The Impact of a Visual Approach Used in the Teaching of Grammar When Embedded into Writing Instruction: A Study on the Writing Development of Chinese First Year University Students in a British University in China

Vinita Gaikwad

Submitted to the University of Exeter as a Thesis for the Degree of Doctor of Philosophy in Education in June 2013

This thesis is available for Library use on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

Signature:  

Date: June 2013
Abstract

Born into a visual culture, today’s generation of learners generally prefer a visually-rich multimodal learning environment. Tapping into the potential of visuals in language pedagogy, this study was aimed at discovering the impact of a visual presentation of grammatical concepts related to sentence structure on student writing. The study used a mixed methods design to analyse the impact of the visual approach first by statistically measuring sentence variety and syntactic complexity of student pre and post intervention texts and then using interviews to explain the nature of the impact of visuals on student conceptual understanding and its effect on their writing development. Statistical findings reveal that the experimental groups of Chinese students who were taught grammatical concepts in the context of writing instruction using a visual approach outperformed the students in the control groups who were given similar lessons in the context of writing instruction but using traditional printed hand-outs. Qualitative findings suggest that the visuals seems to have increased these students’ conceptual understanding of grammatical items that were taught, and this resulted in more sophisticated and syntactically complex texts after the intervention. The study supports the theory of contextualized teaching of grammar and proposes the use of external visuals that lead to internal visualization based on the cognitive theory of multimodal learning. In so doing, it extends the use of visual learning to grammar pedagogy. However, the findings also suggest that the visual approach would not work effectively in cultures that promote rote learning and decontextualized exercises in grammar with the sole aim of passing the exams. A shift in attitude towards grammar pedagogy in China is deemed necessary.
Acknowledgements

Completing a doctoral thesis is by no means an easy task, and completing without the unswerving support of supervisors, family, and friends, a next-to-impossible endeavour. Therefore, I wish to register my heart-felt appreciation to a few individuals who have played an important role in my being able to complete this task. First, my appreciation goes to my ‘dream’ supervisor, Prof. Debra Myhill who has been a source of inspiration and a guide on every step of the way: your timely response to every query, every email, every submission, and your valuable insights are deeply appreciated. I also appreciate the valuable insights provided by my second supervisor, Dr. Shirley Larkin. Second, to my husband, Rajan Gaikwad, without whose support I couldn’t have even begun this journey: your patience, guidance, and tolerant attitude throughout the years have made this possible. Third, to my family – my kids, my mother, my parents-in-law, all sisters and their families – who stood by me in every trial, tolerating the mood swings and yet being proud of my little accomplishments: I will always remain indebted to you. Fourth, my friends in UNNC – Richard Silburn, and Arnold Jonga – who offered their classes to be my control groups: thank you! I would also like to register my appreciation to CELE, UNNC management for giving me permission to conduct my research at their premises and for lending me their full support. Above all, I thank God for giving me life, for giving me the ability, intellect, and good health to carry on even as I wore multiple hats of fulltime teacher, wife, mother, and student: without your strength, I could do nothing. Finally, I dedicate this work to the memory of my loving father whose dream it was that I wear this feather in my cap: were you still around, I know you’d be proud.
# Table of Contents

Abstract ......................................................................................................................... 2  
Acknowledgements ...................................................................................................... 3  
Table of Contents ......................................................................................................... 4  
List of Tables .............................................................................................................. 7  
List of Figures ............................................................................................................. 9  
List of Acronyms/Abbreviations .................................................................................. 10  

1. CHAPTER ONE: Introduction .................................................................................. 11  
   1.1 Introduction ........................................................................................................ 11  
   1.2 The Problem ...................................................................................................... 12  
   1.3 The Theory ........................................................................................................ 15  
   1.4 Visual Approach ............................................................................................... 16  
   1.5 Grammar and the Teaching of Grammar .......................................................... 18  
   1.6 The Research Questions ................................................................................... 20  
   1.7 The structure of the Thesis .............................................................................. 21  

2. CHAPTER TWO: Theoretical Framework and Literature Review ......................... 23  
   2.1 Differences in L1 and L2 Language Learning .................................................. 23  
   2.2 Grammar Pedagogy in L1 Contexts .................................................................. 24  
   2.3 Grammar Pedagogy in L2 Contexts .................................................................. 30  
   2.3.1 Grammar Pedagogy in China ....................................................................... 35  
   2.4 The Importance of Grammar in the Development of Writing ......................... 39  
   2.4.1 Errors and Error Analysis ........................................................................... 40  
   2.4.2 Syntactic Complexity ................................................................................. 42  
   2.5 Teaching Grammar in the Context of Writing Instruction .............................. 45  
   2.6 Visual Approach ............................................................................................... 47  
   2.6.1 Visual Culture .............................................................................................. 48  
   2.6.2 Visuals in Education .................................................................................... 50  
   2.6.3 Theories of Visual Cognition ...................................................................... 53  
   2.6.4 Visuals and Visualization .......................................................................... 56  
   2.6.5 Visuals and Visualization in the Teaching of Grammar and Writing ......... 64  
   2.6.6 A Need for Visual Literacy ......................................................................... 73  
   2.6.7 Limitations in Using a Visual Approach ....................................................... 74  
   2.7 Summary .......................................................................................................... 77  

3. CHAPTER THREE: Methodology ............................................................................ 78  
   3.1 Philosophical Assumptions of the Research .................................................... 78  
   3.1.1 Ontological, Epistemological, and Methodological Assumptions ............... 78  
   3.2 Mixed Methods Research ............................................................................... 82  
   3.2.1 Research Designs in Mixed Methods ......................................................... 85  
   3.2.2 Explanatory Design: QUAN → qual ............................................................ 86  
   3.3 Research Design ............................................................................................. 89  
   3.4 The Sampling Strategy .................................................................................... 91  
   3.5 Background of the Participants ....................................................................... 93
3.6 Data Collection .................................................................................................................. 94
  3.6.1 Pilot Study ...................................................................................................................... 95
  3.6.2 Writing Samples ............................................................................................................ 96
  3.6.3 Interviews ..................................................................................................................... 98
3.7 The Intervention ................................................................................................................ 100
  3.7.1 The Experiment Groups ............................................................................................... 100
  3.7.2 Contextualized instruction ............................................................................................ 101
  3.7.3 Error Analysis and Self-correction ............................................................................... 101
  3.7.4 Syntactic Complexity ................................................................................................ 102
  3.7.5 Visual Approach .......................................................................................................... 102
3.8 The Control Groups ......................................................................................................... 107
3.9 Data Analysis ................................................................................................................... 108
  3.9.1 Quantitative Data Analysis: ......................................................................................... 108
  3.9.2 Qualitative Data Analysis: .......................................................................................... 122
3.10 Ethical Considerations ..................................................................................................... 123
3.11 Strengths and Weaknesses of the Design ....................................................................... 127
3.12 Summary .......................................................................................................................... 129

4. CHAPTER FOUR: Statistical Findings ............................................................................. 130
  4.1 Grammatical Correctness of Sentence Structure .......................................................... 133
    4.1.1 Statistical Analysis ....................................................................................................... 133
    4.1.2 Descriptive Analysis ................................................................................................... 134
    4.1.3 Inferences from the Analysis ...................................................................................... 138
  4.2 Variety of Sentence Structures ....................................................................................... 139
    4.2.1 Descriptive Analysis ................................................................................................ 140
    4.2.2 Inferences from the Analysis ...................................................................................... 144
  4.3 Syntactic Complexity in the Sentences .......................................................................... 146
    4.3.1 Statistical Analysis .................................................................................................... 146
    4.3.2 Descriptive Analysis .................................................................................................. 149
    4.3.3 Inferences from the Analysis ...................................................................................... 154
  4.4 Quality of the Texts ......................................................................................................... 155
    4.4.1 Statistical Analysis .................................................................................................... 155
    4.4.2 Descriptive Analysis .................................................................................................. 156
    4.4.3 Inferences from the Analysis ...................................................................................... 161
  4.5 Summary .......................................................................................................................... 163

5. CHAPTER FIVE: Findings from the Interviews ................................................................. 165
  5.1 Themes, Codes, and Sub-codes ....................................................................................... 166
  5.2 Importance of Grammar ................................................................................................. 167
  5.3 Studying Grammar in High School ............................................................................... 170
    5.3.1 Translation .................................................................................................................. 172
    5.3.2 Exam-driven Study .................................................................................................... 173
    5.3.3 Methods of Studying Grammar in High School ....................................................... 176
    5.3.4 Development of Writing Skills .................................................................................. 179
    5.3.5 Methods Used by Teachers in Schools .................................................................... 180
List of Tables

Table 3.1: The Research Design ................................................................. 90
Table 3.2: Theoretical Constructs Used to Develop the Interview Schedule ............... 99
Table 3.3: Types of Visuals Used in the Intervention ........................................ 103
Table 3.4: The Code for Error Analysis ......................................................... 112
Table 3.5: Band Score Categories .................................................................. 117
Table 3.6: Percentage of Agreement between the Markers ................................. 119
Table 4.1: Number of paragraphs, sentences, and words compared ...................... 132
Table 4.2: Summary of ANCOVA showing a comparison of the number of errors present in the post-intervention writing samples while controlling for the pre-intervention samples 134
Table 4.3: Descriptive Analysis of Percentage Reduction of Error within groups ........ 135
Table 4.4 Total Number of Errors along with the Mean, Minimum and Maximum number of Errors along with a note of Standard Deviation .................................................. 136
Table 4.5: Table displaying a sample of pre and post intervention texts with errors ........ 137
Table 4.6: Different types of Sentence Structures Compared between the Groups ........ 141
Table 4.7: Use of the types of dependent clauses to demonstrate variety .................. 142
Table 4.8: Comparison of sentence variety in the pre and post intervention texts from the same student .................................................................................. 144
Table 4.9: A Summary of ANCOVA results for the comparison of the use of verbals .................. 147
Table 4.10: A summary of ANCOVA results showing the comparison of prepositional phrases in the post-intervention samples ........................................................................ 148
Table 4.11: A summary of ANCOVA showing the comparison of the number of dependent clauses between the two groups in the post-intervention writing samples .................. 149
Table 4.12: Syntactic complexity in terms of use of verbals, prepositional phrases and dependent clauses compared between the two research groups .................. 149
Table 4.13: Comparison of the pre and post writing samples of a student demonstrating the use of verbals (in red), prepositional phrases (underlined) and dependent clauses (in blue). 154
Table 4.14: A summary of ANCOVA results for the comparison of scores awarded to the writing samples indicating overall writing quality .......................................................... 156
Table 4.15: The mean of the scores along with minimum and maximum scores awarded to the writing samples ........................................................................................................... 156
Table 4.16: Number of Scripts Awarded Marks per Score Band .................................................................................................................. 157
Table 4.17: An overview of the performance of the groups in the post-intervention texts .................. 162
Table 4.18: Details of two texts that were awarded the highest overall score of 85% ......................... 163
Table 5.1: A summary of the six themes and main codes including the total number of comments .................................................................................................................................................. 166
Table 5.2: Theme 1 - Importance of Grammar -- Codes and Subcodes ....................................................... 168
Table 5.3: Theme 2 - Studying Grammar in High School -- Codes and Sub codes .................................. 171
Table 5.4: Codes for Themes 3 and 4 ................................................................................................................. 183
Table 5.5: Theme 5 -- Contextualized grammar .............................................................................................. 187
Table 5.6: Theme 6 -- Visual Approach, Codes and Number of comments from each Research Group .................................................................................................................................. 190
List of Figures

Figure 3.1: The Mixed Methods Research Model (QUAN \rightarrow qual) ..................................................88
Figure 3.2: Image used to teach prepositional phrases .................................................................104
Figure 3.3: A chart with images used to create a visual imagery of the sentence types ..........104
Figure 3.4: An example of a sentence diagram ..............................................................................106
Figure 4.1: Variables used in the Statistical Analysis ....................................................................131
Figure 4.2: Comparison of different types of verbals used by the two research groups ............150
Figure 4.3: A comparison of the total number of verbals used by the two research groups .......151
Figure 4.4: A comparison of the total number of Prepositional Phrases .......................................151
Figure 4.5: A comparison of the total number of dependent clauses (DC) .................................152
Figure 4.6: Text produced by a student before the intervention ......................................................159
Figure 4.7: Text produced after the intervention by the same student .........................................160
List of Acronyms/Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANCOVA</td>
<td>Analysis of Covariance</td>
</tr>
<tr>
<td>BERA</td>
<td>British Educational Research Association</td>
</tr>
<tr>
<td>CAF</td>
<td>Complexity, Accuracy, Fluency</td>
</tr>
<tr>
<td>CALL</td>
<td>Computer Assisted Language Learning</td>
</tr>
<tr>
<td>CEE</td>
<td>College Entrance Examination</td>
</tr>
<tr>
<td>CELE</td>
<td>Centre for English Language Education (at UNNC)</td>
</tr>
<tr>
<td>CLT</td>
<td>Communicative Language Teaching</td>
</tr>
<tr>
<td>DCT</td>
<td>Dual Code Theory</td>
</tr>
<tr>
<td>EAP</td>
<td>English for Academic Purposes</td>
</tr>
<tr>
<td>EFL</td>
<td>English as a Foreign Language</td>
</tr>
<tr>
<td>ESAP</td>
<td>English for Specific Academic Purposes</td>
</tr>
<tr>
<td>ESL</td>
<td>English as a Second Language</td>
</tr>
<tr>
<td>L1</td>
<td>First or native language</td>
</tr>
<tr>
<td>L2</td>
<td>Second Language</td>
</tr>
<tr>
<td>NVivo</td>
<td>(qualitative data analysis software package)</td>
</tr>
<tr>
<td>qual.</td>
<td>Qualitative</td>
</tr>
<tr>
<td>QUAN</td>
<td>Quantitative</td>
</tr>
<tr>
<td>RQ</td>
<td>Research Question</td>
</tr>
<tr>
<td>SLA</td>
<td>Second Language Acquisition</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>UNNC</td>
<td>University of Nottingham, Ningbo, China</td>
</tr>
<tr>
<td>VFA</td>
<td>Visual Formative Assessment</td>
</tr>
<tr>
<td>VIE</td>
<td>Visual Input Enhancement</td>
</tr>
</tbody>
</table>