allow learners to develop strong phonological form-meaning links.
3.3.2 DDP 2: Develop learner knowledge of word meaning and lexical networks

This principle highlights that learners need to focus on how individual words relate to other words to enrich the semantic knowledge of target words. As such, this second principle is focused on facilitating learner movement along the partial-precise continuum of vocabulary knowledge (Henriksen, 1999) by developing a richer understanding of the lexical meaning and word associations.

As demonstrated in the literature review, it would be difficult, if not impossible, for productive oral vocabulary knowledge to be developed through incidental learning alone, highlighting the significance of deliberate understanding of vocabulary. Tseng and Schmitt (2008) claim that vocabulary knowledge is multi-dimensional and the objective of vocabulary learning must be to develop a robust, well-organised mental lexicon that is improved by both vocabulary size and depth of knowledge. As such, learning vocabulary involves more than simply memorising the definitions of words and needs to also recognise the relationships between words and how they are used in different contexts.

One method of deliberate learning that can enrich vocabulary knowledge is semantic mapping. Semantic mapping refers to a visual organisation of lexical information that helps learners understand relationships and connections between words, concepts, and ideas. It involves creating a structured diagram that displays the relationships among words, such as synonyms, antonyms, associations, and hierarchical connections (Nation, 2013a). Developing complex lexical networks, including knowledge of word parts, will likely result in enhanced form retrieval at later stages of oral production (Uchihara & Saito, 2016). Nation (2021) advises that learners must be provided with effective practice in recognising the most frequent affixes to better identify words as part of a word family and recognise when varied derivational forms are met. Developing such knowledge becomes particularly important in contexts that aim to develop productive oral vocabulary. Enriching learners’ existing vocabulary knowledge is likely to enhance their ability to use more words when speaking. For example, by developing learners’ knowledge of affixes for words that they can already use in speech, such as happy, learners might become able to use other forms, such as unhappy and happiness, with similar productivity (Lindqvist et al., 2013; Nation, 2013b; Nation & Webb, 2011). In a classroom context, utilising
semantic mapping is a great technique to consolidate existing word knowledge to develop knowledge of affixes of target words.

Semantic mapping is also highly useful in facilitating the development of semantic domains of target words. Such a method can facilitate the development of word knowledge, including associations, especially synonymy and collocations, and can help to strengthen knowledge of semantic fields in which lexical items belong (Aitchison, 1994). In his study of word associations, Zhang (2008) concluded that ESL teachers need to assist learners in the development of semantic word relations rather than focusing solely on syntactic relationships. At the same time, Khoii and Sharififar (2013) acknowledge that semantic mapping is a strategy that draws on prior knowledge or schema to strengthen semantic associations between words. In their study, semantic mapping was a process in which learners drew diagrams representing relationships between words. This procedure facilitated learner comprehension of complex information, aiding the consolidation of new with old knowledge (Khoii & Sharififar, 2013). Therefore, similar to developing knowledge of affixes, semantic mapping can be used to consolidate knowledge of existing words and develop productive oral vocabulary knowledge of target words. For example, learners familiar with and can use the word angry are likely to enhance their productive oral vocabulary knowledge if they associate the known word with related lesser-known words, such as furious or irritated. Therefore, as a deliberate learning technique, semantic mapping can facilitate the development of lexical networks and enrich learner knowledge of semantic domains to which target words belong.

In conclusion, DDP 2 outlines that learners must consolidate prior lexical knowledge to enrich conceptual domains so that precise knowledge of target word meaning can be developed. To do this, learners need to focus on the interrelatedness of words within lexical domains to enrich their understanding of target word meaning.

3.2.3 DDP 3: Enhance learner ability to control accurate production of target words

For a word to be valuable in oral speech, additional learning is required compared to receptive knowledge. Receptive knowledge is differentiated from productive knowledge in that for oral production to occur learners must simultaneously be able to control: pronunciation of the word in
continuous speech (Acton, 2001; Alameen & Levis, 2015; J. D. Brown & Kondo-Brown, 2006; Goh & Burns, 2012; Levis & Wichmann, 2015; Nation, 2001); spontaneous retrieval of word form to convey the precise meaning of an intended conceptual idea (Koizumi & In'nami, 2013; Laufer, 1997; Laufer & Rozovski-Roitblat, 2014; Lee & Muncie, 2006; Melka, 1997; Nation, 2001; Swain & Lapkin, 1995; Webb, 2008b; Zhong, 2011); and the ability to construct original sentences, using individual words or multiword units, in appropriate contexts fitting L2 sociolinguistic use (Boers, 2014; de Jong & Perfetti, 2011; Fukuta, 2016; Henriksen & Danelund, 2015; Hsu, 2013; Lee & Muncie, 2006; Newton, 2001; Newton & Nation, 2021; Read & Nation, 2002; Thai & Boers, 2016; Yamamoto, 2011).

Developing productive oral control of lexical items requires a cognitive conceptualisation of the phonological form followed by a kinaesthetic conceptualisation of how to produce the form. Mastery of phonological form precedes adequate lexical memorisation; in other words, learners need to be able to successfully create phonological form before words can be remembered and used in speech (Schmitt, 2008). Furthermore, Fraser (2001) emphasises that the difficulty in producing phonological forms is not caused by a physical inability to produce a sound but rather a cognitive difficulty. As an illustration, the phoneme /d/ may exist in a learner’s L1 in the word-initial position but not in the word final position; therefore, learners may find it difficult to correctly conceptualise words ending with a /d/ sound. Therefore, learners need to understand the constructs of English phonological patterns.

Therefore, before learners can produce accurate English forms, they need to reconceptualise existing phonological concepts and learn to deconstruct and reconstruct sounds according to the L2 and not the L1. Learners attempting to deconstruct English phonological form using their L1 concept of language will result in a loss of transference between the ear and the tongue (Fraser, 2001). Only upon understanding and conceptualising the L2 sound would learners be able to reproduce it. Once the sound has been reconceptualised, Copeman (2009) argues that the focus needs to be placed on kinaesthetic reconceptualisation, which means breaking kinaesthetic habits by hearing and making a different approximation from the habitual one. To do this, learners need to focus on the muscles used to produce words and “heighten [their] awareness of the muscle sensations instantiated during speech production” (Cerreta & Trofimovich, 2018, p. 49). Moreover, Armstrong, Wilcox, and Stokoe (1995) found that gesture positively impacts language perception, production and acquisition in that oral language and physical gesture are
neurologically connected. Consequently, using gesture in pronunciation training is beneficial to enhance knowledge of English phonological forms.

In addition to being able to produce words in isolation, if words are to be helpful in speech, learners need to understand the effect of continuous speech on the phonological form of individual words. This process begins with understanding word level stress, an aspect of knowledge which is Murphy and Kandil (2004) argue is the most critical factor in developing productive oral vocabulary. They further claim that a learner’s productive vocabulary is enhanced with the ability to accurately use word stress in spoken communication and maintain that accurate word level stress has positive effects on productive vocabulary. Nuclear stress is the syllable that contains the principal stress in a word group (Jenkins, 1998). It has been found that the quality of nuclear stress significantly enhances intelligibility and leads to understanding (Jenkins, 2002). Muller and Levis (2016) highlight that nuclear stress is realised in English by syllable duration that is more than twice as long as other stressed syllables in the utterance. Levis and Wichmann (2015) further propose that nuclear stress would typically be placed on the prominent syllable of the last content word in an utterance. By the same token, Dauer (2005) notes that nuclear stress is critical and is considerably associated with reduced vowels and that an inability to reduce vowels in connected speech can delay language acquisition for production. It seems that training in suprasegmental features, such as nuclear stress, can lead to the production of more complex language (Thomson, 2015).

In conclusion, DDP 3 highlights the importance of controlling the accurate production of target words when embedded in continuous speech. As such, this principle proposes that developing knowledge of target word pronunciation, including word level stress, must be considered a priority in enhancing productive knowledge of the spoken form of target words.

3.3.4 DDP 4: Encourage learners to experiment with word use in controlled tasks

This principle advocates for learner consolidation of previous knowledge of **form-meaning** links, **associations**, **grammatical functions** and **collocations** to activate receptive knowledge to become productive. Therefore, learners need to experiment with the productive use of words in controlled speaking tasks (e.g., Baker, 2014) to develop control of oral production of phonological form in
continuous speech. Using words in spontaneous speech creates a significant cognitive burden on learners because it requires them to consolidate prior knowledge as they construct speech to convey the ideas that they have mentally composed (Levelt, 1989). Therefore, this principle aims to increase learners’ oral proficiency of target words so that cognitive burden might be reduced when using words in speech.

The speed at which words transition from receptive to productive is mediated by various factors, including the ability to connect existing knowledge with new knowledge (Eichholz & Barbe, 1961; Tseng & Schmitt, 2008). Being able to draw on existing word knowledge as a foundation for speaking can increase learners’ confidence and result in an increased intrinsic desire to use words in speech (Dornyei, Ibrahim, & Muir, 2015; Tseng & Schmitt, 2008). In her study into the development of productive vocabulary knowledge, Altman (1997) analysed introspective journal entries and found that positive comments related to words that had already surpassed the initial stages of learning. She emphasised that words that were being perceived receptively were linked to negative journal comments such as “… there’s a trapped feeling inside that I can’t speak… I can understand and produce some [verbs] – but still don’t feel comfortable with the language” (p. 87). In contrast, positive journal entries related to words started to be used productively, irrespective of whether or not the word was used correctly. For example, “There are a whole bunch [of verbs] that are now automatic… There’s another group of verbs that I’m actively working on: Either I try to produce, and I’m understood and/or corrected or I want to produce but I can’t so avoid” (p. 87). Altman (1997) concluded that more attempts to use words in speaking meant more retrieval attempts, which in turn led to enhanced automaticity and positive emotions. Therefore, the benefits of opportunities to use words in speech might prime subsequent attempts so that learners develop a desire to experiment with word use in speech.

Therefore, classroom activities need to allow learners to experiment using learned vocabulary knowledge in speaking tasks. Learners must be encouraged to use such experimentation to reflect on their performance in relation to whether they were understood, corrected or unable to use a word. By giving learners opportunities to practice oral output, learners will be able to experiment with using target words in appropriate contexts, i.e. creative language use (Swain & Lapkin, 1995). Swain and Lapkin (1995) further articulate that such opportunities for repeated oral production ultimately allow learners to solve linguistic problems and achieve their individual communication goals. Classroom contexts that trigger the use of target vocabulary are essential
to learning, but lexical use in these environments also requires significant effort on the part of the learner (Fan, 2000). Therefore, specific instruction from teachers to deliberately elicit and encourage learners to use target words is highly beneficial (Lee & Muncie, 2006). In this way, learners will be encouraged to use vocabulary which has been shown to transform receptive vocabulary into productive (Yamamoto, 2011). Communicative practice in classrooms that encourages learners to notice gaps in communicative ability can lead to self-correction or an ability to achieve a communicative goal through discussion (Shintani, 2013). Therefore, activities need to provide opportunities for learners to practice using target words and to discuss word use so that they can collaboratively arrive at mutual understanding.

To develop the ability to use words productively and improve the rate of production, repeated access to lexical items is necessary. Lexical development is enhanced by situations that allow learners to access words repeatedly; however, for word learning to be activated, there needs to be opportunities for learners to use words (Namaziandost et al., 2019; Swain, 1996; Teng, 2019; Teng & Xu, 2022). Altman (1997) affirms that “the co-occurrence of opportunity in both the input and the formal learning situation greatly facilitated the mental processing” (p. 92), which led to an improved rate of production. She further reported that “the more work done in a particular area, the more those items were noticed elsewhere” (p. 92), and that the most potent prompt for noticing seemed to be a need to use language in speech. Altman (1997) claims that learner awareness was drawn to missing lexical knowledge when an attempt for retrieval was made, and if unsuccessful retrievals were repeated, the learner might engage in an active search for the item. Hence, the desire to use words can be strengthened by a repeated need to access words productively in meaningful communication.

In conclusion, DDP 4 identifies the positive effects of controlled tasks that encourage learner experimentation with using words in speech. Controlled tasks facilitate the activation of prior receptive knowledge to become productive through a) learner experimentation with word use that encourages them to pay attention to their own productive abilities; and b) promotion of rich peer discussion of target words.
3.3.5 DDP 5: Encourage learners to repeatedly use target words in communicative tasks

This principle emphasises the significance of providing learners with opportunities to demonstrate their ability to use target words in speech. As the final principle, it is expected that learners have a sufficient foundation of word knowledge, which has been developed through the course of previous learning. Therefore, as advocated for in the literature, this principle promotes the consolidation of prior lexical knowledge within communicative tasks (Boers, 2014). Communicative tasks here are distinct from controlled tasks in that they allow learners to use words to communicate a real message, as opposed to controlled tasks, which focus on the specific development of vocabulary knowledge (Shintani, 2013).

If tasks are designed to frame communication within appropriate conceptual domains, learners can notice when it is appropriate to use words in speech. Then, if communicative tasks provide sufficient opportunities for repeated output, learners will benefit from various facets, including 1) being exposed to language input by means of listening to peers; 2) being able to pay attention to the quality of their own lexical output and allowed to improve production with subsequent outputs; and 3) being able to notice any missed opportunities to use words and utilise opportunities to practice those words in subsequent outputs (Boers, 2014; Laufer & Rozovski-Roitblat, 2014; Nation, 2013a; Shintani, 2013; Thai & Boers, 2016). Learners who take advantage of opportunities to demonstrate these conditions are likely to enhance their mastery of oral production.

Knowledge of L2 does not automatically pass from receptive to productive the way that it does in a learner’s L1. For example, when learning to speak in an L2, syntactic linguistic processes automatically pass to long-term memory; however, in the L2 heavy processing in short-term memory is necessary for fluent production (Ahmadian, 2012). Moreover, formal features of linguistic encodings, such as lexical selection, are highly automatic in the L1; however, in the L2, extra attention is needed for articulating words in speech (Hilton, 2008). Therefore, during classroom speaking tasks, emphasis needs to be placed on learners challenging themselves to use newly learned words and avoid using well-known high-frequency words.
Classroom activities must ensure that the communication of a real message relies on target vocabulary so that learners can demonstrate their ability to use words as they communicate novel ideas. The first point of consideration is whether or not learners should be given planning time before constructing novel speech in a communicative task (Newton & Nation, 2021). Ellis (2005) found that, if pre-task planning is not allowed for, learners must plan oral production while performing the task. In such cases, tasks need to be unpressured about the time allocated for completing the task, leading to the production of language with increased accuracy and complexity. However, tasks with time restrictions should allow pre-task planning (Boers, 2014).

The second point of consideration is whether or not speaking topics need to be familiar to learners. It has been said that when there is a focus on developing fluency, familiar topics must be used so that cognitive resources are not exhausted with the conceptualisation of a message (Newton & Nation, 2021; Thai & Boers, 2016). At the same time, dialogue needs to be sufficiently flexible and not wholly predictable to activate productive vocabulary knowledge (Nation, 2013a).

In conclusion, DDP 5 expresses that learners must be encouraged to use target words in communicative speaking tasks. Such communicative activities need to include: 1) tasks with time pressure to enhance fluency; 2) planning time to focus on vocabulary use; 3) tasks requiring learners to speak about familiar topics; and 4) tasks with less predictable dialogue.

3.4 Phase 2: An educational solution

The education solution designed for this study consisted of two parts. Firstly, a four-stage teaching model that was developed to systematically target each of the DDP. Then, this teaching model was applied in the design of a practical productive oral vocabulary classroom workshop.

3.4.1 The innovative teaching model

The steps taken to investigate the teaching model were guided by the stages of DBR and iterative cycles of testing within Phase 3 of DBR. DBR is an approach rather than a methodology which can incorporate both qualitative and quantitative methods; however, it is important to note that DBR investigates specific processes in specific contexts rather than focusing on isolated variables (van den Akker, Gravemeijer, & McKenney, 2006). As such, multiple iterations are necessary to gather sufficient evidence about the effectiveness of an intervention and its impact.
on the problem, and a single implementation is often not enough (Herrington et al., 2007). The multiple iterations in this study included the pilot study, outlined in Phase 1, followed by two complete testing cycles. Each of the full cycles of testing was conducted over a week of study, consisting of four hours of classroom time per day for five consecutive days. At the end of the pilot study and each cycle of testing, the collected data was reviewed so that the teaching model could be enhanced, and learner needs could be better addressed in the next cycle of testing.

Figure 4 below outlines a summary of the iterative cycles of testing and the activities used in each iteration and each cycle with its respective activities are described in Section 3.4.3 below. However, it is important to first gain an insight into the target vocabulary used in each iteration, which is explained in Section 3.4.2 below.

**3.4.2 Target vocabulary**

Target words were selected words from the *Longman Communication 3,000* for two reasons. Firstly, the list was developed using a spoken corpus to avoid problems that may arise in comparing oral data with a written corpus (Lindqvist et al., 2013), and secondly, for its ability to count lemmas.
In the learning context, teachers would use a theme for each week of instruction, which was dictated by the coursebook. Both iterations of the study were undertaken when students were working through Unit 6 of the student coursebook, *Speakout Intermediate* (Clare, Wilson, & Dimond-Bayir, 2015), for which the theme is ‘Emotion’. In the first iteration of this study, the theme used as part of experimental lessons was travel. Therefore, words related to travel were selected from the S3 category of the *Longman Communication 3,000*. However, feedback from teachers in the first iteration indicated that it was challenging to have a different theme for experimental lessons than for standard classes within which the experimental lessons were embedded. Therefore, for lesson fluidity and to avoid learners shifting their focus from the context of emotions to travel and back to emotions, it was decided that the theme of emotions would also be used for experimental lessons for the second iteration. For that reason, S3 target words were identified within Unit 6 of the student coursebook, *Speakout Intermediate* (Clare et al., 2015). Words were selected as target words only if they appeared in the coursebook and were also S3 words. Table 3 outlines all target words used in each of the iterations.

**Table 3**

*Target words used in each iteration of this study*

<table>
<thead>
<tr>
<th>Iteration 1 experimental theme: Travel</th>
<th>Iteration 2 experimental theme: Emotions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain (noun)</td>
<td>Angry (adjective)</td>
</tr>
<tr>
<td>Route (noun)</td>
<td>Disappointed (adjective)</td>
</tr>
<tr>
<td>Pleasant (adjective)</td>
<td>Fascinating (adjective)</td>
</tr>
<tr>
<td>Journey (noun)</td>
<td>Confusing (adjective)</td>
</tr>
<tr>
<td>Island (noun)</td>
<td>Enjoyable (adjective)</td>
</tr>
<tr>
<td>Spot (verb)</td>
<td><em>(be at each other’s) throat</em> * (idiom)</td>
</tr>
<tr>
<td>Wander (verb)</td>
<td>Shocked (adjective)</td>
</tr>
<tr>
<td>Organised (adjective)</td>
<td>Persuade (verb)</td>
</tr>
<tr>
<td>Fascinating (adjective)</td>
<td>Escape (verb)</td>
</tr>
</tbody>
</table>

* The target word which appeared in Unit 6 of the textbook was *throat*, however, for the purpose of the experimental lessons it was taught in the context of this idiom in order to relate to the theme of emotions. In addition to this, the inclusion of an idiom was also considered beneficial in an effort to push students to use known lexical items in a new way. In consulting the Longman Dictionary of Contemporary English, the S3 category of the word *throat* lists this as a frequent idiom and is defined as “*if two people are at each other’s throats they are fighting or arguing*”. 
3.4.3 Outline of the productive oral vocabulary workshop

This study tested a new and innovative pronunciation-integrated teaching model consisting of four stages of teaching: 1) Focus on Conceptualisation; 2) Develop Internal Network; 3) Proceduralise Output; and 4) Focus on Productive Use. For this study, the teaching model manifested in a one-week productive oral vocabulary workshop and was implemented in a classroom setting. The workshop is presumed to be pedagogically balanced, according to Newton and Nation’s (2021) four strands of learning. Newton and Nation (2021) identify that when teaching listening and speaking to learners of English as a second language it is crucial to balance a course equally over what they refer to as the four strands of learning. They define the first strand as meaning-focused input, in which time should be spent listening with learner attention focused on an idea or message being communicated. The second strand is defined as meaning-focused output, in which the objective of activities needs to be for learners to convey specific ideas or messages in speaking tasks. The third strand is defined as language-focused learning, in which time needs to be spent on the deliberate study of language such as vocabulary, grammar or pronunciation. The final strand is defined as fluency development, in which time needs to be spent on allowing learners to use already known language more fluently. Important to note that these strands do not necessarily have an order of acquisition. However, fluency development must be focused on language that is already known and not new information. The productive oral vocabulary workshop was carefully designed to ensure that roughly equivalent time was spent on each of these four strands, as advised by Newton and Nation (2021).

Consequently, in both iterations of this study, the productive oral vocabulary workshop consisted of five 30-minute classroom lessons conducted over five consecutive days, and the strands were relatively balanced within the workshop as a whole.

The following sections will outline each of the iterations, how the four strands were balanced within the workshop and each of the activities used in each iteration. The following sections also outline the key learnings from each activity’s implementation that were used to inform subsequent iterations and final principles. Keeping with the functions of DBR, the research and evaluation efforts were focused on development, where the aim was to improve rather than prove the effectiveness of the intervention (Herrington et al., 2007).
Iteration 1

The teaching model was implemented in the first iteration as a productive oral vocabulary workshop embedded into an intact classroom. The workshop consisted of a five-day program of 30-minutes of teaching per day, 150 minutes or 2.5 hours. Table 4 below outlines the teaching schedule and illustrates how activities have been sequenced at each stage to scaffold learning whilst balancing the four strands of learning. As shown in the table, the total of 150 minutes of classroom time is across the four as follows:

- Strand 1 – meaning-focused input: Approximately 40 minutes of classroom time
- Strand 2 – meaning-focused output: Approximately 35 minutes of classroom time
- Strand 3 – language-focused learning: Approximately 45 minutes of classroom time
- Strand 4 – fluency development: Approximately 30 minutes of classroom time

Table 4

<table>
<thead>
<tr>
<th>Iteration 1 – Balancing the four strands and workshop structure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day of workshop</strong></td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Day 1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Day 1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Day 2</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Day 3</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Day 4</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Day 4</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
The following paragraphs describe the learning activities used in the first iteration with relation to the intended learning outcome (ILO) of each activity. These paragraphs also include discussion of the observations and learnings of this iteration that fed forward to inform the second iteration of the study.

Activity: Match Words with Images

Description of activity

The ILO of this activity was for learners to develop foundational form-meaning links of target words so that they could build on this foundation to develop subsequent productive vocabulary knowledge. As informed by DDP 1, this activity aims to facilitate learners’ development of phonological form-meaning links of target words by incorporating linguistic, audio and visual input.

This activity exposed learners to target words embedded in meaningful contexts as they listened to the teacher read individual sentences containing the target words. The teacher drew attention to the target word by first saying the target word, reading the sentence and then repeating the target word (linguistic and audio input). As the student listened to the sentences, the written form of the sentences was presented to students. The target words were accentuated in the accompanying text to draw the learner’s attention to the target word. This condition has been shown to enhance receptive knowledge of target words and reduce cognitive load (Vasylets, Gilabert, Tada, & Gesa, 2016). Then, in pairs, learners were tasked with matching the target word with its respective image before the teacher moved on to the next target word (visual input) (see Appendix 4 for a list of images and sentences used for each target word). Although adding images in glosses has been shown to reduce the uptake of written word knowledge (Boers, Warren, He, & Deconinck, 2017), various studies have shown the benefits of using images to support aural input (e.g., Boddart et al., 2021). Since this study views vocabulary as occurring on a continuum from receptive to productive, rather than as two different phenomena, this activity was used to assess baseline knowledge that learners had of the target words. Discussions occurring during this activity were expected to provide insights into learners’ ability to
comprehend phonological forms, produce phonological forms and demonstrate any knowledge of lexical meaning that they might already have\(^1\). This activity aimed to develop perceptual relationships (Vygotsky, 1986) between the aural word form, meaning and representative image so that they had a conceptual foundation from which they could develop subsequent productive vocabulary knowledge.

**Learning from activity implementation**

Upon reflection and review of observations and feedback from the teacher and student participants, it seemed that the images did not support learning as expected. Even on the second day of the workshop, learners found it difficult to recall target words when prompted by the images. The use of flashcards was considered as a tool because they have been shown to rapidly develop learners’ receptive knowledge of words (Nation, 2013a). Findings from this first iteration demonstrated a need to incorporate a listening task. It was decided that a listening task during which learners listen to a narrative would elevate the focus on oral, a conditions which is difficult to achieve with flashcards (Nation, 2013a). This further reiterates the decision made after the pilot study, which utilised flashcards using Quizlet (see section 3.2), not to use flashcards during the workshop. Further review of existing literature indicated that incorporating a narrative might aid in memorising target words and associated images. Prince (2012) found that when target words were embedded into a story, learners were better able to retain vocabulary in the short term than when target words were embedded into unrelated sentences. In other words, linking target words to a narrative framework will lead to enhanced vocabulary learning. The use of storytelling has been shown to aid vocabulary acquisition amongst children because stories are typically characterised by novelty, humour, conflict and surprise (Elley, 1989, p. 176). Elley (1989) claims that these characteristics allow children to maintain attention and learn from context. However, since the author’s study was conducted on children learning their L1, findings cannot be presumed to be true in the context of adult ESL. Therefore, Elley’s (1989) findings have been applied with caution in the present study. Nonetheless, the engaging nature of the stories has been shown to enable memorisation which can contribute to academic achievement (R. Ellis, 1984). This additional literature review further informs DDP 1 to suggest that it is insufficient to develop phonological form-meaning links using linguistic, audio and visual input, but that the three types of input need to be founded in a single narrative. In other words, narrative

---

\(^1\) While this dataset will not be overtly analysed for baseline knowledge in this thesis, insights generated from the data will be used to support and enrich my broader analytical investigation.
devices need to be used as a foundation to anchor and index vocabulary knowledge as phonological form-meaning links are created, therefore DDP 1 was amended to incorporate this learning.

**Activity: Word Domains**

**Description of activity**

This activity was adapted from *Word Domains* (Holisky et al., 1994) which aims to build on existing vocabulary knowledge. The ILO of this activity was for learners to develop an understanding of the inter-relational meaning between words to develop meaningful connections between ideas (Vygotsky, 1986). As specified in DDP 2, learners need to focus on consolidating prior lexical knowledge to enrich the conceptual domains of target words. DDP 2 recommends explicitly the use of semantic mapping to develop knowledge of associated words to enhance semantic knowledge of target words.

Using prior knowledge of words, learners needed to discuss their conceptual understanding of each word and its respective image, resulting in an enriched understanding of the conceptual domain for each word. This activity was used after learners had already engaged with target words and images during the *Match Words with Images* activity. This activity aimed to build on the form-meaning connections created during the *Match Words with Images* activity to establish knowledge of word associations and word parts. Students needed to match sentences containing various two target word collocations or word part variations. They then need to match the images with sentences provided and encouraged to discuss choices with their partners (see Appendix 5 for a list of sentences and associated images provided for each target word). Such activities, which require problem-solving help to shift words into long-term memory (Nation, 2013a). Therefore, the learning objective of this activity is to further develop internal lexical networks of the target words and to engage in a puzzle-like activity to solve a linguistic problem so that factual connections can be made through direct experience (Vygotsky, 1986).

**Learnings from activity implementation**

Similar to learnings identified in the *Match Words with Images* activity, the implementation of this *Word Domains* activity appeared to inhibit the utility of images for subsequent recall of target words (DDP 1). Observations and feedback from teacher and student participants indicated that using too many unrelated images was confusing. Although images negatively impacted
learning, the *Word Domains* activity was quite effective. After engaging in this activity, learners demonstrated an ability to use target words and collocation in many subsequent speaking tasks. However, learners were not observed to use collocations in diverse contexts that demonstrated their understanding of how word meaning changes when combined with different collocations. As a result, it determined that activities informed by DDP 2 need to be carefully designed to ensure that they do not conflate with the incorporation of DDP 1; instead, these DDPs need to be treated as mutually exclusive circumstances. Furthermore, this learning suggested that DDPs must acknowledge the importance of gaining a more profound understanding of word meaning, which provided evidence for the revision of DDP 2 to “Develop semantic and grammatical word knowledge through exposure to various encounters with words in rich and meaningful contexts”.

**Activity: Rhythmic Fight Club (RFC)**

**Description of activity**
The ILO of this activity is for learners to create conceptual associations between the target word meaning and phonological form. The RFC technique focuses learner attention on prominent syllables in continuous speech by using boxing-like movements to draw attention to the syllable structure (e.g., lexical stress) and prominence of target vocabulary in meaningful contexts. It should be noted that the phonological training in this study covers both word and sentence stress, which are distinct phenomena. The teachers made efforts to teach them as separate concepts during RFC sessions. They did this by first focusing on target word stress and then shifting attention to sentence level stress, in which case stress might move from target words to other words. The objective of this approach was to not only train learners in the production of target words, but to enhance their proficiency in using those target words in connected speech. For a more detailed description of the RFC technique, see Chapter 4, Burri, Baker and Acton (2016), and Acton, Baker, Burri and Teaman (2013). This activity relates specifically to DDP 3 in that it is focused on developing the learner’s ability to control the accurate production of target words.

During the Rhythmic Fight Club (RFC) activity, learners began to focus on the productive output of target vocabulary in an engaging activity. The theoretical foundation for this activity is for learners to gain control of external auxiliary stimuli (Vygotsky, 1986) by developing a conceptual understanding of the lexical meaning and spoken form. According to Karmiloff-Smith (1986), gaining control of oral reproduction can result from meaningful repetition. Therefore, the pronunciation training in this activity used repeated output so that learners could
engage with self-correction. Then, the physical nature of RFC can help to alleviate the emotions and anxiety that learners may experience when speaking, thereby maximising learning potential (Burri et al., 2016). Furthermore, such physical pronunciation training promotes muscle memory to facilitate the learning of target vocabulary in long-term memory so that it can be used in conversation (Burri et al., 2016; Macedonia & Klimesch, 2014). Therefore, the learning objective was for learners to engage in pronunciation training to accurately identify and produce prominent syllables within target words when embedded into continuous speech.

The RFC technique was implemented in three stages informed by Baker’s (2021), Pronunciation Pedagogy Model – From Awareness to Clear and Fluent Pronunciation, which draws on the work of Crookes and Chaudron (1991), Brown (2007), Richard-Amato (2010), Wajnryb (1992) and Celce-Murcia et al. (2010). Baker (2021) proposes that pronunciation training needs to begin with Language Awareness, followed by controlled practice. Therefore, in line with Baker’s (2021) first two stages of pronunciation training, Language Awareness and Controlled practice, the first instance of the RFC technique began with the teacher explaining and modelling the target features of language while using the RFC. In this initial stage, the learner focused on recognising that the target words contained prominent syllables in continuous speech. Given that the focus was on explaining and modelling, at this stage, the prominent syllables were highlighted in written sentences whilst the teacher explained the concept of prominence and modelled production using the RFC technique. The learners followed along with the boxing-like movements as they imitated the teacher and produced the sentences in Controlled Practice. In this second RFC session, learners engaged in a Guided Practice session, the third stage of Baker’s (2021) pronunciation model. This stage began with learners productively recalling target words prompted by images before engaging in RFC practice. Prominence was again highlighted for learners in the written sentences, but as a Guided Practice session, it was less teacher directed. In this session, students worked in pairs and used the RFC technique to practice producing target phonological forms more independently. In the third RFC session, learners engaged in a Free Practice session as outlined in Baker’s (2021) Pronunciation Pedagogy Model – From Awareness to Clear and Fluent Pronunciation. In this session, learners first productively recalled target words prompted by images before engaging in RFC practice. However, this time the prominence was not highlighted in the written sentences. Instead, learners needed to work in pairs and use the RFC technique to freely identify and produce target phonological forms.
Learning from activity implementation

In the first iteration, the sentences which were used for RFC practice were relatively simple and did not contain rich contextual clues (see Appendix 6 for a full list of sentences used during RFC in the first iteration). Upon reflection and review of researcher observations, this was a missed opportunity to expose learners to words embedded in various meaningful sentences from which they could enrich knowledge of word meaning. This learning provided further evidence to support the revision of DDP 2 to “Develop semantic and grammatical word knowledge by exploring semantic domains of target words and through exposure to target words in various rich and meaningful contexts”.

Activity: Collocation Bingo and Sentence Creation

Description of activity

This activity was adapted from Collocation Bingo (Schmitt, 1994) and the ILO for this activity was to provide additional opportunities for learners to strengthen memory traces of target word collocations. This activity was informed by both DDP 2 and DDP 4.

The theoretical foundation for this activity was for learners to demonstrate their ability to use internal networks to make linguistic structures and convey original ideas in speech (Vygotsky, 1986). This game was played in small groups of three. Playing in small groups rather than as a whole class can maximise the speaking time of each student. Students completed their bingo game cards with the target vocabulary to begin the game. The group drew from a pile of collocation cards and needed to match the collocation with the target vocabulary on their game-board (DDP 2). If a student matched a collocation, they needed to use the collocation to create an original sentence (DDP 4). The other students judged if the collocation was used correctly or not; a student needed to use the collocation correctly before they could cross the target word off their Bingo game card. This component of peer engagement calls for active listening, which can facilitate the maturation of factual connections between words through direct experience (Vygotsky, 1986) (DDP 4). This activity aims to provide opportunities for learners to draw on the depth of productive word knowledge so that they can demonstrate their ability to use associated linguistic terms in a social setting.

Learning from implementation
Upon reflection and review of researcher observations this activity was useful in enriching lexical associations of target words but did not seem to enhance learner ability to use words in novel sentences. In the majority of cases, when learners needed to create a novel sentence, they repeated the sentence presented to them during the previous day’s RFC activity nearly verbatim. Little effort was made to incorporate the target word into a new context. This learning further reinforced the revision of DDP 2.

**Activity: Collective Story**

*Description of activity*

This Collective Story activity has been adapted from a game readily available in gaming stores called Rory’s Story Cubes. The ILO of this activity was for learners to use target words meaningfully in a more extended speech. Unlike the Bingo sentence creation, where learners produced words in sentences, this activity required learners to integrate words into a longer, meaningful narrative. This activity relates explicitly to DDP 4 in that it was designed to promote learner experimentation with using target words in speech.

In this activity, learners take turns drawing an image card from a pile (i.e., the images used to develop the phonological-form meaning links) and recall phonological form of the target word. The first learner to draw a card then starts a story with “Once upon a time…” and incorporates the target word as they create a story. The next learner draws the next image card, recalls the word form, and continues the story to logically incorporate the target word. Students are instructed to recycle as many target words into the story as they can at each turn.

This activity deliberately draws on strategies to consolidate prior knowledge to facilitate the conversion of receptive vocabulary knowledge to become productive. Tasks requiring learners to use target vocabulary within written compositions have been shown to increase productive vocabulary knowledge (Lee, 2003; Lee & Muncie, 2006). Presumably, the same is true in spoken modes. The nature of this activity is fun and creative and therefore increases motivation by providing an atmosphere where learners can freely experiment with using the words (Dodigovic, 2018). For this activity, students were placed in small groups of two or three, and each group was given a pile of image cards used on the first day of the workshop during the *Match Words with Images* and *Word Domains* activities. The first student drew an image card from the pile and created a story beginning with “Once upon a time…” . They then incorporated the target
vocabulary that they had drawn into their story. The next student then pulled the next image card and continued the story, which the first student started whilst incorporating the target vocabulary. Students were instructed to recycle as many target words into the story as they could at each turn.

**Learning from activity implementation**

Upon reflection and review of researcher observations, this activity helped generate productive recall of target word forms using images (DDP 1). However, except for one group, learners failed to produce a continuous narrative and persisted in producing individual, unrelated sentences with each turn. Interestingly, the one group who did create a constant narrative decided to retell the story of Little Red Riding Hood because they were all familiar with the story. They then retold the story and incorporated the target words with each turn. Focus group participants reported understanding the task but feeling overwhelmed by the activity, suggesting cognitive overload. This learning led to an adjustment in DDP 4 and DDP 5 between iterations first and second to acknowledge the clear need for learners to practice using words in increasingly longer outputs.

**Activity: 2/2/2 Repeated Monologue**

**Description of activity**

The ILO of this activity was for learners to stabilise control of productive output. To achieve this, learners focused on using words more freely and more accurately in continuous speech. This activity was informed by DDP 5 by providing learners with opportunities to use target words in the communication of a novel message.

In this 2/2/2 activity, learners repeated the same two-minute narrative three times with a specific focus on the target vocabulary. The repetition of oral narratives has been found to reduce the cognitive burden resulting in learners making more sophisticated lexical choices and enhancing oral fluency (de Jong & Perfetti, 2011; Fukuta, 2016; Lambert, Kormos, & Minn, 2017; Thai & Boers, 2016). For this activity, learners were given a question on a familiar topic (see appendix 7 for a complete list of topics provided to students) and given two minutes to prepare for the task, during which time they could request assistance with language concerns before they delivered their monologue, a condition which is advocated for by the literature (Mochizuki & Ortega, 2008). Learners then delivered their monologue to a partner and were asked to utilise as many previously studied target words as possible. Learners then changed partners and repeated the same narrative to a new partner in two minutes. Unlike Newton and Nation’s (2021) 4/3/2
activity, which incorporates increasing time pressure with each turn, this activity maintained a two-minute speaking time so that learners could focus on vocabulary selection rather than fluency (Boers, 2014). Removing time pressure from the 4/3/2 activity has been found to push output and allow speakers to incorporate more information into their monologue with each repetition (Thanyawatpokin & Vollmer, 2017). In other words, the 4/3/2 activity has a focus on fluency development, whilst the 2/2/2 activity focuses on enhancing lexical choice and producing richer contexts. As such, the requirement to use more words and produce more descriptive monologues is the pressure for learners in the 2/2/2 activity, as opposed to a time pressure of the 4/3/2 activity which focuses on fluency development.

**Learning from implementation of activity**

Upon reflection and review of researcher observations, few improvements were made concerning the target words from one delivery of their monologue to the next. There was a high proportion of verbatim repetitions of the monologues, including repetitions of erroneous use. As suggested by Boers (2014), this may be remediated by allowing partners to provide feedback to speakers between deliveries of their monologues. This learning led to an adjustment in the activity, which allowed for peer feedback between monologue deliveries. The provision of peer feedback allowed for small amounts of discussion relating to target words, which relates to the adjusted DDP 4.

**Iteration 2**

The teaching model was also implemented in the second iteration as a productive oral vocabulary workshop that was embedded into an intact classroom. The activities used in the second iteration were revised according to learnings from the first iteration and refined list of DDPs. Table 5 below outlines the list of refined DDPs used to inform the second iteration and how they changed from the first iteration.

**Table 5**

*Summary of Draft Design Principles used in the first and second iterations*

<table>
<thead>
<tr>
<th>First iteration DDPs</th>
<th>Second iteration refined DDPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bianca Mister</td>
<td>From potential words to actual words</td>
</tr>
</tbody>
</table>
From potential words to actual words

Chapter 3: Research Design

Bianca Mister

DDP1  Employ imaging to conceptualise the meaning of words

DDP1  Anchor and index vocabulary knowledge with images related to a meaningful narrative.

DDP2  Develop learner knowledge of word meaning and lexical networks

DDP2  Develop semantic and grammatical word knowledge through semantic mapping and exposure to target words in various rich and meaningful contexts.

DDP 3 Enhance learner ability to control accurate production of target words

[DDP 3 Remained unchanged]

DDP 4 Encourage learners to experiment with word use in controlled tasks

DDP 4 Encourage learners to experiment with and discuss target word use in communicative tasks.

DDP 5 Encourage learners to repeatedly use target words in communicative tasks

DDP 5 Encourage learners to use target words increasingly freer speech and in ways that elaborates core lexical meaning.

The workshop for the second iteration consisted of a five-day program of 30-minutes of teaching per day, which is a total of 150 minutes or 2.5 hours. Table 6 below outlines the teaching schedule and illustrates how activities have been sequenced at each stage to scaffold learning whilst balancing the four strands of learning. As shown in the table, the total of 150 minutes of classroom time is across the four strands as follows, which when compared with the first iteration, allowed for slightly enhanced balance across the four strands:

- Strand 1 – meaning-focused input: Approximately 35 minutes of classroom time
- Strand 2 – meaning-focused output: Approximately 40 minutes of classroom time
- Strand 3 – language-focused learning: Approximately 41 minutes of classroom time
- Strand 4 – fluency development: Approximately 37 minutes of classroom time

**Table 6**
*Iteration 2 – Balancing the four strands and workshop structure*

<table>
<thead>
<tr>
<th>Day of workshop</th>
<th>Stage of the teaching model and workshop activity</th>
<th>Learning Strand</th>
<th>Activity source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Focus on conceptualisation</td>
<td>Strand 1 &amp; 3</td>
<td>Original material</td>
</tr>
<tr>
<td></td>
<td>- Listen to Story with Images (20 mins)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 1</td>
<td>Develop internal network</td>
<td>Strand 3</td>
<td>Martin and White (2003)</td>
</tr>
<tr>
<td></td>
<td>- Word Domains (10 mins)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Activity: Listen to Story with Images

**Description of activity used in the second iteration**

The ILO of this activity was for learners to develop form-meaning links so that they could build on this foundation to develop subsequent productive vocabulary knowledge. This activity was informed by the refined DDP 1.

The *Listening to Story with Images* activity was an adaptation of the match words with images activity used in the first iteration. The main difference was that target words were embedded into a narrative. By inserting lexical items into an engaging story, students’ receptive knowledge of words was targeted because their attention was focused on understanding the story. Again, this activity was used to assess baseline knowledge that learners had of the target words with relation to comprehending phonological forms, producing phonological forms and demonstrating any knowledge of lexical meaning that they might already have. Furthermore, to enhance the
association between target words and the narrative framework, images used in this iteration were visually related to the story (see Appendix 8 for a transcript of the story and images used to represent the target words). After listening to the story, learners matched three sets of cards: one set containing images; the second set containing the target word embedded in the entire sentence as it appeared in the story; and the third set providing the target word’s corresponding definition (see Appendix 9 for a full list of card sets). The objective of this activity was for students to develop lexical form-meaning links founded in a narrative framework (DDP 1).

**Activity: Word Domains**

*Description of activity used in the second iteration*

There were minor changes made to this activity for the second iteration. The main difference was that learners did not focus solely on collocations but on enriching their knowledge of the semantic domains of target words (refined DDP 2). To do this, learners developed a mind map shaped by the expression of attitudes defined by Martin and White (2003). Target vocabulary was divided into two categories of attitudinal language: 1) *affect*, which describes emotions and how people feel; and 2) *appreciation*, which evaluates the worth and quality of things and processes. First, such feelings and evaluations were identified as either positive or negative. Then, feelings were identified as direct emotional states (such as sadness) or indirectly through actions (for example, crying as an expression of sadness). Therefore, learners determined if the target vocabulary was a direct or indirect expression of emotion. Finally, learners decided if lexical items could be categorised as *appreciation*, describing an object that produces a particular feeling within us. The objective of this activity was to develop a richer understanding of target words by enhancing lexical networks with other words in the same conceptual domain (refined DDP 2).

**Activity: Rhythmic Fight Club (RFC)**

*Description of activity used in the second iteration*

As with the first iteration, the RFC technique was used in this iteration, however, the activity was adapted after the first iteration to utilise the opportunity to expose learners to words in various rich and meaningful contexts. This condition allowed learners to practice saying words in varying meaningful contexts and draw their attention to the inter-relational meaning between the words and their context, as informed by refined DDP 2. For the second iteration, sentences used for RFC practice were carefully designed to provide rich, meaningful input so that learners could
create conceptual associations between the meaning of the target words and the metalinguistic knowledge of spoken form (see appendix 10 for a full list of sentences used in all RFC sessions in the second iteration). This activity aimed to facilitate the development of target word production and understanding of how to target word pronunciation might change depending on context (DDP 3); whilst simultaneously enriching knowledge of target word meaning through exposure to rich and meaningful contexts (DDP 2).

**Activity: Taboo**

*Description of activity used in the second iteration*

This Taboo activity replaced the Bingo activity used in the first iteration and was inspired by the Hasbro board game Taboo, the Vocabulary Exchange Game (Lange, 1994) and Hot Seat (Dodigovic, 2018). This activity had two ILOs. The first ILO was for learners to develop phonological and semantic associations between target words and associated words (refined DDP 2). The second ILO was to encourage learners to experiment with target word use and discuss appropriate target word use creating sentences containing target words (refined DDP 4).

In line with sociocultural theories of learning, games, such as the one described, enable the co-construction of linguistic knowledge through social interaction (Dodigovic, 2018). The procedure for this game was for one student (the describer) to draw a game card and describe the target word for their partner (the guesser), but the describer could not use any of the other related words listed on the card (see Appendix 11 for a full list of Taboo game cards). The Taboo game allowed for both incidental and deliberate learning and elicitation of various metalinguistic knowledge in describing target words (e.g., synonyms, antonyms, word parts, etc.). The primary aims of this game were:

1) the describer would gain a richer conceptual understanding of the target word through describing the meaning of the word;

2) the describer would enhance their form-meaning mapping of the target word through engaging with associated words on the card;

3) the guesser would have the opportunity to engage in productive recall of target vocabulary.

**Activity: Collective Story**

*Description of activity used in the second iteration*
This activity underwent one minor change to reduce the cognitive load that learners experienced in the first iteration. In the second iteration, learners were provided with the following tools to create their story: 1) A character card containing information about the lead character in the story; and 2) a pile of vocabulary image cards used in the *Listen to Story with Images* activity (see appendix 12 for a full list of Collective Story game cards). By doing this, learner attention was solely focused on using target words meaningfully.

**Activity: 2/2/2 Repeated Monologue**

*Description of activity used in the second iteration*

The only change to the 2/2/2 activity in the second iteration was the provision of feedback between monologues. In implementing the 2/2/2 activity in the second iteration, the listening partners were advised that they would need to provide the speakers with feedback specifically relating to their use of the target words. The provision of peer feedback facilitated learner discussion of how target words were used within the monologues (DDP 4). (See appendix 7 or a full list of topics provided to learners.)

### 3.5 Phase 3: Iterative cycles of testing

This section provides an overview of data collection and analysis used in the two iterative rounds of testing.

#### 3.6.1 Data collection

In DBR, data collection methods can involve both qualitative and quantitative data, and the types of data collected are likely to differ depending on the stage of the study. For instance, in the initial stages of the study, more emphasis will be placed on collecting data that contributes to contextual understanding. On the other hand, data on prototype characteristics or user reactions is more likely to be gathered in later stages (Herrington et al., 2007). For the present study, data was collected through classroom observations, student learning data, student focus groups and teacher focus groups. Data instruments are outlined in Table 7, and the procedure for each is described below.
Table 7
Outline of data instruments used and analyses

<table>
<thead>
<tr>
<th>Data collection instruments</th>
<th>Collection frequency</th>
<th>Data collected</th>
<th>Methods and procedure for analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom observations</td>
<td>5 x 30-minute classes in each iteration.</td>
<td>Field notes.</td>
<td>Observing, transcribing, a priori and inductive(^2) coding and analysing through data condensation.</td>
</tr>
<tr>
<td>Student learning data</td>
<td>Main speaking activities throughout each iteration.</td>
<td>Audio recordings of group / pair discussions and monologue speech, and transcription.</td>
<td>a) Frequency of target word use b) Metalinguistic choices surrounding target vocabulary c) Degrees of generative use for target vocabulary d) Phonological accuracy of target word productions</td>
</tr>
<tr>
<td>Student focus group</td>
<td>Two 40-minute group interviews at the end of each iteration.</td>
<td>Audio recordings, transcription and field notes.</td>
<td>Transcribing, a priori and inductive coding and analysis based on key themes.</td>
</tr>
<tr>
<td>Teacher focus group</td>
<td>One 60-minute group interview at the end of the first iteration; and one 30-minute one-to-one interview at the end of the second iteration.</td>
<td>Audio recordings, transcription and field notes.</td>
<td>Transcribing, a priori and inductive coding and analysis based on key themes.</td>
</tr>
</tbody>
</table>

Classroom observations
Observations occurred during all lessons in both iterations, totalling seven hours of observations. Both research questions were informed by observing student interactions with each other and with the teacher during speaking tasks and also by observing direct teaching of target vocabulary using deliberate vocabulary training methods.
**Student learning data**
During both iterations, daily audio recordings of learner speech and group/pair interactions were collected. The purpose of the recordings was to gain a picture of students’ development of metalinguistic knowledge and target word use over the course of the workshop. Both research questions were informed by the analysis of student responses to the learning environment and stimuli in the audio recordings. At the same time all components of the second research question were informed by audio recordings through analysis of each student’s oral productions and target word use over the course of the intervention.

**Student Focus Group**
A student focus group was conducted at the end of each iteration with all willing participants from each student cohort. At the end of the first iteration, only two focus groups were conducted, one for each of the class groups in the study. These consisted of 7 of the 11 students in Lynn’s class and 8 of the 14 students in Jack’s class in the first iteration. At the end of the second iteration, tea and snacks were provided during the focus group to encourage participation, which resulted in a larger number of volunteers, i.e., 10 of the 11 participating students. As a result, the 10 students were divided into two groups, and two focus group interviews were conducted. The focus groups sought to inform the first research question, which aimed to gain an understanding of student preferences and experiences with the intervention. This included their experiences with the teaching techniques used and the reasons behind their specific lexical choices.

**Teacher Focus Group**
A semi-structured group interview with both teacher participants was conducted at the end of the first iteration, and a one-to-one semi-structure interview was conducted with the single teacher participant at the end of the second iteration. The interview was organised and facilitated by the researcher. The first interview ran for 60 minutes with two participants and the second for 30 minutes with one participant. The purpose of these interviews was to inform the first research question in that the teachers were encouraged to reflect on their experience with the intervention and its application and how they felt their approaches to teaching productive oral vocabulary may have changed as a consequence of participating in the study.
3.6.2 Data Analysis

Data collection generated considerable amounts of both written and audio data types. All written field notes and focus group audio were transcribed into Microsoft Word and uploaded to NVivo for coding. Qualitative data were coded and analysed according to themes identified as part of the literature review and by the DDPs, allowing for a descriptive analysis of the results. In DBR, analytical procedures are chosen and used based on how beneficial they are in advancing the research project rather than solely on their theoretical merits (Herrington et al., 2007). Therefore, the identified existing themes (*a priori*) were used to determine what factors of the educational intervention have the most significant effect on mastery of productive oral vocabulary. These themes were then analysed using data condensation, data display and conclusion drawing, as shown in Figure 5. Data analysis through condensation allows for various aspects of the investigation to be interlaced throughout the data collection process in an iterative manner (Miles et al., 2019).

**Figure 5**
Interactive model of data analysis (Miles et al., 2019, p. 10)

All student learning audio files were uploaded to NVivo directly and transcribed within the program so that data could be efficiently coded and timestamped. Data was coded within NVivo to identify the use of the target word of each student and the phonological accuracy of production. In addition to this analysis, a Microsoft Excel spreadsheet was created and populated with: coded student learning data from NVivo to allow for further analysis of identified themes;
and data generated from lexical diversity and lexical sophistication analyses using AntWordProfiler. AntWordProfiler is a vocabulary analysis tool that creates statistics and frequency information relating to a text. For this study, S1, S2 and S3 words from the Longman Communication 3,000 list were uploaded to AntWordProfiler so that subsequent analyses would highlight the level of coverage provided by each of those bands in learner speech output. In the example analysis shown in Figure 6 below, the lexical coverage of speech produced by the learner was 66.9% S1 words, 4.6% S2 words, 5.1% S3 words and 23.4% words which are outside of the spoken modality covered by the Longman Communication 3,000, for example proper nouns such as America and English.

Figure 6

AntWordProfiler example analysis

A summary of each student’s speech output was then recorded in an Excel spreadsheet to determine changing coverage as the workshop progressed. The first tab of this spreadsheet included a list of all student names in the left vertical column. Then, the top horizontal row contained the following breakdown for each of the workshop activities: Type-Token Ratio (TTR); the number of tokens produced within a task; percentage coverage according to the Longman Communication 3,000 S1 words, S2 words, S3 words; and percentage coverage of off list words. This tab was then linked to a second tab of the Excel spreadsheet as a V-Lookup, which provided a snapshot profile for each student participant. An example of a student summary in the V-Lookup account is shown in Figure 7 below.

Figure 7

Example summary of lexical coverage for a student’s output during the 2/2/2 task
A second Excel spreadsheet was also created to conduct semantic analysis of speech output. The left vertical column of the first tab of this spreadsheet included a list of student pseudonyms with a list of target words next to each name. The top horizontal row listed each day of the workshop, and under each day was another row that listed: how many times each student used a target word on a particular day, the accuracy of target word stress for each production; and number of novel sentences created on a specific day. This tab allowed for individual analysis of each word and
each student. The purpose of this analysis was to identify relationships between frequency of production, phonological accuracy and improvements over time. Figure 8 below provides an example of data within this tab of the spreadsheet.

**Figure 8**

*An example of target word uses during the Taboo activity for a sample student*

<table>
<thead>
<tr>
<th>Student pseudonym</th>
<th>Target Word</th>
<th>Frequency of Production in task</th>
<th>Number of Novel sentences created</th>
<th>Number of accurate phonological forms produced</th>
<th>Number of incorrect phonological forms produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gianni</td>
<td>Enjoyable</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Shocked</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Angry</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>disappointed</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Persuade</td>
<td>2</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Confusing</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>escape</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>fascinating</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>At each other's throats</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The second tab of this spreadsheet contained student pseudonyms in the left vertical column, followed by the workshop activities in the order that they were conducted. Then, the top horizontal row listed each target word, with the columns under each containing the sentences produced for each target within each workshop activity. This tab allowed for analysis of the quality of productions made for each word and for each student to identify improvements over time with relation to metalinguistic choices surrounding target word use, metalinguistic accuracy of target word use, and generative use of all target words. Figure 9 below provides an example of data within this spreadsheet tab.

**Figure 9**

*An example of a student’s use of the target word ‘enjoyable’ within the 2/2/2 activity*
3.6.3 Rigor of the analysis

Research instruments have been chosen for triangulation so that evidence is corroborated from several sources (Creswell, 2014). Furthermore, data has been re-read numerous times and member checking with participant teachers in this study has ensured that themes were coded and identified correctly.
Foreword to Study 1

As discussed in Chapter 1, this doctoral study aims to contribute to understanding the effectiveness of a teaching model designed to develop productive oral vocabulary knowledge in the context of adult intermediate-level ESL learners. Research that sheds light on the types of classroom activities and environments which support the development of receptive vocabulary to become productive is needed (Schmitt, 2019; Teng & Xu, 2022). However, some research has provided insight into the development of vocabulary in written modes (Elgort et al., 2018), but understanding of the development of productive vocabulary in oral modes is lacking (Shintani, 2013; Uchihara & Clenton, 2022). Thus, the research focus of the first paper (Chapter 4) was to examine the effectiveness of a classroom workshop in developing learners’ ability to produce a phonological form of target words. Exploring the effects of pronunciation instruction on vocabulary-focused lessons was important as results obtained from the first study would serve as the basis for the following two chapters. It was anticipated that this first study would address calls for research focusing on developing receptive vocabulary to become productive and address whether Darcy et al.’s (2021) call for pronunciation instruction to be embedded into vocabulary-focused lessons was valid.
4.1 Abstract

This paper aims to investigate how productive oral vocabulary development can be promoted by focusing on word stress patterns. The Rhythmic Fight Club (RFC) pronunciation technique has been used in numerous ESL/EFL classrooms, but its effect on the L2 vocabulary development of learners has yet to be investigated. The present study focused on adult ESL learners and tested a four-stage teaching model aimed at developing productive oral vocabulary. This paper focuses on findings related to one aspect of that teaching model which used the RFC to draw learner attention to word stress patterns in order to control productive output. Findings reveal that repetition of target words whilst making a gesture helped to enhance the learners’ productive output accordingly. The paper concludes that kinaesthetic/tactile classroom teaching techniques such as the RFC can help learners to develop productive oral vocabulary by reconceptualising their perception of English speech rhythm.

4.2 Introduction

There has been a recurring concern about second language (L2) learners’ reliance on familiar high frequency vocabulary (Laufer, 1998; Zheng, 2012). This lack of capacity to use less frequent words in oral communication (Laufer & Paribakht, 1998; Nation, 2013a; Schmitt, 2000) tends to limit their ability to effectively express their thoughts and ideas in a range of communicative contexts. Traditionally, classrooms have placed greater emphasis on the most frequent 2,000 words (Matsuoka & Hirsh, 2010; O’Loughlin, 2012); however, 3,000 words have been identified as a more realistic baseline for participation in informal oral communication (van Zeeland & Schmitt, 2013). Therefore, learners need to be pushed to use more words in this third thousand frequency band. Moreover, a focus on accuracy has resulted in learners who are
inclined to avoid error-prone words in lieu of words that do not pose productive difficulty for the learner (Laufer, 1998; Laufer & Eliasson, 1993). Although avoidance may seem like a good strategy to improve accuracy, Fitzpatrick and Wray (2006) argue that taking language risks is actually a sign of proficiency, even if it increases the potential for error. Additionally, there is a lack of sufficient opportunity to practise productive oral vocabulary development in a classroom environment. Laufer and Paribakht (1998) explain that the incidental exposure to and practice of the highest frequency vocabulary in communicative tasks means that less frequent words are rarely encountered. The drive to achieve communicative goals by using only high frequency vocabulary subsequently leads to insufficient practice of less frequent words, making them more difficult to activate (Laufer & Paribakht, 1998). With these factors in mind, it seems that the activation of productive vocabulary would be enhanced through greater experimentation with production of words beyond the most frequent 2,000.

There is general agreement that language learning is a multisensory process and that, from a cognitive perspective, an emphasis on kinaesthetic, visual and auditory modalities maximises learning (Macedonia, 2014; Shams & Seitz, 2008). Armstrong et al. (1995) affirm that the cognitive domains of oral language and physical gesture are neurologically connected and, therefore, gesture has an effect on language perception, production and acquisition. Based in part on this research, one relatively new methodology of incorporating kinaesthetic and tactile teaching techniques has been developed, namely Essential Haptic-Integrated English Pronunciation (EHIEP) (Burri et al., 2016; Teaman & Acton, 2012). One particular EHIEP technique, the Rhythm Fight Club (RFC), focusing attention on English speech rhythms, is a popular tool in a number of ESL/EFL classrooms which has been suggested to enhance the development of L2 vocabulary (Burri et al., 2016); however, its effect on L2 vocabulary development has yet to be investigated. This paper seeks to determine whether the RFC is an effective tool for assisting in the development of productive oral vocabulary by anchoring words in the memory for spontaneous recall in speech.

4.2.1 Oral Production Whilst Making Gestures

Making gestures while repeatedly producing target words can promote the creation of a cognitive motor trace to support phonological form. In vocabulary training, gestures can either encapsulate the meaning of the word (congruent gestures) or can have no relationship with the meaning of
From potential words to actual words (Macedonia & Knosche, 2011). Although incongruent gestures have been shown to have the least effect on vocabulary learning (Kelly, McDevitt, & Esch, 2009), they have also been recognised to enhance the memorability of words by leaving a motor trace which embodies verbal information (Macedonia & Knosche, 2011). Mental representations of words are thus not only linguistic but are also heavily dependent on multisensory experiences (Macedonia, 2014). For example, incongruent gestures can create an episodic memory attached to the neural representation of a word (Macedonia & Knosche, 2011). Consequently, incongruent gestures are highly useful in word learning, particularly for words with less concrete meaning that cannot be easily embodied.

Given the utility of incongruent gestures in word learning, the RFC seems a practicable technique. The gesture used with the RFC technique can be classified as incongruent as it does not have any association with the meaning of the word; instead, it mimics rhythmic components of English speech. The capacity for memorisation increases if speaking is accompanied by physical movement (Goldin-Meadow, Nusbaum, Kelly, & Wagner, 2001), which equally dictates the adoption of English speech rhythms (Miller, 2006). In this paper the gesture-like movement used in RFC could be classified as a beat gesture which McNeill (2012) defines as “non-conventional and is strongly dependent on co-expressive speech. It is unique among gestures in having almost purely a discourse meaning” (p. 14). The purpose of beat gestures is to highlight information that is important in some larger context by emphasising elements of speech without a complete meaning of their own (McNeill, 2012). The RFC gesticulatory function is to highlight stressed syllables, which, according to Celce-Murcia et al. (2010) carry discoursal meaning, so that words can be anchored in the memory (Burri et al., 2016). In the same vein, an integral characteristic of English pronunciation is word stress; in fact, the expansion of a learner’s productive vocabulary is more likely to occur if they are better able to accurately use word stress in spoken communication (Murphy & Kandil, 2004).

4.3 The present study

This study adopted a Design-based Research (DBR) approach to examine a pedagogic solution to develop learners’ productive oral vocabulary. DBR enables the investigation of instructional strategies and tools which have been designed to solve real-world educational problems (van den Akker, 2006). In the case of this study, the problem is that learners need to develop their
productive oral vocabulary beyond the most frequent words, an objective which might be facilitated using the RFC technique. Central to DBR is the understanding of how, when and why educational innovations succeed in practice so that educational reform can be implemented (The Design-Based Research Collective, 2003). The pedagogic solution designed for this study was a teaching model of four stages: 1) Focus on conceptualisation; 2) Develop internal network; 3) Proceduralise output; and 4) Focus on productive use.

This paper will only focus on the third stage of the teaching model, proceduralise output, because this was the stage targeting the development of learner ability to produce accurate phonological form of target words. The findings presented in this paper only relate to the development of productive linguistic control over target vocabulary in continuous speech, and not the development of other aspects of word knowledge targeted during the remaining stages of the teaching model. Therefore, analysis in this paper was guided by the following research question: How does repeatedly producing target words with gesture and touch help to develop productive control of target words in speaking?

4.3.1 Site and participants

The language school selected for this study provides educational services to international students studying in Sydney, Australia, in an ESL context. The natural setting of the school enabled teachers and learners to behave and act as they normally would, which is a key aspect of qualitative research (Creswell, 2014). Intermediate level learners were targeted as it is expected that learners at this level to be proficient in producing individual words and short sentences whilst developing control in more continuous discourse (Fraser, 2001). The main researcher of this study, who also worked at the participating language school at the time, approached the two intermediate level teachers and both teachers agreed to participate based on the opportunity for professional development. Whilst both teachers and their intermediate level students participated in the first iteration of the study, only one teacher was able to participate in the second iteration due to reduced student enrolments and closure of the second intermediate class. The ages of students participating in the study ranged from 19 to 38 years. Both participant teachers undertook a 1-hour professional development session during which the researcher provided them with background pedagogical knowledge upon which the teaching model was based, and specific training in the teaching techniques that they would be required to use.
### Table 8

**Teacher and student participants**

<table>
<thead>
<tr>
<th>Iteration</th>
<th>Teacher Pseudonym</th>
<th>Number of student participants in cohort</th>
<th>Country of origin</th>
<th>Student L1</th>
<th>Qualifications</th>
<th>Years of experience teaching ESL</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Lynn</td>
<td>11</td>
<td>South Korea x 2</td>
<td>Korean</td>
<td>Bachelor of Communications / Master of International Relations / Postgraduate Certificate in</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Japan x 5</td>
<td>Japanese</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Brazil x 1</td>
<td>Portuguese</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bulgaria x 1</td>
<td>Bulgarian</td>
<td>TESOL / Master of Applied Linguistics / Certificate IV in Training and Assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Italy x 1</td>
<td>Italian</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Thailand x 1</td>
<td>Thai</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Israel x 1</td>
<td>Hebrew</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Brazil x 6</td>
<td>Portuguese</td>
<td>CELTA / Bachelor of Arts (Communication) / Certificate IV in Training and Assessment</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Jack</td>
<td>14</td>
<td>Colombia x 4</td>
<td>Spanish</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Thailand x 1</td>
<td>Thai</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mongolia x 2</td>
<td>Mongolian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>Jack</td>
<td>11</td>
<td>Bulgaria x 1</td>
<td>Bulgarian</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.3.2 The workshop

In order to test the teaching model this study implemented a practical 5-day classroom workshop designed specifically for the target learner group. As part of this study the workshop was embedded within the existing curriculum and consisted of 30-minute daily sessions over one week, which were taught by the normal classroom teacher. Each of the stages of the teaching model was incorporated into the workshop to enhance learner proficiency of the productive aspects of word knowledge as defined by (Nation, 2013a). The workshop and data collected at the various stages are outlined in Table 9 below.

The first day of the workshop reflected the conceptualisation stage of the teaching model and aimed to develop knowledge of the form-meaning link through the presentation of a meaningful narrative supported by images representing each of the target words, in line with activities defined by Elley (1989). The first day of the workshop also focused on the internal network development stage of the teaching model and was designed to provide learners with deeper engagement with target words in a concept mapping task. This task required structural and semantic analysis of words to strengthen associations between words, following Wesche and Paribakht (1996) assertion that learners must engage in manipulation tasks requiring such deep analysis. The second day of the workshop reflected the proceduralisation of the output stage of
the teaching model. On this day RFC was used to focus learner attention on word stress and thought-group prominence in an effort to develop oral control of word form. According to (Burri et al., 2016) such haptic activities enable learners to gain productive oral control of various linguistic features. The third day of the workshop continued the internal network development stage of the teaching model and also introduced the productive use stage of the teaching model (Haastrup & Henriksen, 2000). The goal of the workshop was for learners to engage in a Taboo task game activity, followed by a requirement to produce a novel sentence containing the target word. Day four of the workshop continued to focus on the productive use stage of the teaching model with a collective story task requiring the incorporation all target words in a longer narrative. The final day of the workshop maintained the focus on the productive use stage of the teaching model as learners were expected to freely select any of the target words and use them in a monologue. This series of communicative tasks on days three, four and five were designed to repeatedly elicit the use of target words in progressively longer outputs, an idea inspired by (Fitzpatrick & Clenton, 2017) who assert that repeated activation events allow learners to practice words in communicative tasks so that they can demonstrate their productive vocabulary knowledge.

Table 9

The 5-day classroom workshop

<table>
<thead>
<tr>
<th>Stage of the teaching model and workshop activity</th>
<th>Data collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1 Activity: Listen to story with images (20 mins) Activity: Word Domain (10 mins)</td>
<td>a) Audio recording of learner discussion during concept mapping b) Observation notes from both activities</td>
</tr>
<tr>
<td>Day 2 Activity: RFC (30 mins)</td>
<td>c) Observation notes</td>
</tr>
</tbody>
</table>
4.3.3 Haptic Rhythm Fight Club

The RFC technique incorporates boxing-like movements (kinaesthetic) to draw attention to syllable structure and prominence in continuous speech. Haptic senses supported the punch-like gesture with learners holding a ball in the palm of the hand that they can squeeze (tactile) as they physically produce target words in speech. The physical nature of this method reduces learner anxiety normally associated with speaking so that learning can be maximised (Burri et al., 2016). In this study, attention was given to pitch variation to express attitudinal and pragmatic meanings (Levis & Wichmann, 2015) and the RFC technique was adapted to ensure that words were not only repeated, but that they were repeatedly retrieved from memory prior to engaging in vocal rehearsal. In other words, the RFC has been used in this study in an attempt to assist learners to make lexical items more available for subsequent productive recall by repeatedly producing words with a focus on phonological form to the enhance the verbal memory trace and to improve the accuracy of phonological representations.

On the first day of the productive oral workshop learners initiated the first two stages of the teaching model, *conceptualisation* and *develop lexical networks*. Then, on the second day of the
workshop learners engaged in one 30-minute RFC lesson which taught the technique and consisted of a controlled RFC activity. During each subsequent day of the workshop the RFC sessions became progressively less controlled so that learners could become more independent in identifying and producing accurate word and sentence stress. During the third and fourth days of the workshop learners engaged in a 10-minute RFC session as a warm-up to the daily workshop tasks. However, the learners were not explicitly instructed to engage in any RFC or punching movements during other activities of the workshop, only during the RFC sessions outlined in Table 9.

4.3.4 Target vocabulary

This study focused on intermediate level learners at B1 level (Council of Europe, 2001) who are expected to have knowledge of between 2,750 – 3,250 words in English (Milton & Alexiou, 2009). At the same time, research literature has identified that successful participation in spoken English requires knowledge of around 95% of the most frequent 3,000 words (Adolphs & Schmitt, 2003). A list of words that claims to represent the most important words for students to learn so that they can communicate effectively is the Longman Communication 3,000\(^3\), which was developed from a corpus of 390 million words derived from authentic language samples. The Longman Communication 3,000 categorises words as being representative of either written or spoken English, then words are further categorised into frequency bands. For example, S1 is the code given to the most frequent 1,000 words of spoken English; whilst S3 is the code given the least frequent words of spoken English that appear on the list, namely, spoken words in the frequency band of 2,001 – 3,000.

According to the aforementioned literature, the intermediate level learners in this study need to have at least 95% productive knowledge of the Longman Communication 3,000. However, a pilot study (Mister, 2019) revealed a typical group of students in the educational context had insufficient productive knowledge of a selection of S3 words taken from the Longman Communication 3,000. Two classes of intermediate level learners, a total of 20 students, at the participating language school were asked to rate the selection of 68 S3 words. Students were asked to rate the words according to an adapted version of Wesche and Paribakht (1996)

\(^3\) A PDF of the Longman Communication 3,000 can be downloaded from https://www.lextutor.ca/freq/lists_download/longman_3000_list.pdf
Vocabulary Knowledge Scale. Results of this pilot study revealed that this group of students had productive knowledge of only 56% of the selected words (see Table 10 below). Therefore, given that this study is focused on less frequent spoken English in the context of intermediate learners, the category of S3 from the Longman Communication 3,000 has been identified as a target.

Table 10
Average student rating of the chosen 68 words

<table>
<thead>
<tr>
<th>Rating</th>
<th>Words</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) I know what this word means, and I can use it in a sentence.</td>
<td>38 of 68 words</td>
<td>56%</td>
</tr>
<tr>
<td>(Productive knowledge)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) I know what this word means, but I’m not sure how to use it.</td>
<td>8 of 68 words</td>
<td>12%</td>
</tr>
<tr>
<td>(Receptive knowledge)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) I’ve seen this word before, but I don’t know what it means.</td>
<td>15 of 68 words</td>
<td>22%</td>
</tr>
<tr>
<td>(Partial receptive knowledge)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) I have never seen this word before.</td>
<td>7 of 68 words</td>
<td>10%</td>
</tr>
</tbody>
</table>

As the workshop was embedded into existing curriculum for the intermediate class, vocabulary needed to align with the coursebook. An analysis was then undertaken to identify S3 words which appeared in Unit 6 of the student coursebook, Speakout Intermediate (Clare et al., 2015) and the following nine target words were chosen from this unit of the coursebook for the workshop: enjoyable, shocked, angry, disappointed, persuade, confusing, escape, fascinating, and the idiom at each other’s throats. These words were then placed in prominent positions within thought groups to be used during RFC practice. The only instances of target words not to be stressed were when they were accompanied by negating auxiliary words (e.g., this is not enjoyable), in which case the negating auxiliary would be stressed.

4 In English verb conjugations, when ‘ed’ is added to make past form of verbs ending with plosives such as in /t/ or /d/, an extra syllable is added to the end of the word. However, this is not the case with verbs ending with /k/ and /t/. Therefore, it is a common error for learners to add an extra syllable to ‘shock’ and produce /ʃɑkt/, instead of the target /ʃɑk/‘ed/. For this reason, the target word shocked was included to specifically emphasise the monosyllabic phonological form.
4.4 Research Design

This study employed four phases of development using the DBR model as defined by Reeves (2006), see Figure 10 below. This paper reports on one educational principle and a pedagogical tool which are a result of all four phases. In keeping with the first phase of the DBR project, an extensive literature review of existing theories and educational principles related to the development of productive oral vocabulary was conducted. At this initial stage interviews with educators at the participating language school were conducted to gain an understanding of teaching vocabulary in this real-life classroom environment (e.g., teaching preferences, working within the confines of an existing curriculum, learner abilities and preferences) with a particular attention on the productive vocabulary. The knowledge gained through this first phase subsequently informed the creation of a classroom workshop as part of phase two of the DBR project. The workshop was designed as a classroom tool to be used for the purpose of developing the productive oral vocabulary of adult learners of English as a second language (ESL). Subsequently, phase three of the DBR model tested and refined the classroom workshop in two iterative rounds of implementation. The workshop was implemented in an authentic educational setting and results of this first implementation led to a refinement of the workshop so that it could be tested in a second and final implementation. Lastly, phase four of the DBR model resulted in the creation of six design principles to guide other ESL educators in designing similar learning environments aimed at developing productive oral vocabulary.

Figure 10

The DBR research model (Reeves, 2006, p. 59)
4.4.1 Data and analysis

There are three datasets which were analysed for this paper: classroom audio data collected from the workshop (as outlined in Table 9 above); 40-minute focus group interviews with four groups of learners; and classroom observation notes made during the workshop. In DBR, data is collected continuously throughout the four phases of development; however, for the purpose of this paper the decision was made to only include data from phase 3. This decision was made because this paper is focused on learners’ development of productive oral vocabulary as a result of engaging in the classroom workshop which was conducted as part of Phase 3. Additionally, any learners who were absent for any classes during Phase 3 were excluded from this analysis as it was deemed their progress would have been compromised by any absence. This resulted in six participants whose data was used in this dataset.

For analysis of classroom workshop data, audio files were uploaded to Nvivo, transcribed and timestamped, and all productions of target words were counted and analysed to determine the stressed syllable in each instance. Instances of accurate target word productions were then counted and compared to instances of inaccurate productions. These numbers were then imported into an Excel spreadsheet created by the researcher, in which the vertical left column included a list of student names with rows of target word productions for each student. Horizontal rows indicated the number of times each student used each target word on each day of the workshop, whether or not target word stress for each production was accurate, and whether or not any comments relating to particular productions were noted in observation notes. A second tab calculated the average number of productions and level of accuracy for all students. Finally, this data was analysed to track improvements in accuracy of the target phonological form made over time during the workshop period and to determine if improvements were sustained in the three-week delayed speaking task.

The second dataset included in the analysis for this paper is data from four 40-minute focus groups with learners. Focus group data from Phase 3 of the DBR cycle was included to reflect the experience of learners as they engaged in the RFC, which is valuable in understanding the benefits of this technique and how it is used in a classroom environment. Of the total number of students who participated in the study only 16 were available for focus groups, namely two groups of five students from the first iteration, and two groups of three students from the second
iteration. Focus groups were semi-structured, and questions intended to gain insights into student preferences and experiences with the intervention, specifically relating to their experiences with the teaching techniques used and their motivations for making particular lexical choices. For analysis of focus group data all audio files were uploaded to Nvivo; transcribed and timestamped; and, coded to identify any mentions of gesture, RFC, physical movement, knowledge of word stress, or learner motivations to use words in speaking tasks. Additionally, focus group transcripts were cross referenced with researcher observations noting any gestures made during the focus groups.

4.5 Findings and Discussion

The main findings of this paper indicate that learners developed control production of trained words by focusing attention on speech rhythm. All 16 participants who took part in focus groups commented that they felt the RFC activity helped them improve productive output of target words. Analysis of qualitative data indicate that, with regards to developing accurate lexical stress patterns, there are three stages related to proceduralising linguistic control: deconstructing English stress, reconceptualising English stress, and stabilising productive output.

4.5.1 Deconstructing English stress

During the focus groups there was a general theme of students claiming to have never previously learned the concept of English stress and prominence. Of the 16 students only three said that they had previously studied English stress patterns. It has been demonstrated that pronunciation problems in adult L2 learners is often a result of selective attention (Rochet, 1995). If learners are unaware that a feature exists, then they would be unable to focus attention on it, which is illustrated in this comment made by Akira during the focus group “I didn’t know about syllable I think I have never thinking about syllable but [now I know] syllable is important”, to which the group quickly responded by nodding in agreement. Lily then added “I don’t remember learning this in Brazil you have the syllable and you emphasise …this is really different. We [didn’t] learn in this way”. So, once learners had been made aware of the existence of stress in English, they could then focus their attention on it. However, it would not be sufficient for learners to be presented with the English rhythm and be expected to know what to do in order to reproduce it;

---

5 All names used in this paper are pseudonyms.
rather, in order to effectively understand stress learners need to be able “to recognise it and use it and manipulate it and play around with it” (Fraser, 2001, p. 21).

*Playing with stress* is precisely what the researcher observed learners doing during the RFC pair practice. The RFC uses incongruent gestures to highlight stressed syllables, which, according to Celce-Murcia et al. (2010), carry discoursal meaning, so that words can be anchored in the memory (Burri et al., 2016). Field notes show that as learners were practicing saying sentences in pairs and punching stressed syllables using the RFC technique the learners were noticeably experimenting with verbal production. In one field note entry during RFC practice the researcher noted that learners were manipulating or *playing* with target forms by: over-exaggerating stress, accompanied by exaggerated punches using the whole body and silly facial expressions; producing slight emphatic stress, accompanied by less emphatic punches or simple shoulder movements; and undergoing trial and error to determine correct stress placement. This idea of *playing* with stress allows learners to create personal concepts of English pronunciation through engaging their senses and linking such sensory experiences to the articulation of each target (Cerreta & Trofimovich, 2018).

On the fourth day of the second iteration learners were required to identify stress with a partner and the researcher observed that learners were consistently *manipulating* and *playing* with the concept of stress to achieve this goal. Students were producing target sentences with stress on all different syllables and negotiating with each other until they agreed on which one sounded the most natural, often bursting out into laughter when they produced strange sounding, inaccurate stress patterns. Not only were students *playing* with the idea of stress, but they were also *playing* with the idea of punching. Students were observed to create their own incongruent gestures that incorporated other parts of the body; one student was even observed to ‘wobble’ his body upwards while he kept his arm punched out and verbally exaggerated syllable stress. Students continued to do this in the subsequent speaking tasks with numerous instances of students saying a target item and then repeating it with more emphatic stress.

When asked in the focus group what they had learned with the RFC activity, Miya said “it was a good opportunity to understand which is like I have to say more strong so it was so helpful for me”. This comment demonstrates Miya’s understanding of the concept of stress in English; she
has correctly understood the concept of stress to mean producing some syllables with more emphasis than others. Similarly, Kiri responded with a comment that illustrated a contrast between saying target words with and without stress “like fa-sci-na-ting ‘it’s faaaaascinating’ en-joy-a-ble ‘it so enjoooooyable’ yeah now I can speak right pronunciation”. Interestingly, when making this comment Kiri produced a spontaneous gesture at the moment of producing the each of the stressed forms. At the start of the word she held her hand flat with palm down at her chest; then as she produced the stressed syllable she pushed her arm out in front of her body and pulled it back to her chest when the stressed syllable was finished. Spontaneous gesture, such as this, has been shown to be important in speech because it is a part of the conceptualisation process in the sense that it is an alternative mental code (Alibali, Kita, & Young, 2000). From this perspective, it seems that the RFC activity may have assisted Kiri in conceptualising English rhythm and this spontaneous gesture helped her to draw on that knowledge to produce accurate stressed forms.

4.5.2 Reconceptualising English stress

It would not be sufficient for learners to be presented with the sounds of English and be expected to know how to reproduce those sounds; rather, in order to effectively understand phonological features learners need to use and experience language (Fraser, 2001) and to feel the differences in syllable length and the reduced nature of unstressed syllables (Cerreta & Trofimovich, 2018). This is precisely what the participants of this study articulated in focus groups. This idea of using their senses to feel what it means to stress syllables is elucidated in a comment made by Izzy in the first iteration: “it’s really using my voice [to] imitate my physical [movement]”. This point becomes salient when we consider that multiple students claimed to have never previously focused on stress, two of whom were able to succinctly explain the purpose of English stress and how to produce it after undertaking the experimental workshop:

“when you speak you have space for [pauses] … space for another people to understand when you talk” (Thaksin, Iteration 1)

“[RFC is] good idea because I know to stretching word” (Rafael, Iteration 1)
Despite the teacher modelling various approaches to stress, including syllable length, changing pitch or intensify loudness of stressed syllable during the workshop, Rafael focused on syllable length as he coined the term *stretching*. The first session of RFC practice was guided by the teacher modelling speech; however, in the following session learners were presented with sentences with highlighted stress and in pairs they needed to produce speech without any modelling, a process which (Gibbons, 2006) considers to be typical of sociocultural learning environments. It was in this second, less controlled lesson that Rafael was observed to peer-teach using this coined term, *stretching*. Rafael’s partner produced very staccato-style speech for the thought group “we climbed up the mountain”; however, stress was identified as being on the first syllable of *mountain*. Rafael proceeded to tell his partner “no … you should to stretch the word mountain … like this mooouuuntain”. As Rafael demonstrated accurate stress, he over-exaggerated the allocated stress, as is advocated for by Copeman (2012), to highlight the contrast, so that muscle memory can be developed. Furthermore, it seems that learners benefit from an ability to create and apply a personal concept of speech according to a previously heard model (Cerreta & Trofimovich, 2018). Under these circumstances, Rafael demonstrated an ability to deconstruct what was modelled on the previous day and applied it on this day using his own meta-language, which Couper (2011) claims can assist learners to develop new concepts of target pronunciation. In this case, Rafael’s independent development of the term *stretching* is an example of the role of such meta-language in eliciting a strong visual image; a visual image so strong, in fact, that one could imagine activities using rubber bands to ‘stretch’ stressed syllables (Celce-Murcia et al., 2010).

### 4.5.3 Stabilisation of productive output

Over the one-week workshop learners engaged in multiple tasks designed to activate the use of target vocabulary. Analysis of target lexical productions made during these tasks concentrated on the accuracy of word stress and syllable structure, as this was the focus of the RFC practice. As such, segmental errors which did not impede intelligibility were ignored, as were unnatural intonations for the context of the production. Word stress was determined to be accurate only if accurate syllable structure was also produced. Observation notes indicate that increased instances of productions were attributable to both RFC and other scaffolding; however, the decreased
instances of inaccurate word stress were observed to be a result of RFC\(^6\). To review the distribution of productions across the group, refer to Appendix 13.

On the first day of the workshop any lexical productions were speech imitation, as defined by Karmiloff-Smith (1986), and did not require productive recall of word form as defined by Nation (2013a). The objective of this first day was for learners to engage in developing a concept of the word; therefore, from a Vygotskian (1986) perspective individuals at this stage are not yet able to freely verbalise concepts in speech and are highly dependent on external stimuli. This is precisely what findings indicate (see Figure 11 below). On the first day there were very few attempts made to produce the target words, whilst the ratio of inaccurate word stress and syllable structure was high, a finding which, according to Karmiloff-Smith’s (1986) theory of oral linguistic development, could be expected at this stage as the learners had not yet gained any control of productive output. Interestingly, although production attempts were low across the board, two of the six students avoided saying most of the target words altogether. This is a finding which is supported by numerous studies showing that learners who had not yet gained productive control of the words may engage in avoidance strategies (Karmiloff-Smith, 1986; Laufer, 1998).

**Figure 11**

*Output prior to any RFC practice*

\(^6\) Although the nature of activities being performed in the various days was different and might have influenced frequency of production, it is clear that the quality of production improved. Further research is needed to determine the impacts of the activity type of frequency of production.
On the second day of the workshop learners engaged in their first RFC session of 30 minutes focusing learner attention on target word stress, which was immediately followed by a shift in the pattern of production attempts and accuracy of word stress on day three. As can be seen in Figure 12 below, not only did production attempts increase on day three, but the gap between inaccurate word stress and production attempts also increased. Furthermore, productions made required productive recall of word form prompted by images (Nation, 2013a) with results indicating that learners were gradually enhancing their ability to control successful reproduction of target form, according to Karmiloff-Smith’s (1986) model of speech production. To illustrate this finding, learners were observed to be playing with the idea of stress with four instances of learners either self-correcting or negotiating accurate word stress with a partner, which is defined as a common strategy used to gain control of productive output (Karmiloff-Smith, 1986).

**Figure 12**
*Output after 30min RFC practice on previous day and 10 min on this day*
The following exchanges demonstrate the use of self-correction and peer negotiation as strategies to gain control of oral output. In this activity learners were required to describe a target word for partners to guess word form; the pair was then required to produce sentences containing the target word as a demonstration of understanding word meaning. In this exchange Christian produced accurate target stress in each production of word form, whereas Pedro engaged in self-correction.

Pedro: When you want this person to do it
Christian: Convince?
Pedro: Is like convince… is synonym convince… has two syllables, stress on second
Christian: perSUADE
Pedro: Yeah. And a sentence?
Christian: I perSUADE my friend to do my homework
Pedro: My mum *persuade* me to study more. She *persuade* me to study.\(^7\) Importantly, in this exchange, Pedro demonstrated an initial awareness of correct lexical stress when describing the target word for his partner. However, it was not until he attempted to produce the word in a sentence that he was able to use self-correction as a way of controlling oral output. Therefore, such activities requiring output of words in a meaningful context can result in opportunities for self-correction of form, leading to gradual enhancement of ability to control production of the target form. A second example of *playing* with stress is revealed in the following exchange where two learners explicitly negotiate stress of target word *fascinating* until success is achieved.

Boris: I'm fasci*N*ating with beautiful girls around me? Is it right? fasci*N*ating?

Gianni: No. It is fasci*N*ating…. hmmm…. It is FAscinating.

Boris: Oh. It is FAscinating

Gianni: Yeah FAscinating

In contrast, this excerpt illustrates gradual movement towards controlled production as a result of explicit negotiation. The negotiation of target word stress in this example led to both learners gaining gradual oral control of accurate form. This process of repeated input and repeated output supported by either self-correction or explicit negotiation of form exemplifies a pivotal moment of oral development where learners gradually control speech output. Interestingly, in this exchange both Boris and Gianni were observed to use incongruent gestures to mimic lexical stress as they produced target forms. In each instance of producing target word stress (either accurately or not) Boris pushed his arm out with a pointed finger towards Gianni, whilst Gianni raised his eyebrows in an exaggerated fashion when he produced target word stress. This final note provides evidence that these learners were drawing on their haptic senses in an effort to ‘feel’ where the accurate word stress was.

Subsequently, on the fourth day of the workshop, after peer discussions on the previous day and a further 10 minutes of RFC practice on this day, learners again engaged in productive recall of word form prompted by images and were required to produce longer speech incorporating all target words into a single narrative. At this point the researcher observed all students imitating

---

\(^7\) Note that not all prominent syllables have been highlighted, only where it is relevant to target words and to the analysis within this paper.
target word stress with some kind of gesture. Gestures observed on this day included shoulder movements, head nods, eyebrow raises, arm movements and hand taps. As can be seen in Figure 13 below, production attempts remained high, whilst control of accurate word stress continued to stabilise. Moreover, at this stage there were only two instances of self-correction and an absence of peer negotiation. This can be interpreted as a demonstration of increasing control of speech as a result of speakers repeatedly producing target vocabulary leading to an internalisation of target form (Karmiloff-Smith, 1986). In other words, learners enhanced their retention of accurate word form through repeated output, which in turn enabled them to regulate their own verbal production.

**Figure 13**

*Output after discussions/negotiations on previous day plus an additional 10 min RFC practice on this day*
Finally, on the fifth day of the workshop it seems that learners further stabilised oral production of word form as they were required to use productive recall to incorporate words voluntarily in a monologue without image prompts. As can be seen in Figure 14 below, the number of production attempts remains high, with observable peaks for the target words *persuade* and *fascinating*. These peaks will not be discussed in this paper, as they are a consequence of productive fluency rather than accuracy in word form; therefore, this anomaly will be discussed in a subsequent paper investigating lexical fluency development. As such, this discussion will focus on learner ability to control accurate word stress, which had mostly stabilised by this point with few inaccurate occurrences of word stress. At this stage, learners demonstrated an ability to control both internal stimuli (memorised word form) (Karmiloff-Smith, 1986) and lexical use in linguistic production to convey an original idea (Vygotsky, 1986). These findings can be understood as a motivation to use words in order to demonstrate learners’ productive knowledge of the target vocabulary. The temporal nature of motivation indicates that productive use of vocabulary is driven by a learner’s willingness and subjective choice to use words (Zheng, 2012). During the focus group learners were asked to elaborate on their use of the target words in the final speaking tasks and Kiri elaborated with the below comment. In this comment she associates her ability to accurately produce words with a positive feeling, and explains that this association led to her using the words in the speaking task on day 5:

“I feel better now… when I was talking [in the] last activity … I can say the words so I can mix my story with [the words]” (Kiri, Iteration 2)

**Figure 14**

*Output after no additional RFC practice*
In the final analysis Figure 15 below indicates productions made in a three-week delayed speaking task. The classroom time between day 5 of the workshop and this speaking task did not focus on the target vocabulary; yet it seems that the learners retained productive knowledge of the target words without any additional focus. Again, all productions were voluntary and productive recall was unprompted. Nonetheless, there were no instances of inaccurate word stress. Therefore, it seems that by this point learners had reached a point of mastering productive output with relation to this prosodic feature, according to Karmiloff-Smith (1986) this is the final stage of productive oral development.

Figure 15
Output after no focus on target words in classroom for 3 weeks
4.6 Conclusion

The findings presented in this paper demonstrate that engagement with the RFC focusing learner attention on word stress led to increasingly improved accuracy of word stress in subsequent productions. Data reported in this paper has demonstrated that learners were able to deconstruct the sound of target words according to this prosodic feature, reconceptualise the way that the target words sound, and ultimately stabilise production of that target form in speech. After engaging in the RFC, learners were observed to make various forms of gesticulation which emulated lexical stress alongside verbal productions. Although the sample size of this study is relatively small, these findings provide valuable insights into the utility of the RFC to enhance learners’ ability to memorise phonological word forms. Findings presented here support those of (Macedonia & Knoche, 2011) in that incongruent gestures (such as shoulder movements, head nods and finger taps) supported learners’ development of their ability to embody phonological word form in order to enhance the accuracy of the subsequent reproductions.
The promising results from this study, which indicate the potential effectiveness of the RFC method in enhancing learners' ability to embody the phonological form of target words, warrant further investigation. It is important to exercise caution in asserting the uniqueness or superiority of the RFC method without additional empirical evidence. Future research could compare RFC with other explicit instruction approaches to determine its relative effectiveness in productive oral vocabulary development. While the RFC method likely assists students in visualising the word and sentence stress systems of English, the question of whether RFC is more effective than other approaches in the field remains open. In light of these considerations, it is suggested that classroom teachers of L2 learners might consider incorporating activities such as the RFC into their lessons as a potential means to enhance learners' ability to embody the phonological form of target words. By adopting a cautious approach and further investigating the effectiveness of the RFC method with larger sample sizes, researchers and educators can gain deeper insights into its pedagogical utility and make informed decisions regarding its implementation in language instruction.
The first study (Chapter 4) demonstrated that by engaging in the productive oral vocabulary workshop, learners increasingly improved the accuracy of their phonological production of target words. Findings also suggested that the ability to use target words in speaking was sustained beyond the classroom intervention, as demonstrated in a 3-week delayed task. Although the ability to produce the phonological forms of target words is a critical component, other aspects of vocabulary knowledge are equally important. Therefore, further investigation was needed to understand the development of different aspects of word knowledge. The second paper aimed to investigate the effects of a teaching approach that bridges phonological form instruction with meaning-focused instruction. This study examined the development of deeper metalinguistic awareness of target words to provide insight into the subsequent effects on target word use in speech. The importance of such a study was to identify ways vocabulary training can maximise the update of lexical knowledge concerning both meaning and phonological form.
Chapter 5: Study 2 – “Putting it into context: How exposure to rich and meaningful contexts can activate productive oral vocabulary”

5.1 Abstract
Developing L2 learners’ productive mastery of vocabulary is a challenging task. Recent research has called for greater attention to understanding how receptive vocabulary may be transformed for productive use (Schmitt, 2019). Using a design-based research methodology, this study investigated adult ESL learners’ productive oral vocabulary development through engaging them in a series of classroom workshops where they were exposed to nine target words in five different contexts. Findings suggest that such exposure to words combined with phonological form-focused elaboration facilitates the development of metalinguistic awareness, specifically the associations between grammatical patterns and word meaning, leading to subsequent productive use of target words. The paper contributes to the understanding that vocabulary training combining a focus on meaning with a focus on phonological and grammatical form may enhance form-meaning mapping, leading to productive oral vocabulary development.

5.2 Introduction
The development of productive oral vocabulary has long been highlighted as an area of importance in L2 vocabulary research due to its central role in enabling learners to use words in speech (Laufer, 1998). Integral to learners’ knowledge of productive oral vocabulary is the development of phonological form-meaning links, which are essential for successful spoken communication. In particular, this type of knowledge can manifest as form recall, defined as the ability to retrieve a word from memory when prompted by its meaning, for which the processing
of form and making form-meaning connections is necessary (Nation, 2013a). In terms of productive oral vocabulary knowledge, this involves recalling the phonological form of a word. An inability to accomplish this would render words unusable for speaking purposes (Nation, 2020) and ultimately hamper learners’ efforts toward effective spoken communication. To date, few studies have investigated these phonological form-meaning links (e.g., Afshar, 2021) with most research focusing primarily on the development of form-meaning links in written modes (e.g., Elgort et al., 2018). Further problematic are the concerns that oral language skills are hindered due to an over-emphasis on either meaning-focused instruction without adequate focus on phonological form or linguistic form without sufficient focus on meaning (Sicola & Darcy, 2015).

More recent studies have started to investigate the relationship between speech and vocabulary but have produced a mixed view of the productive vocabulary in spoken modes. Various studies have reported significant gaps between L2 learners’ knowledge of words in written modes versus their spoken modes. Milton and Hopkins (2006) reported that, at lower proficiency levels, learners favored phonological knowledge, but as their proficiency advanced, their knowledge of written form surpassed their knowledge of phonological form. In a similar vein, Uchihara and Harada (2018) identified that English as a Foreign Language (EFL) learners were better able to recognise the written form of target words in written input than the phonological form of target words in aural input. The authors attribute this reduced ability in spoken modes to learners not being adequately trained in oral language skills. Similarly, van Zeeland (2013) found that learners often exhibit superior knowledge of word meaning in written modes when compared to spoken. Yet, the paucity of research on spoken modes has been emphasised by Schmitt (2019) who has noted that more research needs to be done investigating the types of classroom activities that lead to this much needed productive oral vocabulary development. This paper aims to explore the effects of simultaneous focus on meaning (i.e., contextual word learning) and phonological form (i.e., pronunciation training) on productive vocabulary learning.

5.3 Literature review
5.3.1 Productive oral vocabulary

It is generally acknowledged that two types of vocabulary knowledge are essential to vocabulary development: receptive and productive. Receptive knowledge relates to the ability to comprehend words in listening and reading, whilst productive knowledge refers to the ability to use words in speaking and writing (Nation, 2013a). More specifically, productive oral vocabulary knowledge involves the application of various aspects of vocabulary knowledge in speaking.

Levelt’s (1989) theory of speech development provides better understanding of productive oral vocabulary. Levelt (1989) states that lexical selection drives speech processes because grammar, morphology, and phonology will be determined by initially selected words. Speech begins with learners’ conceptualisation of a pre-verbal message as they identify what they want to say, which is followed by the construction of the message as learners retrieve necessary words from memory, before finally conveying that message through oral output (Levelt, 1989). Kormos (2014) contends that learners who can use procedural knowledge (unconsciously accessible; automatic knowledge) to access grammatical and phonological rules will become more proficient speakers than learners who rely on declarative knowledge (consciously accessible; less automatic knowledge). Furthermore, Fukuta (2016) claims that learners initially tend to focus on communicating intended meaning, but that the repeated retrieval of lexical items in this formulator module can reduce learners’ dependency on declarative knowledge and increase their procedural knowledge of words. Kormos (2014) emphasised that automatizing knowledge of grammatical and phonological rules is what determines proficiency in L2 speech. At lower proficiency levels, attentional resources will need to be utilised for lexical retrieval and grammatical encoding. This could result in slower articulation (Kormos, 2014).

This paper draws on Levelt’s (1989) theory of speech development, which is highly useful in understanding how learners engage in speech production, and Vygotsky’s (1986) sociocultural theory of learning, which posits that social interactions lead to higher level learning. In other words, before learners integrate knowledge into their own mental structures, they would first need to interact with others. In a classroom environment, this theory of learning offers a powerful tool to facilitate automatisation of knowledge needed for speech production. Research has shown that such a sociocultural approach to classroom learning is beneficial to vocabulary development
in written modes as it facilitates metatalk, talk about target words, when learners engage in
discussion to explore and justify lexical choices (Chen & Myhill, 2016). In fact, Maad (2016)
determined that learners who valued the learning process (acquisition of knowledge), as opposed
to learners who valued the product of learning (speech output), sacrificed accuracy in oral output
to produce higher levels of novel structures. This finding confirms the conclusions of Kormos
(1999) who found that learners who are less focused on monitoring their language are better able
to assume complex structures and deep processing as they restructure and conceptualise their
verbal messages. Therefore, pedagogical approaches with sociocultural underpinnings may
facilitate development of learner productive oral vocabulary by encouraging discussion of target
words to better understand how words are used in speech.

5.3.2 Facilitating productive oral vocabulary learning in classroom
environments

Productive oral vocabulary development involves creative constructions of language containing
target words (Altman, 1997). This requires deep engagement with target words. One such form
of deeper engagement is metatalk, talk which enables learners to further develop lexical
knowledge, such as morphology and grammar (Chen & Myhill, 2016). However, for such
metatalk to take place, educators need to ensure that learning activities will facilitate such
engagement. A broadly accepted method of evaluating classroom activities is the Involvement
Load Hypothesis (ILH) (Laufer & Hulstijn, 2001), which identifies three key factors in word
practice that are beneficial to learning, namely need, search, and evaluation. Need identifies the
extent to which learners require knowledge of a word’s meaning to complete a task, while search
relates to the degree of effort that is required by a learner to find the meaning of a word. Then,
evaluation is the comparison of a word with relation to other words, other meanings of the word,
or the use of the word in a given context. Yanagisawa and Webb (2021) recently suggested that,
of the three factors, a high level of evaluation, such as tasks requiring the productive use of
newly learned words in authentic contexts, is one of the most significant predictors of L2
vocabulary learning. Furthermore, Harrington and Jiang (2013) found that a focus on
phonological form it led to measurable developments in vocabulary knowledge. It seems that
each productive retrieval can prime subsequent retrieval attempts and that the use of words in
various contexts and situations can enhance learners' productive knowledge by creating well-connected paths to target words (Altman, 1997; Bolger, Balass, Landen, & Perfetti, 2008; Nation & Meara, 2010; Shintani, 2013).

In addition to the retrieval of phonological form, it has been increasingly acknowledged that drawing attention to linguistic forms of a word is highly beneficial to vocabulary acquisition (Laufer & Girsai, 2008). However, most studies investigating the linguistic form have focused on written modes. For example, Shin and Jung (2021) reported that exposure to written input facilitated the development of productive written output. Yet, there are a few studies that have explored the effectiveness of phonological form in developing spoken vocabulary. Most notably, Shintani (2011) reported on the effects of input-based tasks without requiring learners to produce spoken output compared to output-based tasks requiring learners to use target items in speech. Although both input-based and output-based tasks led to productive vocabulary development, analysis revealed that listening tasks resulted in higher levels of free-productive output, which is the ability to use words without being prompted (Laufer, 1998), whereas production-based tasks led to higher levels of controlled-productive output, which involves the production of words when specifically elicited by tasks.

Deep processing of target words would presumably involve metalinguistic engagement with both linguistic form and meaning through noticing patterns within linguistic input. One method that may enable learners to better engage with linguistic input could be the facilitation of learner engagement in metatalk focused on their understanding of lexical meaning and lexical choice (Chen & Myhill, 2016; Shintani, 2011). In the case of meaning, learners need to therefore be encouraged to elaborate on their knowledge of core lexical meaning through exemplification and explanation (Chen & Myhill, 2016). One early study by de la Fuente (2002) found that the opportunity to negotiate words in pairs alongside the opportunity to focus on the phonological form of a word leads to significant use of target items. This highlights the need for further exploration to better understand how meaning-focused input with a focus on phonological form of target words leads to productive oral vocabulary learning.
5.4 The present study

This study draws on data collected as part of a larger study examining a pedagogic solution designed to develop adult learners’ productive oral vocabulary. Specifically, this paper expands on (Mister et al., 2021), which aimed to investigate how repeatedly producing target words with gesture and touch facilitated the development of productive oral vocabulary. The findings presented in this study relate to the effects of exposure to target words in context. Therefore, the guiding research question for this paper was: How does focusing learner attention on the phonological form whilst being repeatedly exposed to target vocabulary embedded in diverse meaningful contexts affect subsequent oral productive knowledge of those words?

5.4.1 Methodology

This study adopted a qualitative research design as is typical in investigations of social phenomena (e.g., classroom environments) focused more on the process of learning, rather than the outcome (Kervin et al., 2016). Design-based Research (DBR) was specifically chosen for its ability to examine solutions to real-world pedagogic solutions (van den Akker, 2006), thus enabling the exploration of productive oral vocabulary within sociocultural constructs. DBR provides insights into how, when, and why educational innovations are successful in practice for the overall purpose of implementing educational reform (van den Akker, 2006).

5.4.2 Site and participants

This study occurred at an international English as a Second Language (ESL) language school in Sydney, Australia. It was chosen primarily for its ability to offer insight into the behaviors of teachers and learners in a natural setting, a principal aspect of the research design (van den Akker, 2006). The intermediate level teacher at the participant site, where the lead researcher also worked at the time, was approached to participate in the study. The participant teacher agreed, viewing it as an opportunity for professional development. Students enrolled in his class were also invited to participate. These 11 learners, ranging from 19-38 years of age, were recently promoted to the intermediate level class and were in their first weeks of this course. Classes at this research site often consist of learners with mixed abilities, with many learners regarded as still transitioning from CERF A2 to B1 level placed in this intermediate class.
Although it is difficult to measure productive oral vocabulary requirements for learners at this stage, in a general sense there is some understanding of the expected vocabulary knowledge. Milton and Alexiou (2009) reported that the expected vocabulary size of learners at A2 level would be between 1,500 and 2,500 words, whilst the expected level of learners at B1 level would be between 2,750 and 3,250 words. Table 11 provides an overview of teacher and student participants in this study.

Table 11
Summary of participants

<table>
<thead>
<tr>
<th>Teacher pseudonym</th>
<th>Number of student participants in cohort</th>
<th>Student country of origin</th>
<th>Student L1</th>
<th>Teacher qualifications</th>
<th>Years of experience teaching ESL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jack</td>
<td>11</td>
<td>Bulgaria x 1</td>
<td>Bulgarian</td>
<td>CELTA / Bachelor of Arts (Communication) / Certificate IV in Training and Assessment</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Colombia x 3</td>
<td>Spanish</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brazil x 2</td>
<td>Portuguese</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>India x 1</td>
<td>Punjabi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mongolia x 1</td>
<td>Mongolian</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thailand x 1</td>
<td>Thai</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Japan x 2</td>
<td>Japanese</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.5 Data and analysis

This study aimed to examine the effects of a classroom workshop on learners’ productive oral vocabulary development. Table 12 outlines three data collection methods that were used at each stage of the classroom workshop: 1) classroom audio data collected from the 5-day workshop (as outlined in Table 12); 2) audio and researcher notes from 3 x 40-minute focus groups8 one week after the workshop; and 3) researcher classroom observation notes made during the workshop.

8 To maximise student participation in focus group discussions, students were randomly divided into three smaller focus groups (i.e., two groups of four students and one group of three students).
Table 12

*The 5-day classroom workshop*

<table>
<thead>
<tr>
<th>Stage of the teaching model and workshop activity</th>
<th>Data collected</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day 1</strong>&lt;br&gt;Activity: Listen to story with images (20 mins)&lt;br&gt;Activity: Word Domain (10 mins)</td>
<td>i) Audio recording of learner discussion during concept mapping&lt;br&gt;j) Observation notes from both activities</td>
</tr>
<tr>
<td><strong>Day 2</strong>&lt;br&gt;Activity: RFC (30 mins)</td>
<td>k) Observation notes</td>
</tr>
<tr>
<td><strong>Day 3</strong>&lt;br&gt;Activity: RFC (10 mins)&lt;br&gt;Activity: Taboo Game (approx. 10 mins)&lt;br&gt;Activity: Taboo Sentences (approx. 10 mins)</td>
<td>l) Audio recording of learner discussion during Taboo&lt;br&gt;m) Observation notes from both activities</td>
</tr>
<tr>
<td><strong>Day 4</strong>&lt;br&gt;Activity: RFC (10 mins)&lt;br&gt;Activity: Collective Story (20 mins)</td>
<td>n) Audio recording of learner discussion during Collective Story&lt;br&gt;o) Observation notes from both activities</td>
</tr>
<tr>
<td><strong>Day 5</strong>&lt;br&gt;Activity: 2/2/2 (30 mins)</td>
<td>p) Audio recording of learner monologues.</td>
</tr>
</tbody>
</table>

To analyse all audio files from classroom workshops, focus groups, and the researcher notes from classroom observations, all files were uploaded to NVivo, a qualitative data analysis software. The audio files were then transcribed and dated within Nvivo and all data were coded (*a priori*) according to learner engagement, with target words relating to specific receptive and productive aspects of knowledge.
Data analysis was guided by Nation’s (2013a) questions as summarised in Appendix 1, which were used as a framework for analysis of engagement with receptive or productive knowledge. Firstly, Nation’s nine receptive knowledge question cues were used as heuristics of receptive knowledge. For example, discussions relating to “What does the word sound like?” or “In what patterns does the word occur?” were coded as receptive knowledge; whilst “How is the word pronounced?” or “In what patterns must we use this word?” were used as heuristics for evidence of productive knowledge. Finally, analysis was undertaken to identify possible patterns of progression from receptive to productive knowledge during the intervention period.

5.6 The vocabulary workshop

This section outlines a vocabulary workshop for an intact class, consisting of five 30-minute lessons conducted over five consecutive days. Workshop activities focused on providing learners with contextual word learning and rich clues to the meaning of target words along with pronunciation training. Although decontextualised learning of words presents benefits, the decision to focus on contextualised learning is justified by findings identified through analysis of iteration 1 data (refer to Section 3.4.3 of Chapter 3). The present paper will analyse data collected throughout the workshop with a specific focus on the effects of contextual word learning on subsequent word use.

Further to the findings of Shintani (2013), who reported the benefits of FFI using input-based tasks on subsequent freer use of target words in spoken modes, contextual word learning has been shown to assist learners in incrementally gaining knowledge of words by repeatedly encountering items in new meaningful sentences (Webb, 2008a, p. 238). Consequently, over the course of the workshop, students were exposed to five meaningful sentences providing inter-relational meaning between target word and various conceptual domains. Research has indicated that repeated exposures to words (between three to five) in meaningful contexts can lead to significant improvements in productive knowledge (Jenkins, Stein, & Wysocki, 1984; Webb, 2008a). In the present study, the sentences were carefully designed to reinforce meaning of the target vocabulary whilst highlighting critical grammatical functions of target vocabulary in varying contexts. The use of various meaningful sentences, such as these, for the purpose of developing learners’ oral vocabulary does not appear to have been previously researched.
However, these are conditions that have been shown to enhance learner ability to use words in new contexts within written tasks (Bolger et al., 2008, p. 148).

Nine target words were chosen and received focused instruction in the workshop. Approximately 95% of the most frequent 3,000 words is needed to successfully participate in spoken English and learners at the intermediate level need to have a vocabulary of similar size (Nation, 2013a). The Longman Communication 3,000 is a list of the most frequently used words, which is claimed to represent the most important words for effective communication. The list is also divided into frequency bands and identifies words most common in written communication or spoken communication. For example, the code S3 is given the most frequent 2,001 – 3,000 words in spoken communication. A pilot study by Mister (2019) revealed that a typical group of intermediate level students at the participant site had insufficient productive knowledge of a selection of S3 words taken from the Longman Communication 3,000. Therefore, the nine target words, which aligned with the weekly textbook theme of Emotions, were selected from this category in the Longman Communication 3,000: enjoyable, shocked, angry, disappointed, persuade, confusing, escape, fascinating, and the idiom at each other’s throats.

Table 13 provides a representative example of how meaningful sentences were designed to provide rich clues to the meaning of target words over a four-day period. In Day 1, the first sentence provided synonyms, argue and fight, as presented by the Longman Dictionary of Contemporary English. Further semantic clues were provided in the second sentence on Day 2 for the development of inter-relational meaning between the target phrase and concept domain of having a bad relationship. For example, two significant clues in the second sentence provide inter-relational meaning that enriches the concept of the target phrase by including the synonym, argue. The sentence also incorporates the negative adjective mean to juxtapose the farmer with the rebellious main character, Peter Rabbit; not to mention the fact that it is quite predictable that farmers and rabbits are probable foes. The inter-relational meaning provided by this sentence indicates that such a negative force as the farmer is likely to clash with Peter, and the two would be at each other’s throats.

---

9 A PDF of the Longman Communication 3,000 can be downloaded from https://www.lextutor.ca/freq/lists_download/longman_3000_list.pdf
Following this, the third and fourth sentences (Day 3) focused on a negative grammatical structure with the juxtaposition of the idiom with a positive relationship and the idea of *peacefulness*. Finally, in the fifth sentence (Day 4), the notion of having a bad relationship provided further clues to meaning by using the context of *divorce* to demonstrate the extreme meaning of the idiom. All the varied contexts illustrated the need for the target vocabulary to take a plural subject, which is central to the meaning of the idiom. Therefore, with the provision of each context, various shades of semantic meaning highlighted different aspects of the target phrase and how it is used, whilst allowing learners to draw meaning from the context to enrich their understanding of grammatical forms.

**Table 13**

*Meaning-focused input of the target idiom “at each other’s throats”*

<table>
<thead>
<tr>
<th>When and how learners were exposed to the sentences</th>
<th>The sentences provided for the target idiom: <em>at each other’s throats</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1: Listening to a meaningful story</td>
<td>Peter and the mean farmer were always <em>at each other’s throats</em>; they would <strong>fight and argue</strong> all the time.</td>
</tr>
<tr>
<td>Day 2: Input / Output during pronunciation practice</td>
<td>My brother and sister <em>don’t have a good relationship</em>; they are always <em>at each other’s throats</em>.</td>
</tr>
<tr>
<td>Day 3: Input / Output during pronunciation practice</td>
<td>My neighbor and I <em>used to be</em> <em>at each other’s throats</em>, but <strong>now we’re friends</strong>.</td>
</tr>
<tr>
<td>Day 3: Input / Output during pronunciation practice</td>
<td>My parents were <strong>not at each other’s throats</strong> on the weekend; we had a <strong>peaceful time together</strong>.</td>
</tr>
<tr>
<td>Day 4: Input / Output during pronunciation practice</td>
<td>My parents were <em>at each other’s throats</em> all the time, so now they are <strong>divorced</strong>.</td>
</tr>
</tbody>
</table>

To facilitate pair discussion of both target word meaning and phonological form, which is advocated for by (de la Fuente, 2002), this workshop incorporated repeated exposure to target words in varying meaningful contexts into pronunciation training with the Rhythmic Fight Club (RFC). RFC is a gesture-based, punch-like technique designed to draw learner attention to syllable structure and prominence in continuous speech (Burri et al., 2016; Mister et al., 2021; Mister & Burri, 2019). This method contributes to the development of learners’ conceptual understanding of words by considering the impact of primary stress placement on meaning. For example, in the sentence ‘My parents were **not at each other’s throats** on the weekend’ primary
stress would typically shift from target phrase at each other’s throat to emphasise the negative adverbial not. During the RFC training, learners were provided with multiple opportunities for contextual word learning to occur, whilst specifically targeting the production of accurate phonological form. The objective of the RFC is to emphasise prominent syllables within speech to enhance form-meaning links. To illustrate, prominent syllables are marked here in capitals: ‘My PARENTS were at each other’s THROATS all the time, so now they are DIVORCED’. This example shows how RFC facilitates semantic elaboration by using prominent syllables to create meaningful associations between words (i.e., grammatical subject parents, target word throats, conceptual domain divorced). The benefit of this approach is the amalgamation of explicit phonological form training and contextual word learning, which may assist in the development of form-meaning links. Given that learners’ linguistic knowledge of written and aural modes differs and that learners tend to focus less on vocabulary in listening than they do in reading (van Zeeland, 2013), the workshop provided learners with the written form of the sentences as a means of additional learning support. In this way, learners could equally draw on textual and aural cues to discern meaning from the contexts provided.

5.7 Findings and discussion

Overall, the data analysis revealed three noticeable stages in developing learners’ oral productive knowledge: 1) giving attention to and negotiating receptive knowledge; 2) giving attention to and negotiating productive knowledge; and 3) demonstrating productive knowledge in freer speaking. To illustrate these findings, the following sections will first present two vignettes, each describing the journey of one learner’s engagement with one of the target words, before examining the results of the class as a whole. As the vignettes demonstrate, the development of metalinguistic knowledge occurred as a result of repeated exposure to words in varying meaningful contexts as they progressed through the three stages while participating in the workshop. All names used are pseudonyms.

5.7.1 Vignette 1: Boris and target word shocked

The first stage of development was identified by analysing classroom observation notes on the first day of the workshop and focus groups, both of which provide evidence that Boris gave deliberate attention to receptive knowledge. After being exposed to the target word in just one
sentence, ‘The rabbits were shocked by the farmer’, Boris exhibited an attempt to develop metalinguistic understanding of the target word. During the focus group Boris claimed to have heard the word shocked before, but not having seen it used with the preposition by. On the first day of the workshop, Boris was observed to seek clarification from his teacher, who explained that in this structure, something is doing the action which ‘creates the feeling in you’; a structure denoting the target word being used in passive verb form, relating to the word’s grammatical function (Nation, 2013a). This demonstrates that Boris gave deliberate attention to receptive knowledge relating to a target word, specifically seeking out the answer to ‘in what patterns does the word occur?’

This deliberate attention to receptive knowledge primed subsequent negotiation of productive knowledge in the second stage of development, which occurred on the third day of the workshop. In this stage, Boris negotiated productive knowledge of grammatical function relating to the target word shocked. In the exchange below, Boris demonstrated an attempt of productive retrieval of the target word, initially saying the target on its own and then repeating it together with the preposition to use it in passive verb form. This is a demonstration of Boris extending receptive knowledge of grammatical function, which he negotiated with his teacher in the first stage of development and incorporated into productive knowledge of grammatical function in the second stage of development (i.e., In what patterns must we use this word?).

Gianni When something happens, you look at it and you got a reaction but is something that you was not expecting to happen.
Boris Is it negative? … It’s shocked. Shocked by… I’m shocked by this game. It is hard, but I did it!

Such experimentation in a controlled task appeared to reinforce Boris’ ability to use the target word in a freer speaking task during the third stage of development, which occurred during Boris’ final monologue (the 2/2/2 activity on Day 5). In this speech, Boris demonstrated an ability to integrate knowledge gained over the first two stages of development into productive output. Cross analysis of Boris’ monologue recording (see excerpt below) with findings of the first and second stages of development revealed that Boris used shocked appropriately in its passive verb form. This is specific knowledge of grammatical function, which Boris gave
deliberate attention to in both the first and second stages of development, and presumably primed his ability to accurately use the target word in his final monologue:

When I saw how many documents I got to prepare I was shocked by the amount of documents and I was surprised after two months of preparation when they called me that I get the visa for here.

Additional analysis of the focus groups revealed that Boris had developed deeper metalinguistic knowledge of the target word, which was not observed during classroom activities. It seems that Boris had paid further deliberate attention to the properties of the target word (associations). Boris had learned that surprised and shocked are conceptually related words but are not synonyms and thus cannot be used interchangeably. When asked why he had chosen to use the target word shocked and non-target word surprised with such contrast, he commented “[I knew] surprise is positive [but] I didn’t know shocked is something negative. I [learned] that on the first day in class when I talk about it with my partner and teacher. So, I just figure out it and use it in my talk”. Therefore, in this final stage of development Boris was able to demonstrate two aspects of productive knowledge: grammatical function and associations.

5.7.2 Vignette 2: Sofia and target phrase at each other’s throats

The first stage of Sofia’s development was identified on the second day of the workshop. Analysis of observation notes revealed that, after exposure to the target phrase in two meaningful contexts, Sofia exhibited deliberate attention to receptive input to further develop metalinguistic understanding of the target phrase. After being exposed to the two sentences containing the target phrase at each other’s throats on the first two days of the workshop, Sofia approached the teacher, enquiring “Why is they at each other’s throat? Is correct I at each other’s throat with my sister?” When asked about this event during the focus group, Sofia stated to have not seen or heard the target phrase previously; yet, she had already noticed a linguistic pattern (grammatical function). In fact, another student, Christian, made this same observation in an unprompted comment during the focus group “We learned how to use [at each other’s throats] because we didn’t know that is made for two persons… We see it many times in different sentence … so, is better for us because you know the word in different sentence and how to use in different ways”.

Bianca Mister
During the first stage, Sofia gained critical metalinguistic understanding of the target word which underpinned her ability to progress to the second stage of development on the third day of the workshop. This is evidenced by her ability to negotiate productive knowledge of the grammatical function of the idiom. Analysis of the audio recording of a pair work discussion revealed that Sofia self-corrected her use of the plural subject we with argue. Although Sofia did not push herself to use the target phrase in a novel context, she negotiated productive knowledge of the phrase’s grammatical function. This supports a body of research which states that that negotiation with both native and non-native speakers enables learners to describe vocabulary items but may not yet use those words productively in speech (Gass & Varonis, 1994; Kowal & Swain, 1994; Swain & Lapkin, 1995). In this case, Sofia engaged with her teacher during the first stage of development (i.e., giving attention to and negotiating receptive knowledge). The below exchange demonstrates Sofia’s productive knowledge of grammatical function.

Simone [productively recalls at each other's throats from image prompt]

Sofia What kind of situation we can use that? For example, when my kids don't do the things that I want … I or we argue about it.

Simone When my boss say to me to do something that I just already did I um I want to be at each other’s throats.

Sofia I think is we are at each other’s throats I think but I don’t know that this sentence involves both you can’t say ‘I’ because is both.

This negotiation enriched Sofia’s understanding of linguistic structures, which allowed her to experiment with productive knowledge so that she could use the phrase in a freer speaking task. Sofia advanced to the third stage of development in which she created rich meaning of the target phrase at each other’s throats in her monologue. This shift demonstrates Sofia’s ability to integrate previously created form-meaning links in novel speech. Cross analysis of Sofia’s monologue recording with findings of the first and second stages of development indicate that she used the target phrase in a novel context beyond that provided to her in the input. The below excerpt displays Sofia’s incorporation of at each other’s throats in which she elaborates on her
From potential words to actual words

Chapter 5: Study 2 – “Putting it into context: How exposure to rich and meaningful contexts can activate productive oral vocabulary”

description of a challenging time in a new job: “[It] was so hard because the staff we we [sic] at each other’s throats a lot because my ideas were so different that them and I had to try to persuade them to change their minds”. When later asked about this excerpt in the focus group, Sofia stated that “when you use in a sentence you start to learning more about [the idiom]… I’m rectified my knowledge … [because] I can practice and use the vocabulary”. This shows her enhanced metalinguistic understanding which may have resulted in her enriched productive knowledge of the target phrase, corroborating findings of Bolger et al. (2008). It is worth noting that the first two stages of development may have equipped Sofia’s with knowledge necessary to use the target phrase in speech, the third stage of development.

5.8 Learning trajectories of other students

The two vignettes above are representative of the learning trajectories of other students in the class, specifically in relation to what Vygotsky (1986) refers to as learners’ ability to demonstrate productive word knowledge as they use words in new contexts. The three stages of development that are illustrated in the case studies of Boris and Sophia exemplify the data presented in Table 14, which outlines the number of instances that the entire cohort of learners engaged with each of the target words within each of the stages. To track the progress of each word, each learner’s engagement with a target word was monitored at each stage of development. Instances of the same student engaging with the same word at more than one stage of development, highlighting progression through the stages of development, are shown in the final two columns of Table 14.

For example, relating to the target word shocked, Boris was one of the five students (first stage of development defined in the second column of Table 14) who gave attention to receptive knowledge of the target word. He was also one of the seven students who gave attention to productive knowledge of the target word (second stage of development defined in the third column of Table 14). And he was one of the four students who demonstrated productive knowledge of the target word in speaking (third stage of development defined in the fourth column of Table 14). However, the last two columns of Table 14 illustrate that of the five learners who engaged with the target word shocked in the first stage of development, only four went on to engage with the word in the second stage of development, which is a progression rate of 57.14% from the first stage to the second stage of development (defined in the fifth column of Table 14). Then, of those four learners, three progressed to the third stage of development, which
is a cumulative progression rate of 75% through all three stages of development (defined in the last column of Table 14).

**Table 14**

*Tracking learner engagement with target words through the stages of development*

<table>
<thead>
<tr>
<th>Target word</th>
<th>Number of students who engaged with target word</th>
<th>Student progression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First stage of development</td>
<td>Second stage of development</td>
</tr>
<tr>
<td>Escape</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Fascinating</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Persuade</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Shocked</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Enjoyable</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Disappointed</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Angry</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Confusing</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>At each other’s throats</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Average rate of progression</strong></td>
<td><strong>56.88%</strong></td>
<td><strong>83.15%</strong></td>
</tr>
</tbody>
</table>

Note: The numbers in the final two columns represent at least one engagement with a word at each stage of development; in other words, if a student engaged with the same word more than once at a single stage of development, this was counted as one engagement. The reason for this is that the impact of multiple instances of engagement were outside the scope of this study.

These findings suggest that, as learners engage with the target words at each stage of development, they are more likely to move to the next stage of development. On average, 56.88% of learners who engaged with words in the first stage of development also engaged with the same words in the second stage of development. 83.15% of students who engaged with words at both the first and second stages of development were more likely to use the target word during the third stage of development. This finding indicates that there is a cumulative relationship
between the stages of development and that the likelihood for learners to use words in the final stage of development increases when engagement with words in the first two stages has occurred. Analysis of the data indicates that using target words in speech may be predicated on an early engagement with receptive knowledge and followed by later engagement with productive knowledge of target words. That is to say, learners who gave attention to receptive knowledge were more likely to subsequently give attention to productive knowledge, and learners who gave attention to both receptive and productive knowledge were more likely to subsequently attempt using words in freer speech, indicating an automatisation of knowledge as defined by Kormos’ (2014) model of speech development.

The first stage of knowledge development occurs at a point of giving attention to and negotiating receptive knowledge prompted by exposure to words in meaningful contexts. At this stage, the definition and identification of receptive knowledge was guided by the respective questions outlined in Appendix 1. Most engagements at the first stage of development occurred either during the ‘listen to story’ with images activity on the first day or during the RFC activity on the second day, as was illustrated in both case studies of Boris, who only heard the word *shocked* once in the story on the first day of the workshop, and Sofia, who was exposed to the target idiom *at each other’s throats* during the story on the first day of the workshop and during RFC on the second day. Therefore, through exposure to words in context, learners demonstrated a conscious uptake of knowledge; specifically, learners became more aware of the impact of semantic nuances and grammatical structure, which ultimately led to freer use of target words at later stages of teaching model. This first stage of developing productive knowledge can be seen as a sign of deliberate attention given to understanding linguistic structures (most notably, *grammatical function*). Therefore, metalinguistic understanding plays a critical role in the development of receptive knowledge in that it is a form of deeper syntactic processing, which has been shown to enhance the development of vocabulary knowledge (Chen & Myhill, 2016); and, in this study, productive knowledge of word meaning as well.

The second stage of development occurs at a point of giving attention to and negotiating productive knowledge as learners attempt to use target words in communicative speech. At this stage, the definition and identification of productive knowledge was guided by the respective questions outlined in Appendix 1. Most engagements at the second stage of development
occurred during Taboo and Collective Story activities, illustrated in case studies of Boris and Sofia, both of whom negotiated productive knowledge during the Taboo activity on the third day of the workshop. At this stage, learners were consciously negotiating the generation of messages with peers as they engaged in procedures of the formulator module as defined by Levelt (1989). In Sofia’s case study, she self-corrected the use of plural subject *we* with synonym *argue* in the early stages of message formulation, which led to her accurate use of plural subject with the target idiom. Not only do learners who push themselves to produce output and self-correct demonstrate developments in linguistic knowledge (Swain & Lapkin, 1995), but linguistic knowledge expands at a point where learners are able to elaborate on concepts through exemplification and explanation (Chen & Myhill, 2016).

In the final stage of development, learners exhibit an ability to apply productive oral knowledge of target words in freer speech. At this stage, learners were experimenting with *articulation* as they engaged in overt speech as defined by Levelt (1989). Although learners were encouraged to use target words at this stage, no lexical prompt was provided. Therefore, all instances of target word use are deemed to be a demonstration of productive knowledge. Moreover, learners who were not observed to previously negotiate receptive and then productive knowledge did not appropriately use target words at this stage (unless they claimed to have prior productive knowledge). As with the case studies of Boris and Sofia, all counts of engagement at the third stage of development occurred during the fifth day of the workshop during the repeated monologue activities. This task was specifically designed for learners to demonstrate their productive knowledge in an unprompted speaking activity, whereas all other tasks provided learners with prompts to recall word form. Therefore, using words in freer speech was only considered to occur on the fifth day of the workshop. At this stage, learners drew on their own experiences and prior knowledge to provide additional details and elaborate on meaning. Joe Joe (1995, pp. 156-157) states retrieving items at least three times and elaborating on a word’s use in speech to “introduce contexts beyond those occurring in the input texts” highlights a significant increase in vocabulary knowledge.

5.9 Conclusion

This paper concentrates on the process of productive lexical learning that occurred as a result of focusing on meaning, through contextual word learning, together with a focus on phonological
form, by means of pronunciation training. The findings presented here reflect the findings of Elgort et al. (2018) investigation of written form, which reported that contextual word learning accompanied by word-writing mediates the development of more complete form-meaning links (Elgort et al., 2018, p. 663). The present study extends these findings as equally applicable to productive oral vocabulary and goes further to propose three critical stages of development: deliberate attention to receptive knowledge; deliberate attention to productive knowledge; and demonstration of productive knowledge.

The first stage occurred through contextual word learning, initiating the form-meaning mapping process. The second stage resulted in the exploration and expansion of this knowledge to include productive knowledge, through discussion with peers. The final stage allowed for consolidation of vocabulary knowledge, deepening learner understanding of linguistic and semantic contexts. Although further investigation is needed to examine long-term effects of the three stages proposed in this paper, these findings identified ways in which students develop productive oral vocabulary, and that effective pedagogy needs to take into account the processes involved in such development. Significantly, the findings allude to the potential of metalinguistic understanding to build links between form and meaning in the mastery of productive knowledge. Therefore, engaging students in metatalk, talk about meaning and lexical choice (Chen & Myhill, 2016), may be a step towards developing productive mastery of oral vocabulary.
Foreword to Study 3

The first two studies (Chapters 4 and 5) included in this thesis have established that the productive oral vocabulary workshop designed for this study was able to facilitate the development of various aspects of productive oral vocabulary knowledge. While the first study demonstrated improvements in the accuracy of target word phonological form production, the second paper highlighted the benefits of rich and meaningful input in transforming receptive vocabulary knowledge into productive knowledge. These papers provided valuable insight into teaching approaches’ role play in developing adult learners’ productive oral vocabulary; however, neither examined how learners engage with target words within communicative activities. An effective method for providing insight into how learners engage with target linguistic features is the analysis of Language-Related Episodes (LREs) in classroom discourse (Jackson, 2001). The objective of the third paper was to identify parallels between the findings of the first two papers by investigating how learners engaged with the target words. It was expected that such findings will provide deeper insight into the specific benefits of pronunciation training that incorporates exposure to target words embedded within rich and meaningful contexts. To do this, the present study (Chapter 6) investigated the effects of pronunciation training by analysing learner demonstrations of knowledge during LREs that occurred within subsequent communicative tasks.
Chapter 6: Study 3 – “Bridging the gap: The role of pronunciation-related episodes (PREs) in developing productive oral vocabulary knowledge”

6.1 Abstract

Analysing language-related episodes (LREs) in classroom discourse provides critical insights into understanding how learners respond to problematic linguistic features (Jackson, 2001). With most studies of classroom LREs focusing on either vocabulary-related or grammar-related episodes (e.g., Newton, 2013) few have focused on pronunciation-related episodes (PREs). One such study suggests that phonological training could effectively promote PREs (Darcy et al., 2021). In the context of productive oral vocabulary development, there is a need for research that scrutinises classroom activities to understand their effect on pronunciation related-LREs. The present study used Design-Based Research (Reeves, 2006) to integrate an innovative 5-day productive oral vocabulary workshop into an intact classroom. The study aimed to investigate the relationship between classroom instruction of phonological form and subsequent discussion of qualities of speech. Findings indicate that the classroom instruction of phonological form followed by communicative activities can promote the occurrence of pronunciation LREs. Furthermore, such teaching methods may encourage learners to recognise how the pronunciation of target words can change with respect to various aspects of word knowledge.

6.2 Introduction

A strong productive oral vocabulary is fundamental to meaningful oral communication in any language but the development of sufficiently rich vocabulary knowledge within the confines of the L2 classroom can be challenging. Defined as the ability to use words in spoken modes of communication, productive oral vocabulary is developed by activating knowledge from
understanding words in reading and listening (receptive vocabulary) to using them in speech (productive oral vocabulary). However, textbooks may not provide adequate levels of learning which would allow learners to “actively manipulate the words” (de Azevedo & Tomitch, 2019, p. 17), a condition which has been shown to lead to vocabulary development (Nation, 2013a). Therefore, teachers need to integrate supplementary activities to enhance the development of learners’ productive oral vocabulary development. An instrumental framework for classroom teachers is Nation’s (2013) nine aspects of vocabulary knowledge, which also provides a guide for teaching each aspect of vocabulary knowledge and distinguishing productive learning from receptive. However, for all its virtues, Nation’s framework offers limited insight into how the different parts of vocabulary knowledge relate to each other.

Understanding the relationship between various aspects of vocabulary knowledge is essential for words to be used effectively in speech, especially for understanding alterations to phonological form. For words to be used appropriately in speech, learners require an understanding of how spoken form changes in conjunction with other aspects of word knowledge, such as the relationship between lexical stress and grammatical function (e.g., the word ‘permit’ as a noun vs. a verb). The same way that syllables are stressed within words to make some syllables more prominent, the stress of particular words at a discourse level makes them more prominent (Celce-Murcia et al., 2010). Prominence at a discourse level tends to highlight essential content words in creating meaning (Goh & Burns, 2012); however, shifts in prominence can occur due to specific communicative contexts (Celce-Murcia et al., 2010). To illustrate the interplay between spoken form and other aspects of knowledge, consider decontextualised teaching of the word good by focusing learner attention on the length and quality of the vowel /ʊ/. However, if we incorporate good into a simple context such as ‘I’ve had a good time’, the past grammatical tense of “had” could be stressed, causing the vowel within good to be reduced to /ə/. In this case, learners would require knowledge of how the spoken word form would change to emphasise a grammatical aspect of speech; however, more research needs to be done to understand how classroom activities can promote such knowledge.

The use of collaborative problem-solving in classroom contexts may likely be used to enrich learners’ understanding of the relationship between phonological form and other aspects of word knowledge. Past research has shown that collaborative problem solving is advantageous to
language development because it enables learners to solve language-related problems and co-
construct new knowledge (e.g., Basterrechea & Leeser, 2019). For example, Swain and Lapkin
(1998) found that co-constructed knowledge can be retained as learners are “able to use the
language of others (and the mental process that interaction has constructed)” (p. 321). One recent
study by Mister et al. (2022) reported that discussion with peers during collaborative problem
solving led to subsequent use of the previously discussed lexical features in spontaneous speech.
Nevertheless, there is a paucity of research specifically investigating the effects of collaborative
problem solving on understanding the relationship between various aspects of productive oral
vocabulary.

With this in mind, analysis of Language-related Episodes (LREs) may offer great insight into
how classroom discussion might enrich learners’ understanding of the relationship between
phonological form and other aspects of vocabulary knowledge. LREs are defined as “any part of
a dialogue where the students talk about the language they are producing, question their language
use, or correct themselves or others” (Swain & Lapkin, 1998, p. 326). Analysis of LREs is
advantageous because episodes can be categorised to better understand how learners address
recently learned or problematic linguistic features (Jackson, 2001). For instance, LREs can be
categorised according to learner discussions of the relationship between phonological form and
other aspects of vocabulary knowledge. Moreover, Leeser (2004) argues that it is crucial to
understand that LREs are not decontextualised discussions of language and always appear in the
context of a communicative task. As a result, LREs push learners to reflect on their language use.
They have been shown to provide learners with more opportunities to focus on grammar and use
metatalk to solve problems, such as breakdowns in communication (Basterrechea & Leeser,
2019; Fernández Dobao, 2014). It has been suggested that the ‘metatalk’ which arises during
LREs can facilitate the uptake of knowledge by providing learners with a foundation upon which
they can develop form-meaning links necessary to process input in subsequent encounters (Chen
& Myhill, 2016; Van Patten, 2000). Therefore, analysis of LREs is instrumental in contexts
focused on oral production and, in the case of this study, productive oral vocabulary knowledge.

Most past research has typically categorised LREs as either vocabulary or grammar-related
episodes and few have focused on PREs. Nonetheless, some valuable insights can be gained
from these studies to inform the investigation of PREs. First of all, engaging in LREs during
learning tasks seems to lead to the ability to use the knowledge gained during the LRE in subsequent tasks (Williams, 2001). Furthermore, Basterrechea and Leeser (2019) reported a correlation between grammatical LREs that focused on third person singular -s and improved accuracy in producing that morpheme in subsequent writing tasks. This suggests that LREs focused on grammatical function allowed learners to enhance their knowledge of the written form of target words, which led to subsequent development in the productive use of those words. Therefore, it is logical that an increased number of LREs focused on the relationship between grammatical function and phonological form may also lead to enhanced use of target words in spoken modes.

Furthermore, although PREs are more likely to lead to the successful uptake of language, learning conditions that would lead to the spontaneous production of target features have not yet been examined. Ellis, Basturkmen and Loewen (2002) found that PREs are more likely than grammar or vocabulary-related LREs to lead to the correct use or comprehension of a linguistic feature. However, the authors cautioned that uptake in their study does not necessarily equate to acquisition because learners did not demonstrate spontaneous production of linguistic features discussed during the LREs. Despite their utility, PREs have been shown to occur less frequently than vocabulary-related LREs in language classrooms. For example, McDonough and Sunitham (2009) reported that vocabulary-related LREs occur at a high rate of 76% of total LREs, whilst the highest reported rate of PREs was 40% (Bueno-Alastuey & Camino, 2013). It should also be noted that McDonough and Sunitham (2009) categorised PREs as vocabulary-related episodes, so it is unclear what percentage of the reported vocabulary-related LREs were focused on pronunciation. Although the benefit of pronunciation LREs is clear, the types of learning conditions which would lead to the subsequent spontaneous production of the discussed linguistic feature have not yet been explored. As a result, further research is needed to illuminate learning conditions that would not only promote PREs in the classroom but also facilitate subsequent spontaneous production of the same features targeted in those episodes.

However, some conditions appear to be beneficial to promoting PREs, although the precise nature of their effect is not explicit. For example, Leeser (2004) reported that the rate of grammar-focused LREs increased with higher proficiency levels, whilst learners at lower proficiency levels produced a higher number of vocabulary-related LREs. The author claims that
learners at higher proficiency levels would be more capable of negotiating grammatical functions because their attention would not be as focused on processing meaning as lower proficiency learners. Therefore, prior knowledge of lexical items can lead to more complex negotiations within LREs. Under these circumstances, we can assume that the generation of LREs focused on understanding the relationship between phonological form and other aspects of word knowledge would occur when the meaning of target words is already known.

Furthermore, it is commonly known in vocabulary research that linguistic input containing target words facilitates the development of form-meaning links of those words (Nation, 2013). To support this, Loewen and Isbell (2017) found that tasks containing substantial linguistic input increased the frequency of PREs. Despite this finding, the authors did not explore the relationship between linguistic input and the quality of speech that was the focus of the discussion. Further research is thus needed to better understand the types of pronunciation LREs generated from activities that leverage prior knowledge of the lexical meaning and expose learners to linguistic input.

An additional condition associated with increased rates of PREs is the incorporation of oral communication tasks and two-way information exchange tasks; yet, the specific focus of PREs continues to remain unexplored. Lasito and Storch (2013) found that oral communication tasks undertaken in pairs generated pronunciation LREs at 6% of total counted LREs. Interestingly, this rate increased to 16% when tasks were conducted in small groups. Moreover, several studies have reported that two-way information exchange tasks can generate high rates of PREs. Rates of PREs occurring within two-way information exchange tasks have been reported to start at 16% (Loewen & Isbell, 2017), with mid-range reports of 28% (Zhao & Bitchener, 2007) and reports as high as 40% (Bueno-Alastuey & Camino, 2013) of total counted LREs. The significantly higher rate found in Bueno-Alastuey’s (2013) study may be attributed to the use of Skype rather than face-to-face as a medium of communication. The author explains that Skype was chosen for its ability to reduce speaking anxiety and increase willingness to communicate, which may have contributed to higher rates of PREs. Important to realise is that of all the aforementioned studies investigating PREs, Lowen and Isbell (2017) was the only study to distinguish any qualities of speech within pronunciation LREs. The authors distinguished between segmental and suprasegmental features of speech discussed in PREs. Their findings reported that 90% of
pronunciation LREs focused on segmental components, whilst 8% concentrated on suprasegmental features, with the remaining percentage coded as “other”. Therefore, there is a lack of research investigating the conditions of classroom environments that may promote pronunciation LREs. The specific focus of pronunciation LREs was not considered in any of these studies.

A final condition that promotes the generation of PREs is specific instruction on the phonological form. However, the correlation between instruction and a particular focus on PREs has not been considered with the exception of Darcy, Rocca and Hancock (2021). They examined instances in three teaching contexts: instruction focused on phonological form (only), instruction focused on phonological form and communicative focus simultaneously, and no emphasis on phonological form. Unsurprisingly, the authors reported increased instances of pronunciation-focused LREs in the first two groups and fewer instances in the group that received no instruction on the phonological form. Therefore, explicit instruction of phonological form is beneficial in promoting PREs.

In conclusion, there is a need for research that focuses on understanding the correlation between classroom activities and the discussion of specific qualities of speech that ensue in subsequent pronunciation LREs. Consequently, this study investigated the effects of a classroom productive oral vocabulary workshop that incorporated a simultaneous focus on phonological form and meaning. The current study aimed to analyse the types of PREs that occurred during workshop activities and attempt to identify relationships between PREs and subsequent lexical use.

6.3 The present study

The main goal of the present study is to better understand the types of student-student discussions that occur during PREs focused on target vocabulary. Design-Based Research (DBR) was chosen for its ability to explore the effectiveness of practical instructional strategies to solve real-world problems in order to better implement educational reform (Reeves, 2006). Consequently, through using DBR, four phases of investigation were undertaken as outlined in Figure 16 below. This paper will report on one set of findings revealed in Phase 3 of the study.
The DBR research model (Reeves, 2006, p. 59)

6.3.1 Site and participants

This study located at an international English as a Second Language (ESL) school in Sydney, Australia, explored teachers and learners’ engagement with a productive oral vocabulary workshop within an intact class. The workshop took place in the second week of an intermediate level course of study, and the learners’ ages ranged from 19 – 38 years. At the research site, classes are often of mixed ability, and this group of students consisted of several learners who would be considered as transitioning from the CERF A2 to B1 level. An overview of teacher and student participants is provided in Table 15.

Table 15

Summary of participants

<table>
<thead>
<tr>
<th>Teacher pseudonym</th>
<th>Number of student participants in cohort</th>
<th>Student country of origin</th>
<th>Student L1</th>
<th>Teacher qualifications</th>
<th>Years of experience teaching ESL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jack</td>
<td>11</td>
<td>Bulgaria x 1</td>
<td>Bulgarian</td>
<td>CELTA / Bachelor of Arts (Communication) / Certificate IV in Training and Assessment</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Colombia x 3</td>
<td>Spanish</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brazil x 2</td>
<td>Portuguese</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>India x 1</td>
<td>Punjabi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mongolia x 1</td>
<td>Mongolian</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thailand x 1</td>
<td>Thai</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Japan x 2</td>
<td>Japanese</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.3.2 Target vocabulary

Measuring specific vocabulary requirements for learners at this level can be challenging, but Milton and Alexiou (2009) have provided valuable insight into the expected vocabulary size of various CERF levels. For example, they claim that at the A2 level, learners should understand between 1,500 and 2,500 words, and learners at the B1 level should know between 2,750 and 3,250 words. Therefore, the learners in this study, who are transitioning from A2 to B1, could be assumed to have knowledge of words anywhere within these ranges. Yet, a pilot study by Mister (2019) revealed that a specific group of students within the educational context did not have sufficient knowledge in this range.

As the workshop was embedded in an intact classroom, the target vocabulary needed to align with the coursebook. Therefore, the following nine words in the target range, which appeared as focus vocabulary in Unit 6 of the student coursebook, *Speakout Intermediate* (Clare et al., 2015), were chosen as target words for the productive oral vocabulary workshop: *enjoyable, shocked, angry, disappointed, persuade, confusing, escape, fascinating*, and the idiom *at each other’s throats*.

6.3.3 The learning materials

The innovative vocabulary workshop used in this study consisted of 30-minutes of class time per day for five consecutive days. It was integrated into an intact classroom, in which the participants studied for four hours a day over five days. Therefore, the vocabulary workshop entailed 2.5 hours of study over a one-week period. On the first day of the workshop, learners focused on the meaning of target words. The objective of this was to facilitate the development of form-meaning links of target words, which would be used as prior knowledge in subsequent learning activities. On the second day of the workshop, learners received instruction on the phonological form of target words using the Haptic Rhythm Fight Club (RFC) technique (Acton et al., 2013), which focuses explicitly on lexical stress and phrasal prominence. On the third and fourth days of the workshop, learners used the RFC technique in conjunction with communicative tasks. As part of this, on the third day, learners undertook a Taboo activity, which is a communicative information exchange task. On the fourth day learners constructed a Collective Story, which is a
communicative task. All three activities are described in detail below. On the final day of the workshop, learners engaged in a 2/2/2 monologue talk (for more details see Mister et al., 2021). As a monologue task, there was no opportunity for LREs to take place so analysis was not included in this paper.

The Haptic Rhythm Fight Club (RFC)
The RFC technique uses boxing-like movements (kinaesthetic) to focus learner attention on syllable structure and prominence in continuous speech (Acton et al., 2013). Pronunciation training needs to be fun and supportive because when students feel comfortable, they can better improve intelligible pronunciation (Burri, 2021). Haptic senses support the punch-like movements in that learners hold a ball in the palm of their hand, which they can squeeze (tactile), while they physically produce target words in speech. Although speaking can often induce anxiety in learners, this method’s physical nature can help reduce angst so that learning can be maximised (Acton et al., 2013). In this study, learners engaged in 30 minutes of pronunciation training using the RFC technique on the second day of the workshop and for an additional 10 minutes on both the third and fourth days. Previous research has shown that opportunities to improve the speech intelligibility, with relation to lexical stress, can be maximised by repeating the same procedure (Jung, Kim, & Murphy, 2017). In this study, learner attention was directed to pitch variation, which is used to express attitudinal and pragmatic meanings (Levis & Wichmann, 2015). In addition, the RFC technique was adapted to avoid providing students with the target word, but instead with images to be used as lexical prompts. This enhanced learner ability to recall phonological form of words from memory before engaging in vocal rehearsal. By doing so, verbal memory traces will be enhanced, subsequently improving the ability to produce accurate phonological representations of target words.

Taboo
On the third day of the workshop, after completing 10 minutes of the RFC technique, learners participated in a Taboo game for 20 minutes. Taboo is inspired from the Hasbro board game of the same name, the Vocabulary Exchange Game (Lange, 1994) and Hot Seat (Dodigovic, 2018). The Taboo game provided learners with associated words, enriching vocabulary knowledge by developing relationships between words and enhancing form-meaning associations (Nation, 2013). In line with socio-cultural learning theories, such games allow knowledge to be co-
constructed through social interaction (Dodigovic, 2018). This activity activates phonological and semantic associations between words in a highly engaging game. In this game, students work in pairs where one student (the describer) draws a card and must describe the target word for their partner (the guesser). However, the describer cannot use any of the associated words listed on the card (see examples in Appendix 1). After the guesser has produced the target word, the two students take turns to construct as many sentences as possible using the target vocabulary. This game allows for both incidental and deliberate learning and can elicit various metalinguistic knowledge in the description of target words (e.g., synonyms, antonyms, word parts, etc.). There are four primary aims of this game.

1) The describer will gain a richer conceptual understanding of the target word by describing the meaning.
2) The describer will enhance their form-meaning mapping of the target word by engaging with associated words on the card.
3) The guesser will have the opportunity to engage in the productive recall of target vocabulary.
4) Both learners will have the chance to enlist their thought processes and create novel linguistic structures.

Collective Story
On the fourth day of the workshop, after completing 10 minutes of the RFC technique, learners engaged in a Collective Story activity for 20 minutes. This activity has been adapted from a game readily available in gaming stores called *Rory’s Story Cubes* and inspired by various storytelling activities commonly used in ESL classrooms. The objective of the Collective Story is to give learners further opportunities to use target words in continuous speech. This activity deliberately draws on strategies to consolidate prior knowledge of target words, which is known to facilitate the conversion of receptive knowledge to productive knowledge (Nation, 2013). The nature of this activity is fun and creative and therefore increases motivation by providing an atmosphere where learners can freely experiment with using target words (Dodigovic, 2018). The key to success is to provide learners with all the tools necessary to create a story; this will help reduce the cognitive burden and enhance learner focus on using the target words. For this activity, students were placed in pairs and given: 1) a *character card* which contained information about the lead character in the story; and (see example in Appendix 2); and 2) a pile
From potential words to actual words

Chapter 6: Study 3 – “Bridging the gap: The role of pronunciation-related episodes (PREs) in developing productive oral vocabulary knowledge”

of target vocabulary cards with the corresponding image (not written word form) to prompt learners to recall phonological form of the target words. The learners drew vocabulary cards and incorporated the words as they developed a continuous narrative. To maximise the opportunity to produce target words, teachers need to instruct students to recycle as many target words into the story as they can at each turn.

6.4 Data collection and analysis

The data set analysed for this paper consisted of classroom audio data collected during the Taboo and Collective Story activities on days three and four of the workshop, a monologue task on day five of the workshop and a three-week delayed monologue. A total of 12 recordings of classroom discussions, equating to around 308 minutes, were analysed, which represents 30 minutes of classroom time. Six recordings were taken from the Taboo activity and six from the Collective story activity. The monologue recordings are not calculated in this total as they were not analysed for the occurrence of LREs but used to identify potential correlations between PREs and subsequent word use.

To create the audio recordings students worked in pairs and a recorder was placed on the table between the two students. For the two monologue activities students also worked in pairs, in which one student was speaking and the other listening. The audio files were transcribed and analysed to identify LREs specifically focused on the target vocabulary items and subsequent use of target items in the three-week delayed monologue. LREs that did not relate to the target vocabulary items were not included in the analysis. The identified LREs were then classified as pronunciation-related or ‘other’ and the pronunciation LREs were coded to identify interactions that focused on understanding the relationship between phonological form and other aspects of vocabulary knowledge according to Nation’s (2013) framework. To analyse longer-term retention of target words, the researcher identified instances of students discussing target words during PREs and subsequently using the same target words in their three-week delayed monologue.

The guiding questions from Nation’s (2013a, p. 49) framework of what is involved in knowing a word for productive vocabulary knowledge was used to classify pronunciation LREs.

Pronunciation LREs were first analysed to identify instances of learners discussing “How is the
word pronounced? (knowledge of spoken form)” then they were analysed to identify discussions of how spoken form can change with relation to any of the following questions:

Q1: What word parts are needed to express meaning? (knowledge of word parts)
Q2: What word form can be used to express meaning? (knowledge of form and meaning)
Q3: What items can the concept refer to? (knowledge of concept and referents)
Q4: What other words could we use instead of this one? (knowledge of associations)
Q5: In what patterns must we use this word? (knowledge of grammatical function)
Q6: What words or types of words must we use with this one? (knowledge of collocation)
Q7: Where, when and how often can we use this word? (knowledge of constraints on use)

As will be discussed in the results, only discussions focusing on understanding the relationship between spoken form of target word and Q1, Q5 and Q6 were identified in the pronunciation LREs. The coding scheme used for this analysis was as follows:

1. Code as PRE incorporating knowledge of word parts (Q1) = Learners discuss word parts with relation to pronunciation.
2. Code as PRE incorporating knowledge of grammatical function (Q5) = Learners discuss the patterns in which words are used with relation to pronunciation.
3. Code as PRE incorporating knowledge of collocation (Q6) = Learners discuss the types of words that can be used together, the event was coded with Q6.

The following examples from the data illustrate these three identified categorisations of pronunciation LRE, in which stressed syllables are marked with capitals. This paper uses capitalisation to highlight prominent syllables as uttered by the students. Note that not all prominent syllables have been highlighted; only where it is relevant to target words and to the analysis within this paper have prominent syllables been highlighted.

(1)

<table>
<thead>
<tr>
<th>Line</th>
<th>Learner</th>
<th>Utterance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hyo</td>
<td>The museum is so fasciNAtion.</td>
</tr>
<tr>
<td>2</td>
<td>Pedro</td>
<td>Hmmmm the museum is fasciNAtion? Maybe is FAscinating?</td>
</tr>
<tr>
<td>3</td>
<td>Hyo</td>
<td>The museum is FAsci-naysh… huh?</td>
</tr>
<tr>
<td>4</td>
<td>Pedro</td>
<td>FAscinating. With I-N-G.</td>
</tr>
<tr>
<td>5</td>
<td>Hyo</td>
<td>Oh, yes. Right. The museum is FAscinating.</td>
</tr>
</tbody>
</table>
Example (1) illustrates a discussion of how target word stress can shift with respect to *word parts*. The exchange highlights the complexity of LREs and how various aspects of vocabulary knowledge can be negotiated within a single incidence. In the example, the students focus on the lexical stress of the target word as they negotiate lexical stress associated with the suffix of the target word *fascinating*. Line 3 illustrates that Hyo correctly shifted stress, as prompted by Pedro, but did not change the suffix from -tion to -ing. Hyo was obviously confused in Line 3 when he arrived at the /ʃ/ sound of ‘fascination’, realised that it did was not correct when stress was placed on the first syllable together with suffix -tion, resulting in him abandoning the attempt. In line 4 Pedro spells out that it was the suffix in Hyo’s second attempt which was problematic, not the stress. With relation to pronunciation, this exchange does not contain any discussion of Q5: In what patterns must we use this word? (i.e., knowledge of grammatical function); however, learners did discuss Q1: What word parts are needed to express meaning? (knowledge of word parts). Therefore, this exchange was coded as a PRE because it appears that it was the word stress that enabled to learner to become aware of the error they made (i.e., wrong suffix).

(2)

<table>
<thead>
<tr>
<th>Line 1</th>
<th>Suraya</th>
<th>my work is not enJOYable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line 2</td>
<td>Kiri</td>
<td>oh. You like your work? I thought you hate.</td>
</tr>
<tr>
<td>Line 3</td>
<td>Suraya</td>
<td>no no, my work is not enJOYable; it IS so boring.</td>
</tr>
<tr>
<td>Line 4</td>
<td>Kiri</td>
<td>I think is ‘my work is NOT enjoyable; it is SO boring.’</td>
</tr>
<tr>
<td>Line 5</td>
<td>Suraya</td>
<td>yes yes ‘my work is NOT enjoyable; it is SO boring.’</td>
</tr>
</tbody>
</table>

Example (2) illustrates a discussion of how targeted word stress can shift concerning *grammatical function*. In Line 1, Suraya places correct word stress on the middle syllable in the target word ‘enjoyable’. However, in the sentence ‘it is not enjoyable’, the word ‘not’ functions as an adverb modifying the adjective ‘enjoyable’. To appropriately convey such a negative statement, the stress in target word ‘enjoyable’ should be reduced, and stress on adverb ‘not’ needs to be intensified. The breakdown of communication becomes clear in Line 2 when Kiri confirms her understanding that Suraya enjoys her work but suspects a misunderstanding because she appears to have prior knowledge of Suraya ‘hating’ her work. Although it is not overtly discussed, Line 4 demonstrates Kiri’s ability to identify the stress patterns required in
negative statements. Then, in Line 5, Suraya corrects stress placement and intensifies ‘not’ to emphasise the negative aspect of her statement and clarify meaning. With relation to pronunciation, this exchange demonstrates an understanding of Q5: In what patterns must we use this word? (i.e., knowledge of grammatical function); in this case the pattern identified is a stress pattern. Therefore, this exchange was coded as a PRE because it was word stress that enabled learners to successfully negotiate a breakdown in communication related to grammatical function (i.e., negative aspect).

Example (3) illustrates a discussion of how target word stress can shift with respect to collocation. In Line 1 Mary attempts to collocate target word ‘angry’ with the preposition ‘with’ collocation, but she utters an incomplete thought group and misplaces sentence stress on ‘with’. Sofia recognises that the idea is vague. Then in Line 4, she attempts to extract the missing information while correcting the focal stress placed on the target word. In Line 5 we see that Mary is able to reconstruct the clause which conveys complete meaning. At the same time Mary reproduces the sentence with correct stress placement. With relation to pronunciation, this exchange demonstrates an understanding of Q6: What words or types of words must we use with this one? (knowledge of collocation); in this case the use of collocation ‘angry with’. Therefore, this exchange was coded as a PRE because successful negotiation resulted from learner knowledge of clausal structure when ‘angry’ is used alongside ‘with’ (i.e., grammatical object).

### 6.5 Results and discussion

Findings in this study indicate that the structure of the productive oral vocabulary workshop produced a large proportion of PREs. As detailed in Table 16 below, a total of 125 LREs were identified in all recordings, of which 52 (41.6%) were pronunciation-related and 73 (58.4%) were related to target vocabulary but not pronunciation. Of these, 33 LREs were identified among the
From potential words to actual words

Chapter 6: Study 3 – “Bridging the gap: The role of pronunciation-related episodes (PREs) in developing productive oral vocabulary knowledge”

Taboo activity recordings, of which 10 (30.3%) were pronunciation-related, and among the Collective Story recordings, 92 LREs were identified, of which 42 (45.7%) were pronunciation-related. All instances of PREs were related to the suprasegmental feature of stress, either word or sentence level stress, in continuous speech.

Table 16
Analysis of LREs

<table>
<thead>
<tr>
<th>Target word</th>
<th>Taboo activity</th>
<th>Collective Story activity</th>
<th>Combined Taboo activity and Collective Story</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total LREs</td>
<td>PREs</td>
<td>Other LREs</td>
</tr>
<tr>
<td>escape</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>fascinating</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>persuade</td>
<td>7</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>shocked</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>enjoyable</td>
<td>5</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>disappointed</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>angry</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>confusing</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>at each other’s throats</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total number</td>
<td>33</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>Percentage of total LREs</td>
<td>30.3%</td>
<td>69.7%</td>
<td>45.7%</td>
</tr>
</tbody>
</table>

The finding of 45.7% of total LREs in this study can be considered as high compared with previous studies in which the lowest report of pronunciation LREs was 14.1% (Loewen & Isbell, 2017) and the highest was 40% (Bueno-Alastuey & Camino, 2013). The significance of this is that LREs are beneficial to learning because they either impact learning positively or not at all, whilst a higher frequency of LREs is highly advantageous to learning (Lyle, 2015). Furthermore, this finding supports Darcy, Rocca and Hancock’s (2021) claim that integrating explicit pronunciation instruction into existing syllabi can successfully lead to up to a third of the class time spent on PREs. Therefore, in contexts focused on improving spoken communication, including productive oral vocabulary, explicit instruction of pronunciation can be expected to increase the frequency of PREs. This will consequently facilitate the development of productive knowledge in spoken communication.
Further analysis of the PREs was undertaken to better understand instances of discussion relating to the qualities of speech. As outlined in Table 17 below, this analysis exposed three types of discussions taking place: 1) the relationship between spoken form and grammatical function; 2) the relationship between spoken form and collocation; and 3) the relationship between spoken form and word parts. Each of these three categorisations is discussed in the following subsections.

Table 17
Analysis of PREs

<table>
<thead>
<tr>
<th>Number of PREs focused on the relationship between spoken form and another aspect of target word knowledge</th>
<th>Spoken form and grammatical function</th>
<th>Spoken form and collocation</th>
<th>Spoken form and word parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>escape</td>
<td>5</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>fascinating</td>
<td>4</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>persuade</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>shocked</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>enjoyable</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>disappointed</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>angry</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>confusing</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>at each other's throats</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total number</td>
<td>28</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>Percentage of total PREs (n=52)</td>
<td>53.8%</td>
<td>28.8%</td>
<td>17.3%</td>
</tr>
<tr>
<td>Percentage of total LREs (n=125)</td>
<td>22.4%</td>
<td>12%</td>
<td>7.2%</td>
</tr>
</tbody>
</table>

6.5.1 The relationship between spoken form and grammatical function

Findings showed that a total of 28 episodes, representing 53.8% of PREs and 22.4% of total LREs, were focused on discussing phonological form concerning grammatical function. Specifically, they concentrated on changes to target word pronunciation depending on shifting focal stress between the target word and a grammatical function word, as was illustrated in Example (2). Understanding the relationship between grammar and phonological form has long been highlighted as an essential aspect of pronunciation training (Sicola & Darcy, 2015). Compared to previously reported rates of PREs, which ranged from 6 - 40% (Bueno-Alastuey &
Camino, 2013; Lasito & Storch, 2013), the rate of 22.4% of total LREs identified in this study falls in the mid-range and is a very promising finding.

Further analysis showed that in 15 of these episodes, 28.8% of PREs and 12% of total LREs focused on discussing related to shifting emphatic stress between the target word and auxiliary not. The remainder of these episodes focused on discussions relating to the phonological form of the target word with relation to focal stress placed on the target word or the grammatical function words within three different structures, each of which is illustrated in the following three examples.

By in passive structures with two episodes (3.8% of PREs and 1.6% of total LREs). Example (4) below illustrates this type of pronunciation-related LRE:

(4)

Christian When I CAME here, I was shocked BY the new CULture.
Pedro I think you punch on shocked. Remember we punch the words?
Christian Oh, yes.
Pedro So, is SHOCKed by
Christian Right. I was SHOCKed by the new CULture.

The grammatical subject with four episodes (7.7% of PREs and 3.2% of total LREs). Example (5) below illustrates a discussion which prompted a shift in focal stress from the grammatical subject friend to the main verb and target word persuade. Incidentally, the target word persuade was unintelligible until the focal stress was corrected.

(5)

Boris My FRIEND swayed me to GO to the casino.
Gianni What did your friend do? He go to the casino?
Boris He PERsuade ME to go.
Gianni Oh, he convince you to go?
Boris Yeah, he perSUADE me with promises that I will MAKE some MONey there.
The verb *to be* with seven instances (13.5% of PREs and 5.6% of total LREs). Example (6) below illustrates focal stress initially being placed on *was* which prompted a discussion of the omitted suffix -ed on the target word form, *disappointed*. Although Hyo did not recast the entire initial structure containing *was*, he did correct the phonological form of the target word, *disappointed*.

(6)  
Hyo  He WAS disappoint because his DREAM is be a RICH LAWyer, but he isn’t a GOOD student.  
Christian  DisaPPOINTed. He was disaPPOINTed.  
Hyo  Yes, disaPPOINTed. He need to study MORE.

Meaningful input provided to learners during pronunciation training can potentially explain the considerably higher rate of PREs focused on understanding how the phonological form changes in relation to the grammatical function of auxiliary *not*. On each of the days learners trained using the RFC technique, meaningful sentences containing the target words were provided and used as the focus of pronunciation practice. The negative grammatical aspect was the only one of these functions to be incorporated into the sentences. However, when learners were presented with the negative aspect in sentences, they were required to identify the placement of stress in pairs. The relationship between focal stress and negative aspect was not deliberately highlighted. For example, learners were presented with the sentence “The book is not confusing; it is clear and simple.” without focal stress being highlighted. Learners were then required to work in pairs to identify focal stress as being placed on “not” rather than “confusing” in the first clause, and on “clear” and “simple” in the second clause. This finding expands on Darcy, Rocca and Hancock (2021), who showed that phonological training could promote PREs. The present study further emphasises the contextually-mediated nature of LREs (Lyle, 2015). Furthermore, it indicates that phonological training can promote more nuanced pronunciation LREs by implicitly drawing learners’ attention to the relationship between phonological form and specific grammatical functions. Therefore, results from the present study may suggest that the integration of pronunciation teaching with grammar teaching can generate complex PREs leading to enriched knowledge of the phonological form of target words.
The analysis revealed that nine students participating in the 28 episodes focused on understanding the relationship between spoken form and grammatical function. Of these nine students, six subsequently used the target word discussed in the LRE in their three-week delayed monologue. This extends previous research by Jones and Waller (2017) which has shown that productive vocabulary gains obtained from explicit vocabulary teaching in conjunction with textual and aural input can be sustained after a two-week delay collaborative. It is also consistent with previous research that has shown that collaborative problem solving facilitates learners to solve language-related problems (e.g., Basterrechea & Leeser, 2019) and can enable learners to ‘use the language of others’ in subsequent productive tasks (Swain & Lapkin, 1998).

6.5.2 The relationship between *spoken form* and *collocation*

Findings showed that a total of 15 episodes, which is 28.8% of PREs and 12% of total LREs, were focused on discussion of phonological form in relation to collocations. Of these episodes, ten (66.7%) interactions attempted to negotiate a missing object by using stress placement on a collocation, as previously illustrated in example (3). The episodes related to collocations _shocked by_ (3 episodes), _disappointed with_ (3 episodes), and _angry with_ (4 episodes). Although collocation was not a feature emphasised during the pronunciation training, it was the focus of activities related to the development of form-meaning links on the first day of the workshop. Therefore, learners had prior knowledge of collocational relationships that would enable such problem solving to take place.

This finding supports claims that such active manipulation of words can signify more profound levels of learning which can lead to vocabulary development (de Azevedo & Tomitch, 2019). In the present study, six students were involved in the ten episodes in which learners negotiated a missing object. Of these, all students spontaneously used at least one of these collocations in a monologue on the fifth day of the workshop, with one student using two collocations. Interestingly, two of the six students sustained this knowledge and spontaneously used one collocation in a three-week delayed monologue. This finding builds on previous reports of grammatical LREs leading to improved accuracy of target features in subsequent writing tasks (Basterrechea & Leeser, 2019) to show that complex pronunciation LREs can lead to target features being used in subsequent speaking tasks.
6.5.3 The relationship between *spoken form* and *word parts*

Findings showed that a total of nine episodes, that is, 17.3% of PREs and 7.2% of total LREs, were focused on discussion of the phonological form of target words with relation to word parts. For example, negotiations were about the placement of lexical stress related to one of the following suffixes: *-ed, -ing, -able or -tion* suffixes, as previously illustrated in example (1). As with collocation, there was a deliberate focus on identifying word parts on the first day of the workshop. The objective was to develop an understanding of the relationship between lexical meaning and part of speech, for example, suffixes that change parts of speech from verb to noun or adjective.

Further analysis of the data demonstrated that all five students involved in these nine episodes used the target word, which was the subject of discussion in the LRE, spontaneously in a monologue on the fifth day of the workshop. This finding is consistent with reports that LREs during learning tasks can facilitate the use of acquired knowledge in subsequent tasks (Williams, 2001). Moreover, in all instances of the target word being used in the monologue, students self-corrected their production of the target phonological form. Instances of self-correction were either focused on correcting lexical stress of the target form or self-correction of the word form (i.e., initially using the wrong suffix and then self-correcting). This finding is supported by theories of speech development, which state that initial productions will be unstable and become more stable with repeated output (Karmiloff-Smith, 1986). Furthermore, in the final stages of speech development, learners increasingly use self-correction strategies to regulate verbal output, which can also be viewed as a form of repetition to further stabilise the accuracy of oral production (Karmiloff-Smith, 1986). Therefore, this finding indicates that engaging in PREs may have facilitated learners to achieve the final stages of productive oral development.

6.6 Conclusion

The present study is the first to demonstrate the positive effects of embedding pronunciation training into vocabulary-focused lessons on developing productive oral vocabulary knowledge. The findings are helpful because they demonstrate how the generation of PREs can improve oral
vocabulary learning. The findings of this study suggest that the learner discussion of the interplay between the grammatical function of target words and the phonological form of target words may be an important contributing factor to the development of productive oral vocabulary. Of all LREs identified in this study, 41.6% were pronunciation-related, all of which focused on understanding the relationship between the phonological form of the target word and other aspects of word knowledge. Therefore, the present study highlights the benefits of integrating pronunciation training into vocabulary lessons. A focus on understanding the relationship between target words and prominence in speech can lead to a better understanding of various aspects of vocabulary knowledge. The implication of this finding for teachers is to encourage the integration of pronunciation instruction with vocabulary instruction which may have the potential to enrich the learner’s depth of knowledge of target words.

The benefits of PREs have been emphasised by Ellis, Basturkmen and Loewen (2001), who reported that PREs are more likely than grammar or vocabulary-related LREs to lead to the correct use or comprehension of a linguistic feature. However, they cautioned that their findings should not be assumed to equate to acquisition because the learners in their study were not observed to demonstrate subsequent spontaneous production of linguistic features. Conversely, the findings of the present study indicate that learners could use the linguistic features discussed during the pronunciation-related LRE spontaneously in a subsequent three-week delayed monologue. Though, additional research with larger cohorts of students is needed to further substantiate this claim further and elaborate on the effects of suprasegmental based pronunciation training on productive oral vocabulary development. Nonetheless, the present study provides evidence that a focus on the phonological form of target words together with a focus on grammatical structures may lead to enhanced productive oral vocabulary.
Chapter 7: Phase 4 – Reflection

The overall aim of this doctoral thesis was to explore the effectiveness of a teaching model designed to support adult ESL learners in developing productive oral vocabulary knowledge. As was established in the literature review, it is generally accepted that receptive vocabulary knowledge is easier to develop than productive knowledge (Nation, 2013a). Therefore, learners know more words receptively (i.e., in listening and reading) than they can use productively (i.e., in speaking and writing) (e.g., Laufer, 1998). However, more research is needed to understand how classroom activities and environments support the development of receptive vocabulary to become productive (Schmitt, 2019). To the author’s knowledge, Teng and Xu (2022) is the only study to date that has investigated the effects of task type on improving receptive vocabulary knowledge to productive mastery. However, their study focused on written production and not oral production. Therefore, the present study is the first to investigate the effectiveness of classroom activities in developing receptive vocabulary to become productive in spoken modes.

This thesis investigates the design principles for teaching productive oral vocabulary to adult learners of English, which will be presented in the second half of this chapter. It also set out to investigate how three factors of a learning environment designed using these design principles contributed to developing productive oral vocabulary. The first of these factors was how the instruction of phonological form affects productive oral vocabulary knowledge of target words (Chapter 4). The second was how repeatedly producing target words with gesture and touch can facilitate the development of productive control of those words in speaking (Chapter 5). The third was how repeated exposure to target vocabulary embedded in various meaningful contexts affects subsequent productive knowledge of those words (Chapter 6).

7.1 Overview of the findings

Findings from Chapters 4, 5 and 6 directly relate to answering Research Question 2 (RQ2): What elements of the designed learning environment contribute to L2 learners’ development of
productive oral vocabulary? The sub questions discussed in the subsequent paragraphs collectively answer RQ2.

The first sub question “How does repeatedly producing target words with gesture and touch help to develop productive control of those words when speaking English?” was discussed within Chapter 4. Chapter 4 explored learners’ enhanced ability to produce target word phonological form as a result of focusing on lexical stress and sentence level prominence using the Rhythmic Fight Club (RFC) haptic technique (Mister et al., 2021). This study showed that learners developed a controlled ability to produce target words after multiple sessions of training using the RFC technique. This finding supports the results of Macedonia and Knosche (2011), who reported that using gestures enhanced learners’ ability to accurately produce phonological forms of target words. The overall conclusion of the present study was that the RFC technique facilitated learner knowledge of stress in English and enhanced their ability to produce accurate phonological forms of target words.

The second sub question, “How does repeat exposure to target vocabulary embedded in various meaningful contexts affect subsequent productive knowledge of those words?” was addressed in Chapter 5. Chapter 5 investigated the effects of exposing learners to target words embedded within rich and meaningful contexts on the development of productive oral vocabulary knowledge. Findings from this study revealed three stages of development due to exposure to target words embedded within rich and meaningful contexts. Relevant to the findings of Chapter 5, is the concept of microgenesis. Microgenesis is a method of tracking how perception or thoughts emerge and evolve over a brief period of time (Wertsch, 1985). It suggests that mental processes are not fixed or static but rather undergo dynamic changes over short time intervals. Microgenesis focuses on the unfolding of cognitive processes, often at a micro-level, to examine the building blocks and stages involved in the development of a particular mental phenomenon (Wertsch, 1985). Therefore, it provides an approach for researchers to study the dynamic nature of cognitive process, in particular the sequence of events, transformations, and interactions between different cognitive components that contribute to the formation of a mental process. In the first stage of development identified in this study, learners engaged in a form-meaning mapping process in which they consolidated receptive knowledge to inform productive understanding of target words. This first stage primed learners to progress to the second stage of development, in which they explored and expanded receptive knowledge to include productive
knowledge. The second stage of development typically occurred due to discussion with peers during productive vocabulary tasks. Then, in the third stage of development, learners gained a deeper understanding of linguistic and semantic contexts surrounding words, which enabled them to produce richer descriptions of surrounding target words; in other words, they were better able to elaborate on core lexical meaning when using target words in speech. The study’s findings expand on previous research results to show that a metalinguistic understanding of target words can enhance vocabulary development (Chen & Myhill, 2016) and facilitate productive knowledge of word meaning.

The third sub-question, “How does classroom instruction of phonological form affect productive oral vocabulary knowledge of target words?” is first discussed within Chapters 4. Chapter 4 revealed three stages of development observed in the learners ability to produce target words accurately: deconstructing English stress, reconceptualising English stress and stabilising productive output. In the first stage, learners were observed to experiment with stress and reported that they developed an enhanced understanding of stress as it occurs in English. In the second stage, learners reported that they could feel the differences in syllable length due to the RFC activity that used physical movement to embody the suprasegmental feature of stress. Finally, in the third stage, learners were observed to use target words with increasing phonological accuracy. Learners’ ability to pass through these three stages indicates an automatisation of their lexical knowledge, as defined by Kormos’ (2014) model of speech development. In addition, findings showed that, for learners, with each session of RFC training, instances of inaccurate stress placement decreased, and cases of self-correction and peer negotiation strategies to gain control of oral output increased, which are recognised as positive signs of oral linguistic development (Karmiloff-Smith, 1986).

Chapter 6 continues to provide insight in relation to the third sub-question “How does classroom instruction of phonological form affect productive oral vocabulary knowledge of target words?”. The comprehensive review in Chapter 6 revealed a lack of research exploring the relationship between classroom activities and their ability to promote pronunciation-related Language Related Events (LREs). Previous evidence to indicate that pronunciation training might promote PREs in classroom contexts (Darcy et al., 2021), but further research was needed to confirm the effects of pronunciation training on the subsequent discussion of target words during communicative tasks. To address this knowledge gap, the analysis of Chapter 6 was conducted to examine the
relationship between classroom pronunciation training and subsequent PREs, and to scrutinise the types of discussion that were occurring within these LREs.

7.2 Discussion of the findings

Pronunciation training that is integrated into vocabulary focused lessons can successfully facilitate the progression of receptive vocabulary knowledge to become productive. The pronunciation training in this study began with Language Awareness and Controlled Practice, and then moved to Guided and Free Practice, in line with Baker’s (2021) Pronunciation Pedagogy Model – From Awareness to Clear and Fluent Pronunciation. Chapter 4 showed that this pronunciation training, which focused on target word stress and was embedded into a vocabulary-focused workshop, progressively enhanced learner ability to produce an accurate phonological form of target words. Interestingly, instances of self-correction of phonological form decreased with each day of the workshop, whilst the rate of accurate productions increased (Chapter 4). Further findings from Chapters 4, 5 and 6 indicated that vocabulary knowledge developed progressively after pronunciation training. These findings are evidenced by learner engagement in self-correction, peer correction, and discussions focused on the interrelatedness of aspects of word knowledge. Chapters 4, 5 and 6 highlighted three themes: the effects of receptive learning, impact of productive learning, and dimensions of productive oral vocabulary knowledge.

7.2.1 The relationship between pronunciation training and meaningful input

The present study showed that pronunciation training provides significant opportunities to expose learners to target words within rich and meaningful contexts. Such exposure subsequently leads to substantial gains in vocabulary knowledge. Exposure to target words embedded within rich and meaningful contexts can lead to receptive learning of target words because repeated exposure to words in the input will trigger learners to observe how words are used and to notice word use patterns (Elgort et al., 2018; Webb, 2008a). This is an essential feature of productive vocabulary development since knowing how to use words requires significant exposure to words within input (Nation, 2013a). Nation (2013a) states that learners must be exposed to multiple meetings with words in new contexts to expand their knowledge of how words are used.
Building on existing vocabulary knowledge through repeated encounters alone is a slow process because knowledge is gained incrementally (Webb, 2008a) and providing learners with sufficient exposure to target words in context is not feasible with the time constraints of classroom learning (Nation, 2013a). The findings of the present study revealed that such exposure not only enhanced the subsequent production of phonological form, but it also resulted in developing the semantic and lexicogrammatical knowledge of target words.

To explain this further, the following discussion will refer back to the specific findings of Chapters 4, 5 and 6. In the context of written vocabulary knowledge, previous research has shown that simultaneously focusing attention on orthographic form during meaning-focused learning resulted in significantly improved ability to use target words in subsequent writing tasks (Elgort et al., 2018). The present study demonstrated similar results concerning oral knowledge. Chapter 5 showed that exposing learners to target words within rich and meaningful contexts (meaning-focused input) during pronunciation training (focus on phonological form) led to an enhanced ability to use words in subsequent speaking tasks. The context described in Chapter 5 provided learners with opportunities to enhance their awareness of semantic nuances and grammatical structure associated with target words. Despite learner attention being focused on the phonological form of target words, the meaning-focused input allowed learners to engage in receptive learning of the semantic and lexicogrammatical knowledge.

This finding is further emphasised when compared to observations of the first iteration. As discussed in Section 3.4.3 of Chapter 3, the first iteration did not incorporate exposure to a variety of rich and meaningful input and instead exposed learners to a series of simple sentences containing target words. Consequently, in the first iteration, learners produced speech containing verbatim repetitions of the simple input they were exposed to, and there was a lack of novel and complex output. In contrast, the second iteration, which incorporated exposure to various rich and meaningful contexts, resulted in learners producing higher levels of complex output that integrated rich clues to target word meaning. Although previous literature states that rich contextual clues surrounding the target word are necessary for the acquisition of the target word meaning (Teng, 2019; Webb, 2008a), no literature exists to demonstrate that such exposure can also lead to productive oral vocabulary gains. Yet both Chapters 5 and 6 showed that, when presented with rich and meaningful contexts, learners were able to draw on contextual clues to develop productive oral knowledge of target words. In particular, Chapters 5 and 6 revealed that
learners engaged in a discussion of the relationship between phonological form and grammatical function, specifically highlighting that lexical stress can shift according to negative aspect. Although this relationship was never the specific focus of the pronunciation training, the input provided to learners on Day 3 of the workshop deliberately exposed learners to negative grammatical structures (e.g., my parents were not at each other’s throats on the weekend). Therefore, the present study extends the previously identified benefits of meaning-focused input together with form-focused instruction in written modes (Elgort et al., 2018; Teng, 2019; Webb, 2008a) to oral modes as well.

Findings in Chapter 5 suggest that learners, who sought to clarify their understanding by asking questions during receptive learning, were better able to transform receptive into productive knowledge. Although Teng and Xu (2022) reported that productive learning activities (i.e., sentence writing and sentence translation) significantly surpassed receptive tasks (i.e., gap fill and multiple choice questions), their study only explored subsequent productive gains. It did not examine the depth of learner engagement with target words during learning tasks. Shintani (2011), on the other hand, found that input-based tasks (i.e., listen to input and either do what the instructions ask or identify flashcards that match aural input) allowed for deeper engagement with target words than productive tasks (i.e., choral repetition of target words or productive recall of target words prompted by flashcards) and led to similar levels of productive vocabulary gains. However, her study did not focus on analysing the types of engagement with target words that occurred during the learning activities. Consequently the findings in Chapter 5 of the present study extend the results of Shintani (2011) to provide insight into the types of deep learning that occur during input-based tasks in oral modes of learning. Findings showed that learners who identified structures and patterns in the meaningful input were better able to use the identified structures and patterns in subsequent speech. At the same time, Chapter 6 revealed that receptive knowledge of target words was enriched by PREs, providing learners with a deeper understanding of target words. Therefore, engaging learners in receptive tasks followed by productive tasks will be particularly beneficial to consolidating receptive vocabulary knowledge so that it can become productive.

Likewise, chapters 5 and 6 showed that learners were able to use the input to gain valuable knowledge of lexical meaning, collocation and word parts and subsequently incorporate that knowledge into productive output. Similar to the findings of Elgort et al. (2018), the present
study supports assertions that noticing linguistic features in receptive learning tasks provides a foundation of receptive knowledge that can be used to facilitate the development of productive knowledge. Furthermore, Newton (2013) found that when task sheets contained unknown lexical items, learners were likely to negotiate items for meaning, with learners acquiring around eight new words for every 30 minutes of task activity. Therefore, task sheets can be designed in a way to include useful vocabulary with the expectation that learners will negotiate what is not known. These results further emphasise the benefits of incorporating input-based learning (receptive learning) into pronunciation training (productive learning). Then, as advocated by Darcy et al. (2021), when pronunciation training is followed up with communicative activities, learners are likely to enhance their levels of comprehensibility in speech. Chapters 5 and 6 of this study further substantiate these benefits to state that not only should pronunciation training be followed by communicative tasks, but it needs to also allow for meaning-based learning that enhances receptive knowledge of target words. In conclusion, learners must be encouraged to focus on the rich and meaningful clues provided in the input as they engage in pronunciation training. Then, they need to be offered subsequent opportunities to focus on pronunciation during communicative activities to activate productive oral vocabulary knowledge.

### 7.2.2 Effects of productive learning

Focusing on lexical stress during pronunciation training can also facilitate the development of productive oral vocabulary. Lexical stress is an integral feature of English pronunciation, and it has been said that an enhanced ability to use stress in speech will result in an expanded productive vocabulary (Murphy & Kandil, 2004). The findings of this study demonstrated that pronunciation training focused on lexical stress and integrated into vocabulary-focused lessons is particularly useful in developing a learner’s productive oral vocabulary. Results show that this condition enhanced learners’ ability to produce accurate phonological forms in speech was sustained even after three weeks following the intervention (Chapter 4). This finding provides further evidence to support the belief that productive vocabulary gains obtained from explicit vocabulary teaching in conjunction with textual and aural input can be sustained after a two-week delay (Jones & Waller, 2017).
Furthermore, Chapters 5 and 6 indicated that productive learning of target words, supported by receptive learning, enhanced knowledge of other aspects of word knowledge (i.e., grammatical function, association, and word parts). It also enabled learners to understand the interrelatedness of various aspects of word knowledge (Chapter 6). This finding supports the findings of Chen and Myhill (2016), who assert that enriched metalinguistic understanding of target words can enhance vocabulary development.

Findings from this study also highlighted the benefits of productive learning with the provision of opportunities to use words in communicative tasks. It seems that meaning-focused communicative tasks, such as co-constructing a narrative, after engaging in pronunciation training with exposure to words in varied contexts, allowed learners to consolidate both receptive and productive knowledge of target words. First of all, Chapter 4 revealed that learners engaged in self-correction as they consolidated knowledge of phonological with each attempt to use target words in communicative tasks and that phonological accuracy increased with each day of the workshop. At the same time, Chapters 5 and 6 indicated that this consolidation of knowledge enabled learners to use words in richer and more complex outputs. Joe (1995) states increased proficiency will include using target words in new contexts. In other words, learners will benefit from the construction of novel linguistic structures which incorporate target words to communicate an original idea. Joe (1995) elaborates that the ability to use words in new contexts will occur due to activating prior knowledge and connecting it with new knowledge. It is commonly accepted that repeated opportunities to use target words in communicative tasks will allow learners to consolidate lexical knowledge (Joe, 1995; Nation, 2013a; Swain & Lapkin, 1995). Although focused on written modes of communication, the findings of Webb (2005) are helpful in demonstrating the learner ability to consolidate knowledge by producing novel structures. Webb (2005) found that writing a single sentence was far more effective at developing productive vocabulary than reading three sentences. Therefore, the results of this study provide further evidence to demonstrate the value of productive practice and expand on previous findings to illuminate the benefits of an innovative teaching model.

This study also indicates that the opportunity to use target words in communicative tasks encouraged learners to discuss the language that was produced, identify errors, share knowledge and resolve breakdowns in communication. To achieve communicative goals, it is vital that words must be selected and used correctly. That is to say, the words will be chosen to
communicate a specific message. For communication to be successful, those words must evoke similar images in the listener’s mind as what the speaker intends to convey (Vygotsky, 1986). Therefore, opportunities to use words in communicative tasks will allow learners to experiment with using words whilst providing opportunities to engage in problem-solving when breakdowns in communication occur. Examples of the collaborative problem-solving have been shown to lead to the co-construction of new knowledge (e.g., Basterrechea & Leeser, 2019; Swain & Lapkin, 1998). This study elaborates on these claims and provides further evidence that suggest learners who took advantage of such opportunities enhanced both their receptive and productive knowledge of target words (Chapters 5 and 6).

Furthermore, this study indicates that productive learning of target words may enhance automaticity, leading to productive vocabulary gains because learners will be more motivated to use words if they have productive control over them. This can be explained by Kormos’ (2014) model of speech development, which states that enhanced automatisation will lead to words being more easily accessed in speech. The present study demonstrated that the ability to master phonological production showed an increased willingness to practice using target words in speech. Chapter 4 highlighted a correlation between the ability to use words and the willingness to use words in speech. Specifically, just as rates of accurate phonological production of target words increased with each day of the workshop, so did the frequency with which words were used in productive tasks. Learner comments emphasised an increased motivation to use target words during focus groups stating that they felt more comfortable using words in speech because they had mastered productive control of words. Oftentimes realising personal potential can be triggered by the development of skills (Dornyei et al., 2015). Therefore, it seems that learners’ realisation of their improved ability to control the oral production of target words increased their desire to use those words in subsequent speaking tasks.

Learner ability to use words in subsequent speech may have also been enhanced through peer discussion of target words during productive tasks. Findings of Chapter 6 identified that learners who discussed the relationship between phonological form and other aspects of vocabulary knowledge were more likely to subsequently use target words in speech. This result was sustained even after a three-week delay in a speaking task that did not prompt such target word use. Similarly, findings of Chapter 5 revealed that when learners actively focused their attention on receptive knowledge of target words followed by a conscious focus on transforming that into
productive knowledge, they were more likely to use those target words in speech. These findings reinforce existing research that advocates for receptive learning due to its ability to provide learners with opportunities for richer engagement with words (Shintani, 2013). As a result, attention given to receptive and productive knowledge leads to increased likelihood of using words in subsequent speech. Perhaps this is the result of learners’ developing associative links between form, meaning and function, which have been shown to make words more available for communication (Yamamoto, 2011) during peer discussion of target words.

### 7.2.3 Development of productive oral vocabulary knowledge

The findings of this study offer further insight into Henriksen’s (1999) theory of the *tri continua* and the relationship between the three dimensions (refer to Section 2.1.2 in Literature Review for an extended discussion of the *tri continua*). In her model, Henriksen (1999) states that learners will move along the *partial precise continuum* and the *depth of knowledge continuum* simultaneously, but movement along the *receptive-productive continuum* will occur separately. The present study offers new evidence to suggest that enhanced metalinguistic awareness of target words’ phonological form and meaning may push words along the tri-continua. Furthermore, this study offers insight into the types of classroom activities that might promote such metalinguistic awareness.

Before discussing the findings, it is essential to understand how Henriksen’s (1999) dimensions of lexical knowledge have been extended in this study. Specifically, the definition of Henriksen’s *partial precise* and *depth of knowledge continua* in this study are extended to include learners’ metalinguistic awareness of phonological form. Firstly, the definition of the *partial precise continuum*, which relates to learners’ knowledge of lexical meaning, has been extended to include learners’ metalinguistic awareness of target words. It has also been extended to include learners’ understanding of how stress and prominence can change the meaning of an utterance in English. Then, the definition of the *depth of knowledge continuum*, which relates to knowing aspects of word knowledge, has been extended to include learners’ metalinguistic awareness of the interrelatedness of lexical stress with grammatical function, collocations, and other aspects of speech.
Chapters 4, 5 and 6 identified various activities used in this study that can promote productive oral vocabulary knowledge to shift along the *tri continua* as defined by Henriksen (1999). First of all, Chapter 4 highlighted that concerning the phonological form of target words, the RFC activity was highly effective in promoting movement along the *receptive-productive continuum*. This is determined by findings that showed rates of accurate target word stress placement suddenly increased from 47% the day before engaging in the RFC activity to 81% on the day after RFC practice. By the end of the workshop, the initial rate doubled to a 94% rate of accuracy. Therefore, the RFC technique can promote the ability to control the production of phonological form and that, after initial pronunciation training, learners demonstrated a rapid move along the *receptive-productive continuum*.

Subsequently, as learners were exposed to words within various rich and meaningful contexts, they demonstrated shifts along the *partial precise* and *depth of knowledge continua*, which can be explained by the findings of Chapters 5 and 6. Chapter 5 showed that enhanced metalinguistic awareness of the interrelatedness of grammatical patterns and word meaning (i.e., *partial precise* and *depth of knowledge continua*) led to an enhanced ability to use target words in speech (i.e., *receptive-productive continuum*). Chapter 6 revealed that enhanced metalinguistic awareness of the interrelatedness of phonological form with other aspects of target word knowledge (i.e., *partial precise* and *depth of knowledge continua*) also promoted learners’ ability to use target words in speech (i.e., *receptive-productive continuum*). Therefore, exposure to target words embedded within various rich and meaningful contexts during pronunciation training needs to be seen as a condition that can promote learners’ metalinguistic awareness of target words and, in turn, facilitate their ability to use words in speech.

The rapid development of phonological knowledge along the *receptive-productive continuum* observed in this study can be explained by various previous studies. First, knowledge within the *partial precise* and *depth of knowledge continua* requires knowledge of morphological, syntactic and collocational profiles, as defined by Henriksen (1999); therefore, it is more complex than knowledge within the *receptive-productive continuum*. As a result, knowledge within the *receptive-productive continuum* will presumably occur rapidly. Furthermore, although her study focused on written vocabulary knowledge, Pellicer-Sánchez (2015) identified significant gains in automaticity when learners engaged in explicit learning of vocabulary as opposed to incidental acquisition in reading tasks. Similarly, Sobczak and Gaskell (2019) reported that consolidation
of lexical knowledge would occur when learners engage in explicit training of target words and when initial exposure to words is high. Therefore, it is not surprising that control of phonological form occurred rapidly in the present study because a significant focus was given to phonological forms during RFC pronunciation training whilst simultaneously exposing learners to words in rich and meaningful contexts.

It should be noted, however, that some learners were observed to make more progress than others. In the analysis of learner performance, it was observed that certain individuals exhibited progress in using target words appropriately, while others seemed to engage in high levels of repetition. This observation was particularly evident in the analysis of Figure 14 (refer to Section 4.5.3 of Chapter 4), which depicted peaks for the target words *persuade* and *fascinating*. These peaks indicate a disproportionate frequency of word usage by two learners, Christian and Bataar (refer to Appendix 13).

The case of Christian and his use of the target word *persuade* will be used to exemplify this variation. The following extract from Christian’s 2/2/2 monologue on Day 5 demonstrates an overreliance on the target word *persuade*. In this extract Christian uses the target word three times, when, arguably, only the third instance would be considered appropriate. In the first two instances, Christian uses the target word *persuade* with reference to his brother giving him compelling reasons to go to Sydney, which led to the ultimate persuasion. Since giving reasons to convince someone is central to the definition of *persuade*, Christian would have demonstrated his knowledge of the target word by providing the reasons given by his brother, without using the target word until the final instance. Therefore, this is an indication of Christian’s productive oral knowledge of the target word not being as developed as some of the other learners who learned to use words appropriately without repetition. This is supported by claims that it is quite typical for learners to overuse newly learned words; however, as their productive output stabilises, they will learn to use words more appropriately (Laufer, 1998).

‘…my brother **persuade me** about ah you need to go there you need to go here
Sydney is good for you … my brother always say me **persuade me** about you can go
you can you can go is much better for you to have the more opportunities about your
life in the future … the first time I don’t want live here but my brother **persuade me**
about that you can live here.’
Another finding of the present study is that metalinguistic awareness of receptive aspects of word knowledge will occur before productive knowledge. This aligns with assertions that receptive knowledge of words will develop before productive (Laufer, 1998; Melka, 1997). Chapter 5 identified that receptive learning of target vocabulary typically occurred within the first two to three days of the workshop and productive learning typically occurred between the third and fifth days. Therefore, in classroom contexts focused on developing productive oral vocabulary knowledge, earlier stages of the workshop need to focus on receptive learning of words, with later stages focusing on productive learning. At the same time, Chapter 6 showed discussions of target word knowledge promote the development of knowledge that facilitates the transformation of receptive knowledge into productive. This is demonstrated by findings which revealed that receptive knowledge is consolidated through discussion of word use and that these discussions prime subsequent use of words in speech. In other words, discussion of receptive lexical knowledge can be presumed to shift target words along the *partial precise* and *depth of knowledge continua*, which can activate a shift along the *receptive-productive continuum*. Consequently, classroom contexts focused on developing productive oral vocabulary knowledge must incorporate ample opportunities for a rich discussion of target word knowledge after some initial receptive learning and before a final focus on productive learning.

In summary, findings from all three studies reflect existing notions of vocabulary knowledge as moving along a continuum, rather than being strictly receptive or productive (Melka, 1997). Furthermore, findings from the present studies provide additional insights that suggest that further shifts along the *receptive-productive continuum* will be primed by subsequent developments within the *partial precise* and *depth of knowledge continua*. The present study has shown that learning environments incorporating pronunciation training, meaningful input and communicative activities into vocabulary-focused lessons can promote productive oral vocabulary development. Moreover, results showed that such a learning environment could facilitate deep learning of target vocabulary leading to an understanding of the interrelatedness of different aspects of target word knowledge, including phonological form, grammatical function, collocation and word parts. This supports the findings of Tseng and Schmitt (2008), who state that deep learning is preferred to surface learning because it allows learners to connect concepts and link them to prior knowledge. Finally, findings showed that such a learning environment could promote both receptive and productive learning of target words, which can lead to the
development of productive oral vocabulary. Therefore, this study has shown the significant benefits of embedding pronunciation training within vocabulary-focused lessons and supporting learning by providing target words within rich and meaningful contexts and various communicative activities.

7.3 Final design principles

This section will provide the final design principles as part of the fourth phase of the design-based research (Reeves, 2006). These principles outline a potential solution to the problem of developing learners’ productive oral vocabulary knowledge in a classroom context, as identified in the first phase of the study. As a response to the first research question, ‘what are the design principles for teaching productive oral vocabulary?’, each design principle that was investigated as part of this study will be discussed in turn, summarising the findings of two iterations of inquiry and presenting final principles as a result of the analysis. Following this, a final framework for facilitating productive oral vocabulary development in a classroom environment will be presented to discuss these final principles.

The following table summarises the evolution of the initial draft principles, as presented in Chapter 3, to become a set of final principles, as presented in the upcoming sections.

<table>
<thead>
<tr>
<th>Draft Design Principle (DDP)</th>
<th>Final Principle</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDP 1: Employ imaging to conceptualise the meaning of words</td>
<td>Final Principle 1: Anchor and index vocabulary knowledge with images related to a meaningful narrative</td>
</tr>
<tr>
<td>DDP 2: Develop learner knowledge of word meaning and lexical networks</td>
<td>Final Principle 2: Develop semantic and grammatical word knowledge through exposure to various encounters with words in rich and meaningful contexts</td>
</tr>
<tr>
<td>DDP 3: Enhance learner ability to control accurate production of target words</td>
<td>Final Principle 3: Incorporate haptic procedures and exposure to rich and meaningful input into pronunciation training</td>
</tr>
</tbody>
</table>
DDP 4: Encourage learners to experiment with word use in controlled tasks

Final Principle 4: Encourage learners to experiment with and discuss target word use in communicative tasks

DDP 5: Encourage learners to repeatedly use target words in communicative tasks

Principle 5: Provide learners with opportunities to use words in increasingly freer outputs and encourage learners to use target vocabulary in ways that elaborate core lexical meaning

7.3.1 Final Principle 1: Anchor and index vocabulary knowledge with images related to a meaningful narrative

The first design principle was revised to acknowledge the findings from the study. As discussed in Section 3.4.3 of Chapter 3, it was identified that teacher and student participants found using too many unrelated images confusing. Therefore, the draft design principle was adapted to incorporate the use of images that are related to a meaningful narrative. Using storytelling in vocabulary learning has been shown to be a highly effective tool for vocabulary learning (Feng & Webb, 2020; Mangubhai, 2001; Mello, 2001). This is particularly true for L2 learners. Narratives provide L2 learners with additional opportunities to store lexical information and expand their vocabulary knowledge through context (J. Liu, 2004). Data analysis between iterative testing cycles (as described in Section 3.4.3 of Chapter 3) suggests that learners benefit from listening to a narrative containing target words (linguistic input). As target words appear in the narrative, the respective image and short textual representation of the word (visual input) needs to be shown on a screen to draw the learner’s attention to the target vocabulary (see Appendix 8 for examples). Therefore, this principle’s objective is not only to facilitate the development of phonological form-meaning links but to provide a visual anchor for target words.

For teacher participants, this principle enabled images to become the visual anchor for target words and be used as a tool for recalling phonological form. The images ensured that students were prompted to engage in productive recall of target words and to strengthen phonological form-meaning links. As was highlighted by one of the teacher participants, the use of images was not new in the classroom, but they felt that the use of a narrative that provided a consistent
foundation and reference point for all subsequent learnings was innovative at the institute where the study was conducted. Initially, images were used to draw associations between core semantic features of the target words and meaningful contexts in which they were embedded, which is advocated for in the literature (Elley, 1989). As such, it allowed images and target words to be anchored within a meaningful narrative, which provided rich clues for the target word’s meaning.

In conclusion, for this first principle to be effective learning activities need to: 1) expose learners to target words embedded into meaningful narratives offering sufficient context to illustrate the meaning of words; 2) incorporate images representing each of the target words which need to be presented in conjunction with the meaningful narrative; and, 3) provide learners with clear definitions of each target word after exposure to narratives so that their attention can be further focused on target words. Table 18 below highlights the key actions of teachers and learners as this principle is enacted in a classroom environment.

**Table 18:**

*Principle 1 in action*

<table>
<thead>
<tr>
<th>Teachers will:</th>
<th>Learners need to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Associate target words with a visual anchor that represents core lexical meaning.</td>
<td>• Use images as an anchor for target word form.</td>
</tr>
<tr>
<td>• Present target words within a meaningful narrative.</td>
<td>• Use images to index semantic associations with target words.</td>
</tr>
<tr>
<td>• Ensure that images used as a visual anchor relate to the narrative.</td>
<td></td>
</tr>
<tr>
<td>• Provide definitions of words to reinforce form-meaning links.</td>
<td></td>
</tr>
</tbody>
</table>

**7.3.2 Final Principle 2: Develop semantic and grammatical word knowledge through exposure to various encounters with words in rich and meaningful contexts**
The second design principle was retained but expanded upon to acknowledge the findings from the study. Data analysis between iterative testing cycles (as described in Section 3.4.3 of Chapter 3) identified that student participants made little effort to use words creatively in novel speech. Most of the time, learners repeated input containing target words nearly verbatim when asked to use words in speech. This supports the findings of Joe (1998), who reported that exposure to words in a meaningful context followed by productive output resulted in an enhanced ability to use newly learned words in novel ways. Therefore, the draft design principle was expanded to incorporate additional exposure to target words embedded in rich and meaningful contexts to enhance learners’ semantic and grammatical knowledge of target words.

This second principle and the upcoming third principle are closely interconnected, which outlines the importance of pronunciation training in productive oral vocabulary development. Such pronunciation training typically requires teachers to provide learners with language to be practised, which incidentally offers a significant opportunity to present learners with target words embedded in rich and meaningful contexts. As informed by Chapters 5, it is recommended that a bank of sentences need to be created for target words so that learners can be repeatedly exposed to words in varied contexts. Each sentence needs to provide rich and meaningful contextual clues to the meaning of target words and present learners with various grammatical structures (refer to Appendix 10 for an example of such sentences). It has been shown that the context surrounding a word can be so rich that when a word is removed, and learners are presented with a gapped sentence, the missing word can be guessed with significant accuracy (van den Broek, Takashima, Segers, & Verhoeven, 2018). Furthermore, Uchihara and Saito (2016) state that frequent encounters with L2 words in meaningful input strengthen learner connections between target words and associated words, leading to more automatic and robust lexical networks. Findings from the present study show that this condition will allow learners to engage in implicit learning of how words are used to enrich their semantic and grammatical knowledge of target words as they focus on developing knowledge of their phonological form.

Accordingly, for this second principle to be effective when learners engage in pronunciation training as part of vocabulary focused lessons, words need to be practiced within rich contexts that have been specifically designed to providing meaningful clues to word meaning and varied grammatical structures. Table 19 below highlights the key actions of teachers and learners as this principle is enacted in a classroom environment.
Table 19

*Principle 2 in action*

<table>
<thead>
<tr>
<th>Teachers will:</th>
<th>Learners need to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Encourage learners to notice relationships</td>
<td>• Develop an understanding of semantic and</td>
</tr>
<tr>
<td>between semantic and conceptual domains.</td>
<td>conceptual domains of target words.</td>
</tr>
<tr>
<td>• Provide learners with multiple exposures to</td>
<td>• Pay attention to patterns in which the target</td>
</tr>
<tr>
<td>target words in various contexts providing</td>
<td>vocabulary must be used.</td>
</tr>
<tr>
<td>rich clues to target word meaning.</td>
<td>• Pay attention to contextual clues that help to</td>
</tr>
<tr>
<td>• Encourage learners to notice contextual clues</td>
<td>enrich their semantic and grammatical knowledge of</td>
</tr>
<tr>
<td>that help to enrich their semantic and</td>
<td>target words.</td>
</tr>
<tr>
<td>grammatical knowledge target words.</td>
<td></td>
</tr>
</tbody>
</table>

### 7.3.3 Final Principle 3: Incorporate haptic procedures and exposure to rich and meaningful input into pronunciation training

The foundation of the third design principle was retained but expanded upon to acknowledge findings from the study. As discussed in Principle 2 above, pronunciation training in classroom contexts provides the opportunity to present learners with target words embedded within rich and meaningful input. Therefore, to accommodate such a condition, pronunciation training must be conducted in stages as defined by Baker’s (2021) Pronunciation Pedagogy Model – From Awareness to Clear and Fluent Pronunciation. The stages are Language Awareness, Controlled Practice, Guided Practice and Free Practice.

The findings of this study indicated enhanced learning outcomes as a result of this principle being implemented using pronunciation training that incorporates two essential conditions: 1) utilises haptic procedures; and 2) provides learners with rich and meaningful input. Investigation of this principle showed that pronunciation training with these two conditions allowed for the transition of receptive vocabulary knowledge to become productive. Regarding the first condition, Chapter 4 revealed that using gestures can be highly beneficial in enhancing learner ability to produce accurate phonological forms so that words can be articulated and used in
speaking. Of salience were the findings that highlighted the benefits of learners using gestures to embody the sound of target words and begin to feel the rhythm of linguistic output as they used target words in speech. The second condition is closely associated with the previous principle. The findings of Chapter 5 showed that vocabulary learning can be enhanced when learners are repeatedly exposed to target words embedded in meaningful input. Input is then used as a vehicle to engage in pronunciation training focused on developing learner independence in identifying and producing target phonological forms.

In conclusion, pronunciation training that incorporates these identified conditions and is used as a supplement to deliberate vocabulary instruction can increase learners’ ability to produce words with enhanced proficiency and accuracy, and within increasingly informative contexts. Table 20 below highlights the key actions of teachers and learners as this principle is enacted in a classroom environment.

### Table 20
**Principle 3 in action**

<table>
<thead>
<tr>
<th>Teachers will:</th>
<th>Learners need to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Focus on and model:</td>
<td>• Gain oral control of:</td>
</tr>
<tr>
<td>o Target word stress</td>
<td>o Accurate word stress</td>
</tr>
<tr>
<td>o Prominence in continuous speech.</td>
<td>o Accurate stressed vowel phoneme.</td>
</tr>
<tr>
<td>• Give adequate training in production of lexical items in continuous speech.</td>
<td>• Be able to improve oral production of target words.</td>
</tr>
<tr>
<td>• Guide learners as they engage in pronunciation training in increasingly freer settings.</td>
<td>• Identify and produce target forms with increasing independence.</td>
</tr>
<tr>
<td>• Provide examples of how a word form can change in continuous speech.</td>
<td></td>
</tr>
</tbody>
</table>

### 7.3.4 Final Principle 4: Encourage learners to experiment with and discuss target word use in communicative tasks

The fourth design principle was retained but adapted to acknowledge findings from the study. Just as experimentation with word use is vital to enhancing productive oral vocabulary, we
cannot ignore the importance of learner discussion of word use. The importance of learner
discussion of word use is especially important when taken together with findings highlighting the
high level of learner negotiation of meaning when they are presented with unknown words in
task sheets (Newton, 2013). A key finding of this study realised the value of learner discussion of
target word use as they engaged in communicative tasks. Specifically, Chapter 6 demonstrated
that engaging in a series of increasingly more unrestricted communicative tasks after
pronunciation training encouraged learners to recognise how the pronunciation of target words
can change concerning various aspects of word knowledge. Therefore, this principle was adapted
to encourage learner discussion of target words in communicative tasks. To relate to Baker’s
(2021) Pronunciation Pedagogy Model – From Awareness to Clear and Fluent Pronunciation,
this principle invokes Guided and Free Practice according to Baker’s model. Therefore, activities
based on this principle need to be enacted after the initial focus on developing learners’
awareness of target phonological features (i.e., the Language Awareness stage of Baker’s model)
and engaging in identification activities (i.e., the Controlled stage of Baker’s model).

The findings of Chapter 6 showed that learner discussion of target words facilitated the
development of productive oral vocabulary knowledge. Specifically, there were noted advantages
of discussion related to the interplay of the grammatical function and phonological form of target
words. Experimentation with target word use and discussion of target words provide
opportunities for learners to resolve communicative issues, share lexical knowledge and
negotiate meaning. Examples of such activities implemented as part of this study include Taboo
Game, Collective Story and 2/2/2 with opportunities for peer feedback (refer to Section 3.4.3 of
Chapter 3 for a full description of these activities). In order for learners to develop skills required
for syntactic processing, they must engage in the oral output of language and discuss how words
are used in linguistic output. If learners are not pushed to produce language, they may only learn
to pay attention to semantic language features required for comprehension, and never focus on
productive aspects of word knowledge, such as grammar (Swain & Lapkin, 1995).

In sum, teachers need to provide opportunities for learners to experiment with target word use
and encourage discussion of target words, particularly discussion of different aspects of word
knowledge and how aspects interrelate. Table 21 below highlights the key actions of teachers and
learners as this principle is enacted in a classroom environment.
Table 21
Principle 4 in action

<table>
<thead>
<tr>
<th>Teachers will</th>
<th>Students need to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide opportunities for repeated use of target words in communicative oral tasks.</td>
<td>• Utilise opportunities to discuss target words with peers and the teacher.</td>
</tr>
<tr>
<td>• Encourage learners to take advantage of opportunities to discuss how words can be used in speech.</td>
<td>• Utilise opportunities to repeatedly use words in speaking tasks.</td>
</tr>
<tr>
<td></td>
<td>• Focus attention of the interrelatedness of different aspects of word knowledge when words are used in speech.</td>
</tr>
</tbody>
</table>

7.3.5 Principle 5: Provide learners with opportunities to use words in increasingly freer outputs and encourage learners to use target vocabulary in ways that elaborate core lexical meaning

The fifth design principle was redrafted to acknowledge the findings from the study. Most significantly, it was identified that students benefit from using words in increasingly more unrestrained learning environments and by producing language that elaborates on the core meaning of target words. These conditions allow learners to notice gaps in their vocabulary knowledge as they practice using words in speech production.

The findings of Chapters 5 and 6 highlighted that for learners to develop their productive oral vocabulary knowledge, they must be provided with opportunities to use words in increasingly longer and less controlled outputs. Specifically, Chapter 5 identified an enhanced ability to use target words in increasingly rich and informative contexts. Then, Chapter 6 highlighted an increased discussion of target words when communicative tasks allowed for more unrestricted speech outputs. These chapters suggest that providing learners with the opportunity to produce target words within increasingly freer outputs may encourage learners to discuss target word knowledge and demonstrate their knowledge in rich and meaningful output.
The first part of this principle identifies that activities need to be designed to trigger the use of target words and allow learners to produce speech that demonstrates a rich knowledge of the target vocabulary. This relates to the Free Practice stage of Baker’s (2021) Pronunciation Pedagogy Model – From Awareness to Clear and Fluent Pronunciation. Therefore, learners need to engage in student-led games, such as Taboo, and activities in which they produce unscripted creative language, such as Collective Story and 2/2/2. The second part of this principle states that, during these activities, learners must be encouraged to produce speech that goes beyond verbatim repetitions of input and construct language that elaborates on core lexical meaning, which further enacts Final Principle 2.

In conclusion, activities that allow learners to produce language in freer outputs will enhance productive oral vocabulary development. To do this, opportunities need to be provided for learners to use words in increasingly freer learning environments and longer outputs allow them to draw on their vocabulary knowledge and produce speech containing rich contextual information that demonstrates semantic knowledge of words. Table 22 below highlights the key actions of teachers and learners as this principle is enacted in a classroom environment.

**Table 22**

*Principle 5 in action*

<table>
<thead>
<tr>
<th>Teachers will</th>
<th>Students need to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide communicative speaking tasks in which learners use target vocabulary in increasingly freer outputs.</td>
<td>Use words in increasingly freer speech.</td>
</tr>
<tr>
<td></td>
<td>Use words in speech that communicates a novel message constructed in the moment of speaking.</td>
</tr>
<tr>
<td></td>
<td>Demonstrate ability to use target vocabulary in informative contexts that elaborate on core lexical meaning.</td>
</tr>
</tbody>
</table>
Foreword to Chapter 8

Based on the findings discussed in this study, this chapter presents the final framework for a pronunciation-integrated teaching model. This framework is intended to inform the design of classroom environments that aim to promote the development of learners’ productive oral vocabulary. This framework is the result of analysing specific findings reported in Chapters 4, 5 and 6, together with the final principles provided in Chapter 7. The final framework is helpful because it consolidates Chapters 4, 5 and 6 in a single visualisation which illuminates the staged approach proposed in the teaching model. The final framework presented here was written as a manuscript that describes each stage of the framework and provides suggested activities with their intended outcomes. The objective is to provide ESL teachers, teacher trainers and researchers with insight into a pedagogical model that can be used to facilitate the development of productive oral vocabulary.
Chapter 8: Final Framework – A pronunciation-integrated teaching model to facilitate productive oral vocabulary development

8.1 Abstract
Facilitating the transformation of vocabulary from receptive to productive can be challenging for second language (L2) teachers. Although some studies have focused on understanding the activities that promote productive vocabulary in written modes (e.g., Teng & Xu, 2022), more research is needed to investigate the effect of activities on productive vocabulary in spoken modes. To fill this gap, this paper presents a new and innovative pronunciation-integrated teaching model to facilitate productive oral vocabulary development. Pronunciation training and vocabulary teaching are typically seen as distinct areas of teaching English as a Second Language; yet, in the context of developing productive vocabulary to be used in speaking, they are highly complementary. Therefore, the innovativeness of the teaching model presented here is the integration of pronunciation training into vocabulary-focused lessons that utilise social learning. The model features four teaching stages, including a critical bridge that activates receptive vocabulary knowledge to become productive. The teaching model is helpful to teachers of adult L2 learners because it provides a practical guide for the creation of activities that can be used for classroom teaching of productive oral vocabulary.

8.2 Introduction
Around 15 years ago, I travelled to Argentina for the first time to obtain a CELTA certificate. While I was there, I decided to learn Spanish to thoroughly understand the experiences of a second language (L2) learner. As the daughter of immigrants, I have been bilingual since birth, knowing both English and Serbo-Croatian. However, I had never formally studied a second
language. So, I was excited to go through the process of learning another language as an adult in an academic setting. As I studied Spanish in Argentina, I kept a reflective journal on my experiences as a language learner. My reflections on learning Spanish revealed that I was consciously aware of the fact that I could not use words that I knew existed but were unknown to me. Although I was cognisant of having heard a word before or understood that a direct translation of an English word would exist, in the moment of speaking, I was unable to access the specific vocabulary I needed to communicate my thoughts. In some way, I was acutely aware of my lack of productive vocabulary knowledge. In subsequent years, I, as an English as a second (ESL) and foreign language (EFL) teacher, observed similar frustrations in my students.

As a result, I determined that the objective of L2 vocabulary teaching was to facilitate the acquisition of new words and to develop a learner’s ability to use learned words in real-life communication. However, as a teacher, I found that teachers can use limited classroom resources to support learners in developing their ability to use words productively in speech. A basis for using words in speech will be accurately pronouncing a target item. Jones (2018) has highlighted that “while other linguistic inadequacies may make an exchange difficult, incomprehensible pronunciation will stop the conversation” (p. 370). However, teachers seem to dedicate most classroom time to grammar and vocabulary instruction and often neglect explicit pronunciation teaching (Foote et al., 2016). Word stress is critical in the context of productive vocabulary development (Cutler, 2015). The ability to produce accurate word stress has been shown to expand learners’ productive vocabulary (Murphy & Kandil, 2004). Therefore, to ensure that pronunciation is not completely overlooked, Darcy et al. (2021) have recommended that explicit pronunciation instruction should be integrated into existing vocabulary-focused lessons. Moreover, experts recommend that learners need to be provided with repeated opportunities to practice using words if they are to develop proficiency in word use (Laufer, 2005; Schmitt, 2019). To support the development of productive oral vocabulary, teachers need to use classroom time to provide learners with opportunities to experiment with using target words in speech and provide sufficient pronunciation training for learners to accurately produce target words.

The teaching model presented in this paper can be used as a practical guide by teachers as they aim to develop productive oral vocabulary knowledge of adult ESL learners. It is expected that instructors in an Australian ESL context will be able to use the teaching methods presented in
this paper to teach productive oral vocabulary to their adult learners. It is also expected that this model may empower teachers to develop effective classroom teaching material so that their students can enhance their oral communication skills.

8.3 A pronunciation-integrated teaching model to facilitate productive oral vocabulary development

The pronunciation-integrated teaching model to facilitate productive oral vocabulary development presented in this paper consists of four stages: Focus on Conceptualisation; Develop Internal Network; Proceduralise Output; and Focus on Productive Use. The overall objective of the teaching model is to transform vocabulary knowledge from receptive to productive as learners move through the stages of learning. Therefore, the activities within each stage need to become progressively more focused on productive learning. Particular types of activities are recommended at each of the stages, and other underlying conditions must be considered. It is essential to note that since vocabulary development is viewed as developing on a continuum, the stages of the teaching model need to each be viewed as a continuum as well. Therefore, the individual stages of the teaching model will only be completed after the later stages begin. Instead, learning within each stage will continue, in a cumulative fashion, as each new stage commences. However, the stages must be introduced sequentially. Later stages should not begin without earlier stages having started. Figure 17 below outlines the teaching model’s four stages and also includes suggested activities, which are described in detail in Appendix 14. Subsequent paragraphs describe the stages of the teaching model in detail.

**Figure 17**

*A Pronunciation-integrated Teaching Model to Facilitate Productive Oral Vocabulary Development*
8.3.1 Focus on Conceptualisation

The first stage of the teaching model is *Focus on Conceptualisation*, which utilises receptive learning techniques to facilitate the development of the phonological form-meaning links of target words. Narrative devices need to be used in this stage to create rich opportunities to anchor form-meaning links. For example, listening to a story containing the target words can provide rich context clues to the target word’s meaning. This might include providing synonyms or detailed descriptions in the surrounding sentences. To exemplify this, learners might listen to a pre-recorded narrative that reconstructs a scene from the animated film ‘Peter Rabbit’. The following narrative segment is an example created by the researcher and illustrates the context that surrounds the target word *persuade*:

‘A little bit later in the day, Peter tried to *persuade* his friend Benjamin to steal some vegetables from the farmer’s garden. “Come on Benjamin, let’s do it together. It’ll be great! We can eat all the vegetables we want, and the farmer will never know.” – Peter said convincingly. Benjamin didn’t want to do it at first, but eventually he agreed and together they went into the garden.’

The rich context within the narrative provides numerous clues from which learners can determine the meaning of the word *persuade*. First, Peter provides a list of reasons why Benjamin should join him in the garden, which is central to the definition of *persuade*. Then, the derivative form
of the target word’s synonym, convince, is included. Finally, the concept of persuasion is highlighted at the end with Benjamin initially not wanting to do something but eventually agreeing to do it.

In this first stage of the teaching model, teachers must aim to create a visual anchor for target words. To do this, teachers need to draw on narrative devices to enrich the learning process. They can do this by selecting images representing target words and depicting aspects of the narrative. For example, for the previous example, an image showing the character Peter Rabbit walking down a garden path looking back and gesturing with his hand out in a way that said, “come on, let’s go” could be used. Such an image depicts the meaning of the target word persuade and reflects the narrative device being used. Visual anchors will become helpful in later stages to promote productive learning of target words because the images can be used to trigger productive recall of phonological form. To create visual anchors, imaging activities can be used to link target words with their representative images, such as a simple image matching task in which learners match images to target words and definitions. The provision of target word definitions is essential at this stage to further strengthen form-meaning links.

### 8.3.2 Develop Internal Network

The second stage of the teaching model is to Develop Internal Network, which uses receptive learning techniques to enrich the knowledge of the semantic and conceptual domains of target words. At this stage of the teaching model, teachers need to utilise activities that focus on enhancing semantic maps of target words. By doing this, learners can use knowledge of associated words to improve their understanding of target words, ultimately enriching their internal networks. Activities at this stage of the teaching model need to focus learners’ attention on the grammatical properties of target words, such as parts of speech (e.g., verbs, nouns, adjectives, etc.) and word parts such as prefixes and suffixes. Activities must also focus on how target words relate to other words within the same conceptual domain, such as synonyms and antonyms.

To illustrate the second stage of the teaching model, the Taboo Game will be used as an example of an activity that incorporates both receptive and productive learning. The receptive learning
component of the Taboo Game can lead to productive learning of target words, and the receptive learning component of the game can enrich the knowledge of target words. To play the game, one student draws a game card that contains the target word in conjunction with associated words (see Appendix 11 for Taboo game card example for target word *persuade*). This student then can gain a deeper understanding of the target word by associating it with the words on the card. For example, a student whose L1 is Spanish need to know the association between the target word, *persuade*, and the associated word *convince*, as presented on the card. However, their knowledge of this word association will likely to be enriched by playing the Taboo Game because the English word *convince* is similar to the Spanish translation *convencer*. Therefore, this activity utilises receptive learning focused on enhancing semantic networks of target words to facilitate the development of the productive oral vocabulary. For specific details of this method and the study results, refer to Chapter 5.

### 8.3.3 Proceduralise Output

The third stage of the teaching model is *Proceduralise Output* which is the first stage that utilises productive learning techniques. This stage aims to develop learners’ ability to control the use of words in speech and is defined as a critical bridge that activates the transformation of receptive knowledge to become productive. For the vital bridge to be effective, it contains three activators, and they must all be present in the learning environment. It is expected that the first two bridges (i.e., focus on lexical stress and exposure to input) will trigger the activation of the third bridge (i.e., peer discussion). Therefore, teaching environments must be designed to incorporate communicative tasks, which allow for peer discussion after pronunciation training and exposure to input.

The first activator in this stage is pronunciation training that focuses on lexical stress. This pronunciation training must aim to develop learners’ awareness of the concept of stress and productive control of target word lexical stress. To achieve this, it is advised that teachers construct lessons that follow Baker’s (2021) Pronunciation Pedagogy Model – From Awareness to Clear and Fluent Pronunciation. Therefore, initial lessons need to focus on developing learner awareness of the concept of stress in English and the stress patterns of target words. Lessons need to then undertake stages of Controlled, Guided and Freer practice so that learners are
provided with sufficient opportunities to experiment with stress placement and enhance their ability to produce accurate stress. A recommended pronunciation training technique is the Rhythmic Fight Club (RFC), which has been shown to be highly effective. For specific details of this method and results of the study see Chapter 4. Although there are a multitude of pronunciation techniques that can be used to teach lexical stress, the incorporation of physical movements is highly beneficial. Using gesture in pronunciation training can create a physical memory of target words, providing a mental anchor that can facilitate subsequent form recall of the words (Folse, 2007; Mister & Burri, 2019). Some other methods of using movement to internalise the pronunciation of words include clapping, snapping fingers, raising eyebrows, standing up on toes, and stretching rubber bands (Celce-Murcia et al., 2010).

The second activator in this stage is exposure to words embedded within a variety of rich and meaningful contexts. Interestingly, pronunciation training provides a significant opportunity for this activator to be feasible in classroom contexts because the very nature of pronunciation training requires L2 learners to be provided with the language to be practised. Exposure to target words embedded within rich and meaningful contexts during pronunciation training can provide learners with opportunities for receptive learning to occur. Learners must be encouraged to notice the target words’ semantic nuances and grammatical structure. This stage also focuses on productive learning because students are practising oral production of target words. Therefore, pronunciation training presents teachers with ample opportunities to repeatedly expose learners to target words in meaningful contexts (see Chapter 5). It is recommended that teachers prepare a bank of sentences for each target word that contains rich and meaningful contexts and exposes learners to target words in various grammatical structures. These sentences can then be used for pronunciation training (see Appendix 10 for an example bank of sentences that might be used for target idiom at each other’s throats).

The third activator in this stage is for learners to engage in a peer discussion of target words, with a particular focus on phonological form. This activator calls for learners to engage in social learning that provides them with opportunities to practice using words in speaking. For teachers to promote discussions, they need to provide learners with substantial opportunities to use target words in communicative tasks after they have undertaken pronunciation training. Tasks used for this purpose require learners to work in pairs or small groups. The objective of tasks need to be
for learner attention to be focused on constructing novel sentences or longer stretches of speech using target words. Refer to Section 3.4.3 in Chapter 3 for further explanation of two examples of activities that could be used to achieve this objective (i.e., Taboo Game and Collective Story). Although these communicative tasks are also features of the fourth stage of the teaching model, they will allow this third stage to continue as learners identify errors, share lexical knowledge and resolve breakdowns in communication. The discussions that learners have with their peers will provide them with key lexical knowledge that will enable them to use words more successfully in subsequent attempts.

### 8.3.4 Focus on Productive Use

The fourth stage of the teaching model is *Focus on Productive Use*, which provides learners with repeated opportunities to use words in progressively longer outputs. After vocabulary-focused learning, teachers need to provide learners with a controlled environment that elicits target words to be used in communicative tasks. This will allow learners to experiment with words in new contexts and stabilise their control over linguistic production. Communicative tasks require learners to use words in increasingly longer outputs to demonstrate their ability to use words in progressively more informative contexts. This condition allows learners to produce language that incorporates details that elaborate on core lexical meaning, such as the inclusion of synonyms or detailed descriptions. Example communicative activities would be to move from sentence creation (i.e., Taboo Game) onto the design of a composition (i.e., Collective Story) and finishing with an opportunity to use words in longer, more descriptive outputs, such as a 2-minute monologue (i.e., 2/2/2). Refer to Section 3.4.3 in Chapter 3 for further explanation of these three example activities.

The following example illustrates how a student might incorporate target words within progressively more informative contexts. In the Taboo Game a student might produce the simple sentence “I try to persuade my sister to come here”. In this sentence, the target word is used correctly but the context does not incorporate significant clues to demonstrate knowledge of target word meaning. The same student might then use the target word in a longer context during the Collective Story task and produce “Jack’s friends doesn’t like science. So, Jack tried to persuade his friends to be interested in science experiments”. The longer context provided allows
the learner to incorporate additional information demonstrating their knowledge of the target word meaning. Finally, in the most extended output opportunity, a student might produce the following construct during a 2-minute monologue talk “They are disappointed with my ideas, but I tried to explain the reasons for my ideas and the benefits of those ideas. So, I tried to persuade them to change their minds and accept my ideas”. This example is a demonstration of incorporating the target word in an informative context that includes rich clues to target word meaning.

Therefore, teachers must encourage students to use target words in progressively longer outputs and incorporate rich clues to demonstrate their knowledge of them. Such knowledge includes understanding word meaning and phonological form, which results in the ability to use target words in speech. This will provide opportunities to discuss the accuracy of output with peers but allow students to experiment with word use as they gain control of their ability to produce words in increasingly complex communicative acts.

8.4 Conclusion

This pronunciation-integrated teaching model to facilitate productive oral vocabulary development informs classroom-based teaching for adult learners. It takes into account the premise that vocabulary knowledge develops on a continuum (Henriksen, 1999) and provides instructors with a systematic model for teaching productive oral vocabulary. An approach to teaching vocabulary that acknowledges the importance of teaching pronunciation systematically, and by extension any feature of language, can enhance adult learners oral proficiency, resulting in improved communication abilities (Baker, 2021; Sicola & Darcy, 2015).

The earlier stages of the teaching model focus on receptive learning and the later stages focus on productive learning, with the third stage defined as the critical bridge that transforms receptive vocabulary to become productive. It is proposed that this teaching model be used in classrooms and that it will inspire teachers to develop engaging communicative activities that empower students to use more words in oral communication. In my experience of teaching vocabulary through this model, I have observed students enjoying the process of playing and experimenting with target word pronunciation and using words in speech. In addition, students I have worked with had said that they had not learned in this way before and expressed an appreciation of the method, which they felt allowed them to view vocabulary learning in a new way.
Chapter 9: Concluding remarks

9.1 Overall conclusion

The overarching problem that this research aims to address is how to effectively support adult ESL learners to develop oral vocabulary knowledge. This problem was explored by developing a set of Draft Design Principles that informed the design of a teaching model. The innovativeness of the final teaching framework presented in Figure 17 within Chapter 8 is the identification of a critical bridge consisting of three conditions of teaching. The first condition is the embedding of pronunciation training within vocabulary-based lessons. The second condition is the provision of meaningful input. The third condition is to encourage learners to discuss target word use during activities that provide them with opportunities to produce words in increasingly longer oral output. Findings revealed that when embedded in vocabulary-focused lessons, pronunciation training can improve learners’ control of accurate phonological form production. At the same time, findings showed that providing rich and meaningful input and subsequent communicative tasks can facilitate the development metalinguistic awareness leading to improved productive oral vocabulary knowledge. The use of a Design-Based Research approach has provided a set of Final Design Principles for teaching productive oral vocabulary based on the development of an evidence-based teaching model, which have all undergone thorough refinement. It is proposed that this model be utilised in classrooms, inspiring educators to create engaging communicative activities that encourage students to enhance their oral communication skills by employing a wider range of vocabulary. This thesis, therefore, makes an invaluable contribution to the knowledge- and research-base of productive oral vocabulary development.

9.2 Limitations of the study

Given that robust productive oral vocabulary research would be investigated within a longitudinal study (Nation, 2020), inevitably undertaking a longitudinal study within a doctoral thesis presents several several limitations. Conducting a doctoral study within a limited timeframe can be a significant challenge. The researcher was bound by a set timeline within which she needed to complete her thesis, thus collecting data over an extended period of a year
or longer was not an option. Furthermore, while analysing the quantitative data, the researcher noted variations among individual students, suggesting that some demonstrated greater improvements in their learning compared to others. The divergence in learner outcomes regarding the appropriate use of target words may be attributed to several factors. For example, learners with a stronger vocabulary base and a deeper understanding of word meanings may have been better equipped to use the target words in a more varied and nuanced manner. Conversely, those with limited vocabulary resources might have resorted to repetition as a compensatory strategy. At the same time, individuals may have consciously chosen to incorporate synonyms and avoid excessive repetition, while others might not have been as aware of the need for such diversification. These factors highlight the importance of individual differences and learner autonomy in the acquisition and usage of target words. In order to investigate this further, the researcher contemplated conducting a non-parametric test to assess whether and to what extent the number of students actively interacting with the target words underwent any changes over the course of time. However, such an analysis would go beyond answering the specified research questions that this thesis aimed to answer.

Additionally, the researcher only had access to a small number of participants within a short enrolment period at the participant site. It is normal at ELICOS (English Language Intensive Courses for Overseas Students) institutions in Australia for students to study for relatively brief periods of time, and thus tracking their learning progress over a longer period of time was not possible. The limited number of participants should be considered when interpreting findings, which may limit the conclusions that can be drawn from the data. Secondly, data collection and analysis presented certain limitations. Several student participants, for instance, missed some of the classes within the productive oral vocabulary workshop. Since it would be difficult to isolate the effects of the intervention in cases where students experienced gaps in the intervention learning, I decided to exclude these students’ productive outputs from analysis. Another limitation of the study was the iterative approach being implemented at a real-world institution. The participant site where the research took place was prone to fluctuating student numbers. This meant that teachers were frequently moved around to different class levels (e.g., moving from teaching a beginner class in one session to an intermediate class the next) and the number of classes available depended on student enrolments. Thus, it was not possible for the researcher to rely on a number of classes using the same teachers in each iteration. This meant that there were two classes with two teachers in the first iteration and only one class with one teacher in the
second iteration. Finally, the researcher was only approved to conduct experimental activities within the in-tact classroom for a maximum of 20 minutes per day. Therefore, the collected datasets needed to focus on the specific research questions being investigated. For this reason, it was not feasible to investigate learners’ abilities to extend their phonological accuracy and fluency beyond the target items. The researcher acknowledges that it would have been beneficial to investigate whether participants were able to generalise the acquired knowledge of word and sentence stress to other lexical contexts, as well as to explore any changes in their performance and pronunciation-related episodes (PREs) in both trained and untrained lexical contexts. Unfortunately, due to limited classroom time available at the research site, a comprehensive examination of these themes could not be conducted within the scope of this research. However, the limitations discussed above represent the typical challenges of conducting research in intact classes. McKenney and Reeves (2018) aptly state that:

Classrooms are complex systems… [and] human subjects introduce a level of unpredictability that can be difficult to control. Researchers must be aware of and navigate the cultural, political, social, and ethical realities of the setting… and they must be flexible, adaptive, and responsive to the needs of all stakeholders involved. (p. 14)

It is recommended that further research be conducted to build upon the findings of this doctoral study. The following section discusses direction for future research in more detail.

9.3 Recommendations for future study

This research has demonstrated optimistic outcomes of using the teaching framework to develop learners’ knowledge of productive oral vocabulary. However, arguably, the most urgent follow-up study into the effectiveness of the teaching framework presented in this thesis is to investigate the long-term uptake of productive oral vocabulary knowledge by embedding pronunciation training into vocabulary focused lessons together with exposure to rich meaningful input and subsequent communicative tasks. That is, future research needs to compare the findings generated by this doctoral study with research examining long-term effects on productive oral vocabulary developments made in similar classroom environments. The present study is highly valuable in providing valuable insight which can support teachers in designing classroom environments. The benefits of a longitudinal study would be to yield advanced insights into the effectiveness of the teaching framework in developing long-term productive oral vocabulary.
knowledge. Furthermore, the focus of this research was a general English ESL context, but the content may be adjusted for other contexts. This could involve using the teaching framework to create learning environments targeting vocabulary development within English for Specific contexts.

It is also important to acknowledge the methods used to conduct any follow-up studies. One consideration would be to undertake a quasi-experimental research design. This would allow data to indicate whether this approach to teaching productive oral vocabulary produces better results than other potential approaches (e.g., observational or action research methodologies). In other words, quasi-experimental research design would provide insight into the specific strengths of this teaching approach compared to other methods. Secondly, the significance of focusing on prefabricated chunks of language, or multiword units, has been highlighted by numerous studies (Ding, 2006; Fitzpatrick & Wray, 2006; Thomson, 2015; Wray & Fitzpatrick, 2009). Therefore, a critical direction for future studies is to investigate how the model for teaching productive oral vocabulary can be adapted or tailored to focus on multiword units, as opposed to teaching single words. A final point to consider for future studies is to examine the effects of such an intensive approach to teaching vocabulary. Although the teaching model presented here provides strategies for incorporating productive oral vocabulary activities which emphasise broader communication skills, doing so requires an intensive focus on a defined set of target vocabulary. Yet, as emphasised by Nation (2013a), the least important job for the vocabulary teacher is to teach words; rather teachers should train learners to apply knowledge and become more autonomous in their vocabulary learning. Therefore, future studies might focus on analysing the effectiveness of this approach, in offering a form of learner training, with the objective of identifying participants’ ability to utilize skills gained for subsequent independent vocabulary learning.
Appendices

Appendix 1: Aspects of knowing a word (Adapted from Nation, 2013, p. 49)

<table>
<thead>
<tr>
<th>Type of knowledge</th>
<th>Aspect of knowledge</th>
<th>Questions guiding identification of knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptive</td>
<td>Spoken form</td>
<td>What does the word sound like?</td>
</tr>
<tr>
<td></td>
<td>Written form</td>
<td>What does the word look like?</td>
</tr>
<tr>
<td></td>
<td>Word Parts</td>
<td>What parts are recognisable in this word?</td>
</tr>
<tr>
<td></td>
<td>Form &amp; Meaning</td>
<td>What meaning does this form signal?</td>
</tr>
<tr>
<td></td>
<td>Concept &amp; Referents</td>
<td>What is included in the concept?</td>
</tr>
<tr>
<td></td>
<td>Associations</td>
<td>What other words does this word make us think of?</td>
</tr>
<tr>
<td></td>
<td>Grammatical Function</td>
<td>In what patterns does the word occur?</td>
</tr>
<tr>
<td></td>
<td>Collocation</td>
<td>What words or types of words occur with this one?</td>
</tr>
<tr>
<td></td>
<td>Constraints on Use</td>
<td>Where, when and how would we meet this word?</td>
</tr>
<tr>
<td>Productive</td>
<td>Spoken form</td>
<td>How is the word pronounced?</td>
</tr>
<tr>
<td></td>
<td>Written form</td>
<td>How is the word spelled?</td>
</tr>
<tr>
<td></td>
<td>Word Parts</td>
<td>What word parts are needed to express meaning?</td>
</tr>
<tr>
<td></td>
<td>Form &amp; Meaning</td>
<td>What word form can be used to express meaning?</td>
</tr>
<tr>
<td></td>
<td>Concept &amp; Referents</td>
<td>What items can the concept refer to?</td>
</tr>
<tr>
<td></td>
<td>Associations</td>
<td>What other words could we use instead of this one?</td>
</tr>
<tr>
<td></td>
<td>Grammatical Function</td>
<td>In what patterns must we use this word?</td>
</tr>
<tr>
<td></td>
<td>Collocations</td>
<td>What words or types of words must we use with this one?</td>
</tr>
<tr>
<td></td>
<td>Constraints on Use</td>
<td>Where, when and how often can we use this word?</td>
</tr>
</tbody>
</table>

Adapted from “Learning vocabulary in another language” by I.S.P Nation, 2013, p. 49. Copyright 2013 by Cambridge University Press. Reprinted with permission from Cambridge University Press
Appendix 2a: Information provided to student participants

PARTICIPANT INFORMATION SHEET FOR STUDENTS

TITLE: From potential words to actual words: Developing productive oral vocabulary.

INVESTIGATORS

Primary supervisor: Dr Amanda Baker, School of Education
Phone: 02 4298 1254
Email: abaker@uow.edu.au

Secondary supervisor: Dr Honglin Chen, School of Education
Phone: 02 4221 3941
Email: honglin@uow.edu.au

PhD student: Bianca Beljanski, School of Education
Phone: 
Email: bbb020@uowmail.edu.au

Dear Participant,
You have been invited to participate in a research project designed to improve vocabulary in speaking. The following information has been prepared to help you consider your participation in this research project.

Why is the study being carried out?
The objective of this study is to find new ways of teaching English vocabulary so that it can be used when speaking. The idea is that this project will result in innovative techniques to help students use more vocabulary when speaking and understand their own progress in learning.

What will you need to do?
If you choose to be included, you will be asked to:
• Volunteer to participate in a student discussion (focus group) to talk about your experiences during class time. The objective will be to understand what you liked and did not like about the program and any suggestions you might have about improvements. This discussion will be audio recorded to ensure all ideas are remembered.
• Make weekly recordings of a speaking activity with a partner.
• Submit learning cards that have been made as part of classroom activities.
• Be observed during class for approximately 2.5 hours over a period of one week.

**Will I be paid for taking part in this study?**
You will not be paid to take part in this study.

**How will my privacy be protected?**
All the information collected from the classroom observations and focus groups will not be seen by others and will only be used by the researcher. In addition, confidentiality of participants will be preserved, and participants of observations and focus groups will be given pseudonyms (false names) during data processing and analysis as well as in the subsequent publication of the project findings.

Hard copy data will be kept in a locked filing cabinet at the University of Wollongong. Any computer files (e.g., audio recordings) will be stored on a computer at the University under password protection (known only to the researcher). All personal information will be coded without names during and after this study. The data collected will remain the property of the University of Wollongong and will be used for conference presentations, thesis and journal publication. However, any publications that result from this study will not contain any personal identifying information. At the conclusion of the study all data will be converted to digital form, password protected and kept/saved in researcher’s supervisor’s office at the University of Wollongong.

**What are the risks and benefits associated with this study?**
You will benefit by learning innovative ways to develop your vocabulary in speaking and will be able to use these techniques for future self-study. Apart from participating in the classroom workshop during your existing class, we do not expect any risk for you.
Is taking part in the study voluntary?
You are free to decide if you want to be involved in this project or not and your decision whether to participate will not affect your grades or your relationship with ELSIS or the University of Wollongong. You are free to stop participating at any time or to refuse to answer any of the questions. However, during group discussions it will not be possible to remove your individual comments from our audio records once the group has started, but any comments you have made will not be used for analysis.

What should I do if I would like to participate?
You will be asked to sign a consent form before the study begins. Then once the study has started you will participate in the learning program during your usual ELSIS classes with your usual ELSIS teacher. If you any questions at any time during the research, please feel free to contact any of the three members of the research team listed at the top of this information sheet.

If you have any further questions or concerns
This study has been reviewed by the Human Research Ethics Committee (Social Sciences, Humanities and Behavioural Science) of the University of Wollongong. If you have any concerns or complaints regarding the way this research has been conducted, you can contact the UoW Ethics Officer on (02) 4221 3386 or email rso-ethics@uow.edu.au.

Thank you for your interest in this study.
Appendix 2b: Information provided to teacher participants

PARTICIPANT INFORMATION SHEET FOR TEACHERS

TITLE: From potential words to actual words: Supporting ESL learners to develop productive oral vocabulary.

PURPOSE OF THE RESEARCH
This is an invitation for you to participate in a study conducted by PhD student at the University of Wollongong. The purpose of this study is to identify ESL teaching practices that will effectively use classroom time for the purpose of advancing oral productive vocabulary to include K3 band (2,000 - 3,000 of the most frequently used word families in English). This research will lead to the design of: a) draft design principles to guide the teaching of productive oral vocabulary (the words actively used in speech) in an ESL context; and b) a professional development workshop including a means for assessing learner speech (a prototypical product supported by empirical evidence).

INVESTIGATORS

Primary supervisor: Dr Amanda Baker, School of Education
Phone: 02 4298 1254
Email: abaker@uow.edu.au

Secondary supervisor: Dr Honglin Chen, School of Education
Phone: 02 4221 3941
Email: honglin@uow.edu.au

PhD student: Bianca Mister, School of Education
Phone
Email: bbb020@uowmail.edu.au

METHOD AND DEMANDS ON PARTICIPANTS
If you choose to be included, you will be asked to participate in a professional development session with one of your fellow teacher participants. The objective of this professional development is to train you to implement the classroom workshop designed to develop students’ productive oral vocabulary. You will then be asked to implement a one-week workshop consisting of five half-hour lessons per week, which will be taught as part of your existing class.

During the research the following procedures will take place:

- **Professional development**: a one-hour professional development session will be run by a member of the research team who will train you in the implementation of the classroom tool that has been developed as part of the research project.
- **Classroom observation**: During classes that are part of the one-week workshop a member of the research team will be present to observe and take notes. That is, five half-hour sessions for one week (a total of two and a half hours).
- **During the course of the one-week workshop** student learning data will be collected in the form of weekly audio recordings that students will make during classroom activities. At the end of the one-week period the word cards that students have made will also be collected.
- **Throughout the intervention period** you will be asked to participate in regular 15-minute feedback sessions with the researcher and your fellow teacher participant, which will be audio recorded. The objective of such feedback will be to reflect on the implementation of the intervention and your perspectives on teaching productive oral vocabulary.

**POSSIBLE RISKS, INCONVENIENCES AND DISCOMFORTS**

Apart from implementing the classroom workshop in your existing class, we can foresee no risk for you. You are free to decide if you want to be involved in this project or not and your decision whether to participate will not affect your current or future employment, nor will it affect your relationship with ELSIS or the University of Wollongong. You are free to stop participating at any time or to refuse to answer any of the questions.

**BENEFITS OF THE RESEARCH**
The benefits of the proposed research include professional development in the context of teaching productive oral vocabulary. By participating in the study, you will learn new vocabulary teaching techniques which you can apply in classrooms long after the study is finished.

PROTECTION OF PRIVACY
All the information gained from the professional development, classroom observations and focus groups will not be seen by others and will only be used by the researcher. In addition, confidentiality of participants will be preserved, and participants of observations and focus groups will be given pseudonyms during data processing and analysis as well as in the subsequent publication of the project findings.

Hard copy data will be kept in a locked filing cabinet at the University of Wollongong. Any computer files (e.g. audio recorded interview) will be stored on a computer at the University under password protection (known only to the researcher). All personal information will be coded without names during and after this study. The data collected will remain the property of the University of Wollongong and will be used for conference presentations, thesis and journal publication. However, any publications arising from this study will not contain any personal identifying information. At the conclusion of the study all data will be converted to digital form, password protected and kept/saved in researcher’s supervisor’s office at the University of Wollongong.

ETHICS REVIEW AND COMPLAINTS
This study has been reviewed by the Human Research Ethics Committee (Social Sciences, Humanities and Behavioural Science) of the University of Wollongong. If you have any concerns or complaints regarding the way this research has been conducted, you can contact the UoW Ethics Officer on (02) 4221 3386 or email rso-ethics@uow.edu.au.

Thank you for your interest in this study.
Appendix 3a: Student participant consent form

CONSENT FORM FOR STUDENTS

RESEARCH TITLE: *From potential words to actual words: Supporting ESL learners to develop productive oral vocabulary.*

RESEARCHER/S: Amanda Baker

I have been given information about *From potential words to actual words: Supporting ESL learners to develop productive oral vocabulary* and discussed the research project with Bianca Mister who is conducting this research as part of a PhD supervised by Amanda Baker and Honglin Chen in the School of Education at the University of Wollongong.

I have been advised of the potential risks and burdens associated with this research, which includes the submission of my classroom oral assessments and classroom observations and have had the opportunity to ask Bianca Mister any questions I may have about the research and my participation.

I understand that my participation in this research is voluntary, I am free to refuse to participate and I am free to withdraw from the research at any time. My refusal to participate or withdrawal of consent will not in any way affect my grades or relationship with ELSIS or the University of Wollongong.

If I have any enquiries about the research, I can contact Amanda Baker (4298 1254) or Honglin Chen (4221 3941) or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on 4221 3386 or email rso-ethics@uow.edu.au.

By signing below, I am indicating my consent to (please tick):

- Be observed during classes
- Participate in a focus group
- Provide classroom oral assessments
Participate in focus group that will be audio recorded

I understand that the University of Wollongong will own all data collected from my participation and will be used for conference presentations, thesis and journal publication, and I consent for it to be used in that manner.

Signed Date

..........................................................................................  ....../...../.....

Name (please print)

..........................................................................................
Appendix 3b: Teacher participant consent form

CONSENT FORM FOR TEACHING STAFF

RESEARCH TITLE: From potential words to actual words: Supporting ESL learners to develop productive oral vocabulary.

RESEARCHER/S: Amanda Baker
I have been given information about From potential words to actual words: Supporting ESL learners to develop productive oral vocabulary and discussed the research project with Bianca Mister who is conducting this research as part of a PhD supervised by Amanda Baker and Honglin Chen in the School of Education at the University of Wollongong.

I have been advised of the potential risks and burdens associated with this research, which includes the implementation of a classroom intervention (for which I will receive training) as part of my daily teaching at ELSIS and have had the opportunity to ask Bianca Mister any questions I may have about the research and my participation.

I understand that my participation in this research is voluntary, I am free to refuse to participate and I am free to withdraw from the research at any time. My refusal to participate or withdrawal of consent will not in any way affect my employment or relationship with ELSIS or the University of Wollongong.

If I have any enquiries about the research, I can contact Amanda Baker (4298 1254) or Honglin Chen (4221 3941) or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on 4221 3386 or email rso-ethics@uow.edu.au.

By signing below, I am indicating my consent to (please tick):

- Undertake professional development
- Implement classroom intervention in my existing classes at ELSIS
- Provide feedback during a teacher interview which will be audio recorded
I understand that the University of Wollongong will own all data collected from my participation and will be used for conference presentations, thesis and journal publication, and I consent for it to be used in that manner.

Signed Date

.......................................................... ....../....../......

Name (please print)

..........................................................
## Appendix 4: List of sentences and images used for each target word in first iteration

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Image source</th>
</tr>
</thead>
<tbody>
<tr>
<td>When I’m travelling, I am a very <strong>organised</strong> person.</td>
<td></td>
</tr>
<tr>
<td>The Philippines is a country that is made up by a group of <strong>islands</strong>.</td>
<td></td>
</tr>
</tbody>
</table>
The boat **route** is marked onto a map.

We spent the morning climbing to the top of the **mountain**.

We had a **pleasant** afternoon relaxing at the beach.
<table>
<thead>
<tr>
<th>Snorkeling is a great opportunity to <strong>spot</strong> fish in the water.</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Snorkeling](image source)</td>
</tr>
<tr>
<td>I like to <strong>wander</strong> around markets and buy souvenirs.</td>
</tr>
<tr>
<td>![Wandering markets](image source)</td>
</tr>
<tr>
<td>It is <strong>fascinating</strong> to learn about different cultures.</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td><img src="image1.jpg" alt="Image source" /></td>
</tr>
<tr>
<td>It was a long plane <strong>journey</strong>.</td>
</tr>
<tr>
<td><img src="image2.jpg" alt="Image source" /></td>
</tr>
</tbody>
</table>
## Appendix 5: List of collocations and associated images used in first iteration

<table>
<thead>
<tr>
<th>Target collocation</th>
<th>Respective image</th>
</tr>
</thead>
<tbody>
<tr>
<td>We will take an alternative route that will be quicker.</td>
<td><img src="image1.png" alt="Map of Sydney and surrounding areas" /></td>
</tr>
<tr>
<td></td>
<td>Image source: Google Maps</td>
</tr>
<tr>
<td>We took a circular route around Amsterdam.</td>
<td><img src="image2.png" alt="Map of Amsterdam" /></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>The book is fascinating.</td>
<td><img src="https://www.flickr.com/photos/ala_members/7440372760" alt="Book Image" /></td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>The book is not very fascinating.</td>
<td><img src="https://www.stockvault.net/photo/234848/girl-reading-a-book" alt="Book Image" /></td>
</tr>
<tr>
<td><strong>Image source:</strong> <a href="https://www.flickr.com/photos/ala_members/7440372760">https://www.flickr.com/photos/ala_members/7440372760</a></td>
<td><strong>Image source:</strong> <a href="https://www.stockvault.net/photo/234848/girl-reading-a-book">https://www.stockvault.net/photo/234848/girl-reading-a-book</a></td>
</tr>
<tr>
<td>I’m an organized person.</td>
<td><img src="https://www.flickr.com/photos/nottinghamtrentuni/4453107835" alt="Organized Room" /></td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>I’m a disorganised person.</td>
<td><img src="https://www.flickr.com/photos/marktristan/1518235860" alt="Disorganized Room" /></td>
</tr>
</tbody>
</table>

Image source: [https://www.flickr.com/photos/nottinghamtrentuni/4453107835](https://www.flickr.com/photos/nottinghamtrentuni/4453107835)

Image source: [https://www.flickr.com/photos/marktristan/1518235860](https://www.flickr.com/photos/marktristan/1518235860)
It is an artificial island and is not natural.

Image source: https://www.flickr.com/photos/rikyunreal/18983420770

It is a tropical island.

Image source: https://www.flickr.com/photos/136966778@N03/24501555349
<table>
<thead>
<tr>
<th>We climbed to the top of the mountain.</th>
<th><img src="https://vectorportal.com/vector/mountain-clip-art/28996" alt="Mountain Image" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>We climbed halfway up the mountain.</td>
<td><img src="https://vectorportal.com/vector/mountain-clip-art/28996" alt="Mountain Image" /></td>
</tr>
<tr>
<td>The weather was unpleasant.</td>
<td><img src="https://www.flickr.com/photos/vfowler/5988337/" alt="Image source: https://www.flickr.com/photos/vfowler/5988337/" /></td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>The weather was pleasant.</td>
<td><img src="https://www.flickr.com/photos/o_0/48794388671" alt="Image source: https://www.flickr.com/photos/o_0/48794388671" /></td>
</tr>
</tbody>
</table>
It was a long journey.

It was a dangerous journey.

We wander all around Hiroshima.

Image source: https://www.flickr.com/photos/maniya/6652201565

Image adapted from: https://commons.wikimedia.org/wiki/File:Hiroshima_city_map.png
We have a little wander around Hiroshima.

Image adapted from: 
https://commons.wikimedia.org/wiki/File:Hiroshima_city_map.png

Wally is difficult to spot.

Image source: https://www.flickr.com/photos/theloushe/5964644143
Wally is easy to spot.

Image adapted from: https://www.flickr.com/photos/theloushe/5964644143
Appendix 6: Full list of sentences used during RFC in first iteration

1. I like to spot tourist sites.
2. It’s an island in the middle of the ocean.
3. It was a long journey to get to Australia.
4. The book was fascinating.
5. I’m a very organised person.
6. We had a pleasant day in the park.
7. They wander around the streets of Sydney.
8. I take the shortest route to work.
9. We climbed to the top of a mountain.
Appendix 7: Topic used for 2/2/2 activity in first and second iterations

You are going to talk about a challenge or achievement.

Use the following question prompts to help you talk for two minutes about your topic.

- What was your challenge?
- Where were you?
- How did you feel?
- Describe the challenge?
- Did you succeed?
- How did you feel when the challenge was over?
Appendix 8: Transcript of story and respective images used in second iteration

When I was a child, I heard the story of Peter Rabbit. It was absolutely fascinating. I used to love reading it. It's about Peter and his friends who live in a borough. Near a mean farmer who hated rabbits. Peter and the mean farmer were always at each other's throats. They would fight and argue all the time. Then, one day the farmer went to town and all the rabbits were happy. They had so much fun when the farmer wasn't home.

“This is great!” called Peter.

“Hurray!” all the rabbits cheered.

It was very enjoyable for everybody. A little bit later in the day, Peter tried to persuade his friend Benjamin to steal some vegetables from the farmer’s garden.

“Come on, Benjamin. Let's do it together. It'll be great! We can eat all the vegetables we want, and the farmer will never know” Peter said convincingly.

Benjamin didn't want to do it at first, but eventually he agreed and together they went into the garden. But before they could steal any vegetables, they were shocked. They did not expect the farmer to be home so early. The farmer was angry with them.

“What are you doing in my garden? Get out of here!” screamed the farmer and started running after the rabbits.

Peter and Benjamin ran and ran. Finally, they managed to escape from the farmer through a hole in the fence. After the rabbits escaped, the farmer decided to put an electric fence around his garden at first, this was confusing the farmers girlfriend and the rabbits sat and watched the farmer. They couldn't understand what he was doing.

“What is he doing?” they asked.

Then Peter realised it was an electric fence and he was deeply disappointed because he knew he could never eat vegetables from the garden again, and this made him sad.
Appendix 9: Full list of cards provided for matching activity after listening to story in second iteration

<table>
<thead>
<tr>
<th>Target word</th>
<th>Sentence containing target word with context from story and respective image</th>
<th>Target word definition from Cambridge Dictionary online</th>
<th>Image source:</th>
<th>Source:</th>
</tr>
</thead>
<tbody>
<tr>
<td>fascinating</td>
<td>It was absolutely fascinating. I used to love reading it.</td>
<td>Extremely interesting.</td>
<td><img src="https://www.flickr.com/photos/ala_members/7440372760" alt="Image" /></td>
<td><img src="https://www.youtube.com/watch?v=bx5zeorHvdE" alt="Source" /></td>
</tr>
<tr>
<td>at each other’s throats</td>
<td>Peter and the mean farmer were always at each other's throats. They would fight and argue all the time.</td>
<td>If two people are doing this, they are arguing angrily.</td>
<td><img src="https://www.flickr.com/photos/ala_members/7440372760" alt="Image" /></td>
<td><img src="https://www.youtube.com/watch?v=bx5zeorHvdE" alt="Source" /></td>
</tr>
</tbody>
</table>
| **enjoyable** | “This is great!” called Peter.  
“Hurray!” all the rabbits cheered.  
It was very enjoyable for everybody. | An event or experience gives you pleasure. |
| --- | --- | --- |
| **persuade** | Peter tried to persuade his friend Benjamin to steal some vegetables from the farmer’s garden.  
“Come on, Benjamin. Let's do it together. It'll be great!” | To make someone do or believe something by giving them a good reason to do it or by talking to that person and making them believe it. |
| **shocked** | But before they could steal any vegetables, they were shocked. They did not expect the farmer to be home so early. | --- |

Source: [https://www.youtube.com/watch?v=bx5zeorHvdE](https://www.youtube.com/watch?v=bx5zeorHvdE)
<table>
<thead>
<tr>
<th>Word</th>
<th>Definition</th>
<th>Example</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>angry</strong></td>
<td>Having a strong feeling against someone who has behaved badly, making you want to shout at them or hurt them.</td>
<td>The farmer was angry with them. “What are you doing in my garden? Get out of here!” screamed the farmer.</td>
<td><a href="https://www.youtube.com/watch?v=bx5zeorHvdE">https://www.youtube.com/watch?v=bx5zeorHvdE</a></td>
</tr>
<tr>
<td><strong>escape</strong></td>
<td>To get free from something, or to avoid something.</td>
<td>Peter and Benjamin ran and ran. Finally, they managed to escape from the farmer through a hole in the fence.</td>
<td><a href="https://www.youtube.com/watch?v=bx5zeorHvdE">https://www.youtube.com/watch?v=bx5zeorHvdE</a></td>
</tr>
<tr>
<td><strong>confusing</strong></td>
<td>Something that makes you feel perplexed because it is difficult to understand.</td>
<td>This was confusing. They couldn't understand what he was doing. “What is he doing?” they asked.</td>
<td></td>
</tr>
<tr>
<td>Disappointed</td>
<td>Then Peter realised it was an electric fence and he was deeply disappointed because he knew he could never eat vegetables from the garden again, and this made him sad.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td><a href="https://www.youtube.com/watch?v=bx5zeorHvdE">https://www.youtube.com/watch?v=bx5zeorHvdE</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unhappy</td>
<td>Because someone or something was not as good as you hoped or expected, or because something did not happen.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td><a href="https://www.youtube.com/watch?v=bx5zeorHvdE">https://www.youtube.com/watch?v=bx5zeorHvdE</a></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 10: Full list of sentences used during RFC in second iteration

<table>
<thead>
<tr>
<th>Target word</th>
<th>Sentences</th>
</tr>
</thead>
<tbody>
<tr>
<td>fascinating</td>
<td>1. The book is fascinating; it has beautiful pictures and interesting facts about the world, so I love reading it.</td>
</tr>
<tr>
<td></td>
<td>2. The documentary about the ocean was absolutely fascinating, I learned so many interesting things about animals in the ocean.</td>
</tr>
<tr>
<td></td>
<td>3. She didn’t think the history of her family was very fascinating; she couldn’t imagine what it was like in that time, so she thought it was boring.</td>
</tr>
<tr>
<td></td>
<td>4. The biology class tried to grow plants, but nothing grew so the results weren’t fascinating at all.</td>
</tr>
<tr>
<td></td>
<td>5. He found different cultures to be fascinating, so he travelled all around the world to learn about new cultures.</td>
</tr>
<tr>
<td>at each other’s throats</td>
<td>1. Peter and the mean farmer were always at each other’s throats; they would fight and argue all the time.</td>
</tr>
<tr>
<td></td>
<td>2. My brother and sister don’t have a good relationship; they are always at each other’s throats.</td>
</tr>
<tr>
<td></td>
<td>3. My neighbor and I used to be at each other’s throats, but now we’re friends.</td>
</tr>
<tr>
<td></td>
<td>4. My parents were not at each other’s throats on the weekend; we had a peaceful time together.</td>
</tr>
<tr>
<td></td>
<td>5. My parents were at each other’s throats all the time, so now they are divorced.</td>
</tr>
<tr>
<td>enjoyable</td>
<td>1. The rabbits had so much fun when the farmer went away. They had a party and it was enjoyable for everybody.</td>
</tr>
<tr>
<td></td>
<td>2. They had a very enjoyable day at the park; the weather was great and they had many fun things to do.</td>
</tr>
<tr>
<td></td>
<td>3. The concert was not enjoyable because the music was terrible and the tickets were expensive.</td>
</tr>
<tr>
<td></td>
<td>4. We did not have an enjoyable holiday; it rained all week and was so boring because we couldn’t leave our hotel room.</td>
</tr>
<tr>
<td>persuade</td>
<td>1. Peter tried to persuade Benjamin to steal vegetables and gave him good reasons why they should do it.</td>
</tr>
<tr>
<td></td>
<td>2. He tried to persuade his boss to give him a promotion by convincing him with all the good things he has done for the company.</td>
</tr>
<tr>
<td></td>
<td>3. She used scientific evidence to convince politicians to change laws, but she couldn’t persuade them because they didn’t believe what she was telling them.</td>
</tr>
<tr>
<td></td>
<td>4. He didn’t persuade Tim to go to the party; Tim thought it would be boring so he needed more convincing.</td>
</tr>
<tr>
<td></td>
<td>5. She used her confidence to persuade people to give money to the zoo; she told them how their money could help improve the animal’s lives.</td>
</tr>
<tr>
<td>shocked</td>
<td>1. The rabbits were shocked that the farmer came home so early and made them leave his garden.</td>
</tr>
<tr>
<td></td>
<td>2. She was shocked by the news of her dog’s death; the dog was very healthy, and she did not expect him to die.</td>
</tr>
<tr>
<td></td>
<td>3. The restaurant was not shocked that they didn’t have many customers; they knew their food was bad.</td>
</tr>
<tr>
<td></td>
<td>4. He didn’t study for his exam, so he was not shocked by his bad results; he was expecting to fail.</td>
</tr>
<tr>
<td></td>
<td>5. They were shocked by the cold weather; the news said it was going to be hot and sunny all week and they really wanted to go to the beach.</td>
</tr>
<tr>
<td>angry</td>
<td>1. The farmer was angry with the rabbits for stealing vegetables; he screamed and chased them out of the garden.</td>
</tr>
<tr>
<td></td>
<td>2. The parents were angry with their son because he didn’t go to school and lied about it.</td>
</tr>
<tr>
<td></td>
<td>3. The boss wasn’t angry at the employees for not finishing the job, but he was frustrated that they lost the customer.</td>
</tr>
<tr>
<td></td>
<td>4. She didn’t get the food she ordered, but she wasn’t angry and didn’t yell at the waiter because in the end it was delicious.</td>
</tr>
<tr>
<td>5. Mary asked her husband not to tell anyone the secret, but he did; she was angry and shouted at him.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td></td>
</tr>
<tr>
<td>escape</td>
<td></td>
</tr>
<tr>
<td>1. The rabbits ran away and managed to escape from the farmer through a hole in the fence.</td>
<td></td>
</tr>
<tr>
<td>2. The family went on a holiday so that they could relax and escape the stress and chaos of their lives.</td>
<td></td>
</tr>
<tr>
<td>3. The prisoners climbed over a fence, but they didn’t escape and the police caught them on the other side.</td>
<td></td>
</tr>
<tr>
<td>4. A bear attacked a hiker in the forest and the hiker didn’t manage to escape being hurt and had to go to hospital.</td>
<td></td>
</tr>
<tr>
<td>5. The man listened to music to escape from his problems and find peace.</td>
<td></td>
</tr>
<tr>
<td>confusing</td>
<td></td>
</tr>
<tr>
<td>1. The rabbits didn’t know why the farmer put up an electric fence, it was so confusing for them.</td>
<td></td>
</tr>
<tr>
<td>2. English grammar is difficult to understand, and it can be confusing to learn the rules.</td>
<td></td>
</tr>
<tr>
<td>3. I didn’t get lost because the man gave me very clear and easy directions to the shop; they were not at all confusing.</td>
<td></td>
</tr>
<tr>
<td>4. We learned to play the game quickly because the rules were not confusing, they were very simple.</td>
<td></td>
</tr>
<tr>
<td>5. The instructions to build the Ikea table were confusing, so we had to ask for help.</td>
<td></td>
</tr>
<tr>
<td>disappointed</td>
<td></td>
</tr>
<tr>
<td>1. Peter was disappointed with the electric fence because he couldn’t eat vegetables from the garden, and this made him sad.</td>
<td></td>
</tr>
<tr>
<td>2. I was disappointed that I didn’t get the job and it made me sad that they didn’t appreciate my skills.</td>
<td></td>
</tr>
<tr>
<td>3. They were not disappointed with the restaurant because food was delicious, and they were happy they went.</td>
<td></td>
</tr>
<tr>
<td>4. She got the highest exam score in the class she was so happy and wasn’t disappointed with the result.</td>
<td></td>
</tr>
<tr>
<td>5. The kids were disappointed that the park was closed, so their parents bought them an ice cream to make them feel better.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 11: Set of Taboo game cards used in second iteration

<table>
<thead>
<tr>
<th>Enjoyable</th>
<th>Angry</th>
<th>Persuade</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can’t say these words</td>
<td>You can’t say these words</td>
<td>You can’t say these words</td>
</tr>
<tr>
<td>Nice</td>
<td>Mad</td>
<td>Convince</td>
</tr>
<tr>
<td>Fun</td>
<td>Furious</td>
<td>Make</td>
</tr>
<tr>
<td>Like</td>
<td>Bad</td>
<td>Influence</td>
</tr>
<tr>
<td>Enjoy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fascinating</th>
<th>Shocked</th>
<th>Confusing</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can’t say these words</td>
<td>You can’t say these words</td>
<td>You can’t say these words</td>
</tr>
<tr>
<td>Book</td>
<td>Unexpected</td>
<td>Understand</td>
</tr>
<tr>
<td>Interesting</td>
<td>Surprise</td>
<td>Difficult</td>
</tr>
<tr>
<td>Good</td>
<td></td>
<td>Unclear</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Escape</th>
<th>Be at each other’s throats</th>
<th>Disappointed</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can’t say these words</td>
<td>You can’t say these words</td>
<td>You can’t say these words</td>
</tr>
<tr>
<td>Dangerous</td>
<td>Argue</td>
<td>Expect</td>
</tr>
<tr>
<td>Catch</td>
<td>Fight</td>
<td>Upset</td>
</tr>
<tr>
<td>Run</td>
<td></td>
<td>Sad</td>
</tr>
</tbody>
</table>
Appendix 12: Set of Collective Story game cards used in second iteration

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Profession</th>
<th>Country</th>
<th>Hobbies</th>
<th>Dream</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary</td>
<td>30</td>
<td>Daughter of wealthy businessman</td>
<td>Canada</td>
<td>Shopping, going to expensive restaurants, playing tennis</td>
<td>To marry a rich man.</td>
</tr>
<tr>
<td>Tom</td>
<td>28</td>
<td>Accountant</td>
<td>Russia</td>
<td>Cooking, hip hop music, watching American movies</td>
<td>To become a famous rapper.</td>
</tr>
<tr>
<td>Jack</td>
<td>16</td>
<td>Student</td>
<td>England</td>
<td>Playing computer games, collecting insects and spiders, reading</td>
<td>To be a scientist.</td>
</tr>
<tr>
<td>Kate</td>
<td>60</td>
<td>Retired</td>
<td>USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peter</td>
<td>15</td>
<td>Student</td>
<td>Czech Republic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suzi</td>
<td>22</td>
<td>Shop Assistant</td>
<td>Australia</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hobbies:</strong> Cooking cakes for her 10 grandchildren, sitting in the park, doing puzzles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dream:</strong> To visit Tokyo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Hobbies:** Skateboarding, watching horror movies, mountain biking |
| **Dream:** To be a rich lawyer |

| **Hobbies:** Fashion, theatre, chatting with friends |
| **Dream:** To become a famous Hollywood actress |

## Appendix 13: Frequency of target word production distributed across student group

<table>
<thead>
<tr>
<th></th>
<th>Day 1</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kiri</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>enjoyable</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>shocked</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>angry</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>disappointed</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Persuade</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Confusing</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>escape</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>fascinating</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>At each other's throats</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sofia</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>enjoyable</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>shocked</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>angry</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>disappointed</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Persuade</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Confusing</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>escape</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>fascinating</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>At each other's throats</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Christian</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>enjoyable</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>shocked</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>angry</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>disappointed</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Persuade</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Confusing</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>escape</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>fascinating</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>At each other's throats</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td><strong>Bataar</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>enjoyable</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>shocked</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>angry</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>disappointed</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Persuade</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Confusing</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>escape</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>fascinating</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>At each other's throats</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>enjoyable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-----------</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Pedro</td>
<td></td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>shocked</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>angry</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>disappointed</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Persuade</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Confusing</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>escape</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>fascinating</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>At each other's throats</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>enjoyable</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Boris</td>
<td></td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>shocked</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>angry</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>disappointed</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Persuade</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Confusing</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>escape</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>fascinating</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>At each other's throats</td>
<td>3</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>
References


Deveci, T., & Saleem, M. (2022). Reducing learners’ cognitive load and emotional challenges created by lexis: The andragogical approach to enhance adult learners’ mental lexicon. In
Individual and contextual factors in the English language classroom: Theoretical, pedagogical, and empirical approaches (pp. 35-55): Springer.


Laufer, B. (1997). What’s in a word that makes it hard or easy: Some intralexical factors that affect the learning of words. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: Description, acquisition and pedagogy* (pp. 140-154). Cambridge, UK: Cambridge University Press.


Muller, G., & Levis, J. M. (2016). Integrating pronunciation into listening/speaking classes. *Integrating pronunciation with other language skills*, 27-42.


Nation, I. S. P. (2014). How much input do you need to learn the most frequent 9,000 words? *Reading in a Foreign Language, 26*(2), 1-16.


and the four skills: pedagogy, practice, and implications for teaching vocabulary (pp. 146-165). London: Routledge.


