

**The role of input in the acquisition of English articles by L1 Najdi  
Arabic speakers**

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The candidate confirms that the work submitted is her own and that appropriate credit has been given where reference has been made to the work of others.

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## Abstract

The acquisition of English articles has been studied extensively in recent years suggesting difficulties facing learners from languages with and without articles. Explorations into cross-linguistic differences defined semantic universals of article features such as: definiteness, specificity and genericity and different form-meaning mappings between languages (e.g. Hawkins et al, 2006; Ionin, Ko & Wexler, 2004; Ionin & Montrul, 2009; Ionin et al, 2011; Slabakova, 2008; Snape, 2006). Meanwhile, this detailed account of the features related to articles is not found in English language instruction. The purpose of this research is to investigate the application of those findings from current generative second language acquisition research in the language classroom.

The study started out by defining the difficulties in acquiring English articles by L1 Najdi Arabic speakers through a “contrastive analysis of features” that cause re-assembly difficulties (Lardiere, 2008, 2009; Slabakova, 2009). Contexts that involve the [+generic] feature are proposed to involve feature re-assembly difficulties and another difficulty is found with syntactic restrictions on the definite article when the noun is modified by a relative clause (Almahboob, 2009; Azaz, 2014; Sarko, 2009a, 2009b).

Following an experimental design, the study included 54 Najdi Arabic speakers and 10 native English speakers. Three instruments were used: forced choice, sentence repetition, and written production conducted as pre-tests, post-tests and delayed post-tests eight weeks later. Two experimental groups received explicit and an implicit instruction with reinforced texts over the course of five weeks and a third uninstructed control group was used for comparison.

The findings show that explicit and implicit instruction resulted in improvement not found with the control group. The explicit instruction resulted in improvement on the generic plural context and sustained long term effect. Therefore, this study recommends explicit instruction following an analytic focus on form on reinforced texts to accelerate the re-assembly process and recovery from L1 transfer.

## Table of Contents

<b>Acknowledgments</b> .....	<b>i</b>
<b>Abstract</b> .....	<b>iv</b>
<b>List of tables</b> .....	<b>ix</b>
<b>List of figures</b> .....	<b>xii</b>
<b>List of Abbreviations</b> .....	<b>xiii</b>
<b>Chapter 1: Introduction</b> .....	<b>1</b>
<b>1.1. Applied Generative Second Language Acquisition: from theory to practice</b> .	<b>1</b>
<b>1.2. Goals of this thesis</b> .....	<b>5</b>
<b>1.3. Organization of the thesis</b> .....	<b>7</b>
<b>Chapter 2: Generative Second Language Acquisition Research</b> .....	<b>9</b>
<b>2.1. Generative linguistics: A background</b> .....	<b>9</b>
2.1.1. The generative theory on language .....	9
2.1.2. Innate knowledge .....	9
2.1.3. Modularity .....	10
2.1.4. Generative transformational grammar: Early rules .....	10
2.1.5. Recent developments in generative linguistics .....	12
<b>2.2. Generative Second Language Acquisition (GenSLA)</b> .....	<b>13</b>
2.2.1. Development of perspectives in GenSLA research .....	14
2.2.1.1. The UG Access debate .....	14
2.2.1.2. Investigating “parameters” in SLA .....	15
2.2.1.3. Investigating “features” in SLA .....	16
2.2.1.4. Investigating “interfaces” in SLA .....	18
2.2.2. GenSLA theories on acquisition .....	19
2.2.2.1. Starting from L1 transfer.....	19
2.2.2.2 The Article Choice Parameter and the Fluctuation Hypothesis .....	21
2.2.2.3. The Bottleneck Hypothesis .....	22
2.2.2.4. The Feature Reassembly Hypothesis .....	23
2.2.2.5. A contrastive analysis of features .....	23
<b>2.3. Chapter 2 summary and conclusion</b> .....	<b>26</b>
<b>Chapter 3: The Acquisition of English Articles</b> .....	<b>27</b>
<b>3.1. Introduction</b> .....	<b>27</b>
<b>3.2. Studies on the acquisition of English articles</b> .....	<b>27</b>
3.2.1. Early studies establishing persistent difficulties in the acquisition of articles .....	29
3.2.2. Generative SLA studies on the acquisition of articles .....	32
3.2.2.1. Semantic universals: definiteness and specificity .....	34
3.2.2.2. Semantic universal: genericity .....	44
<b>3.3. Cross-linguistic variation: English and Arabic:</b> .....	<b>53</b>
3.3.1. The DP domain in English and Arabic: .....	53
3.3.2. Definiteness and Specificity in English and Arabic: .....	54
3.3.3. Genericity in English and Arabic: .....	57
3.3.4. Comparing the features: definiteness, number, specificity, and genericity in English and Najdi Arabic:.....	58
3.3.5. Relative clause modification of the DP in English and Arabic .....	60
3.3.5. The learning task facing Arabic L1 learners of English articles.....	60

<b>3.4. The acquisition of English articles by Arabic L1 speakers .....</b>	<b>61</b>
3.4.1. Early studies on “errors” made by L1 Arabic speakers .....	61
3.4.2. A longitudinal case study of a Saudi Arabic learner of English .....	64
3.4.3. Studies on the acquisition of English articles by L1 Arabic speakers .....	65
3.4.4. A summary of findings .....	70
<b>3.5. A contrastive analysis of features in the acquisition of English articles by L1 Najdi Arabic speakers.....</b>	<b>72</b>
3.5.1. The learning task of L1 Najdi Arabic speakers .....	72
3.5.2. A proposed difficulty cline .....	74
<b>3.6. Chapter 3 summary and conclusion .....</b>	<b>74</b>
<b>Chapter 4: Second Language Acquisition Research and the Language Classroom.....</b>	<b>75</b>
<b>4.1. Introduction .....</b>	<b>75</b>
<b>4.2. Input in GenSLA studies .....</b>	<b>75</b>
<b>4.3. A theoretical background on “input” and “L2 knowledge” in SLA .....</b>	<b>77</b>
<b>4.4. Defining terminology: A review .....</b>	<b>81</b>
<b>4.5. The Modular On-line Growth and Use of Language MOGUL.....</b>	<b>83</b>
<b>4.6. Instructed SLA research.....</b>	<b>88</b>
4.6.1. The effectiveness of one type of instruction: explicit vs implicit.....	88
4.6.2. Defining the content of instruction .....	90
4.6.3. Generative instructed studies: positive and negative evidence.....	92
4.6.4. Measuring explicit and implicit knowledge.....	95
<b>4.7. Instructed SLA research on English articles .....</b>	<b>97</b>
<b>4.8. Instruction to foster a dual representation of knowledge.....</b>	<b>103</b>
4.8.1. Explicit instruction: Focus on Form .....	103
4.8.2. Implicit instruction: Reinforced genre analysis .....	104
<b>4.9. Building an instructional framework for this study.....</b>	<b>105</b>
<b>4.10. Chapter 4 summary and conclusion .....</b>	<b>106</b>
<b>Chapter 5: Methodology .....</b>	<b>108</b>
<b>5.1. Introduction .....</b>	<b>108</b>
<b>5.2. Ethical issues .....</b>	<b>108</b>
<b>5.3. The pilot study: The acquisition of English articles by L1 Najdi Arabic speakers .....</b>	<b>108</b>
5.3.1. Hypotheses of the pilot study.....	109
5.3.2. Research questions.....	109
5.3.3. Participants.....	110
5.3.4. Instrument .....	112
5.3.5. Procedure .....	113
5.3.6. Results.....	113
5.3.6.1. Group total scores .....	113
5.3.6.2. Group scores on test contexts.....	114
5.3.7. Discussion and limitations .....	119
5.3.8. Conclusion .....	120
<b>5.4. The main experiment: The role of input in the acquisition of English articles by L1 Najdi Arabic speakers (an experimental design).....</b>	<b>121</b>
5.4.1. Research questions and hypotheses .....	123
5.4.2. Procedure .....	124
5.4.3. Participants.....	125
5.4.3.1. Background questionnaire.....	125

5.4.3.2. Language Proficiency test .....	126
5.4.4. Instruments.....	126
5.4.4.1. Instrument 1: Forced choice task: .....	128
5.4.4.2. Instrument 2: The sentence repetition task: .....	129
5.4.4.3. Instrument 3: The written production task: .....	130
5.4.5. Study instruments and measuring linguistic knowledge.....	133
5.4.6. Instructional material .....	134
5.4.6.1. A review of article instruction in textbooks.....	134
5.4.6.2. Designing the instructional material .....	135
5.4.6.2. Lesson plans .....	136
5.4.5.3. Description of texts .....	140
5.4.5.4. Description of grammatical focus and feedback.....	140
<b>Chapter 6: Results.....</b>	<b>143</b>
<b>6.1. Introduction .....</b>	<b>143</b>
<b>6.2. Pre-intervention results .....</b>	<b>143</b>
6.2.1. Forced choice task .....	144
6.2.1.1. Pre-test descriptive statistics and normality tests.....	144
6.2.1.2. Pre-test inferential analyses.....	147
6.2.2. Sentence repetition task .....	149
6.2.2.1. Pre-test descriptive statistics and normality tests.....	149
6.2.2.2. Pre-test inferential analyses.....	150
6.2.3. Written production task .....	152
6.2.3.1. Comparison with native English speakers .....	152
6.2.3.2. Percentages of article choice.....	153
6.2.1. Pre-test results summary .....	157
<b>6.3. Post intervention results .....</b>	<b>159</b>
6.3.1. Forced choice task post-tests .....	159
6.3.1.1. Forced choice descriptive and inferential statistics of pre- & post-tests .....	159
6.3.1.2. The percentages of article choices .....	163
6.3.1.3. Forced choice task interaction of variables.....	166
6.3.1.4. Forced choice task contexts: summary of results .....	172
6.3.2. Sentence repetition task post-tests .....	173
6.3.2.1. Sentence repetition descriptive and inferential statistics for pre- & post-tests.....	173
6.3.2.2. Sentence repetition task interaction of variables.....	176
6.3.2.3. Sentence repetition task: summary of results.....	181
6.3.5. Written production task post-tests .....	182
6.3.5.1. Written production pre- & post-test comparison .....	182
6.3.5.2. The percentage of article choice .....	183
<b>6.4. A summary of the results of the three instruments.....</b>	<b>188</b>
<b>Chapter 7: Discussion &amp; Conclusion.....</b>	<b>189</b>
<b>7.1. Introduction .....</b>	<b>189</b>
<b>7.2. A summary of the results answering the research questions .....</b>	<b>189</b>
7.2.1. Research question 1 on the levels of difficulty.....	189
7.2.2. Research questions 2&3 on the two types of input.....	191
7.2.3. Research question 4 on the long-term effect .....	192
7.2.4. Research question 5 on the effect of language proficiency .....	192
7.2.5. Research question 6 on the effect of the instruments .....	193

<b>7.3. Discussion of the instruments and type of knowledge.....</b>	<b>193</b>
<b>7.4. Discussion of findings in relation to SLA theories.....</b>	<b>196</b>
7.4.1. Full Transfer/ Full Access.....	197
7.4.2. The predictions following a contrastive analysis of features.....	198
7.4.3. The syntactic difficulty with relative clause modification.....	199
7.4.4. A modular dual knowledge view: MOGUL .....	200
<b>7.4. Discussion of the instruction.....</b>	<b>202</b>
<b>7.5. Evidence for and against the hypotheses of the study.....</b>	<b>205</b>
<b>7.6. Shortcomings .....</b>	<b>206</b>
<b>7.7. Summary and directions for future research .....</b>	<b>207</b>
<b>References .....</b>	<b>210</b>
<b>Appendices A: Research Ethics Documents .....</b>	<b>227</b>
Appendix A1: The ethical approval letter.....	227
Appendix A2: Information sheet pilot study .....	228
Appendix A3: Information sheet main study.....	229
Appendix A4: Consent form pilot study.....	230
Appendix A5: Consent form main study.....	231
<b>Appendices B: The study instruments .....</b>	<b>232</b>
Appendix B1: Background questionnaire pilot study and main study .....	232
Appendix B2: Oxford Quick Placement Test OQPT cover page.....	233
Appendix B3: The Forced Choice Task: (categories and NP types).....	234
Appendix B4: The Sentence Repetition Task .....	239
Appendix B5: The Written Production Task.....	241
<b>Appendices C: The classroom material .....</b>	<b>242</b>
Appendix C1: In-class production sheet .....	242
Appendix C2: Text Analysis .....	244
Appendix C3: Highlighted grammar focus lesson (introduction genre) .....	245
Appendix C4: Sample texts (methods genre).....	246
Appendix C5: Highlighted grammar focus lesson (results genre) .....	247

## List of tables

Table 1 Mapping between form and meaning of articles in different languages (taken from Slabakova, 2009, p. 319).....	24
Table 2 A summary of early research investigating article acquisition.....	31
Table 3 Predictions for article choice in L2 English (taken from Ionin, Ko& Wexler, 2004, p.19) .....	34
Table 4 The reduced Article Choice Parameter (taken from Tryzna, 2009, p.72).....	40
Table 5 Language groupings according to the Nominal Mapping Parameter (taken from Snape, 2006, p. 6) .....	44
Table 6 Sentence-level & NP level generics (taken from Ionin et al,2011, p. 256) .....	47
Table 7 A summary of major GenSLA studies on the acquisition of articles and proposed hypotheses .....	51
Table 8 Cross-linguistic generic morphological marking in English & Arabic.....	58
Table 9 Definiteness and specificity mappings in English and Najdi Arabic.....	58
Table 10 Genericity mappings in English and Najdi Arabic .....	59
Table 11 A summary of studies on the acquisition of English articles by L1 Arabic speakers.....	71
Table 12 A summary of instruction studies on English articles.....	102
Table 13 Options in language teaching (taken from Long & Robinson, 1998. P.16)...	104
Table 14 Pilot study Native English college level students' results on MTELP proficiency test.....	111
Table 15 Pilot study Najdi learners' group division following MTELP scores.....	111
Table 16 Pilot study total accurate results on the Forced choice task.....	113
Table 17 Pilot study Post-Hoc between groups on the Forced Choice Task total scores .....	114
Table 18 Pilot study overall accurate results of participant groups on each test category .....	114
Table 19 Pilot study indefinite context accurate results and error rates .....	116
Table 20 Pilot study generic context accurate results and error rates .....	117
Table 21 Pilot study indefinite with RC context accurate results and error rates .....	117
Table 22 Pilot study Post-Hoc between test categories of the intermediate group.....	118
Table 23 Pilot study Post-Hoc between test categories of the advanced group.....	118
Table 24 Main study procedure timeline .....	125
Table 25 Main study participants' average on the number of years studying formal English .....	126
Table 26 Main study participants proficiency on the Oxford Quick Placement Test...	126
Table 27 The predicted problematic areas on article use.....	127
Table 28 The description of the four major NP types targeted by this study .....	127
Table 29 Main study forced choice task [-definite] noun types and target article.....	128
Table 30 Main study written production task questions, noun types and target article	131
Table 31 Main study written production task coding for the expected noun combinations .....	132
Table 32 Main study instruments.....	133

Table 33 Main study lesson plans schedule and timeline .....	138
Table 34 Main study task sequence used in lessons (1,2,3,6,9).....	139
Table 35 Main study task sequence used in lessons (5, 7, 8, 10, & 11).....	139
Table 36 Main study targeted noun types explicit rules .....	142
Table 37 Main study forced choice task pre-test descriptive statistics .....	144
Table 38 Main study forced choice task test of Normality between groups .....	145
Table 39 Main study forced choice pre-test mean scores on the five contexts.....	147
Table 40 Main study forced choice pre-test noun contexts and effect size .....	148
Table 41 Main study repetition task pre-test descriptive statistics .....	149
Table 42 Main study sentence repetition task pre-test Normality.....	150
Table 43 Main study sentence repetition task pre-test mean scores on the six contexts .....	151
Table 44 Main study sentence repetition pre-test noun contexts and effect size .....	151
Table 45 Main study written task pre-test Mann-Whitney between the implicit instruction group & Native English speakers .....	152
Table 46 Main study written task pre-test Mann- Whitney between the explicit instruction group & Native English Speakers.....	152
Table 47 Main study written task pre-test Mann-Whitney between the uninstructed control group & Native English Speakers .....	153
Table 48 Main study written task pre-test Chi-square test on the <i>first</i> generic question .....	154
Table 49 Main study written task pre-test Chi-square test on the <i>second</i> generic question .....	154
Table 50 Main study written task pre-test Chi-square test on the <i>first</i> [-definite] with RC question .....	155
Table 51 Main study written task pre-test Chi-square test on the <i>second</i> [-definite] with RC question.....	156
Table 52 Main study forced choice task pre- & post-tests descriptive statistics .....	159
Table 53 Main study forced choice paired sample t-test for the groups' total scores in the pre-test and post-test .....	160
Table 54 Main study forced choice task paired sample t-test on the pre- & post-test categories .....	161
Table 55 Main study forced choice task paired sample t-test on the post-tests & delayed post-test categories.....	162
Table 56 Main study forced choice [+definite] context: time and group.....	163
Table 57 Main study forced choice percentage of article choice in [+definite] and [+generic] contexts: Explicit instruction group .....	163
Table 58 Main study forced choice percentages in [+generic] contexts: Implicit instruction and uninstructed control groups.....	165
Table 59 Main study forced choice implicit instruction group percentage of article choice in [-definite] with RC .....	165
Table 60 Main study Forced choice explicit instruction group percentage of article choice in [-definite] with RC .....	166
Table 61 Main study regression estimates for the forced choice task.....	168
Table 62 Main study sentence repetition task pre- and post-test descriptive statistics.	173

Table 63 Main study sentence repetition paired sample t-test for the groups' total scores in the pre-test and post-test .....	174
Table 64 Main study sentence repetition task paired sample t-test on the pre- & post-test categories.....	174
Table 65 Main study sentence repetition task paired sample t-test on the post-test & delayed post-test categories .....	175
Table 66 Main study regression estimates for sentence repetition task.....	177
Table 67 Main study written task Wilcoxon test for the groups' total scores in the pre-test and post-test.....	182
Table 68 Main study written task post-test Mann-Whitney between the three groups of second language learners .....	183
Table 69 Main study written task pre-& post-test Chi-square test on the first generic question .....	184
Table 70 Main study written task pre-& post-test Chi-square test on the second generic question .....	184
Table 71 Main study written task pre-& post-test Chi-square test on the <i>first</i> [-definite] with RC question.....	186
Table 72 Main study written task pre-& post-test Chi-square test on the <i>second</i> [-definite] with RC question .....	186
Table 73 Conditions on the type of targeted knowledge as achieved by the instruction groups.....	201

## List of figures

Figure 1 Interaction between language interfaces (taken from White, 2010, p.40).....	18
Figure 2 Cline of difficulty in grammatical feature acquisition from easier to harder (taken from Slabakova, 2009, p.321) .....	25
Figure 3 The ACP revised version (taken from Ionin et al, 2009, p.339).....	41
Figure 4 A difficulty cline based on a contrastive analysis of features on the acquisition of English articles by L1 Najdi Arabic speakers .....	74
Figure 5 A diagram showing the three “interface” positions on L2 knowledge in SLA (taken from Ellis, 1993, p.96).....	81
Figure 6 MOGUL architecture (Taken from Truscott, 2015, p. 7) .....	87
Figure 7 Comparison of group marks on test categories.....	115
Figure 8 Main study forced choice task pre-test mean scores .....	145
Figure 9 Main study forced choice task Implicit Instruction Group normal Q-Q plot .	146
Figure 10 Main study forced choice task Explicit Instruction Group normal Q-Q plot	146
Figure 11 Main study forced choice task Uninstructed control Group normal Q-Q plot .....	146
Figure 12 Main study forced choice task Native English speakers normal Q-Q plot...	147
Figure 13 Main study sentence repetition task pre-test mean scores .....	149
Figure 14 Main study forced choice task pre- and post-tests mean scores .....	160
Figure 15 Forced choice task interaction between time & group [+generic] [+plural]	170
Figure 16 Forced choice interaction between time & group [+generic] [-plural].....	170
Figure 17 Main study sentence repetition task pre- and post-test descriptive statistics	173
Figure 18 sentence repetition task interaction between time & group [+generic] [-plural] .....	179

## List of Abbreviations

ACP	Article Choice Parameter
-ART	Article-less
+ART	With articles
APT	Acquisition by Processing Theory
DP	Determiner Phrase
ESK	Explicitly Stated Knowledge
FH	Fluctuation Hypothesis
FT/FA	Full Transfer/ Full Access
GenSLA	Generative Second Language Acquisition
ILG	Interlanguage grammar
LAD	Language Acquisition Device
LF	Logical Form
L1	First Language
L2	Second Language
MTELP	Michigan Test of English Language Proficiency
MOGUL	Modular On-line Growth and Use of Language
NP	Noun Phrase
OQPT	Oxford Quick Placement Test
PF	Phonetic Form
POS	Poverty of Stimulus
P&P	Principles and Parameters
RC	Relative Clause
SLA	Second Language Acquisition
UG	Universal Grammar
VP	Verb Phrase

# Chapter 1: Introduction

## 1.1. Applied Generative Second Language Acquisition: from theory to practice

The generative theory of first language (L1) acquisition assumes that principles of language are *innate*, named Universal Grammar (UG), allowing children to acquire the complex structure of language despite the simple input they receive (Chomsky, 1959, 1981, 1995, 2001). The core concepts of the generative theory were followed in studying second language (L2) acquisition resulting in a line of research named Generative Second Language Acquisition (henceforth GenSLA). GenSLA studies started out as a theory-driven framework concerned with questions on how UG plays a role in L2 acquisition and the role of L1 in the acquisition process (Clahsen & Muysken, 1986; Flynn, 1987; White, 1985).

Over the course of 25 years, research in GenSLA investigated the relationship between UG, L1 and L2 acquisition offering fine investigations of language structures on concepts such as principles and parameters, feature variability and interface difficulties (White, 2012). Yet those findings were not easily delivered to benefit language pedagogy. The “applied” part of the title of this section is borrowed from Whong (2013) referring to recent calls that inspired the current project to “apply” GenSLA findings to the language classroom.

GenSLA studies witnessed very few early attempts by some researchers such as White (1991) and Trahey & White (1993) to directly investigate the effect of input and L1 transfer on learnability as a result of direct instruction. We also find a few recent attempts at reaching pedagogical findings by some GenSLA researchers such as Rothman’s (2008) study on the role of learned pedagogical rules in L2 “deviant performance” and Slabakova’s (2008) insights on the linguistic properties of “functional morphology” that need a lot of practice in the language classroom while other linguistic properties that are part of semantic universals should come to learners for free. But only recently do we find the call for GenSLA researchers to clearly explore their findings in the classroom because generative research in second language acquisition has much to offer language teaching (Whong, 2011).

Slabakova, Leal, & Liskin-Gasparro (2015) acknowledge that the focus of GenSLA has been mainly on adult L2 acquisition, linguistic representations and processing without much focus on pedagogical applications. While GenSLA research has resulted in significant findings on acquisition difficulties and definitions of how UG operates in L2, Whong (2011) states that “the Chomskyan ‘revolution’ did not, in fact, see a concomitant revolution in language classrooms” (p.143). Bruhn de Garavito (2013) notes that developments in language pedagogy led to focus on “communicative competence” as a goal for language teaching rather than “linguistic competence” which led to a “gap” in the theoretical foundations of the field. Much of the work on the acquisition of grammatical principles was conducted by GenSLA researchers who didn’t translate their findings on the acquisition of grammatical principles to useful applications in pedagogy.

In 2013, Whong, Gil & Marsden (2013) edited a ground-breaking volume that challenged the traditional separation of generative views from instruction with the bold title “*Universal Grammar and the Language Classroom*” featuring many articles by GenSLA researchers who attempted to explore some pedagogical applications of their findings. Whong (2013) suggests that GenSLA researchers can communicate their findings to language teachers by individual empirical research or meta-analyses that provide insights on what linguistic phenomenon *can* and *can’t* be acquired, what linguistic phenomenon *can* and *can’t* be learned and how L1 affects L2 development. Bruhn de Garavito (2013) agrees that the dialogue between GenSLA and language pedagogy can begin with “learnability” and the two related factors: “the nature of the input the learner receives and transfer from the first language.” (p.19).

In accordance with these suggestions and this new pedagogically-oriented GenSLA line of research, this project investigated the acquisition of English articles by L1 Najdi Arabic speakers. The aim is to use descriptions and findings from GenSLA research on the linguistic properties of *articles* to provide the ‘content of instruction’ that can be applied in the classroom. This content is different from any pedagogical syllabi because it is an applied GenSLA study that takes into consideration findings on: a) what can and can’t be acquired b) the nature of the input provided and c) how the L1 (in this case Najdi Arabic) will affect the acquisition of English articles.

The current project looked at the findings of GenSLA on the acquisition of English articles in the series of studies by Tania Ionin and her colleagues (Ionin, 2003;

Ionin, Ko, & Wexler, 2004; Ionin & Montrul, 2009; 2010; Ionin et al, 2011) and Roger Hawkins and his colleagues (Almahboob, 2009; Hawkins et al, 2006; Snape, 2006; Sarko, 2009a, 2009b). Cross-linguistic description of the features related to articles in L1 Najdi Arabic and L2 English such as definiteness, specificity and genericity were explored by looking at linguistic differences and consulting Arabic-English GenSLA studies (Azaz, 2014; Almahboob, 2009; Sarko, 2009a, 2009b). The expected acquisition difficulties related to form-meaning mappings were anticipated following a contrastive analysis of features (Lardiere, 2009; Slabakova, 2009) which builds on GenSLA theories of Full transfer/ Full access (Schwartz & Sprouse, 1996) Feature assembly (Lardiere, 2008) and the Bottleneck Hypothesis (Slabakova, 2008). This information and predictions based on GenSLA theories and descriptions were used to design an instructional treatment using two types of classroom input to investigate the interaction between input and the targeted problematic features in the language classroom.

To define how input would be used in the classroom, this study adopted the “Modular On-line Growth and Use of Language” (MOGUL) (Truscott & Sharwood Smith, 2004) which brings together psycholinguistic and generative views as suggested by Whong (2007, 2011). The MOGUL framework defines how instruction could be provided in the classroom to reinforce modular and non-modular knowledge. The premise is that linguistic items that learners acquire naturally are part of the modular store while instructional input can help in making learned items part of the non-modular store with the possibility of “metafluency” as those items can develop to be automatic and effortless.

GenSLA studies by Ionin (2003) and Ionin, Ko & Wexler’s (2004) defined the difficulties in the acquisition of English articles by learners from languages that do not have articles “article-less” (-ART) as substitution errors following a semantic Article Choice Parameter (ACP) and a Fluctuation Hypothesis (FH). This parameter suggests fluctuation between two values on the basis of “definiteness” in languages like English or “specificity” in languages like Samoan. More investigations (e.g. Garcia Mayo, 2009; Hawkins et al, 2006; Sarko, 2009; Snape, 2006 among many others) looked at learners of English from languages that have articles (+ART) and found less fluctuation than learners from -ART languages with an added effect from L1 transfer.

Another feature that was found to affect article acquisition errors was generic interpretation where languages like English lexicalize [definiteness] only and languages

like Spanish and Arabic lexicalize [definiteness] and [kind reference]. Ionin & Montrul (2009) found that learners from -ART languages show a pattern that can be explained as UG access to two possibilities as they go through a developmental stage in acquisition. Learners from +ART languages show more difficulties as L1 transfer plays a role in the acquisition process (e.g. Ionin & Montrul, 2010; Ionin et al, 2011).

When looking at the results of those GenSLA studies we find new and interesting pedagogical applications that can be of benefit to the language classroom. These detailed linguistic analyses of English articles and their related features suggest that instruction should aim at the properties that are problematic for the targeted L1 learners. Researchers confirm that English language textbooks<sup>1</sup> usually focus on descriptions of the [definiteness] features of articles but not on [specificity] in addition to very little or no description of the generic interpretation of articles at sentence or NP level (Ionin et al, 2011; Pica, 1983; Snape & Yusa, 2013). On the other hand, GenSLA studies predict that the different mappings of those features between languages are -in fact- the main source of acquisition difficulties and may not be inferred through positive input alone because they require complex disentangling of L1 features and re-assembly of different L2 mappings (Lardiere, 2008; 2009; Slabakova, 2008, 2009). This means that there is a *gap* in the traditional instructional material addressing English article use that could benefit from the descriptions offered by GenSLA research.

Snape & Yusa (2013) conducted one of the first studies using instruction based on generative descriptions of the acquisition of English articles on L1 Japanese learners of English. They provided instruction on definiteness, specificity and genericity. Recent findings by researchers on English-Arabic form-meaning mappings of articles such as Azaz (2014) and Sabir (2015) called for offering explicit instruction in the classroom on the semantic features of articles. Although the results of those studies were inconclusive, they opened the door -in my opinion- for testing what could be named ‘GenSLA-based instruction’ in the classroom which is the aim of the current work.

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<sup>1</sup> For the purpose of this research a detailed survey of the textbooks used with the targeted population of this study will be included in chapter 4 to confirm these claims.

## **1.2. Goals of this thesis**

The main goal of this thesis is to investigate the application of GenSLA findings in the language classroom. The targeted findings are those related to the universal semantic features of English articles when acquired by L1 Najdi Arabic learners. The thesis has also three specific goals to achieve in relation to the main goal. The first specific goal is to provide a cross-linguistic analysis of definiteness, specificity and genericity between English and L1 Najdi Arabic to predict acquisition difficulties following a contrastive analysis of features. The second specific goal is to use those findings from GenSLA research to provide the ‘content’ of instruction that would enable learners to accelerate the feature assembly process and recover from L1 transfer showing development in their interlanguage grammar (ILG). Finally, the third specific goal is to define how the instruction should be carried out in the classroom by testing two types of input one with an explicit approach and another with an implicitly reinforced approach.

The empirical data for this thesis comes from two studies: a) a pilot study on the acquisition of articles by L1 Najdi Arabic speakers using an elicitation task, and b) an experimental study on three groups of the same targeted population learning English. The pilot study was conducted first to investigate the acquisition of English articles by L1 Najdi Arabic speakers to gather information for the cross-linguistic analysis of the two languages. The information from the pilot study along with the review of previous research on the acquisition of English articles provided the content of instruction to the main experimental study. The main study involved three instruments: an elicitation task, a sentence repetition task and a written production task and provided the groups with two types of input with pre-tests and post-tests and delayed post-tests.

After defining the universal semantic features that are expressed by articles in some languages, the current study started out with a pilot investigation and a review of studies on the acquisition of English articles focusing on L1 Arabic speakers (Almahboob, 2009; Awad, 2011; Azaz, 2014; Sarko, 2009a, 2009b). Accordingly, a proposed difficulty cline was suggested based on the cross-linguistic comparisons and a contrastive analysis of features (Lardiere, 2008, 2009; Slabakova, 2008; 2009) arranging the features related to articles from those that are predicted to be easier to acquire because: a) they require simple mapping and b) they are available to learners through ample evidence in the input to those that are predicted to be harder because: a)

they involve more complex feature-reassembly and, b) they are less evident in the input. The difficulties were expected with the feature combination [-definite], [+generic], [ $\pm$ plural]. In addition, difficulties are expected in [-definite] [ $\pm$ plural] contexts with relative clause modification because of syntactic restrictions in L1 Najdi Arabic.

As suggested by Whong (2007, 2011), “genre analysis” (Swales, 1990) was used with authentic texts and reinforced with the target linguistic structures to provide natural meaningful input. To explore different types of input, another treatment used “genre analysis” with the added explicit “focus on form” (Long, 1990) on the target structures. Accordingly, there were two experimental groups: a) a group that received implicit instruction through implicitly reinforced texts and b) a group that received explicit instruction with implicitly reinforced texts. A third uninstructed control group was included in the study for comparison. Then the effect of the classroom intervention was tested by comparing the pre-tests, post-tests and delayed post-tests of the three groups.

The findings show evidence on Full transfer/Full access in addition to the expected difficulties as predicted by the difficulty cline. As to the instruction, both explicit and implicit treatments resulted in significant improvement not found with the uninstructed control. Moreover, explicit instruction resulted in significant improvement on the accuracy in using target articles with the [+generic] [ $\pm$ plural] features and some advantage with the syntactic difficulty involving relative clause. The improvement was found to hold on the long term and help in accelerating the process when compared to slower improvement found with the other two groups.

Therefore, this study suggests that the explicit instruction on the problematic contexts following an analytic focus on form on reinforced authentic texts is the type of instruction that is recommended to accelerate the re-assembly process and recovery from L1 transfer to develop the targeted L2 knowledge.

Accordingly, the findings of this thesis are relevant to many areas of research. First, it is relevant to the growing body of GenSLA research on the acquisition of English articles by speakers from different L1 Arabic backgrounds offering an additional perspective on L1 Najdi Arabic. Second, it is a contribution to pedagogical classroom research by offering a clear and detailed instructional plan for teaching the problematic properties of English articles. Finally, it is a contribution to the new *applied* GenSLA body of research aiming at bridging the gap between theory and practice.

### **1.3. Organization of the thesis**

The thesis begins with a literature review in (chapter 2) outlining the generative theoretical background on language acquisition adopted by this study. The chapter starts with definitions of the generative linguistic theory on first language acquisition and the related concepts of innateness and modularity and the recent minimalist developments. The rest of the chapter provides a description of GenSLA research investigating the core concepts of the generative theory in second language acquisition. The first part offers a timeline tracing the development of concepts of UG, parameters, and features over the course of 25 years to reach the recent definitions used in this current project. The second part reviews GenSLA hypotheses on acquisition difficulties suggesting the contrastive analysis of features between L1 & L2 (Lardiere, 2008, 2009; Slabakova, 2008, 2009) which is adopted in this study.

Chapter 3 is entitled “The acquisition of English articles” and starts with a review of studies on the acquisition of English articles by speakers from different L1 backgrounds. Then a review of studies on the acquisition of English articles by L1 Arabic speakers is outlined after a section defining the cross-linguistic variation between English and Arabic (including Najdi Arabic) article systems and the DP. The chapter ends with a summary of findings from GenSLA studies on the acquisition of English articles by L1 Najdi Arabic speakers. Those findings were used to outline the predicted difficulties in the acquisition process in a proposed ‘difficulty cline’ to be used to guide the content of instruction targeting the difficult properties.

Chapter 4 offers a review of the contribution of SLA research to instruction and the concepts that received attention and debate such as input, consciousness, and L2 knowledge. This is followed by a review of empirical instructional research in general and research that targeted the instruction of English articles in particular. The chapter ends with an instructional framework for this study building on language processing models and a generative view.

The methodology is detailed in chapter 5 which starts with reporting the pilot study of this project and how the results affected the design of the main study. The five research questions of the main study are presented. Then the chapter details the methodology of the main experimental study including the participants, procedure, instruments and instructional material.

The results of the main experiment are presented in chapter 6. The chapter starts with pre-intervention results analysed using descriptive statistics, inferential statistics and individual analyses for each of the three instruments. Then post-intervention statistical analyses are then presented on each of the three instruments.

Chapter 7 presents the discussion of the findings of the main experiment starting with a summary of results answering the five research questions. This is followed by a discussion of findings in relation to GenSLA theories, the language processing framework, instruction and tasks. The chapter ends with a description of the shortcomings of the main study and directions for future research.

## **Chapter 2: Generative Second Language Acquisition Research**

### **2.1. Generative linguistics: A background**

The following sections will describe the theoretical framework adopted by this study which is the generative view of language. Some related concepts must be defined first to give a clear picture of this theoretical background and the related terminology used throughout the thesis.

#### **2.1.1. The generative theory on language**

The late fifties witnessed the birth of the influential ideas of Noam Chomsky (1959) on language which adopted a biological view of language departing from structuralist and behavioural approaches to human mental activities. In this view, language is seen as a biologically determined human property and an innate ability which is part of the capacity of the mind named the Language Acquisition Device (LAD). The Chomskyan approach views language grammar as an internal system of knowledge that is operated by principles universal to all languages, termed UG. The arguments are based on observations on L1 acquisition by children whereby children acquire complex linguistic knowledge from simple linguistic stimuli producing an infinite number of sentences including those they never heard before. Chomsky (1981) proposed the Poverty Of Stimulus (POS) theory building on the observations on the “learnability problem” or the “logical problem of acquisition” which is the gap between the stimuli and the resulting complex linguistic knowledge. POS assumes that humans have an innate capacity that provides the missing information from the external stimulus resulting in the rich structured phenomenon we know as human language.

#### **2.1.2. Innate knowledge**

The initial ideas of Chomsky were influenced by structuralism in dividing up the language into its basic components of phonology, morphology and syntax but the approach is strikingly different from the earlier approaches that dictate how speakers should use the language to a description of how native speakers used their language naturally (Carnie, 2002). This entails the fact that native speakers know about language what they can't describe and that they would know which structures are possible in their language without knowing *why*. This is explained as native speakers having subconscious knowledge of their language rather than conscious knowledge. This is

clearly manifested when looking at structural ambiguity, all native speakers for example would know that a sentence like “She loves me more than you” has two interpretations: “more than she loves you”, or “more than you love me” which means all native speakers know how to interpret, i.e. assign different meanings to structures (Radford, 2009. P.11). However, when asked explicitly, native speakers might not know how to give details on grammatical constraints and rules of their language so easily. Chomsky (1965) distinguished between *linguistic competence* which is the innate knowledge or linguistic capacity and *linguistic performance* which is the actual act of speech.

### **2.1.3. Modularity**

The basic idea behind “modularity” is that the human brain is organized in different modules serving different functions one of which is “language”. Noam Chomsky’s influential theory established that human language is a function of an independent “innate module” and this concept of modularity was further explored by Jerry Fodor (1983) in his work “*Modularity of Mind: An Essay on Faculty Psychology*” arguing that the mind is made up of a number of input systems constituting different modules. One of the most prominent accounts of modularity within a Chomskyan tradition is Jackendoff’s (2002) “parallel architecture”. In contrast to Fodor’s view of language as an input system, Jackendoff holds a processing view of the language module with independent syntactic, phonological and conceptual modules connected to one another and other modules through “interface processors”. Identifying the individual modules of the mind is still a challenge to theorists and researchers. This detailed account of modularity had a great influence on theory and debate on the status of language in the mind and the difference between first and second language acquisition and access to UG (Truscott, 2015).

### **2.1.4. Generative transformational grammar: Early rules**

The generative school defines grammar as the finite set of rules that enables humans to generate infinite numbers of sentences that are all grammatical. In generative transformational grammar; *syntax* is the main generative component. Early theories started out with ‘phrase structure rules’ of basic syntactic categories and constituents, and the ‘transformations’ from one deep level of structure to a surface structure within what was named the *Standard Theory*. Early phrase structure grammar defined five phrases in the language:

S (sentence)  
NP (Noun Phrase)  
VP (Verb Phrase)  
PP (Prepositional Phrase)  
AP (Adjective Phrase)

One of the basic phrase structure rules of an English basic (or *kernel*) sentence is that it consists of an NP followed by a VP (S: NP VP). More descriptions of other categories were needed like for example “Determiners” (D) that appear in NPs and they include: articles, demonstratives, possessives and quantifiers. Phrase structure rules looked at the possible combinations of phrases as shown in the following possible examples of an NP (example 2). Note that the third combination isn’t possible in English and as such we have a rule that states: “when an NP contains a D the D must precede the N” (Radford, 1988).

Children  
The children  
\*Children the.

The generative grammar theory kept evolving and undergoing many changes and developments. The concept of Principles and Parameters (P&P) was introduced by Chomsky within what was called the Government and Binding Theory (1981). “Principles”: mean the universal and invariant properties of grammatical constructions, and “Parameters”: the specifications of the possible variations in the grammar of each language. The P&P theory provided the basic architecture for investigating how children acquire their first language. In this context, UG is defined as the set of principles common to all languages and those principles may include parameters that represent the variations among languages (Baker, 2002). Using the P&P approach to explain the syntax of a language will always have to provide proof by evidence from other languages. Also, there has to be a small number of possible parametric variations of a given principle. Parameters are supposed to be restricted by UG to allow a child to set the value of the parameter from a limited set of possibilities after receiving evidence from the linguistic input. Accordingly, research in this framework sought to answer questions on the principles that are part of UG and the possible parameter values in different languages.

This realization that an adequate description of syntax within UG requires studying different languages inspired investigations into parameters and cross-linguistic

parametric differences. An example of this kind of investigation is studying the principle that states that “a sentence must have a subject” as in English (S: NP VP). In order for this principle to be universal and part of UG it should apply to all languages even if the subject is not *overtly* pronounced. A proposed parameter is the *Pro-drop parameter* (Chomsky, 1981) which was investigated by generative researchers in different languages like Rizzi (1982) on Italian, Borer (1983) on Semitic and Romance, and Jaeggli (1982) on Spanish among many others. This parameter classifies languages like Spanish and Italian as languages that have a positive setting of the parameter allowing the subject to be “null”. Other languages like English and French require explicit subjects and as such are not considered Pro-drop languages. Languages that are considered Pro-drop also have properties that are related to this parameter like the ability to omit subject pronouns and free inversion of subject and verb. The aim of such investigations was to reach “explanatory adequacy” of the universal notion of natural language by putting together a restrictive set of principles and parametric variation.

### **2.1.5. Recent developments in generative linguistics**

The initial generative ideas have been further refined with the minimalist programme introduced by Chomsky (1995). A core concept that took on a new perspective is that UG has different linguistic levels expressed by two core components; the lexicon and a computational system. The computational system chooses items from the lexicon and builds a structure that has several stages. As such, minimalism *reduced* the description of language to the essentials of sound and meaning proposing the phonetic form (PF) and logical form (LF) as being the “interfaces” that interface with external cognitive systems (Chomsky, 1981; 1995; Hawkins, 2001; Radford, 2004, 2009; White, 2003a).

Jackendoff (1997, 2002) as explained earlier in (2.1.3) offered a new generative model where “syntax” is not the main generative component but syntax, semantics and phonology are all *generative* connected through *interface components*. Jackendoff brought together the two main approaches to linguistic studies *generative* and *cognitive* with his ideas that assumes an innate UG and at the same time looks at explanations of the human mind and cognition.

The generative theory of first language acquisition as summarised briefly in the previous sections was adopted by many linguistic researchers such as Schwartz (1986) Sorace, (1986) and White (1985) as a theory that offers the best perspective to understand *second* language acquisition. These investigations in the 1980s marked the start of a generative approach to Second Language Acquisition (Lightbown & Spada, 2006) as will be detailed in the following section.

## **2.2. Generative Second Language Acquisition (GenSLA)**

Second Language Acquisition (SLA) is a field of research and theorization that embodies different approaches and perspectives on human language abilities (Doughty & Long, 2003). The generative approach is one of the three main influencing approaches to SLA research along with interactionist and emergentist approaches (Norris & Ortega, 2003).

GenSLA researchers do not necessarily assume that L1 & L2 acquisition are similar but that L2 learners face a task that is similar to L1 acquisition described by White (1985) as the task of “inducing grammar on the basis of data.” (p.48). The assumption is that when exposed to linguistic input, L2 learners acquire the “grammar” of the target language as they go through developmental stages and the grammar of the language they produce is named the “interlanguage grammar” ILG. The ILG shows evidence of innate knowledge similar to children and at the same time it shows the effect of the already fully developed L1. As such, the main concepts of generative theory such as access to UG, learnability, POS and P&P along with the effect of L1 transfer were the concepts investigated by GenSLA researchers in second language acquisition. Researchers agreed on the basic principles of the generative theory but they had differences in interpreting the details of the acquisition process. To describe which specific view is adopted by this study I need to give a brief background on the development of different concepts.

## **2.2.1. Development of perspectives in GenSLA research**

### **2.2.1.1. The UG Access debate**

One key question for GenSLA researchers was if the *competence* that underlies the performance of advanced second language learners is similar to the competence of native speakers. At the core of this concept, is the idea of *access* to UG during the acquisition of a second language since learners have already set their first language parameters (Lightbown & Spada, 2006).

Generative acquisitionists tried to specify how UG is accessible to L2 learners, hence, the “UG access” or “initial state” of L2 acquisition debate. On one side there is the “no access” position taken by Bley-Vroman (1990) and others which assumes that the acquisition of L1 and L2 are “fundamentally” different processes and that learners have no access to UG in SLA. Other views assume access to UG but vary in theorizing on the limits of this access and the role of L1 transfer. On one hand, some researchers assume direct access to UG without being affected by L1 i.e. no transfer (e.g. Cook, 1991) while others proposed partial transfer of L1 with either full or partial access to UG. Two other views propose full transfer of L1 grammar but disagree on partial or full access to UG. Proponents of a Full transfer/ partial access to UG assume that learners either fail to re-set parameters or fail to acquire specific features of the second language (Hawkins & Chan. 1997).

Finally, one of the most influential proposals in the UG access debate and the one adopted by this study is Schwartz & Sprouse’s (1994, 1996) Full transfer/Full access Hypothesis (FT/FA) which claims that L1 grammar constitutes the initial state in L2 acquisition but that language learners could acquire categories and features of L2 grammar that is not in their L1 through full access to UG. The theory describes “Full Transfer” as the transfer of the entire L1 grammar with abstract features and functional categories (but not lexical items) at the initial state in L2 acquisition. “Full access” on the other hand, means that learners of a second language still have access to UG i.e. the innate language capacity. This means that learners transfer L1 grammar and when L1 grammar fails to structure L2 then restructuring of knowledge happens by accessing UG. The result of this process is the ILG which may not be target-like but is still UG constrained.

### 2.2.1.2. Investigating “parameters” in SLA

As explained above in (2.1.4), the P&P framework of generative grammar theory defines parameters as the limited sets of options or settings that allow for cross-linguistic variation. They have been investigated by linguists on different languages to try to find universal patterns. Those parametric differences between grammars of different languages have been associated with *functional* categories of the language (complementisers, inflection, tense, determiners and so on). Those functional categories and the *features* associated with them (number, gender, case...) are considered to be part of the “UG inventory” (White, 2003a). This concept of parametric variation received much attention in the 1980s as a starting point for studying L2 acquisition (e.g. Flynn, 1983; White, 1985). In first language acquisition, the “setting” of those parameters is automatically triggered by input reducing acquisition difficulty. On the other hand, learners of a second language will be in the situation where they have already set their L1 parameter when the target language has a different setting which led to investigating the process of “re-setting” UG parameters in SLA. The idea of UG availability in SLA, similar to the POS in L1 acquisition, was based on learnability arguments that found gaps between L2 input and the knowledge attained by L2 learners (White, 2012).

One early example of GenSLA research on parametric variation is White’s (1985) study on the “Pro-drop parameter”. She investigated the effect of L1 transfer on the Pro-drop parameter when L1 Spanish speakers acquire English based on the Spanish language properties of subject omission and free inversion as described in Jaeggli’s (1982) study. White’s study used a “grammaticality judgment task” which is an instrument used by many GenSLA researchers to investigate the underlying competence of L2 learners rather than just observations of performance (Lightbown & Spada, 2006). The results showed that L1 Spanish learners of English did accept the ungrammatical English sentences with “null subjects” while L1 French controls didn’t. However, no differences were found in the other two properties of the parameter. The study concluded that the properties of the “Pro-drop” parameter didn’t “cluster” together and some improvement was found as L2 proficiency levels increased.

Research into parametric differences has found that all cross-linguistic differences was found in functional categories and viewed as a set of functional features which meant that parameter setting was a process of selecting and assembling “features”

into lexical items (Lardiere, 2009). Accordingly, the initial interest in studying parametric variations shifted in the 1990s to defining and investigating *features* (White, 2010, 2012).

### 2.2.1.3. Investigating “features” in SLA

In Chomsky’s (1995) Minimalist development of the generative theory, “features” and feature combinations were proposed to have a central role in a) defining the content of functional categories and b) defining the syntactic operations of Merge, Agree and Move. Taking the English DP as an example, the “bundles of features” such as (Gender, Person, and Definiteness) define the content of the functional category DP, and then each language makes a selection from the set of features and different combinations of features. The operation “Merge” combines lexical items with the features of the head Determiner defining the morphosyntactic characteristics of the NP complement and the operation “Agree” would use features for syntactic agreement between the DP subject and the head of the IP (Liceras, Zobl, & Goodluck, 2008). When studying cross-linguistic differences between languages the proposal is that they differ in how functional categories are realized. As an example -ART languages like Japanese are proposed to lack the category D altogether and the combination of features related to those functional categories can also vary significantly from one language to the other (White, 2003a).

“Features” were described as being the “heart of recent Chomskyan syntactic theory” and as such “any study of language acquisition done within this framework is now a study of the acquisition of features.” (Travis, 2008, p.22). Following this development in generative theory, GenSLA research shifted to a more detailed description of universal “features” that are available in UG. In this context, generative definitions of features looked at “feature strength” and “feature interpretability”. For example, the strength of a feature was defined as a source of variation causing movement and word order differences. The DP for example would have a functional category (Num) between D and NP that has number and gender features. With Romance languages the Num features are strong causing the N to raise and the word order to be (N Adj) while in languages like English the features are weak and the N doesn’t raise causing the word order (Adj N) (White, 2003a). Features were also classified as being “interpretable” or “uninterpretable” whereby interpretable features include those that are relevant for *semantic* interpretation such as topic, focus and uninterpretable features

those that do not require semantic interpretation such as agreement and case (Adger, 2003).

Many hypotheses were proposed on learnability issues related to features with many different views. On one side, some researchers assume features are present in the grammar but learners face difficulties in associating features with morphology as a result of a mapping problem (Lardiere, 1998) or a missing surface phenomenon explained in Prevost & White's (2000) Missing Surface Hypothesis (MSIH) where features are available on an abstract level but missing in surface morphology. On the other side, some theories propose permanent problems with the *representation* of features when L1 and L2 are different (and as such partial access to the UG feature inventory) such as the Failed Functional Features Hypothesis (FFFH) (Hawkins & Chan, 1997) and the Interpretability Hypothesis (Tsimpli and Dimitrakopoulou 2007).

The concept of features and feature acquisition difficulties still needed more precise description and was further developed in subsequent generative work (Chomsky, 2001; Radford, 2004) as the division of features into [+interpretable] and [-interpretable] sets was abandoned. All features are suggested to have some *semantic* value and are realized by syntactic operations. Following a Minimalist approach and adopting a FT/FA view, Lardiere (2008) pursued the feature mapping proposal suggesting a "Feature Reassembly Hypothesis" shifting away from parametric resetting and interpretable/uninterpretable features to a framework that looks at how learners organize features in the acquisition task in a two-step process of feature- selection then feature-assembly. This account of feature difficulties by Lardiere was in my opinion the first step in reaching a clear explanation of second language acquisition difficulties. The focus in many GenSLA studies became on the question of whether all features are equally accessible to explain the persistent difficulty second language learners face with some features (Liceras, Zobl, & Goodluck, 2008).

Ionin's (2003) thesis and Ionin, Ko & Wexler's (2004) study are considered seminal work in providing a feature-based account of article choice in L2 English by looking at the features that are related to DP and proposing "parametrization" based on the contrast between the semantic features "Definiteness" and "Specificity" with languages organizing the article system around the [ $\pm$ definite] contrast like English or the [ $\pm$ specific] contrast like Samoan. Ionin, Ko & Wexler (2008) state that although Definiteness and Specificity are "interpretable" features that should be accessible to

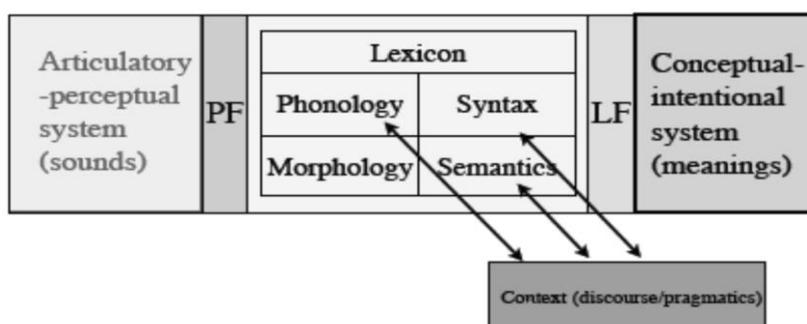
adult learners following the earlier “interpretability” accounts, the results of their studies suggest a learnability problem which led them to reject an “interpretability” account of features and agree with Lardiere’s (2008) proposal on the difficulty in associating article contrast to the appropriate feature.

As shown in Ionin, Ko & Wexler’s (2004) study, article features are considered “semantic” features of the DP but further descriptions also define them as “discourse-related” features (Montrul, 2011). This definition of features in many GenSLA studies as relating to different areas of grammar and the interfaces between them resulted in an interesting line of research investigating “interfaces”. Many studies targeted new descriptions of features as relating to external or internal interfaces as will be explained in the following section.

#### 2.2.1.4. Investigating “interfaces” in SLA

To recap what has been said so far, the results of most studies on feature difficulties lead to conclusions that *certain* features were problematic in adult SLA but the difficulties were not linked to interpretability or strength. The descriptions of features in most studies related them to some interface properties which suggested a mapping problem between different areas of the grammar. GenSLA studies started studying the interfaces between modules of grammar and other cognitive domains (White, 2012). As explained earlier, generative linguistic investigations by Jackendoff (1997, 2002, 2007) and also Reinhart (2006) looked into the concept of how components of the grammar interact with each other at “interfaces” which are divided into grammar-internal and external (as illustrated in Figure 1 below). This concept was mirrored in GenSLA research as studies started to define features and how they relate to a certain interface.

Figure 1 Interaction between language interfaces (taken from White, 2010, p.40)



A proposal that received much attention in GenSLA research was the “Interface Hypothesis” (Tsimpili & Sorace, 2006) which related difficulties to external interfaces of linguistic domains. According to the hypothesis, features that require mapping between external interfaces such as syntax/discourse will cause persistent difficulties while features that require mapping between internal interfaces such as syntax/semantics are not. Studies on “topic” at the discourse interface (e.g. Belletti et al, 2007) supported the interface hypothesis by showing difficulties in acquisition. Other studies on the internal syntax/semantics interface (e.g. Dekydtspotter et al, 2001) also support the hypothesis by showing that learners acquired very subtle features at this internal interface.

However, more studies on the Interface Hypothesis led to the conclusion that not all linguistic phenomena at a certain interface were problematic. White (2011) describes that “Neither versions of Interface Hypothesis, as originally formulated, works for the range of data that we have examined.” (p.587). She added that the sources of difficulty found at the interfaces could be explained as “non-native grammatical representations” or “non-native processing” but could also include multiple explanations caused by different sources or levels of proficiency. Montrul (2011) adds that the distinction between interfaces is not “a straightforward task” (p.602) as some linguistic phenomenon such as the semantic interpretation of “articles” as definite or indefinite also depends on discourse questioning the usefulness of the distinction between internal and external interfaces.

The aim of the previous section was to give an overview of the development of concepts in GenSLA research. The following section will specify the theories that this study adopted to explain acquisition difficulties in general and the acquisition of articles in particular.

## **2.2.2. GenSLA theories on acquisition**

### **2.2.2.1. Starting from L1 transfer**

As mentioned above, studies on the disassociation at the internal syntax/morphology interface (e.g. Lardiere, 1998) and the phonology/morphology interface (e.g. Goad & White, 2006) did not support the Interface Hypothesis. A more logical explanation in my opinion is the “Bottleneck Hypothesis” proposed by Slabakova (2008) suggesting that “functional morphology” is the “bottleneck” of L2 acquisition while the acquisition of syntax and semantics is not problematic. To predict and expect those acquisition difficulties in functional morphology, research has to

account for differences between L1 and L2 “features” in what Lardiere (2009) named the “contrastive analysis of features”.

It must be noted here, that L1 transfer has been treated initially with caution because of the previously abandoned “behaviourist” contrastive analysis of L1 and L2. The effect of L1 on L2 acquisition was in the heart of early behaviourist approaches with the Contrastive Analysis Hypothesis CAH by Lado (1957) suggesting that languages should be described and compared using structural linguistics “pattern by pattern”. The premise is that all errors result from interference of L1, as such; acquisition will be easy when languages are similar and difficult when they are not. Those ideas from the CAH were criticised and abandoned because they were extreme and much evidence was found contradicting its claims as learners from different L1 backgrounds produced similar errors and much evidence was found on the easy acquisition of structures that were different between L1 and L2 (Gass & Selinker, 2008).

On the other side, the role of L1 within a generative theory was proposed by the FT/FA as constituting the “initial” state of acquiring L2 which is constrained by UG. Under this view, some areas of language may not reach native-like accuracy because of L1 transfer on some properties which may also interact with many factors such as insufficient data in the input. The “unlearning” of some L1 properties may be difficult leading to fossilisation at some point without reaching native-like competence (White, 2000). Lardiere (2009) highlighted the need for a contrastive analysis of L1 and L2 to define those properties while “Putting aside the ‘behaviourist’ baggage associated with early contrastive approaches” (p. 219)

The question that faced GenSLA researchers was a question on which properties of language should be the subject of comparison in such a contrastive analysis? GenSLA research started out with comparing parameters and parametric differences between languages but fell short in describing clear sets of parameters. Then, “features” were suggested as being the basic units for comparing properties of L1 and L2 because they were “... the most basic formal unit or ‘common denominator’ between linguistic categories” (Lardiere, 2009, p.220). While agreeing with Lardiere, Slabakova (2009) expressed concern on losing the “deductive and explanatory power” of a parameter approach suggesting investigating “constraints” on feature re-assembly.

Accordingly, when looking at the acquisition of English articles, the FT/FA predicts that learners may be able to acquire target-like use of articles given enough

*input* and *time* but the existence of L1 grammar could prevent full convergence on some properties even among advanced learners despite time and input. In the following sections, GenSLA theories on the acquisition difficulties will be explained. The proposals reviewed hereafter adopt a FT/FA view as a starting point and offer more explanations on the sources of difficulties and allow researchers to make predictions on the expected problematic areas.

### **2.2.2.2 The Article Choice Parameter and the Fluctuation Hypothesis**

In an attempt to predict errors in article acquisition Ionin (2003) and Ionin, Ko, & Wexler (2004) proposed fluctuation between L2 parameter settings. With learners having full access to UG and parameter settings they claim that learners will fluctuate until the input leads them to the correct value. This Fluctuation Hypothesis FH involves a semantic Article Choice Parameter ACP:

The Article Choice Parameter (for two-article languages)

A language that has two articles distinguishes them as follows:

The Definiteness Setting: Articles are distinguished on the basis of definiteness

The Specificity Setting: Articles are distinguished on the basis of specificity. (Ionin, Ko, & Wexler, 2004. p.12)

The prediction of the ACP in the acquisition of English articles (which are distinguished on the basis of definiteness) is that learners will display the first two patterns:

- a. The definiteness pattern: Predicted : L2 English learners correctly use *the* and *a* to mark [+definite] and [-definite] contexts, respectively.
- b. The fluctuation pattern: Predicted : L2 English learners go back and forth between distinguishing *the* and *a* on the basis of definiteness, and distinguishing them on the basis of specificity.
- c. The specificity pattern: Unpredicted : L2 English learners use *the* and *a* to mark [+specific] and [-specific]

(Ionin, Ko, & Wexler, 2004, p.37)

By offering this semantic parameter-based explanation Ionin, Ko, & Wexler (2004) opened the door to a vast number of studies testing the ACP with learners from different language backgrounds (e.g. Garcia Mayo, 2009; Sarko, 2009; Snape, 2006; Tryzna, 2009 among many more)<sup>2</sup>. The ACP and FH were very influential in explaining the acquisition difficulties and predicting error patterns but the results of most studies

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<sup>2</sup> A detailed review of the results of those studies and the evidence with and against the assumptions of the FH will be explored in chapter 3

remain open to interpretations. An explanation for this variability resulting from a “syntax-semantics mismatch” is offered by Slabakova’s (2008) Bottleneck Hypothesis as will be detailed in the following section.

### **2.2.2.3. The Bottleneck Hypothesis**

The Bottleneck Hypothesis is consistent with Jackendoff’s (2002) view of language architecture and states that difficult L2 properties are those properties that “...represent a mismatch at the interface between Conceptual Structure and Syntactic Structure.” (Slabakova, 2008, p.269). She further explains that what is new to learners is the morphological expression of the semantic feature of definiteness not the feature itself. The reason is that semantic features are proposed to be “universal” in all languages involving notions of “uniqueness” and “familiarity” that are expressed in languages without articles through other morphological expressions or through discourse.

Building on Chomsky’s (2004) theory of a Conceptual-Intentional system and Jackendoff’s (2002) conceptual structure, Slabakova draws the attention to a proposal by Ramchand and Svenonius (2008) on the availability of narrow syntax in all languages and the variability in how languages express the *universal semantic component*. Taking the DP as an example, the functional category D is proposed to be provided by UG and available in all languages even -ART languages (opposing the view that they lack the category D) and the difference lies in how some languages have overt morphemes to express the grammatical meanings of D while other languages express it using functional morphology or context (Slabakova, 2009).

In a nutshell, the Bottleneck Hypothesis states that when there is a mismatch in the syntax-semantics interface, the “bottleneck” for the acquisition of meaning will be the “linguistic form”. This proposal is related to situations where both languages have overt morphemes for marking the same property. However, L2 acquisition will be even more difficult “...if the same meaning is marked by a morpheme in one language and by discourse or context in the other, or when mapping of relevant properties interact.” (p.275). The concept of “mapping” relevant properties will be explained in the following section.

#### **2.2.2.4. The Feature Reassembly Hypothesis**

Following the minimalist approach (Chomsky, 1995, 2001), Lardiere (2007, 2008) proposed the Feature Reassembly Hypothesis. Features are defined by Lardiere (2009) as “primitive, elemental units that make up the lexical items of every language” (p.173) available to humans as a set of universal inventory part of a genetic endowment. Syntactic differences “...are hypothesized to be limited to those items that make up (or head) functional categories such as C, T or D, each of which comprises sets of one or more formal features such as [ $\pm$ wh], or [ $\pm$ past] or [ $\pm$ definite]” (p.174).

In a departure from the “parameter re-setting” view as explained earlier, the differences between languages are viewed as differences between “features” (phonological, formal, or semantic) and how they are bundled together. In second language acquisition, the hypothesis assumes that a second language learner will bring to the acquisition task an already fully assembled L1 grammar that is different from the L2. Therefore, learners have to “select” new features for the L2 lexical items if they don’t exist in L1 and “re-assemble” features that exist in the L1 but are assembled differently. The process of re-assembly is proposed to be more difficult than feature selection because it involves more complex steps of disentangling features and feature combinations realised differently by L1 (morphologically or through context etc.) then re-assembling them according to L2 requirements.

When applying the Feature Reassembly Hypothesis to the acquisition of generic interpretation of English articles Ionin & Montrul (2010) found that L1 Korean speakers were more accurate than L1 Spanish speakers. They concluded that the reason may be because Korean speakers only need to “select features” for a new functional element which is the definite article that is not present in their L1 while Spanish speakers have to “re-assemble features” for a functional element that already exists in their L1. This process is more difficult because it involves the complex process of getting rid of the feature [+ kind formation] linked to the definite article in Spanish and leaving the [+definite] feature only.

#### **2.2.2.5. A contrastive analysis of features**

While agreeing with the basic premise of Feature Reassembly as mentioned earlier, Slabakova (2009) proposes looking at the universal constraints involved in the feature reassembly process to avoid “the assumption that the grammar of a language is an assembly of different grammatical constructions with no inherent similarities” which

runs the risk of “losing sight of the facilitative function of UG in SLA” (p.315). She proposes to combine Ramchand & Svenonius’s (2008) model of grammatical organization with Lardiere’s feature reassembly proposal to allow more concrete predictions on L2 learnability.

Ramchand & Svenonius’s (2008) model as explained earlier suggests that the syntax/semantic representations are interpretable directly by the universal Conceptual-Intentional C-I system (Chomsky, 2004) and the differences between languages reside in the way languages choose to express them (overt morphemes, context...). This means that the syntactic structure is always there even when a language doesn’t have overt morphemes for the meaning and as such “the lexical information of various grammatical morphemes contains not only functional features, but also information about whether or not meaning values are to be sought in the extralinguistic situation.” (p.316)

In applying this proposal to the acquisition of articles, Slabakova points out that “articles” express universal meanings available to all languages (e.g. familiarity, uniqueness, referent tracking...). The possible mappings between the category D and the morphemes in languages would be different as languages choose different distributions and interpretations but they could also be “predictable” as shown table (1) below and parametric variation will allow languages to encode meanings in overt morphemes or context.

Table 1 Mapping between form and meaning of articles in different languages (taken from Slabakova, 2009, p. 319)

Meanings	Norwegian	English	Lillooet Salish	Russian
Argumenthood	morpheme	morpheme	morpheme	null morpheme
Familiarity	morpheme	morpheme	discourse	discourse
Specificity	morpheme	discourse	morpheme	discourse*
Referent tracking	discourse	discourse	discourse	discourse

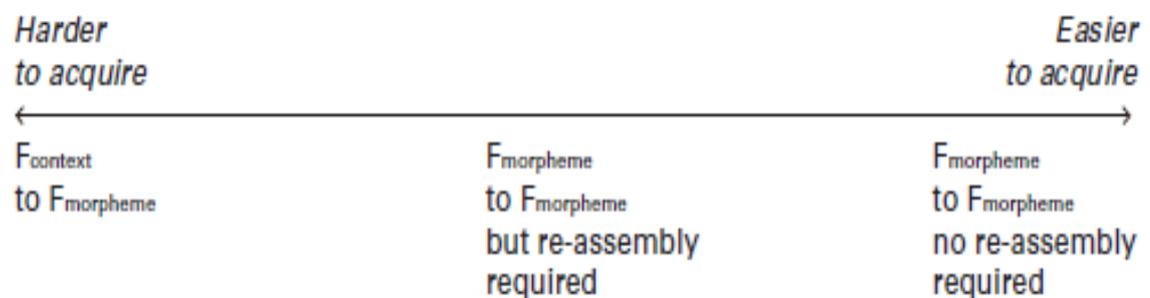
Slabakova then adds to the model her predictions based on Lardiere’s Feature Re-assembly Hypothesis as she specifies two levels of difficulty in a learning situation:

- a) A simple mapping of L1 & L2 morphemes when both languages express the grammatical meaning with morphemes.

- b) A more complex re-assembly when there is a mismatch between L1 & L2 grammatical features.

When adding the predictions to Ramchand & Svenonius's (2008) model, Slabakova draws a cline of difficulty as shown in figure (2) below. The difficulty level shown in the figure starts with the easier morpheme to morpheme mapping with no assembly required and then difficulty increases when the process requires re-assembly then more difficulties are anticipated when the acquisition process requires the learner to map the grammatical feature expressed by context in L1 to a morpheme in L2.

Figure 2 Cline of difficulty in grammatical feature acquisition from easier to harder  
(taken from Slabakova, 2009, p.321)



The difficulty is also complicated by the fact that the re-assembly task may not be supported by enough evidence in the input (Lardiere, 2009; Slabakova, 2009). Accordingly, this study will see if it is possible to find empirical support for the contrastive analysis of “features” and propose a difficulty cline after looking at the re-mapping/ re-assembly task facing L1 Najdi Arabic speakers. This process and the cline of difficulty will be predicted later in chapter three after looking at the cross-linguistic differences between the two languages and the features involved.

Another idea that is crucial to this study is the “speed” of the feature re-assembly process. Cho & Slabakova (2014) note that “feature reassembly may be slow to occur or may not occur at all if the relevant evidence for the formal or semantic feature is rare or contradictory in the linguistic input.” (p. 160). We may not be looking at a permanent acquisition difficulty but rather a slower pace of acquisition because of encountering feature re-assembly. Either way, this idea can be applied in a learning environment by testing how “input” could affect the acceleration of the acquisition process of the re-assembly of features that are marked as being more difficult to acquire.

### 2.3. Chapter 2 summary and conclusion

Before moving to a review of empirical research to specify the features that would cause difficulties in the acquisition of English articles, it is important to summarise the concepts reviewed in this chapter.

This study adopts a generative view of language as an innate ability and with this concept comes the assumption that language is “acquirable” because as humans we have a built -in innate ability. However, given the facts involved in adult L2 acquisition this natural process can face difficulties and problems with *some* linguistic features. The descriptions offered by GenSLA hypotheses reviewed in this chapter specify where acquisition would be difficult or easy. These insights have huge implications if they were embraced by language pedagogy as guidelines on what to teach and what not to teach in the language classroom.

The contrastive analysis of features would produce clear predictions on the acquisition difficulties facing L1 Najdi Arabic speakers learning English articles. The following chapter will end by writing up a cline of difficulty (following Slabakova’s 2009 proposal) specific to this study. Those predictions on the learning task and predicted difficulties will present “content” that can be provided to learners in the classroom while holding the view that learners will still have access to UG in the acquisition process and that the “input” in this case is to help accelerate re-assembly and recovery from L1 transfer.

## Chapter 3: The Acquisition of English Articles

### 3.1. Introduction

The aim of this chapter is to review the existing literature on the L2 acquisition of English articles from the early studies on the errors of English language learners to the more detailed perspectives following generative theories. The main goal as described earlier is to use the findings from acquisition research and the relevant theoretical GenSLA explanations in conducting an experiment in the language classroom. To summarise what has been presented in the previous chapter, the questions usually investigated in GenSLA attempt to a) describe the linguistic property and its related features, b) define access to UG universals, c) examine the developing ILG grammar, d) track the role of L1, e) define the role of natural language input, f) specify problematic areas that resist acquisition and g) account for how all those factors interact with each other in the acquisition process. This in-depth knowledge and the explanations offered by this line of research on the *innate language ability* and *learnability* will be translated by this project into practical applications that can be used in the language classroom.

The chapter will start with a review of the empirical studies that were conducted on the acquisition of English articles. A cross-linguistic description of the linguistic properties in English and Arabic will follow in section (3.4) then a review of studies on the acquisition of articles by L1 Arabic speakers in (3.5). Finally, section (3.6) will provide an outline of the difficulties in the acquisition of English articles by L1 Najdi Arabic speakers on a cline of difficulty following a contrastive analysis of features as suggested in chapter 2.

### 3.2. Studies on the acquisition of English articles

According to Garcia Mayo & Hawkins (2009), initial research in Second Language Acquisition (SLA) focused on the acquisition of the verbal and sentential domains. It was only recently that interest has grown in the acquisition of the “nominal domain”. Earlier studies on the acquisition of English articles established that L2 learners of English exhibited persistent difficulties (Huebner, 1983; Master, 1987; Master, 1990; Parrish, 1987; Murphy, 1997; Young, 1996). Those difficulties were then

investigated by GenSLA researchers looking at the complex syntactic and semantic properties encoded by English articles and the development of second language learners' knowledge as they acquire these properties. A distinction was made between languages that have articles +Art (like Spanish, French and Greek) and languages that lack articles -Art (like Chinese, Japanese, Korean, Russian, and Turkish) (Lyons, 1999). Researchers examined semantic universals and the role of the first language in relation to the underlying assumption of GenSLA that L2 grammar is UG constrained.

The main questions that acquisition studies sought to answer were: 1) Does the L1 play a role in the acquisition of articles? 2) Do learners display developmental characteristics not related to the L1? and 3) Is the development constrained by UG?

Initially, the findings were explained by four major proposals:

- 1) A 'mapping' problem between the morphological component and the syntax, the 'Missing Surface Inflection Hypothesis' (Prevost & White, 2000).
- 2) A 'prosodic' difficulty: also resulting from a mapping problem with the phonological component 'The Prosodic Transfer Hypothesis' (Goad & White, 2004)
- 3) A 'syntactic' difficulty: proposing that articles are misanalysed as nominal modifiers (Trenkic, 2000, 2008)
- 4) A 'semantic' difficulty: the 'Article Choice Parameter' and the 'Fluctuation Hypothesis' (Ionin, 2003; Ionin, Ko, & Wexler, 2004)

The influential studies by Ionin and her colleagues (Ionin, 2003; Ionin & Wexler, 2003; Ionin, Ko, & Wexler, 2004) have inspired a significant number of studies investigating the semantic/syntactic interface in article acquisition concentrating on the distinction between definiteness and specificity by examining the Article Choice Parameter ACP (e.g. Hawkins et al, 2006; Snape, 2006; and papers in Garcia Mayo & Hawkins, 2009 among others). Later on, another series of studies (Ionin & Montrul, 2009; Ionin & Montrul, 2010; Ionin et al 2011; Slabakova, 2006) started investigating another area of article use which is 'generic interpretation' and the cross-linguistic differences found between languages which may lead to acquisition difficulties.

The following sections will present a review of the relevant second language acquisition research on article acquisition from different language backgrounds to give a broad picture of the acquisition of articles. A separate section will follow on the studies that were conducted on L1 Arabic speakers.

### 3.2.1. Early studies establishing persistent difficulties in the acquisition of articles

Early studies on the acquisition of articles adopted the analysis of Bickerton (1981) on noun phrase reference. In Huebner's (1983) longitudinal study of the interlanguage grammar of a 23 year old Hmong acquiring English in an untutored setting, he used Bickerton's (1981) taxonomy of noun phrase reference to track the development in the subject's acquisition of English articles. Seventeen hours of conversation data was recorded over the course of one year then analysed for word order, topic markers, and the use of (*da =the*) versus the use of  $\emptyset$  articles. The taxonomy of noun phrase reference used in the study included the following features:

- a. [-Specific Referent] [+Hearer Knowledge]: Generics. (the/a/ $\emptyset$ )
  - b. [+Specific Referent] [+Hearer Knowledge]: Referential Definites. (the)
  - c. [+Specific Referent] [-Hearer Knowledge]: Referential Indefinites. (a or  $\emptyset$ )
  - d. [-Specific Referent] [-Hearer Knowledge]: Non-Referential (a or  $\emptyset$ )
- (Huebner, 1983 after Bickerton, 1981)

The findings of the study tracked the development of article acquisition from an initial "flooding" of the article "da" to a shift after six weeks to a more syntactically oriented organization, then dropping the article "da" from non-referential environments and finally by the 27<sup>th</sup> week the article "da" was eliminated from referential indefinites. The results suggest that learners go through developmental stages that could be predicted. A follow up on the same subject 20 months later (Huebner, 1985) supported Bickerton's proposal on an innate specific/non-specific referent distinction with the observation of the "fossilization" of errors (p.158). Following Huebner's (1983) classification, Master (1987) investigated the acquisition of articles by analysing the interlanguage of five learners of English from five first languages (Chinese, Japanese, Russian, Spanish & German) proposing the hypothesis that the use of the English article system reflects strategies that are in part universal and in part language specific. His results show an advantage for subjects from +Art languages acquiring English article but he notes that subjects from -Art languages go through a similar developmental pattern.

Using Bickerton's taxonomy, Parrish (1987) collected data from a Japanese adult learner of English over the course of four months. The findings report an initial overuse of the definite article *the*, then a pattern emerged similar to the native pattern of using *the* with referential definite contexts and *a* with referential indefinite contexts. In another study by Thomas (1989) on 30 adult English learners from both +Art and -Art

languages, it was found that learners correctly associate the article *the* with [+Specific Referent] and *a* with [-Hearer Knowledge] suggesting that L1 transfer gives an advantage to learners from languages that have articles. Learners from -Art first languages do acquire the use of English articles in correct contexts but have more omission mistakes as a result of L1 transfer. Murphy (1997) investigated article use among 30 Korean and Spanish learners of English by using an oral and written task in addition to a metalinguistic task asking learners if they know the grammatical rule. The results found a positive effect of L1 transfer in favour of the Spanish L1 speakers with Korean speakers producing more omission errors.

Those early studies were the first attempts at investigating article acquisition by using a semantic classification and looking at the possible transfer effect by looking at learners from different L1 backgrounds. The studies show an advantage for learners from +Art languages explained as a possibly being positive L1 transfer. They also show a pattern of development in the acquisition of the definite article linked by Huebner (1983) and Master (1987) with [+Hearer Knowledge] while Thomas (1989) and Murphy (1997) argue that it is linked to [+Specific Referent] when the referent is known by the speaker. However, the conflicting results suggested that the feature distinctions [ $\pm$ Hearer Knowledge] and [ $\pm$  Specific Referent] didn't fully account for the acquisition process of English articles. A summary of those studies and their results is shown in table (2).

Table 2 A summary of early research investigating article acquisition

Study	Sample size	L1	Data	Results
Huebner 1983	23 year old male	Hmong	Production presence/absence	Overgeneralization of <i>the</i>
Master 1987	1	Chinese	Oral speech analysis	First language influence on the acquisition of articles.
	1	Japanese		
	1	Spanish		
	1	German		
Parrish 1987	19 year old male	Japanese	Longitudinal analysis oral production	Consistent pattern: use of <i>the</i> +SR +HK. and <i>a</i> in -SR-HK
Thomas 1989	7 learners	French, German, Italian, Spanish, Greek	Oral data: picture description task	Advantage to the learners from languages that have articles
	23 learners	Japanese Korean, Finnish, Chinese		
Young 1996	3	Czech	Oral interviews	Definiteness is encoded before indefiniteness. Use of <i>the</i> before <i>a</i> .
	3	Slovak		
Murphy 1997	30 learners	Korean, Spanish	Oral and written + metalinguistic task	Advantage for the L1 Spanish group. Article omission error by Korean L1 learners.

In the following section, more recent research on article acquisition from a generative perspective will be reviewed. GenSLA studies as will be reviewed in the next section offer more principled explanations of the semantic features related to articles to explain the acquisition process and the effect of L1 transfer. The focus is on the universal semantic properties of articles as manifested in different languages and whether the representation of articles is constrained by UG and available for adult L2 learners.

### 3.2.2. Generative SLA studies on the acquisition of articles

One of the earliest studies looking at articles from a generative perspective and linking difficulties to a mapping morphological/syntactic problem was Robertson's (2000) study. He investigated English article use by 18 advanced L1 Mandarin Chinese speakers of English using a referential communication task. In explaining the data he used the functional taxonomy of definiteness proposed by J. Hawkins (1978):

Definite NP environments:  
Anaphoric use of referring NP  
Immediate situation use of referring NP  
Larger situation use of referring NP  
Head noun of an associative clause NP  
Unexplanatory use of definite NP  
NP with nominal modifier  
NP with establishing relative clause

(J. Hawkins, 1978)

Robertson added his taxonomy of indefiniteness based on Bickerton (1981) including three environments: use of NP in existential predication, use of NP as object of transitive verb or complement of copulative construct, and generic use of singular NP. The results show that the incorrect use of articles by learners from Mandarin which is an -Art language was entirely "omission" errors. An attempt to explain those errors systematically couldn't account for a large percentage of the data which resulted in proposing a mapping difficulty following the 'Missing Surface Inflection Hypothesis' (MSIH) (Prevost & White, 2000). This essentially means that as Chinese learners acquire English grammar they have to re-map grammatical features of definiteness that are discourse-oriented in their L1 onto overt phonological forms (*the & a*) in the L2.

In two influential longitudinal case studies on second language learners both White (2003) and Lardiere (2004) examined the performance of an individual subject over time. Their observations regarding the performance of their subjects on the nominal domain has shed some light on the acquisition of articles. White's (2003) study reported on an adult Turkish native speaker learning English in a natural setting. Data was collected through interviews, a written task, and a grammaticality judgment task. The findings on the use of nominal inflection properties confirmed a high percentage of omission errors in article use compared to substitution but when the subject produced articles they were appropriate. To explain this optionality in article use White proposed a Missing Surface Inflection difficulty but notes that this hypothesis doesn't predict when the variability will occur. Lardiere's (2004, 2005) study investigated the language development of an adult Mandarin native speaker after living in the US for 10 years

using interviews and written samples. The findings also confirm a high percentage of omission errors when compared to submission errors. The subject was also more accurate in definite contexts and similar to the subject in White's (2003) study the articles were appropriate when produced. In discussing her findings, Lardiere proposes a difficulty in 'assembling' relevant features of articles into lexical items. White (2003) also makes an important suggestion linking acquisition to positive L1 transfer by noting that her L1 Turkish subject's performance was better than Lardiere's (1998) L1 Chinese subject in verbal inflection morphology. The reason for White's interpretation is because verbal inflections exist in L1 Turkish. As will be explored further, this positive influence from L1 transfer could also be expected with L1 Arabic speakers acquiring the definite English article.

In a re-examination of data from White (2003), Goad & White (2004) looked into the possibility of a prosodic difficulty causing the omission of articles following the Prosodic Transfer Hypothesis. This hypothesis suggests appropriate syntactic representations but difficulties in building the correct prosodic structure of the L2. The difference between Turkish and English is that English articles are free clitics which attach directly to the phonological phrase while the indefinite Turkish *bir* is an affix clitic adjoining to the prosodic word which makes it prosodically dependent on the head noun. This predicts that the subject will be able to represent articles in 'article + noun' constructions but not in 'article + adjective + noun' constructions. The results confirm that the rate of suppliance of articles is indeed lower and affected by the phonological context. In this regard, L1 Arabic learners of English would not have this difficulty in realizing the definite and indefinite articles "since Arabic has the kind of prosodic structure that can accommodate both." (Almahboub, 2009, p.76)

The GenSLA studies reviewed so far still didn't offer the needed principled explanation on L2 learners' choices of articles. The predictions by White (2003) and Goad & White (2004) only suggest that the learner doesn't have difficulties in the semantic interpretation of articles. The seminal work by Ionin (2003) and Ionin, Ko, & Wexler (2004) as will be described in the next section marked a new view of the acquisition of articles predicting semantic interpretation difficulties related to parameter settings. This was the first attempt at providing the much needed principled parameter-based explanation for article use by L2 learners.

### 3.2.2.1. Semantic universals: definiteness and specificity

Ionin (2003), Ionin & Wexler (2003), and Ionin, Ko, & Wexler (2004) tested the Article Choice Parameter ACP through a series of studies on the acquisition of English articles by speakers from languages that do not have articles (to control the effect of transfer if the L1 has articles) proposing a Fluctuation Hypothesis FH which states that:

L2-learners have full UG access to the two settings of the Article Choice Parameter.

L2-learners fluctuate between the two settings of the Article Choice Parameter until the input leads them to set this parameter to the appropriate value.

(Ionin, 2003p. 86)

The effect of the FH on the acquisition of English articles is represented in table (3) predicting that L2 learners of English from languages that do not have articles will fluctuate between the different UG semantic parameter settings until the input leads them to the target English value.

Table 3 Predictions for article choice in L2 English (taken from Ionin, Ko& Wexler, 2004, p.19)

	+ definite (target <i>the</i> )	-definite (target <i>a</i> )
+ specific	Correct use of <i>the</i>	Overuse of <i>the</i>
- specific	Overuse of <i>a</i>	Correct use of <i>a</i>

The assumption is that learners will display one of three patterns: a) a definiteness pattern as L2 learners correctly distinguish *the* and *a* in [+definite] and [-definite] contexts, b) a specificity pattern as L2 learners will use *the* to mark [+specific] and *a* [-specific], and c) a fluctuation pattern as learners go back and forth distinguishing *the* and *a* on the basis of definiteness and specificity.

Ionin, Ko, & Wexler (2004) examined 30 L1 Russian speakers and 40 L1 Korean speakers in their choice of articles as learners of English as a second language (with intermediate and advanced levels within each group). The instruments used were a written production task (fill gaps in a dialogue) and a forced choice task with equal numbers of items representing [ $\pm$ definite] and [ $\pm$ specific] contexts and combinations. The following are examples from the forced choice task<sup>3</sup>:

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<sup>3</sup> These forced choice task items are presented in detail here because they will be used after modification in the two studies of this research as detailed later in chapter 5.

[+definite, +specific]

*Conversation between two police officers*

Police officer Clark: I haven't seen you in a long time. You must be very busy.

Police officer Smith: Yes. Did you hear about Miss Sarah Andrews, a famous lawyer who was murdered several weeks ago? We are trying to find (a, the, Ø) murderer of Miss Andrews – his name is Roger Williams, and he is a well-known criminal.

[+definite, -specific]

*Conversation between a police officer and a reporter*

Reporter: Several days ago, Mr. James Peterson, a famous politician, was murdered! Are you investigating his murder?

Police officer: Yes. We are trying to find (a, the, Ø) murderer of Mr. Peterson – but we still don't know who he is.

[-definite, +specific]

*In an airport, in a crowd of people who are meeting arriving passengers*

Man: Excuse me, do you work here?

Security guard: Yes.

Man: In that case, perhaps you could help me. I am trying to find (a, the, Ø) red-haired girl; I think that she flew in on Flight 239.

[- definite, -specific]

*In a children's library*

Child: I'd like to get something to read, but I don't know what myself.

Librarian: Well, what are some of your interests? We have books on any subject.

Child: Well, I like all sorts of things that move — cars, trains. . . . I know! I would like to get (a, the, Ø) book about airplanes! I like to read about flying!

The findings from group results in the forced choice task indicate that L1 Russian and L1 Korean speakers of English overused the definite article *the* in [-definite, + specific] contexts and the indefinite article *a* in [+definite, -specific] contexts confirming the assumptions of an Article Choice Parameter and L2 learners' access to universal semantic distinction of definiteness and specificity fluctuating between them until input leads them to the correct setting. However, when looking at individual results within the groups they found more patterns that contradict the predictions of the ACP:

Patterns found in individual results:

- a) **The definiteness pattern:** Correct parameter-setting  
At least 75% the use in [+definite, +specific] contexts.  
Less than 25% the overuse in [-definite, -specific] contexts.
- b) **The fluctuation pattern**  
At least 75% the use in [+definite, +specific] contexts  
Less than 25% the overuse in [-definite, -specific] contexts
- c) **The specificity pattern:** Parameter mis-setting  
At least 75% the use in all [+specific] contexts  
Less than 25% the use in all [-specific] contexts

d) **The partial fluctuation pattern**

At least 75% the use in [+definite, +specific] contexts

Less than 25% the overuse in [-definite, -specific] contexts

e) **The miscellaneous pattern**: Any patterns that do not fit into the above four categories.

(Ionin, Ko & Wexler, 2004, p.38)

It was found that 37% of individual participants fell into the “specificity pattern” (opposite the English definiteness pattern) and ‘partial fluctuation pattern’ that couldn’t be accounted for by the FH. The results of the production task were consistent with the FH but they show a higher percentage of article omission consistent with the claims of MSIH because of communication pressure.

Ionin, Ko, & Wexler’s (2004) study left the question open on whether the ACP and the FH will also be found in L2 learners of English from first languages that have articles. Hawkins et al (2006) followed by investigating article acquisition and development of L2 learners of English from Japanese and Greek. They propose that the ACP doesn’t meet the requirements of a minimalist perspective, and that the [ $\pm$ definite] and [ $\pm$ specific] interpretable features are made available by UG for the assembly of lexical items. Furthermore, they question the idea of fluctuation in L2 grammar on what should be a stable assignment of features to lexical entries. They tested 12 L1 Japanese and 12 L1 Greek learners of English by using a forced choice task similar to Ionin, Ko, & Wexler (2004). The contexts covered by the task included [+definite, + specific], [-definite,  $\pm$  specific], but no [+definite, -specific] contexts.

The results show that L1 Greek speakers predominantly chose the correct articles to mark definiteness and indefiniteness exhibiting no fluctuation which rules out fluctuation as a general L2 developmental phenomenon. L1 Japanese learners on the other hand displayed omission errors not found with L1 Greek subjects. Hawkins et al (2006) offered an explanation based on the Representational Deficit Hypothesis that Japanese learners are not able to acquire interpretable features of the N because their ILG didn’t establish the functional head D. Similar to Hawkins et al (2006) Snape (2006) proposes a representational deficit account and rejects the need for an ACP. He concludes that the problem of L1 learners from -Art languages is ‘the use of articles in discourse’ as such he suggests a deficit in the syntax/discourse/pragmatic interface. Snape’s study included L1 Spanish learners of English covering count-mass distinctions and the omission and use of articles in singular and plural contexts. The conclusion regarding L1 Spanish speakers was that they didn’t fluctuate because of L1 transfer.

In this review of studies on the semantic proposal by Ionin, Ko, & Wexler (2004), it is important to highlight Trenkic's (2000, 2008) studies arguing against the ACP. Trenkic (2000) confirmed that English articles are problematic for learners from -Art languages in her investigation of the acquisition of English articles by Serbian L1 speakers. She offered an alternative 'processing' explanation for article acquisition difficulties. What is of relevant to this study is Trenkic's (2008) proposal on the effect of specificity on L2 article choice. She re-examines the test items from their study targeting [ $\pm$ specific] contexts and noting that the definition of specificity as a 'noteworthiness' concept is being conflated with 'Explicitly Stated Knowledge' ESK as in these examples:

[−definite; +specific]

Gary: I heard that you just started college. How do you like it?

Melissa: It's great! My classes are very interesting.

Gary: That's wonderful. And do you have fun outside of class?

Melissa: Yes. In fact, today I'm having dinner with **a girl from my class** – her name is Angela, and she is really nice!

[−definite; −specific]

Professor Clark: I'm looking for Professor Anne Peterson.

Secretary: I'm afraid she is busy. She has office hours right now.

Professor Clark: What is she doing?

Secretary: She is meeting with **a student**, but I don't know who it is.

(Ionin, Ko, & Wexler, 2004 from Trenkic, 2008)

The study involved 43 L1 Mandarin learners of English and used a task of 24 short dialogues based on the forced choice task by Ionin, Ko, & Wexler (2004). The task targeted specificity and ESK by creating six contexts:

[−definite], [+specific; +ESK]

[−definite], [−specific; −ESK]

[−definite], [+specific; −ESK]

[+definite], [+specific; +ESK]

[+definite], [−specific; −ESK]

[+definite], [+specific; −ESK]

(Trenkic, 2008, p.12)

The results show that the overuse of *the* in indefinite contexts was affected by specificity and +ESK contradicting the claim that it is linked to [+specific] contexts in general leading to the conclusion that specificity didn't play a role in L2 article choice contradicting Ionin, Ko, & Wexler's (2004) study. In response, Yang & Ionin (2009) replicated the study with L1 Mandarin learners of English. They also asked the subjects to write a reason for their choices. The results were similar to Trenkic's as learners overused the in [+ESK] contexts. However, in analysing the reasons provided by the subjects 69% of the overall responses supported a specificity-based choice (e.g. because

the speaker has a particular referent in his mind). Yang & Ionin (2009) conclude that the presence or absence of ESK wasn't a determining factor in article misuse. Accordingly, if this current study will consider specificity as having an effect on the acquisition of English articles by L1 Najdi Arabic speakers those modifications to the task must be included to avoid an effect of ESK.

Ionin et al (2008) further investigated the sources of knowledge that L2 learners of English rely on in the form/meaning mappings of articles: L2 input, L1 transfer, and UG. In this study, Ionin et al investigated L1 transfer by comparing 23 L1 Russian learners with 24 L1 Spanish learners proposing two possibilities: fluctuation overrides transfer, or transfer overrides fluctuation:

Possibility 1: Fluctuation overrides transfer: All L2 learners should fluctuate between definiteness and specificity in their L2-article choice.

Both L1-Spanish and L1-Russian L2-English learners should exhibit the pattern in (Ionin, Ko, & Wexler, 2004), showing interchangeable use of the and a on non-specific definites and specific indefinites.

Possibility 2: Transfer overrides fluctuation: L2 learners whose L1 has articles transfer article semantics from their L1 to their L2. L2-learners whose L1 lacks articles exhibit fluctuation.

a) L1-Russian L2-English learners should exhibit the pattern.

b) L1-Spanish L2-English learners should exhibit accurate use of *the* in all definite categories and accurate use of *a* in all indefinite categories, with no effects of specificity.

(Ionin et al, 2008, p. 560)

The results show that L1 transfer overrides fluctuation which could similarly be the case with L1 Arabic speakers in acquiring the definite article. The findings suggest that L1 Russian and L1 Spanish learners of English differ in their use of English articles as Spanish L1 speakers distinguish between *a* and *the* on the basis of definiteness and Russian L1 speakers fluctuate between distinguishing them based on definiteness or specificity. The explanation is that Spanish L1 speakers transfer the semantics of articles from their L1 to L2 while Russian L1 speakers draw on this knowledge from another source. Ionin et al (2008) argue that the best explanation is that “learners are retrieving this pattern directly from UG, by accessing the inventory of semantic universals.” (p. 572). The fluctuation and errors in their performance is then attributed to the difficulty in noting the subtle discourse-based input triggers.

An edited volume by Maria Garcia Mayo and Roger Hawkins entitled “Second Language Acquisition of Articles” (2009) documented this growing interest in the acquisition of articles with a collection of nine studies divided into two parts; the first included studies that investigated the ACP and FH and the second part included studies

investigating other aspects of article acquisition such as generic interpretation (Ionin & Montrul, 2009) and vowel harmony (Goad & White, 2009).

Garcia Mayo (2009) tested Ionin et al's (2008) hypothesis that "transfer overrides fluctuation" in the acquisition of English articles by 60 L1 Spanish speakers divided into two proficiency levels. The study used the forced choice task from Ionin, Ko, & Wexler (2004). Results confirm that L1 transfer is "operative at the level of article semantics" (p.32) with transfer overriding fluctuation and no effect of specificity.

The second study in the first part of the volume was Sarko's (2009a) investigation of L2 English article acquisition among learners from first languages that haven't been investigated within the ACP and FH framework before: L1 Arabic and L1 French. Arabic and French like English have articles that realize definiteness (Arabic article *al-*) (French articles *la/le/les*) but both languages "display different kinds of morphophonological realization" (p.46). In spoken Arabic, indefiniteness is realized by bare NPs and Sarko raises the question on whether this entails the presence or absence of a D category in the Arabic representation of indefinite NPs. Thus, the participants are predicted to show fluctuation in their use of *the/a* in indefinite contexts only if the D is absent and they will not fluctuate if there is a null D representation in their L1. French on the other hand disallows bare NPs (unlike English and Arabic) requiring an overt article form in all definite/indefinite singular, plural and mass NPs with articles marking number and gender in addition to definiteness.

The study tested the knowledge of English [ $\pm$ definite] article acquisition among 57 L1 Syrian Arabic speakers and 18 L1 French speakers by using the forced choice elicitation task (Ionin, Ko, & Wexler, 2004) and an oral story recall task (Snape, 2006). The results of this study show full transfer of the requirements for a definite article from L1 and variability in article choice with mass nouns. The study found no evidence of fluctuation in article choice based on definiteness versus specificity. The results of Syrian Arabic and French speakers show a difference in the [-definite, +specific] contexts as French speakers were target-like showing full transfer of an indefinite D while Syrian Arabic speakers showed a significant tendency to use the definite article *the*. This suggests that L1 Syrian Arabic learners could be fluctuating between the two values of the ACP: definiteness and specificity leading to the assumption that Syrian Arabic has no abstract indefinite D. However, further investigation of the forced choice task items revealed that the presence of a relative clause modifier with the NP significantly affected the use of the definite article compared with indefinite contexts without relative clause modification.

Sarko (2009a) concludes that this indicates L1 transfer rather than fluctuation as Syrian Arabic forces the insertion of the definite article in the presence of a relative clause modification with an overt complementiser. Those results support Sarko’s conclusion that “Syrian Arabic has an abstract indefinite D in its syntax with a phonologically null exponent.” (p.62). More details and studies on L1 Arabic speakers will follow later in section (3.4) but it is important to note here that Sarko suggested that there is no effect of specificity in indefinite contexts for L1 Arabic speakers and the effect was from L1 transfer of relative clause modification constrains.

More investigations into the claims of the ACP by Tryzna (2009) resulted in arguing for a reduced version of the hypothesis. She conducted a field study on Samoan article using an elicitation task translated to Samoan covering four contexts: [-specific, -definite], [+specific, -definite], [-specific, +definite], and [+specific, +definite]. Samoan has two articles: specific *le* and non-specific *se* but the results from this task show that the non-specific article *se* is “incompatible with definite contexts” (p.72) which means that the ACP overgeneralized the specificity setting in Samoan. Tryzna (2009) suggested a reduced ACP (table 4) with expected fluctuation only in [+specific, -definite] contexts not in [-specific, -definite] contexts.

Table 4 The reduced Article Choice Parameter (taken from Tryzna, 2009, p.72)

DP type	Specificity setting (e.g. Samoan)	Definiteness setting (e.g. English)
Non-specific indefinite	Se	A
Specific Indefinite	Le	
Definite		The

Tryzna (2009) followed with a study on 19 L1 Polish and 17 L1 Mandarin learners of English both from -Art languages using Ionin, Ko, & Wexler’s (2004) forced choice task. The results show that fluctuation is not the only error pattern suggesting that the ACP may be too restrictive. She concludes with a “developmental pattern” that starts with widespread optionality in article use in all contexts then narrows down to fluctuation between definite and specific indefinite contexts. It is suggested that learners don’t overuse *the* with non-specific indefinite NPs which means acquiring the non-specific use of the indefinite article earlier than the specific use marking specificity as a semantic universal. This new data on Samoan specificity supports Trenkic’s (2008) earlier critique of the ACP.

In response to this article by Tryzna (2009) and another account of Samoan articles by Fuli (2007), Ionin et al (2009) changed the initial proposal of cross-linguistic

differences in definiteness and specificity (Ionin, Ko, & Wexler, 2004) to a revised version (figure 3).

Figure 3 The ACP revised version (taken from Ionin et al, 2009, p.339)

Article grouping by definiteness

	+definite	–definite
+specific	the	a
–specific		

Article grouping by specificity

	+definite	–definite
+specific	le	
–specific		

This led to the formulation of a new hypothesis by Ionin et al (2009) rejecting earlier assumptions that “ L2-English learners who overuse *a* with definites and overuse *the* with indefinites are adopting the “Samoan” option.” (p.342). This new grouping also explains why L2 learners were making specificity distinctions with indefinites only as they were following natural language patterns. Another outcome of such a revised version was the question: “why do other L2-English learners make the specificity distinction with *both* definites and indefinites, given that this does not appear to be an option available to natural language?” (p.342). The study reported in Ionin et al (2009) aimed at gathering new data by testing different populations ‘children’ and ‘adults’. This was intended to provide explanations on the type of ‘knowledge’ displayed by children and adults. The participants were 58 child and 26 adult L1 Russian learners of English and the research proposed the following questions:

- a. Do child and adult L2-English learners from an article-less L1 make the same error of *the* overuse with specific indefinites?
- b. Do child and adult L2-English learners from the same article-less L1 make the same error of *a* overuse with non-specific definites?

(Ionin et al, 2009, p.345)

The task used was an elicitation task based on the forced choice task by Ionin, Ko, & Wexler (2004) but different in not providing a choice of articles but rather a blank space and providing filler items not targeting articles. The results show the “overuse of *the* with indefinites in L2-English is exhibited by both children and adults, is tied to the semantic universal of specificity” and that the “overuse of *a* with definites is exhibited by adult learners only, and finds no natural language parallels.” (p.354). In other words, “adults overextended the specificity distinction to definites as well as indefinites, while children made the specificity distinction with indefinites only.” (p.357). To explain those findings, Ionin et al suggest that children display “domain-specific mechanisms”

while adults “formulate explicit strategies” based on underlying knowledge of specificity. The effect of specificity on the acquisition of the indefinite article by Arabic L1 speakers will be detailed later in section (3.4.3) to confirm if L1 Arabic speakers do overuse *the* in indefinite specific contexts as found with Ionin et al’2 (2009) children and adult learners from a -Art language that share with Arabic learners the non-existence of an indefinite article. On the other hand, the overuse of *a* with definites is not expected with L1 Arabic learners as they are expected to transfer their L1 knowledge of the definite article.

Ionin et al then addressed Trenkic’s (2008) proposal that articles are misanalysed as adjectives by pointing that the adjectival nature of determiners in Serbian (and most Slavic) languages doesn’t apply to all -Art languages like Mandarin, Korean and Japanese. They argued that the evidence found in Trenkic’s study on L1 Serbian learners of English omitting articles with adjectival modified nouns supports an assumption of an attention limitation but doesn’t explain article omission. Nevertheless, they asserted Trenkic’ proposal that learners were paying attention to the presence or absence of ESK in the contexts, but disagree on the source of this strategy. In their view, the source of this strategy is “learners’ underlying sensitivity to specificity” (p.355). Ionin et al’s (2009) article ended with an important discussion on the role of explicit knowledge strategies in the acquisition of article semantics by adult second language learners and how the differences found in the results of the tasks included in previous studies of article acquisition (the forced choice and written production) could signal a difference in the type of knowledge they test (explicit vs. implicit). This discussion on the types of tasks and types of knowledge is important to the current study because of: a) the need to use more than one instrument to investigate article use and b) the need to specify how instruments will interact with the type of knowledge and c) how far will this study go in explaining and defining the differences between types of knowledge.

Finally, a study by Pierce & Ionin (2011) investigated “perception” rather than “production” difficulties in the acquisition of articles. They targeted English learners from languages that are prosodically different from English to test if they would perceive English articles correctly. Pierce & Ionin’s (2011) study included 16 L1 Korean speakers and 14 L1 Mandarin speakers both from languages that have no definite or indefinite articles and no counterparts of stress-reduced vowels or pro-clitics. The instruments were an AJT and a transcription task. The transcription task consisted

of 18 grammatical sentences spoken by a Native American English speaker and participants were asked to hear the sentences and write down what they heard exactly. They were allowed to listen as many times as they wanted to avoid memory limitations. The noun types were crossed with three sentence positions as shown in the following example:

- a. I heard that international students asked the professor a difficult question.
  - b. I don't know if a teacher gave a new student notebooks.
  - c. She said that the teachers gave students the difficult tests.
- (Pierce & Ionin, 2011, p.124)<sup>4</sup>

The results show that learners indeed faced difficulties in perceiving English articles accurately and this difficulty wasn't linked to language proficiency or experience with English input. However, the researchers admit that "It is still an open question whether the participants entirely failed to hear the articles, or heard them but failed to transcribe them." (p.126).

After encountering Pierce & Ionin's observations on article perception, it was decided to include this idea in the current work to investigate Arabic speakers' production of English articles.

The studies on the acquisition of the semantic features of definiteness and specificity by learners from -Art and +Art languages were followed by another line of investigation to further examine the role of L1 transfer. Researchers looked for more detailed descriptions on the various semantic interpretations of articles in +Art languages and how they affected the acquisition process. This led to investigations into the syntax-semantics domain of "generic interpretation" that marked a difference between English and other Romance languages (Ionin & Montrul, 2009; Ionin & Montrul, 2010; Slabakova, 2006; Slabakova & Montrul, 2003). This area of investigation will be reviewed separately in the following section because of its relevance to the current work as generic interpretations mark a significant difference between Arabic and English.

### 3.2.2.2. Semantic universal: genericity

Early studies on L2 acquisition of articles grouped all generic noun phrases together (Huebner, 1983; Master, 1987) following Bickerton's (1981) classification that all [-Specific Referent, + Hearer Knowledge] nouns used with all articles are generic. Lyons (1999) defines generics as "noun phrases in which reference is made to an entire class, or, perhaps more accurately, which are used to express generalizations about a class as a whole - the class in question being that consisting of all the entities satisfying the description inherent in the noun or nominal" (p.179).

Chierchia (1998) proposed the Nominal Mapping Parameter NMP which groups languages in three categories using the features [ $\pm$  argument] and [ $\pm$  predicate] following the NP type as shown in table (5) below: a) NPs that can refer directly to kinds (can be arguments) [+arg, -pred] , b) NPs that can't refer directly to kinds (only predicates and need a determiner) [-arg, +pred] , c) Some NPs can refer to kind and some can't [+arg, +pred].

Table 5 Language groupings according to the Nominal Mapping Parameter (taken from Snape, 2006, p. 6)

a. NP [+arg, +pred]	b. NP [+arg, -pred]	c. NP [-arg, +pred]
<b>English, German</b>	<b>Japanese, Chinese, Thai</b>	<b>Spanish, Italian, Greek</b>
<ul style="list-style-type: none"> <li>• LIs with (in)definite articles.</li> <li>• Number marking on Ns.</li> <li>• Bare mass Ns.</li> </ul>	<ul style="list-style-type: none"> <li>• LIs lacking an article system.</li> <li>• No number marking on Ns.</li> </ul>	<ul style="list-style-type: none"> <li>• LIs with (in)definite articles.</li> <li>• Number marking on Ns.</li> <li>• No bare mass Ns</li> </ul>

Japanese for example is within the group of languages that allows NPs to be arguments without determiners and kind-denoting. In the category [-arg, +pred], languages like Spanish<sup>5</sup> only allow DPs as arguments with an obligatory D position, bare NPs may not be arguments and generic reference is only available with a definite DP. Taking a middle position, languages like English [+arg, +pred] are mixed languages that allow bare (plural and mass) NPs to be arguments with no need for a licensing D but (count singular) NPs require licencing, hence a generic reference is available for bare plurals.

The difference between definite articles in English and Spanish is captured by proposing 'maximality' and 'kind reference' (Chierchia, 1998 based on the inventory of semantic operation by Partee, 1987). 'Maximality' is defined as selecting the maximal

<sup>5</sup> Arabic is similar to Spanish in only allowing generic reference with definite NPs but at the same time Arabic does allow bare NPs as arguments. Therefore Arabic wouldn't fit in any of the categories of the NMP. Discussing this issue is outside the scope of the current study, more details can be found in Fassi Fehri (2004).

element in the set denoted by the NP, and ‘kind reference’ is defined as selecting the kind whose members have the property denoted by the NP. Spanish lexicalises maximality and kind reference through the definite article similar to other languages like Arabic. On the other hand, the definite English article only lexicalizes maximality. To explain why the definite English article doesn’t lexicalize kind-reference as well, an Avoid Structure Principle is proposed stating that when a bare NP and a DP have the same meaning the simpler structure ‘NP’ is chosen. Dayal (2004) adopted Chierchia’s semantic framework but finds evidence against the Avoid Structure Principle in the fact that some languages like German give generic reference to both bare and definite plurals (Kirfka et al, 1995). Dayal proposes an alternative ‘definiteness scale’ on which languages may choose to lexicalize only the reading of definiteness (maximality) on definite determiners like English, or choose both the definiteness (maximality) and generic (kind-reference) like Spanish (and Arabic as well) or choose to lexicalize neither maximality nor kind reference on determiners like Russian and all -Art languages.

One of the first studies examining L2 acquisition of generic reference following a semantic classification was Ionin & Montrul’s (2009) study. The study followed the semantic operations proposed by Chierchia (1998) and Dayal (2004) to account for the distribution of bare and definite NPs. Ionin & Montrul (2009) hypothesized that L1 Korean learners of English will sometimes misinterpret definite plurals as generics. The participants were 67 L1 Korean learners of English who undertook a TVJT and an AJT. The 24 item TVJT included sentences containing a definite plural, a bare plural and a demonstrative plural and the 36 item AJT included pairs of sentences with the second sentence judged at being acceptable based on the first. The results show that at the group level, L1 Korean learners of English were not as accurate as native speakers but at the individual level the majority of the learners were target-like. The learners who are not target-like fall into two patterns: a) L1 transfer: misinterpreting bare plurals as specific, and b) allowing generic reading of definite plurals. The second pattern suggests a general developmental pattern of fluctuation between different grammars: a) English: that lexicalizes definiteness only and b) Spanish: that lexicalizes definiteness and kind reference.

The findings suggest a combination of UG access to domain specific knowledge and input factors. These results were explained in light of L1 acquisition studies on the acquisition of generics by Perez-Leroux et al (2004) in which L1 English children were

suggested to go through a “Spanish” stage in the acquisition of generic reference. This cross-linguistic influence in the acquisition of plural NP interpretations was also investigated among English-Italian bilingual children by Sorace et al (2009). Using an acceptability judgment task, they found influence from English to Italian as English-Italian bilinguals were non-native like in accepting bare plurals with generic reading. This suggests cross-linguistic influence from English, the language of the most economical setting of the NMP.

To further investigate the acquisition of the generic interpretation of bare plurals in L2 English, Ionin & Montrul (2010) conducted another study involving learners from -Art and +Art languages. The study targeted L1 Korean and L1 Spanish learners of English to know if the acquisition process is more difficult with L1 Spanish speakers as they need to “shift generic interpretation from one category (definite plurals) to another (bare plurals)” or L1 Korean speakers as they need to “acquire a new category (the definite determiner), along with the corresponding semantics” (p. 885). Two studies were conducted; the first study included 24 L1 Spanish speakers and 29 L1 Korean speakers learning English as a second language.

The instruments included a general AJT on English articles, a TVJT on the interpretation of English plurals as generic versus specific adopted with modification from Perez-Leroux et al’s (2004) study with child L1 learners. The results of both instruments show a clear difference between Korean and Spanish learners as Korean learners were more accurate in interpreting definite plurals as specific and not generic signalling the effect of L1 transfer on the acquisition of generic interpretation. This study was followed up by another study targeting advanced English learners 11 L1 Spanish and 9 L1 Korean. The results show recovery from L1 transfer as most participants in both groups were target-like. In answering the research question it was found that shifting generic interpretation into a new category (L1 Spanish speakers) is more difficult than acquiring a new one.

The studies reviewed so far focused only on ‘bare plurals’ and their generic interpretation in English as opposed to ‘definite plurals’ in other languages. However, generic interpretation is also possible in English with definite and indefinite singular nouns. Snape, Garcia Mayo, & Gurel (2009) conducted a study on the acquisition of the three English generic contexts (definite singular, indefinite singular and definite plural) by learners from different L1 backgrounds following Chierchia’s (1998) classification of kind reference but without adopting the NMP. The subjects were 45 L1

Spanish, 88 L1 Turkish, 33 L1 Japanese, and 22 L1 Chinese and they took a 66 item forced choice task on generic contexts. The research sought to investigate if L2 learners of English can acquire the form-meaning mappings when L1 and L2 are different in expressing generic reference. The results gave a preliminary account of the role of L1 transfer as L1 Spanish speakers transferred the requirements of definite generics from their L1, the L1 Turkish speakers exhibited more omission errors of the definite article also transferring their L1 requirement of an indefinite article. As to learners from -Art languages, they substituted the definite article for an indefinite article in singular definite generics. More investigations are called for investigating detailed contexts of generic reference in English including kind, non-kind, and taxonomic features.

A more elaborative study on generic distinctions was conducted by Ionin et al (2011) based on the semantic classification of Kirfka et al' (1995) as: sentence-level or NP level genericity summarised in table (6). In the 'sentence-level genericity' there is a generic operator GEN involving universal quantification and pragmatic constrains while the 'NP-level genericity' involves an NP referring to an entire kind compatible with 'kind' predicates. This entails that the NP types used to express generic reference are not interchangeable in all generic contexts. The conclusion made by Ionin et al (2011) is that the three generic NPs: definite singulars, indefinite singulars, and indefinite plurals are not freely interchangeable.

Table 6 Sentence-level & NP level generics (taken from Ionin et al,2011, p. 256)

	<u>Sentence-level generics</u>	<u>NP level generics</u>
	Characterising sentence	NP= kind/ taxonomic Episodic with kind predicate
<b><i>Indefinite Singular NP</i></b>	A lion is dangerous.	--
<b><i>Indefinite Plural NP</i></b>	Lions are dangerous.	Dinosaurs are extinct.
<b><i>Definite Singular NP</i></b>	The lion is dangerous.* *(with restriction only for NPs that denote an established kind)	The dinosaur is extinct.

Note that with sentence-level generics the sentence has to be a characterizing sentence like “*a dog barks*” and not a particular sentence as in “*A dog is barking*”. This can be tested by inserting an adverb “usually, typically” then checking if the adverb insertion changes the sentence drastically then it is not a characterizing sentence. As to NP-level generics, the NP must occur with a kind predicate like for example “*be extinct*” which indicates reference to the whole kind. Accordingly, only the indefinite plural NP in English can have both sentence-level and NP level generic interpretation.

The generic interpretation of an NP is further complicated by the fact that they can have non-generic readings when they occur in particular episodic sentences:

- a. I saw the lion. [definite singular NP] non-generic
- b. I saw a lion. [indefinite singular NP] non-generic
- c. I saw lions. [indefinite plural NP] non-generic
- d. I saw the lions. [definite plural NP] non-generic

(Ionin et al, 2011, p. 246)

A semantic account for the non-generic interpretations proposes that the definite article *the* with a singular NP encodes the semantic concept of *uniqueness* “the unique contextually salient lion in the discourse”, while the definite article with a plural NP encodes *maximality* “the maximal contextually salient set of lions in the discourse”. The semantics of indefinite NPs on the other hand encodes the concept of *existence* “there exists a lion/multiple lions that the speaker saw” (Ionin et al, 2011, p.245-246, based on Heim, 1991). As explained, generic interpretation is not possible in English with definite plurals as shown in the following example:

Here’s something interesting I’ve read in a book about the behaviour of predatory mammals:

- a. A lion usually hunts alone.
- b. The lion usually hunts alone.
- c. Lions usually hunt alone.
- d. #The lions usually hunt alone.

(Ionin et al, 2011, p. 246)

The study examined 45 L1 Korean and 33 L1 Russian learners of English to investigate if they are capable of making a distinction between sentence-level and NP level genericity and realizing that this distinction is morphologically encoded by English articles. The generic interpretation is possible in Korean and Russian but is not encoded in articles as both languages use singular and plural bare nouns to express all the generic distinctions listed above. The hypothesis is as follows:

L2-English learners who have mastered English article semantics (mapping *the* to the [+definite] feature, and *a* to the [-definite] feature) should be target-like with English indefinite singular generics (which have the semantics of ‘regular’ indefinites), but may not necessarily be target-like on definite singular generics (which bear the [+taxonomic] feature in addition to the [+definite] feature).

(from Ionin et al, 2011, p. 259)

The task included an AJT and a TVJT, and the results answered the hypothesis by confirming that both Korean and Russian learners were capable of distinguishing between sentence-level and NP-level genericity as they “allowed indefinite singular NPs

with sentence-level genericity only, while allowing bare plurals with both sentence-level and NP-level genericity.” (Ionin et al , 2011, p.275). However, some individual problems were found on definite singular generics which is consistent with semantic complications involved in choosing the feature [+taxonomic] for *the* in addition to the [+definite] feature. In comparison, the indefinite singular generics were not problematic because they are regular indefinites requiring only the feature [-definite] as the generic interpretation comes from the sentence level. The study explained those difficulties by referring to the bottleneck hypothesis (Slabakova, 2008) on the difficulties in mapping semantics to morphology as the “[+taxonomic] feature is more difficult to acquire than the [±definite] feature.” (Ionin et al, 2011, p. 276)

The previous sections reviewed the major studies and theories proposed within GenSLA on the acquisition of English articles and the semantic properties related to article use as summarised in table (7) below. The main findings from early studies (Huebner, 1983; Master, 1987; Murphy, 1997; Parrish, 1987) agree that English articles do present an acquisition difficulty and many studies suggest an advantage for learners from +Art languages but those studies didn’t offer a clear semantic classification to define and predict those difficulties. Early GenSLA studies led to proposing the idea of a mapping problem of article features (Goad & White, 2004; Lardiere, 2004; Robertson, 2000; White, 2003) suggesting a morphological-syntax mapping problem related to missing inflections and/or prosodic difficulties. A semantic account of article acquisition was presented by the series of studies by Ionin and colleagues (Ionin, 2003; Ionin & Wexler, 2003; Ionin, Ko & Wexler, 2004) through the proposal of an Article Choice Parameter and a Fluctuation Hypothesis defining the semantic features of definiteness and specificity. The hypothesis accounted for learners from -Art languages but didn’t fully describe the acquisition of English articles by learners from +Art languages. Later on, studies confirmed that learner from +Art languages do not fluctuate and that L1 transfer overrides fluctuation (Hawkins et al, 2006; Ionin et al, 2008; Sarko, 2009a). More investigations into the ACP and critique (Trenkic, 2008; Tryzna, 2009) resulted in a revised version of the ACP (Ionin et al, 2009) confirming that there was no specificity distinctions with definite NPs as a natural parameter and the fact that some adults made that distinction was related to explicit strategies rather than UG access.

Further investigations revealed more acquisition difficulties in the generic interpretation of articles as a result of L1 transfer for learners from +Art languages. SLA studies that were reviewed relied on descriptions of generic NPs and the features related to them (Chierchia, 1998; Dayal, 2004; Kirfka et al, 1995; Lyons, 1999) to explain

acquisition difficulties. It was found that in English the NPs and the features related to the NP are different with different generics. Singular generics are [-definite] NPs with no features carried by the NP but rather a GEN operator and generic interpretation is found at the sentence level. On the other hand, plural generics are NPs that have the features [-definite] and [+kind reference]. English also has definite singular NPs carrying generic interpretation with the features [+definite] [-plural] [+taxonomic].

Arabic is similar to Romance languages and different from English in allowing definite plurals to have a generic interpretation. In Arabic a [+definite] [ $\pm$ plural] NP can have a generic interpretation but a [-definite] [ $\pm$ plural] NP can't have generic interpretation. The differences between English and Arabic will be detailed in the following sections but the conclusion here is that generic interpretation is found to cause difficulties because of the different mappings between languages and feature combinations. In contrast to studies on the definiteness/specificity distinction the advantage in the acquisition of generic interpretation was for learners from -Art languages because of the absence of L1 transfer that would complicate the acquisition process (Ionin & Montrul, 2009; Ionin & Montrul, 2010; Ionin et al, 2011; Snape, Garcia Mayo, & Gurel, 2009).

Table 7 A summary of major GenSLA studies on the acquisition of articles and proposed hypotheses

Study	Sample size	L1	Instrument	Hypothesis
<b>Robertson 2000</b>	18	Chinese	Collaborative problem solving task.	Missing Surface Inflection Hypothesis (Prevost & White, 2000)
<b>White 2003</b>	50 year old female	Turkish	Timed interviews-written elicited production task-grammaticality judgment task	Missing Surface Inflection Hypothesis
<b>Ionin &amp; Wexler 2003</b>	27	Russian	Translation task and an elicitation task	Semantic referentiality in L2 article use
<b>Lardiere 2004</b>	Adult female	Mandarin	Longitudinal analysis (16 years) naturalistic data from recordings and written samples	Distributed Morphology (Halle & Marantz, 1993), Post-syntactic mapping of features.
<b>Ionin, Ko, &amp; Wexler 2004</b>	30 40	Russian Korean	Forced choice task- Written production task	Article Choice Parameter ACP Fluctuation Hypothesis
<b>Goad &amp; white 2004</b>	Adult	Turkish	Data from White (2003)	Prosodic Transfer Hypothesis
<b>Hawkins et al 2006</b>	12 12	Japanese Greek	Forced choice task	Distributed Morphology (Halle & Marantz, 1993) Feature assembly (Lardiere, 2004)
<b>Snape 2006</b>	30 30 15	Japanese Spanish English	Grammaticality judgment, oral/written production, forced choice elicitation tasks.	ACP, NMP, Feature assembly, syntactic/pragmatic interface
<b>Trenkic 2008</b>	43	Mandarin	24 dialogues from the forced choice task (Ionin, Ko, & Wexler, 2004)	Syntactic misanalysis account
<b>Ionin, Zubizarreta, &amp; Maldonado 2008</b>	23 24	Russian Spanish	Elicitation test of articles	Transfer overrides Fluctuation
<b>Ko, Ionin, &amp; Wexler, 2008</b>	30 20	Serbian-Croatian Korean	Forced choice task	Learners access to semantic universals. ACP, FH
<b>White 2008</b>	15	Mandarin	Elicited oral production task	Prosodic representation difference ( Goad & White, 2004) but sensitive to semantic restrictions.
<b>Garcia Mayo 2009</b>	60	Spanish	Forced choice task	Transfer overrides Fluctuation ACP
<b>Sarko 2009a, 2009b</b>	57 18	Syrian Arabic French	Forced choice task - oral production	Transfer from L1 Full transfer Full access (Schwartz & Sprouse, 1994)
<b>Ionin &amp; Montrul 2009</b>	67	Korean	Truth Value judgment task- picture matching- Acceptability judgment task	Preliminary evidence for similarity between L1 and L2 acquisition of generic reference.

<b>Tryzna 2009</b>	19	Polish	Forced choice task	Reduced version of the ACP against the Fluctuation Hypothesis
	17	Mandarin		
<b>Goad &amp; White 2009</b>	6	Turkish	Elicited production	Competing grammars more than one prosodic representation for English articles.
<b>Snape et al 2009</b>	45	Spanish	66 item Forced choice task on English generic contexts	Bottleneck hypothesis, L1 transfer
	88	Turkish		
	33	Japanese		
	22	Chinese		
<b>Ionin &amp; Montrul 2010</b>	29	Korean	AJT	L1 transfer difficulties Feature selection and feature re-assembly (Lardiere, 2004)
	24	Spanish	TVJT	
<b>Ionin et al 2011</b>	45	Korean	AJT, TVJT	The bottleneck hypothesis (Slabakova, 2008)
	33	Russian		
<b>Pierce &amp; Ionin 2011</b>	16	Korean	AJT	Prosodic transfer hypothesis
	14	Mandarin	Transcription task	

Before using what we have known so far about the acquisition of English articles in this current work, more studies on the acquisition of English articles by “L1 Arabic” speakers is needed to arrive at a clear description of the acquisition process and L1 transfer. The following section will start by explaining the cross-linguistic difference between Arabic and English in this property then a review of studies conducted on the acquisition of English articles by L1 Arabic speakers.

### 3.3. Cross-linguistic variation: English and Arabic:

In order to arrive at a principled account for the role of transfer and UG access in the acquisition process, GenSLA studies must develop a clear description of cross-linguistic variation between languages. The description of the linguistic properties in L1 and L2 allow researchers to explore similarities and differences and how they may affect ILGs (White, 2010). For the purpose of this current work a description of the DP domain and the relevant features of articles in English and Arabic will be presented.

#### 3.3.1. The DP domain in English and Arabic:

There is a difference across all languages on whether an NP can occur alone or with a “determiner” as a DP and the function of the determiner is to “typically establish the definite/indefinite interpretation of the nominal” (Longobardi, 2001, p.568). The restrictions found between languages range from languages that disallow bare NPs as arguments on one end (e.g. French) to languages that allow all types of bare NPs on the other end (e.g. Slavic):

- a. Languages with no bare nouns (French)
  - b. Languages with *stricter* bare nouns (apparently the rest of Romance: Spanish Italian...)
  - c. Languages with *freer* bare nouns (English and perhaps most of Germanic)
  - d. Languages with indefinite bare singulars (and only a definite lexical article: Icelandic, Celtic, Hebrew...)<sup>6</sup>
  - e. Languages with ambiguous bare singulars (i.e. articleless languages: Russian, Czech, Latin...)
- (Longobardi, 2001, p. 572)

The last category (e) includes languages that have no articles -Art languages (like Chinese, Japanese, Korean, and Russian) and the first four categories (a-d) are considered +Art languages having either overt or covert forms of “articles” (Lyons, 1999). English has two overt articles: *the* and *a* and one covert article:  $\emptyset$  and all three forms have grammatical properties “person”, semantic properties “generic vs partitive” and selectional properties “selects singular, plural or mass nouns” (Radford, 2004).

On the other hand, Non-standard spoken Arabic<sup>7</sup> varieties have an overt definite article as a bound prefix form *al-* as shown in the following example (a) and an indefinite null covert article  $\emptyset$  (c). The definite article prefix is phonologically

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<sup>6</sup> The Arabic language fits in this category.

<sup>7</sup> Only Modern Standard Arabic has an overt marker of indefinite nouns in the form of a suffix. However, this study is conducted on the Spoken Saudi Arabic variety and as such I have restricted the discussion to the relevant accounts of Non-Standard Spoken varieties of Arabic.

assimilated if the first letter of the noun was an alveolar consonant and pronounced ‘a’ (b). (Almahboob, 2009; Bardeas, 2009; Holes, 1990; Ryding, 2005; Sarko, 2009a, 2009b)

- a) *Al*-bait  
The house
- b) *A*fams  
The sun
- c)  $\emptyset$  Bait  
A house

In English, the three articles *the*, *a*, and  $\emptyset$  do not encode gender but encode “number”. Almahboob (2009) compares between English and spoken Arabic and proposes “that the underlying structure of the DP in both languages is not very different except in relation to mass nouns.” (p.42). The difference is that in Arabic a NumP must project with three values (singular, plural, and dual). Bardeas (2009) concludes that spoken Arabic has two determiners: the overt definite article/prefix *al* and a covert  $\emptyset$  indefinite article. Therefore, this study will adopt the view that all Arabic indefinite nouns are marked by a null determiner  $\emptyset$  whether singular, plural mass or abstract (Almahboob, 2009; Bardeas, 2009; Sarko, 2009a, 2009b).

In summary, the distribution of the Spoken Arabic definite article *al* matches the English article *the* in anaphoric, encyclopaedic, associative definite contexts with no restriction on number, gender, or argument position. The difference is with the indefinite determiners as English has two determiners encoding the feature [number]: *a* [-plural] and  $\emptyset$  [+plural] while Arabic encodes [ $\pm$ plural] onto one morpheme  $\emptyset$ .

### 3.3.2. Definiteness and Specificity in English and Arabic:

The article system according to Ionin, Ko, & Wexler (2004) encodes two possible semantic discourse-related features ‘definiteness’ or ‘specificity’:

#### Definiteness and Specificity

If a Determiner Phrase (DP) of the form [D NP] is...

- (a) [+definite], then the speaker and hearer presuppose the existence of a unique individual in the set denoted by the NP
- (b) [+specific], then the speaker intends to refer to a unique individual in the set denoted by the NP, and considers this individual to possess some noteworthy property

(Ionin, Ko & Wexler, 2004, p.5)

In defining the semantic features related to articles Ionin (2003) and (Ionin, Ko, & Wexler, 2004) followed a Fregean analysis of definiteness and quantificational analysis of indefiniteness (Heim, 1991). The definition of specificity followed Fodor & Sag’s

(1982) speaker's intent to refer with the additional concept of noteworthy property developed by Ionin (2003).

In English, the feature [+definite] has a morphological expression in the article system through the article *the* (e.g. I saw a cat. I gave *the* cat some milk) indicating a [+specific] feature with a noteworthy property. This uniqueness/familiarity could be expressed by previous discourse or by knowledge of the world. In [-definite] contexts the article *a* is used with the presupposition that no unique individual exists indicating a [-specific] feature as well. Specificity can also be expressed in English in indefinite contexts while definite contexts can be non-specific as in the following examples (a, b):

- a. I'd like to talk to *the* winner of today's race...whoever that is; I'm writing a story about this race for the newspaper. [+definite] [- specific].
- b. Peter intends to marry *a* merchant banker... even though he doesn't get on at all with her. [-definite] [+ specific].

(Ionin, Ko, & Wexler, 2004, p.8-9)

Similar to English, Arabic encodes definiteness but not specificity and articles can be interpreted as specific or non-specific. The following examples from Sarko (2009b, p. 36-48) illustrate how the Syrian Arabic definite article *al-* allows specific and non-specific readings and the indefinite null determiner  $\emptyset$  allows specific and non-specific readings as well. Najdi Arabic is similar to Syrian Arabic with slight differences not related to article use as shown by including a transcription into Najdi Arabic under Sarko's examples:

(a) [+definite, +specific]

**Fi al-maktabba (In the library)**

A: xalina neru:h s<sup>s</sup>arlna hon 3 safat (Syrian Arabic)

xalina neru:h s<sup>s</sup>alna hina 3 safat (Najdi Arabic)

Let's go we have been here for 3 hours

B: bes maʕam eʔder qarar ʔyu kita:b baxod (Syrian Arabic)

bas ma agdar aqarer ʔy kita:b axthuh (Najdi Arabic)

But I am unable to decide which book to take

A: xədi al-kita:b tabaʕ altabʕa alʔhdath (Syrian Arabic)

xəthi al-kita:b elly altabʕa alʔhdath (Najdi Arabic)

Take the book with the most recent edition

(b) [+definite, -specific]

**Fi al-madina al-rijjad<sup>hiya</sup> fi sibaq al-xju:l (In the sports city in a horserace)**

Al-s<sup>h</sup>afi: fwan fik tsa<sup>h</sup>dni (Syrian Arabic)

Al-s<sup>h</sup>afi: fwan tegdar tsa<sup>h</sup>dni (Najdi Arabic)

The reporter: excuse me could you help me

Al-<sup>h</sup>arəs: fu baddak? (Syrian Arabic)

Al-<sup>h</sup>arəs: ef tibbi? (Najdi Arabic)

The guard: what do you want?

Al-s<sup>h</sup>afi: ?na s<sup>h</sup>afi u bedi: ?a<sup>h</sup>mol muqabala m<sup>h</sup> al-fajez maba<sup>h</sup>ref mi:n huwa bas fik tsa<sup>h</sup>dni mən fad<sup>h</sup>lak. (Syrian Arabic)

Al-s<sup>h</sup>afi: ?na s<sup>h</sup>afi u abi: ?a<sup>h</sup>mel muqabala m<sup>h</sup> al-fajez ma a<sup>h</sup>ref mi:n huwa bas tegdar tsa<sup>h</sup>dni mən fad<sup>h</sup>lak. (Najdi Arabic)

The reporter: I am a reporter and I want to make an interview with the winner. I don't know who he is but could you help me please.

(c) [-definite, +specific]

**Fi: al-s<sup>h</sup>af (In the class)**

Al-ustaz: fla fu hm ddawer (Syrian Arabic)

Al-ustath: fla ef ga<sup>h</sup>d dawer (Najdi Arabic)

The teacher: what are you looking for?

Al-t<sup>h</sup>aləb: hm ddawer fla kita:b nsitu hon məbarha (Syrian Arabic)

Al-t<sup>h</sup>aləb: ga<sup>h</sup>d ?dawer fla kita:b nsita hina ams (Najdi Arabic)

The student: I am looking for a book I forgot here yesterday.

(d) [-definite, -specific]

**Fi al-<sup>h</sup>arəf (In the street)**

A: finna neruh fla al-maktaba? (Syrian Arabic)

Negdar neruh li l-maktaba? (Najdi Arabic)

A: Could we go to the library?

B: ləf? (Syrian Arabic)

ləf? (Najdi Arabic)

B: Why?

A: Bukra mesafar, Beddi ?ftri: kita:b laqra fla al-t<sup>h</sup>ari:k. (Syrian Arabic)

Bukra mesafer, Abi: ?ftri: kita:b aaqra fla el-t<sup>h</sup>ari:k (Najdi Arabic)

A: Tomorrow I am travelling. I want to buy a book to read on the way.

### 3.3.3. Genericity in English and Arabic:

Bickerton's (1981) features grouped all generic nouns into one combination [-Specific Referent, +Hearer Knowledge] this classification doesn't capture the semantic properties of different generic expressions. Generic readings of an NP in English can be possible through all three articles *the*, *a*, and  $\emptyset$  (Kirfka et al, 1995; Lyons, 1999). Kirfka et al's (1995) classification of genericity in English involves sentence-level, and NP level genericity as explained earlier in (3.2.2.2.).

Ionin et al (2011) confirm that both sentence-level and NP-level genericity are “universal linguistic phenomenon: any language can be used to talk about habitual events (sentence-level genericity) and about kinds (NP-level genericity)” (p.256) The cross-linguistic variation is proposed to be at the “morphological level” as English marks the two semantic concepts with definite and indefinite articles while other languages have different markings.

Generic interpretation in Arabic at the sentence-level and NP-level is only possible with definite singular or plural NPs marked by the article (*al*). Without the article *al* only an existential reading is possible which makes Arabic similar to Romance languages (Fassi-Fehri, 2004) as shown in the following examples from Almahboob (2009, p.50):

(a) Singular

*al-kalbu* lahu arbali'atu iarjul (MSA)

*al-kalb* lah arbaʕ rujool (Najdi Arabic)

**The dog** has four legs

(b) Plural

*al-kilaabu* laha arbali'atu iarjul (MSA)

*al-kilaab* laha arbaʕ rujool (Najdi Arabic)

**Dogs** have four legs

(c) Mass

*Al-maaiu* men al-sawaʔal (MSA)

*Al-moyah* men al-sawaʔil (Najdi Arabic)

**Water** is a liquid (literally: water is part of liquids)

A comparison between English and Najdi Arabic is summarised in table (8). Note that the major contrast is that English allows indefinite NPs to have generic readings while Arabic requires a definite NP. In Arabic, a definite plural can have either a generic interpretation *or* a specific interpretation while in English only a

specific interpretation is possible (with the exception of names of nationalities e.g. The Italians love food) (Almahboob, 2009; Sarko, 2009a, 2009b). Therefore, the only similar morphological marking in generic reference when comparing English and Najdi Arabic is with definite singular NPs.

Table 8 Cross-linguistic generic morphological marking in English & Arabic

Generic interpretation of :	English	Najdi Arabic
<b>Indefinite singular NP</b>	A Dog barks.	*Not possible
<b>Indefinite plural NP</b>	Dogs bark. Dinosaurs are extinct.	*Not possible
<b>Definite singular NP</b>	The dinosaur is extinct.	Aldinasor mongarid <sup>٥</sup>
<b>Definite plural NP</b>	*Not possible	Al-kilabu Tanbahu. <i>The-Dogs Bark</i> Aldinasora:t mongarid <sup>٥</sup> <i>The-dinosaurs are extinct</i>

To summarise the differences that have been presented so far between the two languages a comparison between the feature combinations involved in the universal meanings: definiteness, specificity, and genericity will follow in the next section.

### 3.3.4. Comparing the features: definiteness, number, specificity, and genericity in English and Najdi Arabic

First, the semantic features of definiteness, number and specificity in English and Najdi Arabic will be detailed then we will look closer at the generic feature.

As mentioned above, the two languages encode [number] in the article system with articles carrying the features [ $\pm$ plural]. In addition to number we have the two semantic features: [ $\pm$ definite] and [ $\pm$ specific]. English has three articles that encode those features in different combinations: *the*, *a*, and  $\emptyset$  while Najdi Arabic encodes those features onto two articles: *al*, and  $\emptyset$  as shown in (table 9).

Table 9 Definiteness and specificity mappings in English and Najdi Arabic

English		Najdi Arabic	
Morpheme	Features	Morpheme	Features
<i>the</i>	[+definite], [ $\pm$ specific], [ $\pm$ plural]	<i>al</i>	[+definite], [ $\pm$ specific], [ $\pm$ plural]
<i>a</i>	[-definite], [ $\pm$ specific], [-plural]	-	-
$\emptyset$	[-definite], [ $\pm$ specific], [+plural]	$\emptyset$	[-definite], [ $\pm$ specific], [ $\pm$ plural]

As mentioned earlier in 3.3.1, note the similarity between the two articles *the* and *al* in their feature combinations. Also note the similarity between the two languages in encoding specificity. The difference between the two languages is in the [number] features. Najdi Arabic encodes both features [+plural] and [-plural] onto  $\emptyset$  while English uses an overt morpheme *a* to encode [-plural] and a covert  $\emptyset$  for [+plural]. Lardiere (2008) points out that for learners from -Art languages the acquisition of English *the* is less complicated than *a* &  $\emptyset$  because of the complex [number] features associated with English indefinite determiners. With L1 Najdi Arabic speakers [number] does mark a feature re-assembly process between the two languages but the difficulty level will be considered in comparison to the [+generic] feature and in light of ample evidence in the input for the [number] feature.

On the other hand, the generic feature shows more differences between the two languages. In English, generic interpretation can be encoded onto all three articles but in Arabic it is only encoded onto the article *al* as shown in the following table 10.

Table 10 Genericity mappings in English and Najdi Arabic

English		Najdi Arabic	
Morpheme	Features	Morpheme	Features
<i>the</i>	[+definite], [+generic], [-plural]	<i>al</i>	[+definite], [+generic], [±plural]
<i>a</i>	[-definite], [+generic], [-plural]	-	-
$\emptyset$	[-definite], [+generic], [+plural]	$\emptyset$	-

The major two differences in feature mappings involving genericity are:

- a) The combination [-definite], [+generic] is not possible in Najdi Arabic while in English it is possible and encoded onto two articles: *a* [-plural] and  $\emptyset$  [+plural].
- b) The feature combination [+definite], [+generic], [+plural] is not possible in English while in Najdi Arabic it is possible and encoded onto the article *al*.

### 3.3.5. Relative clause modification of the DP in English and Arabic

The results of previous studies on the acquisition of English articles by L1 Arabic speakers revealed another difficulty related to syntactic agreement. There is a unique restriction requiring an overt definite article when the DP is modified by a relative clause with an overt complementiser. The use of the relative clause ‘pronoun’ or complementiser is allowed only with a definite head noun. While in English there is no such restriction and a definite or indefinite head noun is grammatical. On the other hand, the Arabic rule states that the complementiser must be null when the head noun is indefinite and this restriction holds in many versions of standard and spoken Arabic (Fassi-Fehri 1993; Holes, 1990; Sarko, 2009a, 2009b) including the dialect used in this work “Najdi Arabic” as shown in the following examples:

- a. Gelt 1 uboy yjeeb ly al- sa:ʕa illi feha aħja:r. (Najdi Arabic)  
I told my father to bring me the watch that has studs.
- b. \*Gelt 1 uboy yjeeb ly Ø sa:ʕa illi feha aħja:r. (Najdi Arabic)  
I told my father to bring me a watch that has studs.

In English there is no restriction on the definiteness/ indefiniteness of the head noun of a relative clause and the presence or absence of a relative complementiser. Sentences with definite or indefinite head nouns are both grammatically correct as in the following examples:

- a. I want to buy the book (which/Ø) I have been trying to find for ages.  
b. I want to buy a book (which/Ø) I have been trying to find for ages.  
(Taken from Sarko, 2009b, p. 53)

### 3.3.5. The learning task facing Arabic L1 learners of English articles

The previous section described the cross-linguistic variation between English and Arabic in article semantics. It is shown that both languages encode definiteness in their article systems and not specificity following the ACP distinction. Arabic and English both have articles that encode the [+definite] feature. The main difference is that English has two articles encoding the features [-definite] [ $\pm$ plural]: the overt *a* and the phonologically null  $\emptyset$  while Arabic has only a null  $\emptyset$  article exponent to express the [-definite] [ $\pm$ plural] feature combination. It was also shown that the [+generic] feature is expressed differently in the two languages as it is only possible with the [+definite] feature in Arabic.

Another area of difference is the restriction on relative clause modification of DPs with an overt complementiser. Arabic doesn't allow the [-definite] feature on nouns that are modified by a relative clause with an overt complementiser while in English this restriction doesn't exist.

The learning task facing learners from L1 Arabic as summarized by Sarko's (2009b) previous study involves three points:

- 1) The definite article *the*, corresponds to the definite Arabic article *al* although *the* cannot be interpreted generically when the NP is plural, and there is no dependency between *the* and the choice of complementiser in relative clause.
  - 2) That two allomorphs (*a* &  $\emptyset$ ) realize indefiniteness while in Arabic all indefinites are bare NPs.
  - 3) That NPs modified by (*a* &  $\emptyset$ ) can be given generic interpretation.
- (p.60-61)

The current work will formulate more detailed predictions of the learning task following a contrastive analysis of features by adding more details on the [number] feature and the role of input. To complete this picture and pin down the exact areas of difficulties a review of empirical acquisition studies on the acquisition of articles by L1 Arabic speakers will follow in section (3.4).

### **3.4. The acquisition of English articles by Arabic L1 speakers**

#### **3.4.1. Early studies on “errors” made by L1 Arabic speakers**

One of the early studies that looked into the errors made by L1 Arabic speakers in L2 English was Willcott (1972, 1978). He examined a large corpus of written data from L1 Arabic students at the university of Texas and the majority of the errors (89%) fell into four major categories:

1. The use of  $\emptyset$  when the grammatical choice is *the* (e.g. The effect of \*new deal on society).
2. The use of *the* when  $\emptyset$  is required (e.g. He went to \*the war) which sounds foreign but not ungrammatical (relating this to context and what speaker hearer share)
3. The use of  $\emptyset$  when the grammatical choice is *a* (e.g. Carnegie was \*strong fellow).
4. The use of  $\emptyset$  when *the* is required (He thought that \*depression was due the world situation) which sounds foreign but not ungrammatical.

After analysing the results Willcott (1978) related the second error to generic, mass and abstract nouns that are realized differently through contrastive analysis between Arabic and English. The third error was also related to the omission of the indefinite article as

influenced by L1 transfer. In analysing the first and fourth error he concludes that he found no explanation in the contrastive analysis hypothesis.

Another study by Kharma (1981) investigated the use of English definite and indefinite articles by 128 L1 Arabic students in Kuwait. The study employed a cloze text with gaps required to be filled by articles. The results show five main types:

- a. Overuse of *the* when *a* is required (with indefinite generic singular NPs)
- b. Omission of *a* or *the* with singular NPs.
- c. Overuse of *a* when *the* is required.
- d. Overuse of *the* when  $\emptyset$  is required.
- e. Overuse of *a* with indefinite mass nouns.

(From Sarko, 2009b, p.96)

The interesting findings from Kharma's study are: a) that there was a relatively low rate of errors in the use of the indefinite article *a* which doesn't exist in L1 and as such should have been more difficult if L1 interference was the source of errors, and b) that the errors found in the overuse of *the* revolved around "plural nouns and plurals used in a general sense" (p.341) proposing an interference from L1 in this context only.

Using an error analysis approach Hawas (1986) also studied the errors made by L1 Arabic learners of English in using definite and indefinite articles. Data was collected using three tests with blank spaces in the place of articles and subjects were asked to provide the missing article. The total sample of the study was 308 L1 Arabic learners of English from two Arabic universities (Kwait and Egypt). The findings supported the critique of a contrastive analysis approach which relates all errors to the first language. The results showed correct anaphoric use of the definite article *the* but highlighted patterns of using  $\emptyset$  instead of *the* in contexts that are supposed to be similar in the two languages like reference to unique nouns or modified nouns. In 'indefinite singular contexts' errors were found in using a definite article *the* instead of using  $\emptyset$  with indefinites. Errors were analysed as resulting from "defective comprehension of the text" and "unproductive reading techniques" which relates to the semantic and discourse level. In addition to problems in "knowledge of the grammatical rule" and this relates to the type of input those learners were receiving and finally the effect of L1 transfer described as "mother tongue interference".

Diab (1997) investigated L1 interference in an error analysis of 73 English essays written by L1 Lebanese Arabic speakers and found 155 errors in articles. The errors were related to L1 transfer of the generic and specific use of nouns and the

overuse of the definite article (e.g. The marriage is a holly ceremony, The victims of the war are many).

Zughoul (2002) analysed the oral production of 25 L1 Arabic learners of English at the University of Texas. The results show that the most frequent errors in noun phrases were in the use of “articles”. The errors were categorized as follows:

- a. Omission of the indefinite article *a*. (e.g. Tom is \*very good teacher)
- b. Use of *the* instead of  $\emptyset$ . (e.g. The problem here is \*the money)
- c. Omission of the article *the*. (e.g. I visited \*animal zoo)
- d. Redundant use of the article *a*. (e.g. I always look for \*a work)

Zughoul explains that the second type of error using a definite article when  $\emptyset$  is required occurs in generic contexts as he describes the difference between Arabic and English as Arabic uses the definite article for both specific and generic reference. The omission of the article *the* was related to the complex semantic representations in L2 English and not a result of L1 interference. The redundant use of the indefinite article is explained as an overgeneralization error. The researcher concludes that “... errors made by Arab learners of English seem to be strikingly similar to those made by learners from other language backgrounds.” (p. 19) without specifying which languages he means.

Bataineh (2005) investigated the errors by 209 L1 Jordanian Arabic speakers in the use of the English indefinite article a/an. The study focused on the indefinite article to examine the role of L1 transfer against other factors in the development of the interlanguage. Data was collected by asking participants to write descriptive essays then errors in the use of the indefinite article were divided into nine categories (e.g. omission, substitution,...). The results show that the effect of L1 transfer was minimal and caused only one type of error (omission) while the majority of errors were related to the learning process such as simplification and overgeneralization.

Crompton (2011) analysed 95 essays (42,391 words) of L1 Arabic learners of English to classify the misuse of English articles. Using Lyons (1999) definition of definiteness and classification of languages in how they express generic reference; he focuses his study on the problematic area of using articles in generic reference among L1 Arabic learners of English. The study analysed the errors in the use of articles and found a significant misuse of English articles (*the* instead of  $\emptyset$ ) in generic contexts in comparison to specific contexts. The study suggests that the problematic areas for L1 Arabic learners of English generic reference are caused by the first language “features” but no clear description of those suggested features was included.

The consistent finding of the previous studies investigating errors in article production is that L1 transfer was found to influence some errors but other error patterns were not directly related to L1. The acquisition of the indefinite article which doesn't exist in L1 was not found to cause errors and on the other hand many errors were found in the use of English articles in generic contexts.

### **3.4.2. A longitudinal case study of a Saudi Arabic learner of English**

Another perspective on the acquisition of English articles by Arabic speakers is found in an older longitudinal case study by Hanania & Gradman et al (1977). They started tracking the early stages of language acquisition of "Fatma" an adult L1 Saudi Arabic speaker who went to live in the USA as a wife of a graduate student and had no knowledge of the English language before arriving there. Her exposure to English was through natural communicative situations involving social contacts, necessary interactions on the telephone or at her children's school. The data was collected through structured interviews over a period of 18 months starting six weeks after her arrival to the US. The order of the acquisition of morphemes was compared to Brown (1973) and Dulay & Burt (1974). What is interesting to this study is the development in the acquisition of articles at this early stage of acquisition by an L1 Saudi Arabic speaker. Brown (1973) proposed that articles were acquired after progressive pronouns, prepositions, plural markers, irregular past, and possessive pronouns ranking them in sixth place of order. In comparison, Dulay & Burt (1974) ordered articles to be acquired earlier in second place right after pronouns. Hanania & Gradman reported that Fatma acquired the correct use of the "definite article" at what they labelled as the "fifth stage" preceded only by the acquisition of two morphemes in the "fourth stage": "pronouns" and "prepositions" which is more in line with the predictions of Dulay & Burt (1974). They also report that Fatma didn't acquire the use of the indefinite article *a* which led them to propose that there was a significant difference between the acquisition of the definite and indefinite article contradicting the assumptions by Brown's and Dulay & Burt that both articles are grouped together and acquired together. They suggest that the differences between the definite and indefinite articles suggest differences in the order of acquisition "*a* is less noticeable phonologically and much more complicated semantically and syntactically; the rules governing the use of *a* cannot be stated simply in terms of ( $\pm$ definiteness)." (p.87).

More recently an explanation is found from GenSLA research, as Lardiere (2004, 2005) also noted the difficulty found in acquiring the indefinite article in her

longitudinal study on an L1 Mandarin learner of English at an advanced acquisition stage. She proposed that indefinites are more difficult because they are sensitive to number and count/mass distinctions while the definite article can occur with both. Hanania et al also note that the subject's L1 doesn't have an equivalent of the indefinite article raising a question of the role of L1 in the acquisition process. This also supports the assumptions made later on in GenSLA research that "L1 transfer is operative at the level of article semantics." (Ionin et al, 2008, p.569). L1 transfer could have been the factor that enabled Fatma to acquire the use of the definite article at the early stages of English language acquisition.

The following section will provide more recent studies on the acquisition of English articles by Arabic speakers within such current GenSLA theories.

### **3.4.3. Studies on the acquisition of English articles by L1 Arabic speakers**

The previous section reviewed studies involving error analysis (Bataineh, 2005; Crompton, 2011; Diab, 1997; Hawas, 1986; Kharma, 1981; Willcott, 1978; Zughoul, 2002) and confirmed two major findings: a) that not all errors result from L1 transfer as learners exhibit omission of the indefinite article in early proficiency stages but then as proficiency levels increase they go through stages of overgeneralization then mastery, and b) that learners at advanced proficiency stages produce errors related to L1 transfer in *generic* contexts.

Most of the studies that will be reviewed in this section were conducted within GenSLA theory and their findings suggest that L1 Arabic speakers show positive L1 transfer in "definite" contexts when acquiring English articles. They also confirm that L1 Arabic speakers acquire the English indefinite article *a* as language proficiency increases after overcoming initial difficulties which follows the suggestions of the FT/FA hypothesis (Almahboob, 2009; Awad, 2011; Azaz, 2014; Sarko, 2009a, 2009b).

When it comes to defining acquisition difficulties, we find different proposals. In order to develop a cline of difficulty for the purpose of this study we need to look closely at the results of each study. Almahboob (2009) followed the frameworks by Ionin, Ko, & Wexler (2004) and Hawkins et al (2006) as he investigated how 96 L1 Arabic learners of English interacted with the ACP by using a forced choice task and a written production task. He restricted his investigation in the first part of the study to the definiteness/specificity distinction in non-generic contexts. Regarding the definite article *the* he predicted correct use in definite contexts and overuse in indefinite *specific* contexts. The second part of the study investigated whether the L1 Arabic requirements

for a definite article in generic reference will transfer into the L2 learners' early grammars following the FT/FA.

The results of Almahboob's study were different in each task. He concluded that the forced choice task showed positive transfer from L1 in using the English definite article *the* in definite contexts. And he suggested fluctuation related to specificity as the results confirmed the overuse of *the* in indefinite specific contexts. He also found negative L1 transfer in using the definite article with generic interpretation. On the other hand, the written production task didn't show the suggested fluctuation in indefinite specific contexts nor the overuse of *the* in generic contexts. He explains the reason for the "substitution" and "omission" of articles in the forced choice task as related to the nature of the task which made learners aware of substitution and omission as a choice while in the written task the learners were given the chance to make choices freely. This led to suggesting that the difficulties found were a "surface phenomenon" (p. 201) following the Missing Surface Inflection Hypothesis (Prevost & White, 2000). In comparison to Ionin et al's (2009) results that show that the overuse of *the* by learners from -Art languages in indefinite contexts is linked to the semantic universal of specificity, we find no support for this claim in Almahboob's data from L1 Arabic speakers.

Sarko's (2009b) thesis on the acquisition of English articles by L1 Syrian Arabic and L1 French learners offer a detailed version of her earlier article that appeared in Garcia Mayo & Hawkins (2009a). The thesis reported on the same study on 57 L1 Syrian Arabic and 18 L1 French learners of English but with detailed results and the inclusion of a third instrument: a written production task. She suggested that the overuse of *the* in indefinite specific contexts in the forced choice task was not fluctuation related to specificity as suggested by Almahboob but because of L1 transfer as the sentences in the task were modified by a relative clause with an overt complementiser. She explains that in Arabic there is a restriction that requires a definite article with nouns modified by a relative clause and an overt complementiser. This means that the difficulties are caused by a "syntax-semantic mismatch" between English and Arabic because of the "specific morphological requirement" (Slabakova, 2009, p. 317). In this case, the requirement is the use of a definite article with a relative clause with an overt complementiser.

Data was collected by using three instruments: the forced choice task (adopted from Ionin, Ko, & Wexler, 2004; Hawkins et al, 2006), an oral story recall task (adopted from Snape, 2006), and a written production task (adopted from Ionin, 2003).

The oral story recall task consisted of five short stories presented to participants through an audio program and after hearing each story twice the participants were instructed to recall the story orally after given written prompts. The prompts were bare nouns in the same order they appeared in the story. The written production task was similar to Almahboob's (2009) task based on Ionin's (2003). Five questions were given to elicit certain contexts: indefinite specific, indefinite non-specific, general DPs, and narrow scope indefinites (or definites) as shown in the following examples <sup>8</sup> from the test instrument.

- a) Elicit specific indefinites: Talk about some valuable object that you own or owned in the past: either 1) talk about something that you received as a gift, and tell about how you received it; or 2) talk about something valuable you lost, and tell about how you lost it.
- b) Elicit non-specific indefinites: Describe your room- talk about what objects you have in your room, and describe them.

(Sarko, 2009b, p.121)

The results partially support Almahboob on positive L1 transfer of the use of the definite article *the* in definite contexts. Inconsistencies were found in indefinite contexts but they were not related to specificity as explained above but rather to L1 transfer and the presence of relative clause modification. As to generic contexts, Sarko found target performance in indefinite plural contexts with no effect of L1 transfer. The overuse of *the* was found only in singular generic contexts. Sarko proposes that the problem for L1 Syrian Arabic speakers isn't fluctuation in the Article Choice Parameter but feature re-assembly (Lardiere, 2008).

This would explain Almahboob's (2009) findings on the overuse of *the* in indefinite specific contexts of the forced choice task as a result of relative clause modification. This can lead to the conclusion that there is indeed no effect of specificity in indefinite contexts for L1 Arabic speakers and the effect was from L1 transfer of relative clause modification constrains. This claim is further supported by the results of the written production task from Almahboob's study and Sarko's oral task.

Another finding from Sarko is that learners were target-like in indefinite plural generics but they had persistent difficulties with indefinite singular generics. This result questions the expected difficulties in the use of bare plurals in generic reference when L1 allows only definite plurals following the proposals of previous studies on Romance languages (Ionin & Montrul, 2009, 2010; Ionin et al, 2011). Sarko suggests more investigation into this area to arrive at substantial claims. In a recent study by Azaz

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<sup>8</sup> These questions will be included in the written task of this current work.

(2014) on the differences between Arabic and English generics we could find explanations of Sarko's (2009b) results. Azaz points that there is a straightforward difference in mapping between English and Arabic in the generic interpretation of "abstract concepts and non-count nouns" as English requires bare plurals while Arabic definite plurals. However, on "singular" generics there is the added "optional choice" as English allows definite *or* indefinite nouns (the lion, a lion) which may complicate things for Arabic L1 learners of English trying to figure out the L2 rule. I would also add two points: a) that a complex re-assembly process is required as L1 Arabic learners have to acquire the use of the indefinite article *a* which doesn't exist in L1 in indefinite contexts and then acquire that it could also be used in generic reference similar to the definite article and b) that English singular generics are [-definite] NPs which do not carry a generic feature as the generic interpretation comes from the "GEN operator" with additional "pragmatic constraints" (Ionin et al, 2011, p.248) this means that L1 Arabic learners have to realise the generic interpretation of singular generics at the sentence-level which might cause a more complex re-assembly process when compared to plural generic NPs that have both NP and sentence-level genericity.

Azaz's (2014) study included a bi-directional study on the acquisition of the definite marker in L2 Arabic and L2 English and another investigation into the acquisition of Arabic singular generics by L1 English speakers. The participants of the bi-directional study were 20 L1 Egyptian Arabic speakers learning English and 15 L1 English speakers learning Arabic. Both groups were from low proficiency levels in their L2 to examine the initial state of acquisition of the definite marker in generic and specific contexts. The instruments included a grammaticality judgment task, a forced choice task and written translations. The study covered a range of definite and indefinite contexts with singular and plural specific and non-specific DPs in addition to abstract nouns and generic interpretation. The results show clear transfer from L1 explained by the FT/FA as learners in both directions acquired the use of the definite/indefinite articles in contexts similar to L1. Difficulties were found in contexts where learners needed to "re-assemble" and re-assign generic and specific meanings to different configurations following the Feature Reassembly Hypothesis by Lardiere (2008, 2009). Although there was a clear effect of the dominant language, Azaz suggests that recovery from L1 transfer is possible pointing out the role of "input" in instructed SLA "as a main tool in accelerating this reassembling process." (p.166). Azaz's idea on input supports this current work in looking at the acceleration of the re-assembly process.

Azaz's (2014) second study on the acquisition of Arabic generic contexts by L1 English speakers included 39 participants 10 Arabic native controls and 29 L1 English speakers learning Arabic at the school of Middle Eastern and North African studies at the University of Arizona. The L1 English speakers were divided into two proficiency levels in L2 Arabic (15 low proficiency level learners and 14 advanced proficiency level learners) after being examined by a certified ACTFL tester. The instruments included a grammaticality judgment task and a forced choice task. The grammaticality judgment task included 35 items of three DP contexts that were all expressed by definite NPs in Arabic and they are:

- a) Unique entities (e.g. the moon, the weather)
  - b) Abstract concepts and non-count nouns (e.g. love, friendship, tea, business,..)
  - c) Singular generics: definite: (e.g. the lion) or indefinite: (e.g. a lion)
- (Azaz, in press, p. 3)

The results confirm the predictions of the study as lower proficiency learners faced more difficulties with nouns that represented a mismatch between L1 and L2. The advanced group of learners were more successful in using target language choices marking a recovery from L1 transfer. With singular generics the lower proficiency level exhibited fluctuation between definite and indefinite NPs while the advanced learners were target-like. The results also show differences in tasks as the forced choice mean scores were significantly higher than the grammaticality judgment. Azaz concludes that "...mapping the same meaning to the same form is easier than mapping the same meaning to a different form." (p.17) However, recovery from L1 was possible for advanced learners while "... remapping/reassembling may not have been possible with the low-proficiency group due to infrequency of transparent input." (p. 18)

Azaz confirmed that textbooks don't provide instructions on these distinctions which was why lower proficiency level learners were not able to acquire this but "advanced learners who were taught Arabic for three or four years, may have established the evidence that enabled testing and confirming the hypothesis that singular indefinite nouns were not possible for kind reference in Arabic." (p. 20). The results on the effect of L1 and recovery at higher proficiency levels are in line with other studies (e.g. Ionin & Montrul, 2010) and similarly explained by "indirect negative evidence". The learning task involves movement from superset grammar that allows the two options (definite and indefinite) to a subset grammar that allows only one option (definite) is "mediated by the L1 effects" and "overcome at advanced stages." (Azaz, in press, p.20).

Finally, Awad (2011) conducted a study on the acquisition of English articles by 49 L1 Emarati Arabic speakers. The study investigated the following contexts: definiteness, indefiniteness, specificity, singular, plural, pre-modified nouns, concrete and abstract nouns. Three instruments were used: a writing task with prompts to elicit nouns/ adjectives, a forced choice fill in the blanks story task adopted from Trenkic (2000) in which the articles were removed and participants were asked to provide one of the articles (a/the/or Ø), and a grammaticality judgment task.

The results showed that learners acquired the use of the definite article from early proficiency stages. The most difficult article to master was the (zero article) and the acquisition of the indefinite article *a* went through stages of omission, then overuse, then mastery. The findings of the study were explained by referring to both UG based and usage-based theories. Awad offers support for the FT/FA, as L1 transfer was noted in the production of lower proficiency learners and was less evident as language proficiency increased.

#### **3.4.4. A summary of findings**

The findings of most studies support positive L1 transfer in definite contexts and as such the expected difficulties for L1 Arabic speakers learning English articles would be in indefinite contexts. Indefinite specific contexts were investigated and Almahboob (2009) proposed fluctuation related to specificity in [-definite] [+specific] contexts but his results were questioned by Sarko (2009a, 2009b) as she found that fluctuation was in contexts that involved relative clause restrictions caused by L1 transfer and re-assembly following the feature re-assembly hypothesis (Lardiere, 2008; 2009) rather than fluctuation of the Article Choice Parameter. Therefore, the difficulties in indefinite non-generic contexts can be attributed to relative clause modification and not specificity.

Another problematic area is indefinite generic contexts as positive L1 transfer should enable L1 Arabic speakers to use the definite article correctly with definite singular generics. Sarko suggested persistent difficulties in indefinite singular generic contexts and this was supported by Azaz's (2014) analysis that singular generics involve a more complicated feature re-assembly process. The difficulties on the indefinite plural generic contexts were inconclusive and need more investigation.

Table 9 presents a summary of the studies reviewed in this section on the acquisition of English articles by L1 Arabic speakers. The next section will explain how the predicted acquisition difficulties of L1 Najdi Arabic speakers could be outlined in a contrastive analysis of features specific to this study.

Table 11 A summary of studies on the acquisition of English articles by L1 Arabic speakers

<b>Study</b>	<b>Sample size</b>	<b>Instrument</b>	<b>Explanation of findings</b>
<b>Willcott 1972-1978</b>	Corpus analysis	16 three-hour examinations written by Arabic students at the university of Texas	Contrastive Analysis Hypothesis
<b>Hanania et al 1977</b>	Longitudinal case study	Interviews	Order of acquisition
<b>Kharma 1981</b>	128	Cloze test	Error patterns
<b>Hawas 1986</b>	308	Three fill in gap tasks	Error analysis
<b>Diab 1997</b>	Corpus analysis	Essays	L1 transfer in the generic use of the definite article.
<b>Zogoul 2002</b>	25 learners	Oral data	Error analysis described by using semantic explanations
<b>Batainah 2005</b>	209	Written essays	Errors in the indefinite article, Learning strategies rather than L1 transfer.
<b>Crompton 2011</b>	Corpus analysis	59 essays	Error analysis: L1 transfer , generic contexts
<b>Sarko 2009a, 2009b</b>	57	Forced choice task Written production task Oral recall task	UG based: Feature re-assembly. MSIH, Full transfer: L1 transfer with relative clause modification,
<b>Almahboub 2009</b>	96	Forced choice task Written production task	UG based: Full transfer L1, & MSIH.
<b>Awad 2011</b>	49	Writing task Forced choice fill in the blanks (Trenkic, 2000) Grammaticality judgment	UG based: Full transfer, Representation deficit + Usage based: input and processing.
<b>Azaz 2014</b>	20	Grammaticality judgment Forced choice task Written translation	Full transfer , Feature re-assembly, the role of input

### **3.5. A contrastive analysis of features in the acquisition of English articles by L1 Najdi Arabic speakers**

A contrastive analysis of the following features: [ $\pm$ definite], [ $\pm$ specific] and [ $\pm$ generic] will be presented based on the cross-linguistic variation explained in (3.3). This section will start by proposing the re-assembly task that will face the L1 Najdi Arabic learner of English. This will be followed by proposing a difficulty cline in the acquisition process taking into consideration other sources of difficulty. In order to predict the difficulties the study will bring together theories on the contrastive analysis of features and feature re-assembly (Lardiere, 2008, 2009, Slabakova, 2009) with the findings from previous GenSLA studies on the acquisition of articles as described in (3.2) and the studies that targeted the acquisition by Arabic L1 speakers (Almahboob, 2009; Awad, 2011; Azaz, 2014, In press; Sarko, 2009a, 2009b).

#### **3.5.1. The learning task of L1 Najdi Arabic speakers**

The re-assembly task facing L1 Najdi Arabic learners of English will involve the feature combinations that were presented in 3.4.2. [ $\pm$ definite] [ $\pm$ specific] [ $\pm$ plural] and [+generic] and shown previously in tables 9 & 10. In addition, the role of the availability of evidence in the input will be included in describing the re-assembly process and explaining the difficulty level. Rankin & Unsworth (2016) suggest that "... more specific analysis of how features actually pattern in the input learners are exposed to would provide an empirical enrichment" to feature re-assembly proposals. Ionin et al (2011) looked at corpus analyses from Biber et al (1999) and proposed that generic interpretation is less evident in the input when compared to the other features related to articles. Moreover, investigation into instructional input provided to the participants of this study as will be shown later in (5.4.6.1) confirms that there is lack of sufficient input on generic use of English articles even in instructional settings.

Accordingly, the learning task will involve the following levels:

- 1) L1 Najdi Arabic speakers will start out by perceiving similarities between the English article *the* and the Arabic article *al*. "This similarity leads to an initial mapping of the complete feature set of the L1 item onto the target item." (Cho & Slabakova, 2015, p.3). As such the mapping of the [+definite] feature combined with [ $\pm$ specific] and [ $\pm$ plural] will not be problematic.
- 2) L1 Najdi Arabic speakers will recognize the similarity between L1 & L2 in expressing the [ $\pm$ specific] feature with the [-definite] feature. As such, no

difficulties are expected with specificity in both [+definite] and [-definite] contexts.

- 3) L1 Najdi Arabic speakers will have to re-assemble the features [-definite], [±plural] that are encoded by a covert morpheme  $\emptyset$  in L1 onto two morphemes in L2 (*a* &  $\emptyset$ ). The process will involve re-assembly of the feature [±plural] as follows: *a* encodes [-definite], [-plural] and  $\emptyset$  encodes [-definite], [+plural]. This re-assembly is not expected to be problematic because it is frequent in the input. Learners are expected to encounter much evidence from the input on the [-definite] feature combination with [±plural] enough to establish the target grammatical contrast in their ILG.
- 4) The initial mapping of the complete feature set of the Arabic *al* onto the English *the* will involve the feature [+generic]. Then L1 Najdi Arabic speakers will have to re-assemble the [+generic] feature disentangling it from the [+definite] feature and allowing it to occur with [-definite] and [±plural]. The re-assembly process is expected to be more complex as it involves disentangling and re-assembly. Moreover, the evidence on the use of generic interpretation is not as frequent as the [-definite] feature in the input which will make the re-assembly process more difficult. The re-assembly of the [-definite] [+generic] features with the [-plural] feature is expected to be harder than the [+plural] for two reasons: learners have to acquire the new morpheme *a* with [-plural] and then they will have to realize its rare use with the [+generic] feature. The second reason is that more evidence in the input is expected for bare plural generics in English as they are used more freely as both NP & sentence-level generics.
- 5) L1 Najdi Arabic speakers will face an additional syntactic agreement difficulty with [-definite] contexts when modified by a relative clause with an overt complementiser. Evidence of this restriction is also expected to be rare in the input causing acquisition difficulties.

Following these predictions on the learning task facing L1 Najdi Arabic speakers a difficulty cline will be proposed in the next section.<sup>9</sup>

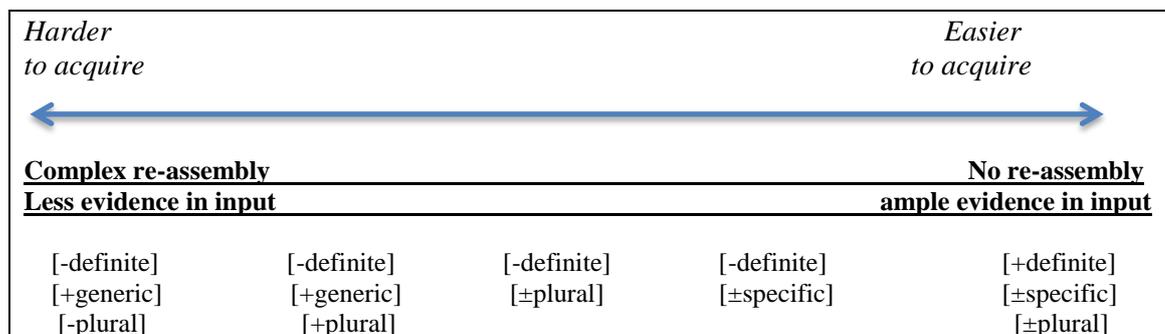
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<sup>9</sup> Note that the [-definite] non-generic context with relative clause modification will be investigated separately as it doesn't involve feature re-assembly.

### 3.5.2. A proposed difficulty cline

To illustrate the difficulty levels in the predicted learning task I will borrow Slabakova's (2009) diagram putting the proposed feature combinations in display from easier to harder as shown below in Figure (4).<sup>10</sup>

Figure 4 A difficulty cline based on a contrastive analysis of features on the acquisition of English articles by L1 Najdi Arabic speakers



### 3.6. Chapter 3 summary and conclusion

This chapter aimed at reviewing empirical second language acquisition research to arrive at findings specifying the ‘content’ of instruction that could be used in the language classroom. The findings from this review of previous studies in addition to the cross-linguistic comparison between English and Najdi Arabic were used to predict the learning task and anticipated difficulties in the acquisition process as suggested in chapter 2. Thus, the chapter ended with predictions on the learning task based on a contrastive analysis at the level of the features to predict simple or complex re-assembly processes. In addition to looking at other sources of difficulty that may be involved when L1 Najdi Arabic speakers acquire and re-assemble the semantic features related to articles: [±definite], [±specific], [±plural] and [±generic]. Instruction would target only those features that are predicted to be problematic requiring complex re-assembly and recovery from L1 transfer with expected rare evidence in the input.

The following chapter 4 will review the concept of input and instruction in GenSLA to complete the picture necessary for the methodology design in chapter 5. The data analysis and results will be presented in chapter 6 followed by a discussion on the implications and findings in chapter 7.

<sup>10</sup> Note that the comparison between English and Najdi Arabic article systems involves re-assembly of morpheme to morpheme it doesn't involve the harder process of context to morpheme or the “hardest” to acquire level which is re-assembly of features encoded contextually and indirectly in both L1 & L2.

## Chapter 4: Second Language Acquisition Research and the Language Classroom

### 4.1. Introduction

Chapter 3 ended with an outline based on a contrastive analysis of features specific for this study predicting difficulties in the acquisition of English articles by L1 Najdi Arabic speakers. Those predictions on the problematic contexts will be used as the *content* of instruction to accelerate the re-assembly process and recovery from L1 transfer. What is needed now to complete the theoretical framework of this study is to decide on how to deliver such instruction defining: a) the “type” of input, b) the inclusion of input combinations, and c) the duration of such instruction. To do so, this chapter will review the development of the GenSLA perspective on *natural input* and *formal instruction* in comparison to other non-modular SLA theories. The chapter will review theories to find a clear theoretical model of language development that maintains a modular view of language acquisition while accounting for the development in language learning. Moreover, a review of instructed SLA studies will follow to consider their empirical findings and methodological concerns.

### 4.2. Input in GenSLA studies

Within the generative framework in first language acquisition, *input* refers to primary linguistic data children are exposed to that enables them to acquire their first language (Chomsky, 1959). The process of L1 acquisition includes interaction between this input which is termed “positive evidence” and the innate principles of UG (Lightfoot, 1989; Pinker, 1984). On the other hand, input that involves correction of errors is termed “negative evidence” and is not viewed as part of natural first language acquisition. Chomsky (1981) states that only *indirect* “negative evidence” which is the non-occurrence of a structure in natural input can be part of the natural acquisition process. The role of input in *second* language acquisition is more complicated by the interaction between input, UG and L1 transfer (White, 1991) but the traditional view in GenSLA is that only positive input results in changing the underlying competence of second language learners (Schwartz, 1993).

The issue of input and its role in acquiring linguistic properties is usually addressed by GenSLA researchers to explain certain findings. Most studies would look for evidence for Poverty of Stimulus (POS) situations, others would relate acquisition

difficulties to the need to be exposed to large amounts of input, and some would relate them to incorrect “strategies” developed from exposure to explicit input in classrooms. However, the description of input as a tool to foster acquisition, and the explanations of what is meant by rich or varied input are areas that are “under-researched” in GenSLA (Piske & Young-Scholten, 2009).

Most GenSLA studies on the acquisition of English articles addressed the issue of input in their discussion of results. Ionin, Ko, & Wexler (2004) investigated possible “negative evidence” as an explanation for the errors in article choice found in their data from L1 Russian and L1 Korean learners of English. They looked at English language textbooks to find if they offered “explicit input” that could explain error patterns in the data but they concluded that the errors found were more related to UG access than explicit input or conscious strategies.

Ionin & Montrul (2010) related input to difficulties in acquiring generic reference in English by L1 Spanish learners. They explain that in order to recover from L1 transfer and notice “indirect negative evidence” learners are required to be exposed to a “fairly large amount of input” (p. 909). They conclude that input may not inform learners that definite plurals *do not* have generic readings in English given that they have to recover from L1 transfer that allows definite plurals to have generic readings. As such, the acquisition process of restructuring their grammar will require time and large input during which some learners may fossilize and never become target-like on this property. Ionin et al (2011) further supported this claim by noting that learners have difficulties in acquiring different kinds of genericity because the [+taxonomic] feature is more difficult to acquire than the [±definite] feature because it requires exposure to large amounts of input.

In general, GenSLA studies do not usually investigate the effect of “direct” input in language classrooms in relation to the acquisition process but rather justify difficulties in acquisition by relating them to insufficient input and influence from L1. In this context, White’s (1991) study stands out as one of the few carried out to investigate the role of “direct” negative input through classroom instruction when natural input on a specific language property is not enough to work out the rule and difference from L1. The study aimed at providing explicit input on a feature that exhibited a parametric difference between English and French, which is the occurrence of an adverb between a verb and its direct object. Since English lacks verb-raising this phenomenon causes learnability problems for L1 French learners of English as a second language. White argued that “form-focused classroom instruction, including negative

evidence, is more effective in helping L2 learners to arrive at the appropriate properties of English than positive input alone” (p.133). This study by White was the first step towards testing how “direct input” will interact with the acquisition process and recovery from L1 transfer which is in line with the goals of this current study.

Slabakova (2013) supported the view of testing direct input in the classroom by reviewing GenSLA studies that investigated problematic functional morphology requiring feature assembly as she discussed the possible pedagogical implications of those studies which include explicit classroom input. This brings me back to Cho & Slabakova’s (2014) point that the “feature re-assembly” process “... may be slow to occur or may not occur at all if the relevant evidence for the formal or semantic feature is rare or contradictory in the linguistic input.” (p.160). This current work focuses on this point to test if some reinforcement of the input could accelerate the re-assembly process and the recovery from L1 transfer.

This attempt to apply findings from GenSLA research to the language classroom and explore the effect of different kinds of “input” on the acquisition process is a relatively new endeavour recently taken by some GenSLA researchers as discussed in (chapter 1). However, other approaches to SLA have investigated input and L2 knowledge in the classroom looking at pedagogical applications for their research. The following sections will look at the development of those concepts within other SLA approaches and the empirical research findings before building an instructional framework for this study.

#### **4.3. A theoretical background on “input” and “L2 knowledge” in SLA**

I will turn now to a review tracing back different perspectives of “input” and the development of linguistic knowledge in the field of SLA to understand the terminology and the different concepts related to instruction. SLA researchers from different approaches investigated naturalistic and/or instructed second language acquisition by using performance data to ultimately understand the underlying linguistic competence (Doughty, 2003). The accumulation of findings from such studies will give the current work the information needed to decide on the type of instruction that will be used in the classroom.

I will start from Corder’s (1967) seminal paper on learners’ errors which marked a major shift in the field from the initial focus on comparing L1 and L2 through the Contrastive Analysis Hypothesis to studying *learner language* itself and the errors made

by learners in an Error Analysis Hypothesis. Following a modular view, this was one of the first attempts that drew the attention to “input” not as an external phenomenon but to the interaction between this external phenomenon and the internal system of language learners. He defined the term “intake” as a different process in which the learner controls what he/she absorbs from the input. Corder’s work was a step in defining this interaction between the knowledge inside learners’ minds and the input they receive.

One of the most influential proposals on adult second language performance was Krashen’s (1977) “Monitor Model” which suggests a “dual” representation of L2 knowledge. Krashen offered a generative view that could be applied to language classrooms by defining “learning” and “acquisition” as two different processes that do not interact as the “conscious” process of learning *doesn’t* lead to the “subconscious” process of acquisition. Krashen’s distinction between learned and acquired knowledge and his hypothesis that learned knowledge can’t become acquired knowledge is regarded as an extreme “non-interface” position in the field of SLA (Doughty & Long, 2003). Krashen (1985) further refined an “Input Hypothesis” which defines “comprehensible input” as natural language one is exposed to that is comprehensible and contains (i+1) with “i” representing the level of language already acquired and “+1” linguistic properties that are just a step beyond that level. In this model; “acquisition” as a process that doesn’t involve conscious attention is *superior* to “learning” which involves conscious attention and “monitoring” in the form of correcting and editing. Input gets converted to “intake” through a process of noticing the “gap” between the learner’s current innate system and new input.

Schwartz (1986) offered an explanation based on Fodor’s view of modularity to support Krashen’s model within a generative view of SLA by specifying that the unconscious acquisition represents the “module” while the conscious learning is a result of the non-modular processes. Under this strong non-interface position and the “modularity thesis” Schwartz (1999) suggests that “negative data and explicit data cannot be used in the creation of interlanguage (or L1) grammars.” (p.651) as such minimising the role of instruction in language acquisition.

The non-interface position dismissed any genuine effect of classroom instruction on sustainable L2 knowledge. However, the view was also challenged by many generative researchers; Gregg (1984) argued that Krashen’s claim was too strong and contradicted by cases of learners who eventually internalised what was initially

“learned” grammar rules drawing on his personal experience in learning Japanese. Gregg (1988) also argued against Schwartz’s strong claims on modularity and the monitor model sparking a dialogue on the nature of L2 knowledge with Schwartz (1988). White (1987) wrote a paper against Krashen’s “comprehensible input” arguing that this model overestimated the role of simplified input and didn’t account for the internally driven grammar development or for cases when the input would not tell the learners that certain forms are not used in the L2. White agrees with Krashen that SLA theory should include an “input hypothesis” but called for refining and testing how different types of input interact with the acquisition process.<sup>11</sup>

The late 1970s also witnessed new approaches to SLA that looked at classroom instruction differently from the strong non-interface view. Researchers turned again to the field of psychology after decades of shying away because of the fall of behaviourism. Cognitive psychologists started investigating implicit and explicit “learning” following Reber’s (1967) proposal on implicit learning the existence of a “multiple learning system”. A debate started on the existence of two types of learning and knowledge and this was mirrored in the field of SLA. McLaughlin (1978) criticised Krashen’s Monitor Model on the lack of evidence to support the claim on a monitor model in the brain. He argued that people may use rules of grammar, “These rules are sometimes conscious and sometimes not, but in any given utterance it is impossible to determine what the knowledge source is.” (p.30). Following a non-modular view of language, McLaughlin proposed an alternative “Information Processing Model” to account for the language learning process following a cognitive approach that views language learning as a type of “skill learning”. McLaughlin’s proposal was influenced by Anderson’s (1976) Adaptive Control of Thought ACT model which distinguished between “declarative” and “procedural” knowledge that involves “controlled” and “automatic” processing which can either occur with “focal” and “peripheral” attention.

Sharwood Smith (1981) described Krashen’s view as being “radical” in suggesting a non-interface position that doesn’t take into consideration the cognitive maturity of adults which allows them to employ methods not available to children in addition to their knowledge of the world. Sharwood Smith defines explicit knowledge as “language conscious-raising” (p.160) that can be planned and practised “consciously” to develop into automatized implicit knowledge. He was a proponent of what could be

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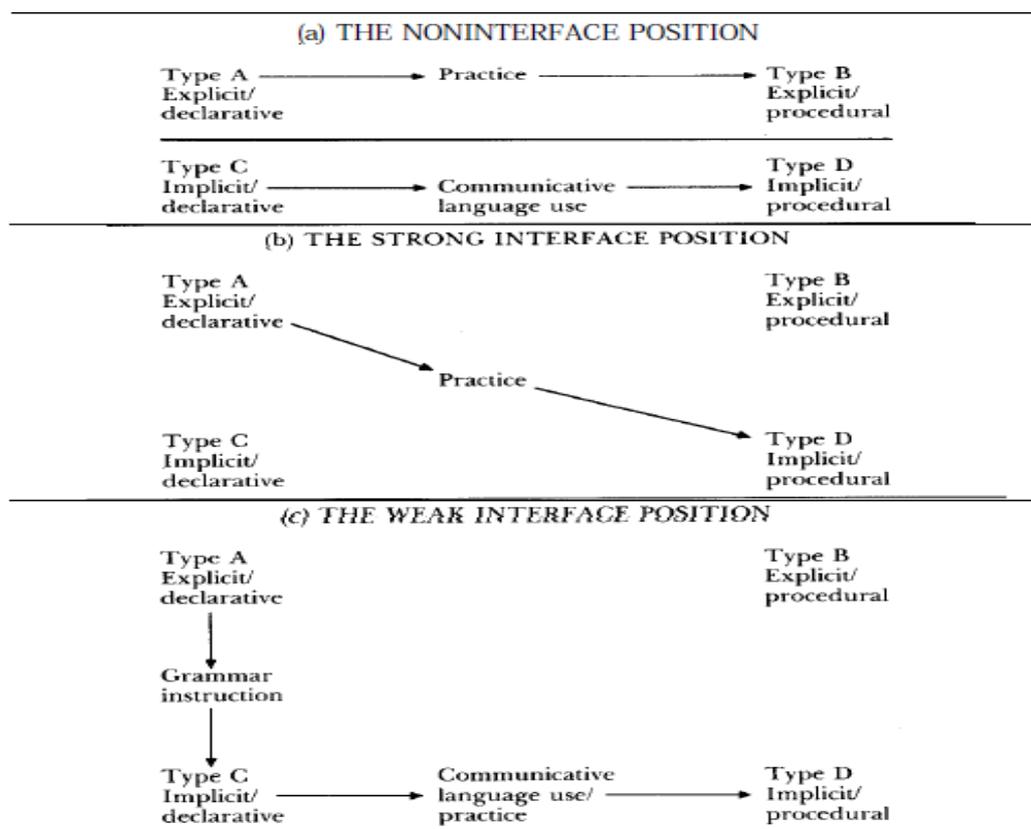
<sup>11</sup> Lydia White pursued these questions on input by conducting her original input experiment as mentioned earlier and detailed later in (4.5). Her study is crucial to this current work as it is one of the first studies nested within a generative framework.

described as a “strong interface” position on the relationship between conscious and unconscious knowledge. Hulstijn & de Graff (1994) argued against these two extreme views of “strong interface” or “non-interface” proposing that explicit instruction *can* facilitate the acquisition of implicit knowledge under specific conditions. They called for more empirical research guided by factors relating to the linguistic phenomenon, the learning process and learner characteristics to arrive at concrete results to replace what they described as a “hypothetical” interface and non-interface debate. This study aims to answer such calls for more empirical research that would shed some light on the issue of explicit instruction affecting L2 knowledge or in other words the issue of learning affecting acquisition.

Ellis (1993) summarized those main positions in SLA suggesting an intermediate “weak interface” view of L2 acquisition (Figure 5). He proposed a structural syllabus of grammatical rules alongside a meaning-based syllabus providing opportunities for practice to develop learners’ explicit knowledge of grammatical properties that may facilitate subsequent intake. In this view, explicit instruction should be directed at grammatical features that a learner is “ready to acquire” in order for the acquisition of implicit knowledge to succeed. This view in my opinion was a step in the right direction on explaining the process of SLA and how it can be facilitated in the language classroom. But when it came to specifying which grammatical features learners are “ready” to acquire Ellis’s proposal doesn’t present one clear theoretical framework but rather a suggestion of different conflicting proposals from relative difficulty (Widdowson, 1968) to linguistic markedness theory (Eckman, 1985) and remedial error-based teaching (Corder, 1981).

To summarise what has been presented so far; a strong debate exists within the field of SLA on concepts of (acquisition vs learning), (natural language use vs language teaching) in addition to the debate on defining the types of resulting L2 knowledge. Proponents of different approaches within this field may not agree on many of the concepts discussed above, and even on the exact definition of terms such as input, intake, explicit, and implicit but yet there is an underlying agreement that the ultimate goal of any language learning context is for learners to arrive at the type of knowledge that is described as being: effortless, automatic, and implicit. To specify the type of instruction and the related theoretical concepts that will be adopted by this study, the following sections will review the empirical research within the field named “instructed SLA”. This review will shed light on those concepts to show that there is an underlying agreement and a common ground between approaches as suggested by Whong (2011).

Figure 5 A diagram showing the three “interface” positions on L2 knowledge in SLA (taken from Ellis, 1993, p.96)



#### 4.4. Defining terminology: A review

Before looking at empirical findings of SLA research on instructed language learning, it is important to define the terms used in this line of research. As mentioned above, most researchers investigating “instruction” followed either a “strong” or “weak” interface position mainly influenced by cognitive approaches to second language acquisition. The theoretical hypotheses that were proposed needed validation and many terms had to be defined clearly to avoid misleading concepts.

One of the major issues at first was defining the role of “consciousness” in the acquisition of language and with the questions of consciousness came questions of awareness, intention and many more aspects of the cognitive processes. McLaughlin (1990) suggested abandoning the terms “conscious and unconscious” because they were scientific psychological terms that do not fully describe “language acquisition”. In 1994, Hulstijn & Schmidt edited an AILA review entitled “*Consciousness and Second Language Learning*” documenting the growing interest in field in defining

consciousness and underlying L2 knowledge. In this review, DeKeyser (1994) points out that the available terms to replace the terms *conscious* and *unconscious* are many and they all share advantages and disadvantages such as "... incidental vs. intentional, inductive vs. deductive, implicit versus explicit, automatic vs. controlled, and focus on form vs. focus on meaning" (p.92). Hulstijn (2005) noted that it is important to distinguish between terms that seem similar but have different interpretations like the two terms "incidental" and "implicit" when used to describe "learning". He explains that while the two terms share the methodological notion of participants "not being informed of a test", the term "incidental" in SLA research means the process of learning *without intention* while the term "implicit" includes the added condition of lacking "awareness" of the regularity being learned. This lack of "awareness" is the goal of instructional treatments that are described as being "implicit" defined by DeKeyser (1995) as treatments that do not include direct rule presentation or attention to form. On the other hand, a treatment is considered "explicit" if the instruction included rule instruction or if the learners were asked to attend to linguistic forms.

Schmidt (1994) differentiated between the equivocal terminology "explicit" and "implicit" *knowledge*, "explicit" and "implicit" *learning* and "explicit" and "implicit" *instruction* suggesting that both types of *knowledge* and *learning* are related but distinct concepts. While "learning" refers to the process, "knowledge" refers to the end product of learning (or sometimes to knowledge that is innate and not learned). He also distinguished between explicit "learning" which is done by the learner and explicit "instruction" which is given by the teacher or researcher. Schmidt's definitions are very useful in defining the concepts related to the current study as "fluent language performance" is seen as "...unconscious only in the sense that it is accomplished without the conscious retrieval of explicit knowledge that may have been used as an aid to production in earlier, novice stages of development." (p.21)

One of the most influential theoretical frameworks that inspired classroom research on the role of consciousness and the input-intake process was also Schmidt's (1990) "Noticing Hypothesis" which describes awareness of the presence of "forms" in the "input" as a necessary step to convert input into intake. But in my opinion the hypothesis doesn't lend itself easily to a clear application in the classroom with the vague process of "noticing" being very hard to capture. The noticing hypothesis was indeed criticized by Truscott (1998) as not being based on a theory of language with no clear predictions to be tested by researchers noting that "its proponents rely on a hodgepodge of ideas from connectionism, specific-knowledge approaches, old linguistic

theory and commonsensical views of language.” (p.116). Truscott called for a reformulation of the hypothesis that describes noticing as helpful but *not necessary* in the acquisition of the type of knowledge that he described as “metalinguistic knowledge” but not the underlying “competence”<sup>12</sup>. In accordance with Schmidt’s Noticing Hypothesis, Long (1988, 1991) offered his pedagogically oriented and learner-initiated “focus on form” as he explained that instruction should only target aspects of L2 input that learners do not “notice”. In this framework focus on form would eventually result in “noticing” (Long & Robinson, 1998).

It is clear from what has been reviewed so far that there is lack of agreement on the terms and what is meant by explicit and implicit. To adopt certain terminology this study needs to be careful in describing the type of input that will be used with terms that don’t carry different and sometimes conflicting assumptions.

As stated in chapter 1, this study will adopt the Modular On-line Growth and Use of Language MOGUL as suggested by Wong (2007) because it offers a way of applying generative concepts to the language classroom. MOGUL can provide a framework because it includes specific definitions of the role of “consciousness” and “input” in language processing within a modular view of a dual representation of knowledge (Sharwood Smith, 2004; Truscott & Sharwood Smith, 2004; Truscott & Sharwood Smith, 2011). The following section will clarify the concepts related to MOGUL and how they developed within this field.

#### **4.5. The Modular On-line Growth and Use of Language MOGUL**

Sharwood Smith’s (1981) early account of “consciousness raising” which entails “deliberate focus on the language whether initiated by the teacher or learner” was later refined (Sharwood Smith, 1991) by abandoning the use of the term “conscious” to a more focused term “input enhancement” to describe how certain features of the language input become salient. The new term avoided the problematic issue “what is made salient by the teacher may not be perceived as salient by the learner.”(p.120).

Sharwood Smith’s view involved defining L2 knowledge in a different way from Schmidt’s “explicit and implicit knowledge”. He proposed a “modular” view of L2 knowledge as a set of many separate knowledge systems one of which is “metalinguistic knowledge”. What has been put forward by Sharwood Smith is that learners’ use of metalinguistic knowledge might help them “generate correct utterances

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<sup>12</sup> This critique of the noticing hypothesis by Truscott will be detailed later with Truscott & Sharwood Smith’s model of language acquisition MOGUL

which themselves would serve as comprehensible input to the implicit, underground mechanisms that Krashen termed 'acquired' or 'subconscious'" (p. 129). Accordingly, conscious knowledge would not transform *directly* into underlying knowledge but would rather help learners as they advance and when they are "ready" this "input" could trigger a change in the underlying knowledge.

Long & Robinson (1998) agree that Sharwood Smith's refined "input enhancement" avoids the problematic "consciousness" issue which doesn't translate well in the actual language classroom resulting in the dilemma "teachers' attempt to raise consciousness may not result in consciousness-raising"(p.18). However, they point that the problem with Sharwood Smith's hypothesis and many other SLA proposals on language learning is the "content" of input which remains a "synthetic" language syllabus that breaks down the language and presents it in timed sequences contradicting the fact that language acquisition isn't a "unidirectional" process.

Sharwood Smith and Truscott further developed a model for understanding language development known as the Modular On-line Growth and Use of Language (MOGUL) through the Acquisition by Processing Theory (APT). MOGUL's view of language development integrates psycholinguistic perspectives with generative notions of a dual representation of knowledge (Schwartz, 1993) leading to specific descriptions of the role of consciousness in language acquisition. The model specifies that formal linguistic properties are processed *without* "conscious" knowledge but their outputs interface with real world knowledge undergoing "conscious" processing. Later on, Truscott (2015) summarized seven important themes that are important in understanding the role of consciousness: "(1) modularity, (2) activation, (3) the contents of a short-term memory store, (4) executive control, (5) attention, (6) value, and (7) information." (p.5)

The important aspect of MOGUL to this current study is that it opened the door for associating "language acquisition" with a "modular multiple knowledge system" without having to follow a "non-interface" position. In this view, metalinguistic knowledge *can* have an effect on "... mental representations which we choose to call tacit knowledge, implicit knowledge, or, indeed, competence" (Sharwood Smith, 1991. p.130).

Indeed, the major proposals in the field of SLA at that time on language processing within a non-modular theory of language fell short in fully describing "input" as the uniquely complex system of "language". Chomsky (2004) described this disconnection by stating "It is absolutely suicidal for a field to define itself the way

psychology of language almost invariably does, as dealing with processes but not with the structures that might enter into them, or to deal with the observed stages of growth and development, but not with the system that underlies them.” (p.95).

“Faced with the frustrating fragmentation within this multidisciplinary field” Truscott & Sharwood Smith (2004, p.17) offered MOGUL adopting a “modular” view of language within a “processing” perspective. The proposal is based on Jackendoff’s (1997, 2002) view of modularity, Carroll’s (2001) view on input processing with reference to Chomsky’s (1995) minimalist perspective. This attempt by Truscott & Sharwood Smith (2004) was a seminal work in trying to build a cross-disciplinary theory that would combine research on “language structure” with research on “general cognition”. Their keynote article was featured in *Bilingualism: language and cognition*, 7(1) with peer commentaries. Bickerton (2004) and Carroll (2004) commented on the lack of empirical evidence for such an ambitious model. Truscott & Sharwood Smith answered by admitting that the proposal is too ambitious but that it opens the door for more to be done.

It is not within the scope of this study to investigate the theoretical assumptions of the processing model but it is highlighted here as a framework that attempted to integrate a modular theory within a processing perspective. The importance of this theory lies in how it explains the role of “explicit input” accompanied by a “natural input flood” in the development of extra modular metalinguistic knowledge, “with which learners could deliberately modify their output.” (Truscott & Sharwood Smith, 2004, p.14).

Sharwood Smith (2004) further explained the extra modular metalinguistic knowledge in a framework that would account for language acquisition and performance “Modular On-line Growth and Use of Language” MOGUL:

“In this framework, language performance is seen as involving two parallel language systems, one subserved by systems largely controlled by the principles of Universal Grammar (UG), the other, a metagrammar, existing outside the UG-controlled zone.” (p. 256)

Whong (2007) explains that the inclusion of a conscious non-modular component in the acquisition process that could also be automated in what they describe as “Metalinguistic Fluency” opens the door for practical applications in pedagogy. In this view of a dual representation of knowledge a *modular linguistic* knowledge is restricted by UG, whereas a *non-modular linguistic* knowledge is consciously

accessible. Learning a language will only occur through reinforcement of input which basically means that if an item is encountered only a few times it will not become part of any type of linguistic knowledge. Therefore, certain ‘formal linguistic properties’ that occur *enough* in the input will be stored as modular linguistic knowledge while extralinguistic knowledge of meaning and use would be part of general knowledge. This distinction marks the difference and relevance of explicit and implicit instruction because of the premise that some aspects of language could develop as modular knowledge and some cannot. Accordingly, explicit instruction would be beneficial for those aspects of language that ‘resist’ development as modular knowledge (Whong, 2007). The current study proposes that two types of input are worth investigating: one that is implicit and reinforced and another that is similarly reinforced but supported by explicit instruction. Another issue that is highlighted here is the importance of defining the “content” of explicit instruction which would be the linguistic properties that are problematic and resist acquisition.

The recognition of the difference between different aspects of the language and the way they develop in the acquisition process was lacking in initial theories within the consciousness debate as noted by many SLA researchers. VanPatten (1994) noted that “perhaps different processes are responsible for the internalization of different aspects of language.” (p.34). Dekeyser (1994) also pointed out that work in SLA on the effectiveness of explicit instruction ignores the nature of the linguistic feature itself and that findings about certain rules can’t be generalized to the “entire grammar” mentioning that White’s (1991) work on negative evidence on a specific linguistic feature within a UG perspective was in the correct path combining explicit instruction with a detailed description of grammatical structures. Truscott (1998) supported this by noting that SLA theory shouldn’t just explain learning in general but the ways learning interacts with “the nature of the target – natural language grammar, in this case.” (p. 125) suggesting that this is the reason cognitive approaches failed “...because they have largely ignored the issue of what language is.” (p.125).

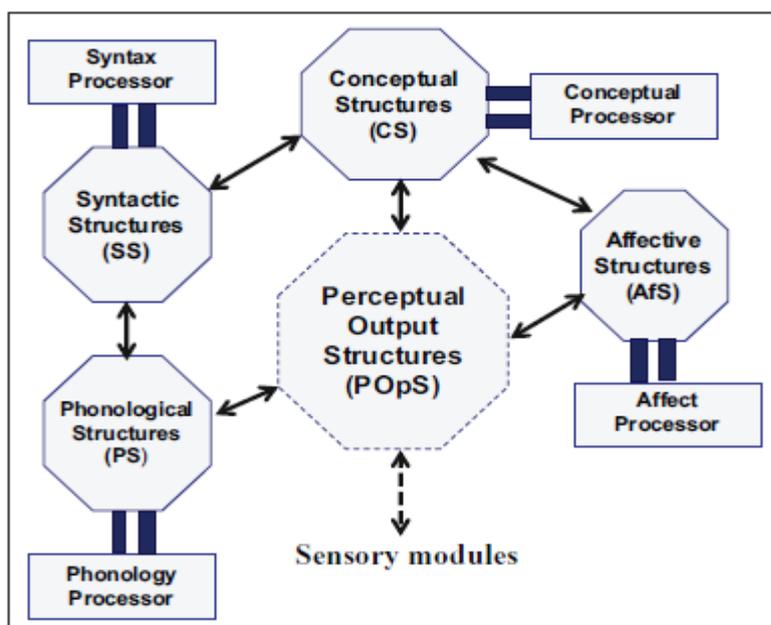
As mentioned earlier, Truscott (1998) criticised Schmidt’s view of “noticing” because it was considered a “necessary” process while it should be viewed as helpful but not necessary in the construction of non-modular linguistic knowledge. Truscott & Sharwood Smith (2011) integrated the notions of input, intake and consciousness within MOGUL by joining what was separated in Schmidt’s hypothesis “noticing” and

“awareness” at the level of understanding. Their revised version of the “Noticing Hypothesis” doesn’t have such a distinction:

*The Noticing Hypothesis (NH):* If learners are to acquire an aspect of language form, they must be aware of a POpS representation that was constructed as the result of processing that treats it as an instance of that form. (p.159)

In this definition “POpS” is the perceptual output structure which is defined as “... the ultimate output of the modality-specific processing systems, each dealing with input from one of the senses.” (p. 509). Two important claims are important to this study: a) the language module deals with linguistic information automatically and awareness of input leads to its development and b) noticing and understanding are important for conceptual “metalinguistic” development.

Figure 6 MOGUL architecture (Taken from Truscott, 2015, p. 7)



Whong, Marsden & Gil (2013) note that research in processing models and language development “... have not seen large uptake in the GenSLA agenda” (p. 208) leaving the gap in the development of transition theories in GenSLA research. According to Truscott (2015), the MOGUL modular approach is much needed to best understand and investigate the “dual-knowledge” view of SLA within a modular perspective by explaining that:

“It can straightforwardly explain the large disconnect between, on the one hand, explicit (conscious) knowledge and its development, and on the other the ability to function (unconsciously) in a language and to make intuitive judgements, along with the very limited influence that formal instruction has on these abilities.” (p. 17)

MOGUL provides a framework for the development of linguistic and metalinguistic knowledge that could be used in building an instructional framework of this study. The APT suggests that learning occurs through reinforcement of input as this reinforcement allows a higher resting activation level for a linguistic item to be a permanent part of the linguistic or non-linguistic knowledge store. Following this model this study would provide large amounts of reinforced input to develop the language module and add explicit instruction on certain linguistic features to develop metalinguistic knowledge.

The following section will highlight the major findings of empirical research that examined input and L2 knowledge to look at other aspects involved in such studies which must be accounted for in this current work such as the method of delivering input in the classroom, and measuring the resulting knowledge.

#### **4.6. Instructed SLA research**

The 90s witnessed huge interest in *instructed* SLA research (Lightbown, 2000) but the traditional UG position on “no-negative-evidence” (Schwartz, 1999) and Krashen’s “non-interface” model were viewed as being “too extreme in their nearly complete prohibition on L2 instruction .” (Doughty, 2003, p.258). Therefore, most studies that explored the role of direct “input” in language classrooms have been conducted following non-modular linguistic theories viewing language learning as part of the overall cognitive process. The following review will focus on two major issues addressed by instructed SLA studies and crucial to this study: a) the effectiveness of explicit or implicit types of input and b) the importance of defining the content of instruction.

##### **4.6.1. The effectiveness of one type of instruction: explicit vs implicit**

Early studies found some benefits for explicit instruction over implicit instruction in the classroom (Doughty & Williams, 1998; Harley, 1989; Lightbown, 1991; Master, 1994; Spada & Lightbown, 1993; Robinson, 1997; VanPatten & Sanz, 1995; White, Spada, Lightbown, & Ranta, 1991; White & Ranta, 2002) and in

laboratory experiments (De Graaff, 1997; DeKeyser, 1997; Doughty, 1991; Hulstijn & DeKeyser, 1997; N. Ellis, 1993).

Most of those early studies made strong claims that “explicit instruction” changed underlying L2 knowledge. Those claims were challenged by many, for example Krashen (1999) reviewed six prominent instructed SLA studies at that time (e.g. De Graaff, 1997; DeKeyser, 1997; Master, 1994; Robinson, 1997 among others). He argued that all what those studies have proven was that more instruction was beneficial in increasing what he named “consciously-learned competence” and not “competence” exactly as the Monitor Hypothesis predicts. He criticized those studies because they lacked the type of input that would create “acquisition-rich” treatments. He also criticised the lack of long-term delayed tests to investigate the “fading of consciously learned competence” (p.251). Krashen specifically addressed DeKeyser’s (1997) study by arguing that the results just confirm that “conscious learning” and “subconscious acquisition” are two different processes which only support Krashen’s view that “conscious learning is done outside the language acquisition device and utilizes mechanisms used in other areas of cognition.” (p.252). DeKeyser (2003) answered Krashen’s critique by claiming that the argument is not the existence of two different processes but that “declarative knowledge” can *turn into* “procedural knowledge” that learners access in the same way as implicitly acquired knowledge. Note that their arguments were focused on making claims about the underlying L2 knowledge rather than focusing on the resulting performance of the learners.

In a comprehensive meta-analysis of 49 instructed SLA studies from 1980 to 1998, Norris & Ortega (2000) reported two major research questions addressed by those studies:

1. How effective is L2 instruction (versus simple exposure or meaning-driven communication)?
  2. What is the relative effectiveness of different types of L2 instruction?
- (p.423)

The conclusion of the meta-analysis reported a large effect of *explicit* types of instruction and medium effect of implicit types of instruction. It was also noted that only a few number of studies used delayed post-tests that indicated sustained differences in favour of the instructed groups and that the results were influenced by the type of instruments. They called for more consistent research design to allow for more concrete results as they strongly recommended “replication of studies” which will lead to a “systematic accumulation of findings” (p.502).

According to Dekeyser (2003), a decade of debate passed without proof from cognitive psychologists that “people can learn abstract patterns without being aware of them.” (p.335) or proof from SLA researchers of “any significant learning of abstract patterns without awareness.” (p.336). He relates this to the limited research on the implicit-explicit distinction with limited real classroom settings lacking strong methodological designs. Doughty (2003) also observed that “the case for explicit instruction has been overstated.” (p.274) referring to the methodological issues found in most studies as they mostly used instruments that measure explicit knowledge.

Therefore, the claim that explicit instruction was more effective than implicit instruction needed validation by more robust and reliable research. Accordingly, this current study will try to add to existing research on the effectiveness of explicit and/or implicit instruction while avoiding hypothetical claims on the nature of L2 knowledge by testing the two kinds of input together in one study. Methodological issues should also be addressed by using multiple instruments that measure L2 knowledge of the targeted linguistic study in production and comprehension.

#### **4.6.2. Defining the content of instruction**

Another major issue involved in instructed SLA studies was defining the “content” of instruction that could benefit from explicit or implicit treatments. A more recent meta-analysis by Spada & Tomita (2010) reviewed instructed SLA studies that were conducted after 1990 with explicit and implicit instructional treatments following the definitions by Norris & Ortega (2000) on explicit and implicit instruction. They focused on the interaction between the type of instruction and the complexity of the linguistic structure. The meta-analysis was designed to answer two questions:

- 1- Do the effects of explicit and implicit instruction vary with simple and complex features in the short and long term?
  - 2- Do the effects of explicit and implicit instruction lead to similar types of language ability for complex and simple forms?
- (p. 266)

The meta-analysis decided to adopt the psycholinguistic cognitive view of complexity involving the ease and duration of acquisition by Hulstijn & de Graaff (1994) to categorise the linguistic features in 41 studies. The results showed no effect of “complexity” on the effectiveness of either explicit or implicit treatments. It was found that explicit instruction was more effective than implicit instruction with *both* simple and complex features. Moreover, explicit instruction was found to affect both types of

knowledge “explicit” and “implicit”. The review ends with a call for more research on the effect of explicit and implicit instruction on types of L2 knowledge.

An important point to consider when looking at the results of Spada & Tomita’s (2010) meta-analysis is that although considerable research has been done on explicit/implicit instruction, much less is known on the target of instruction itself i.e. the problematic linguistic properties that need instruction<sup>13</sup>. They report that most studies (e.g. DeKeyser, 1995; Robinson, 1996 among many others) were correct in finding explicit instruction beneficial for *both* complex and simple features. This leads to the question addressed by this study on using GenSLA findings on form-meaning mapping differences in a contrastive feature account between L1 & L2 to decide on the problematic properties that would provide the content of instruction. Indeed, an example of this inconsistency from Spada & Tomita’s analysis is categorising “articles” as a simple linguistic feature while the writers acknowledge that articles are known to “pose persistent problems” because of “the semantic complexity of articles and to their lack of perceptual salience in the input.” (p. 289).

By bridging the gap between GenSLA research and instructed SLA, this current work tries to present a more concrete understanding of this “linguistic complexity” following recent findings of GenSLA research. Research on semantic universals and acquisition difficulties caused by form-meaning mappings including the “Bottleneck Hypothesis” and “Feature Re-assembly” reaching a contrastive analysis of features as described in chapter 3 offer a much needed description of the “target of instruction” and “linguistic complexity” that is lacking in instructed SLA studies. Complexity in this regard will involve a comparison between L1 and L2 properties not within a CAH framework as explained in chapter 2 but in a generative account of the mismatches between L1 and L2. As such, those aspects of language that cause acquisition difficulties because they require “unlearning” of L1 properties will provide the content of instruction (Whong, 2011).

The following section will review what little instructed research is found following generative approaches to language acquisition and how the view of input in GenSLA has evolved opening the door for more practical applications in the language classroom.

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<sup>13</sup> Recall the similar problem with Ellis’s proposal explained in (4.3).

#### 4.6.3. Generative instructed studies: positive and negative evidence

As mentioned earlier, early research following generative approaches to SLA mainly investigated “positive evidence” with little interest in “negative evidence” or any form of instruction. The traditional GenSLA view followed a strong non-interface position rejecting any form of explicit instruction or negative evidence (Krashen, 1977; 1985; 1999; Schwartz, 1986, 1999). In 1987, Lydia White challenged this view and wrote a paper against Krashen’s extreme non-interface position. She called for re-defining what is meant by “input” through more research exploring all kinds of input:

“In the meantime, we should not be afraid occasionally to provide input which is explicitly geared towards solving some of the problems discussed above, input either in the form of grammar teaching, of correction, or other forms of emphasis on particular structures; at worst, it will be ignored and, at best, it may trigger change in the acquisition system, where such triggers are not present in ordinary input, or are so subtle that they are hard for the second-language learner to detect.” (p.108)

Later on, White (1991) followed with her seminal work investigating the role of form-focused classroom instruction (including negative input) on Second Language Acquisition. This study stands out as one of the first attempts to explore classroom instruction within a generative framework. She targeted a feature that exhibits a *parametric* difference between English and French, which is the occurrence of an adverb (A) between a verb (V) and its direct object (O) as a result of verb-raising resulting in the word order (SVAO) to be allowed in French but ungrammatical in English. Since English lacks verb-raising this phenomenon causes learnability problems for learners of French learners of English as a second language. The subjects were 11-12 year old francophone learners of English who were divided into two groups one group of 82 students received form-focused instruction on the grammatical rule that an adverb in English can’t interrupt a verb and its direct object while the other group (56 students) received only positive input on this rule in the form of authentic material with instruction focusing on question formation. The results showed that indeed negative input in the classroom was effective in helping the participants realise that SVAO was ungrammatical in English, but the follow-up study results showed that it didn’t have a lasting effect, hence, didn’t result in changing the underlying competence. However, a crucial result of this study is that the group that received positive input alone also didn’t acquire the knowledge of this rule in both short-term and long-term results.

Schwartz & Gubala-Ryzak (1992) argued against White's findings on the role of negative evidence in re-structuring ILGs. They rejected negative evidence as "input" that would construct grammar insisting that only positive language input activates UG. They re-analysed White's findings and answered "no" to the question "Can the resulting knowledge that the learning of Negative Evidence (and Explicit Positive Evidence) entails serve as input to the language acquisition process?" (p.33). Their claim is that UG only makes use of input of a particular type (natural positive data) and that negative or explicit positive evidence can't "feed directly into the language module" and no mechanism can translate the resulting knowledge from such input to the required knowledge. White (1992) followed with a reply to Schwartz & Gubala-Ryzak agreeing with their re-analysis of the earlier data in White's original studies that negative evidence "probably did not engage UG at all and that these learners learnt something superficial which they applied and later forgot." (p.136) but White argues that this doesn't mean that negative evidence can "never" engage UG in L2 acquisition which is such a strong claim that needs to be supported by empirical evidence. White (1992) concluded by commenting that the empirical evidence from the original study only confirmed that positive evidence was not sufficient in triggering parameter resetting in L2 learners' grammar in this precise linguistic phenomenon. This leaves the door open to experimenting with other types of input and looking at other linguistic phenomena.

The results of White's study were further investigated by Trahey & White (1993) to investigate why positive input alone wasn't sufficient to acquire the verb raising restriction after noting that the "question group" in White's original study received very limited input on adverbs. The study targeted subjects from the same age group of francophone children studying in two classes of English. The students received two weeks of "input flood" of materials containing English adverbs and the timing of the experiment along with the duration were carefully chosen to be comparable to the original study. The results of the group showed no significant difference after the input flood as they still accepted the French word order which means they didn't reset the parameter to the English value. The results were then compared to the two groups from the original study and revealed that the input flood group increased in accepting the grammatical English order significantly higher than the question group and near the results of the adverb focused group. Trahey & White end by suggesting that the failure of L2 input maybe due to the "length of time" which is another factor to consider in this type of research.

Trahey (1996) followed up on the results of the same group one year later and found that the subjects' knowledge of adverb placement hasn't changed as they still used the grammatical and ungrammatical verb positions. Trahey notes that the problem with the target structure is that it needs "unacquiring" and because of that maybe positive evidence wasn't sufficient on its own. She ends with suggesting that "perhaps positive or negative evidence alone is insufficient. Rather, some combination of the two may result in higher levels of success." (p. 136). Here we find an interesting suggestion of "combining" the two types of input rather than gearing the research to prove the success of only one type (negative vs positive).

As described above, research within GenSLA on positive and negative evidence didn't reach concrete conclusions and called for more investigations into possible shortcomings of previous research in classroom settings but explorations into this kind of research was slow. One of the recent attempts to bridge this gap as detailed earlier in chapter one is the volume by Whong, Gil & Marsden (2013). One study featured in the volume was by Hirakawa (2013) building her instruction on the results of generative theories including the "unaccusative hypothesis" by Burzio (1986) and the Auxiliary Selection Hierarchy by Sorace (2000). She investigated input within a GenSLA framework similar to this research by offering explicit instruction to overcome the "overpassivisation" of intransitive verbs that are unaccusative (e.g. *the earthquake was happened last night*). The unaccusative hypothesis defines two types of intransitive verbs: unaccusative and unergative which are different in the semantic and syntactic information their subject NPs must carry and Sorace's hierarchy detailed six types of verbs. The participants were 27 L1 Japanese learners of English divided into two groups 13 participants received the focused instruction while 14 participants were the control group receiving no specific instruction on the verbs. The instruction period lasted for four weeks and the instrument was a grammaticality judgment task piloted with a group of native English speakers.

The results suggest that the instruction which included negative evidence on the ungrammaticality of passive intransitives had some positive effect on three verb types in immediate post-tests while long term results were not investigated. The study ends by calling for more investigation "...to identify the quality and quantity of negative evidence which is sufficient/crucial for learners to develop knowledge of the ungrammaticality of "passive" unaccusatives in English." (p.135). Again, we find reference to the two important factors related to this kind of research: the "type" of input and the "amount" required.

Gil, Marsden, & Whong (2013) also investigated the effectiveness of explicit instruction on the properties of English quantifiers such as “every” and “any” based on previous findings by Dekydtspotter et al (2001), Marsden (2009), Yuan (2010), and Gil, Marsden, & Whong (2011). The study included two groups: an instructed group of 15 L1 Chinese learners receiving instruction on “any” and a control group of 8 learners of English from different L1 backgrounds. The participants’ proficiency was in the upper intermediate and advanced levels all in their first term of the MA degree at the UK. The results show no effect of explicit instruction in making learners recognise the licencing of “any” in specific contexts. However, the researchers argue for implications on language teaching by overcoming methodological issues in classroom research and more investigations into what “type of input” would be appropriate to help learners acquire a certain linguistic structure.

The consistent conclusions found by most GenSLA studies reviewed so far is that more research is required to arrive at the sufficient “amount of input” and the right “combination” of positive and negative evidence which will have to be addressed in designing this current experiment. Other methodological issues should be considered after reviewing empirical research that targeted English articles but first a closer look at measurements of explicit and implicit knowledge.

#### **4.6.4. Measuring explicit and implicit knowledge**

One of the methodological issues related to instructed SLA research is measuring implicit and explicit learning and the resulting L2 knowledge (Dekeyser, 2003; Doughty, 2003). Doughty (2003) offered a lengthy description of the measures of L2 knowledge after consulting the studies sited by Norris & Ortega (2000) summarized as follows:

- 1) Constrained, constructed responses: written error correction, oral picture description etc.
- 2) Metalinguistic judgment responses: timed or untimed judgment.
- 3) Selected responses: comprehension like picture matching, production like choosing from a list, or other methods like semantic priming.
- 4) Free responses: comprehension like translating, production like picture description etc. (p.299-302)

Ellis (2005) proposed five tests three of which measure implicit knowledge: elicited oral imitation, oral narratives, and timed grammaticality judgments, and two

measure explicit knowledge: untimed grammaticality judgments, and metalinguistic tests. This classification was used in a number of studies to investigate L2 knowledge and language proficiency and the effect of form focused classroom instruction on the two types of L2 knowledge. Ellis's proposal involved a distinction between "timed" and "untimed" grammaticality judgment tests suggesting that timed tests measure implicit knowledge while untimed tests measure explicit knowledge.

Researchers agree on the need to use what Doughty described as both "constrained" and "free" measures to investigate the type of L2 knowledge that was acquired. The use of different measures is vital when the study is investigating more than one type of instruction "input" and trying to test input combinations. Therefore, this study used three instruments: a) a forced choice task, b) a sentence repetition task, and c) a written production task to provide insight into L1 Najdi Arabic speakers' knowledge of English articles before and after the intervention.

Based on Doughty's (2003) and Ellis's (2005) classification the forced choice task is considered a more "explicit" constrained task drawing learner's attention to the available article choices. The sentence repetition task is also considered a constrained task as subjects are required to "recall specific sentences" but the test offers a measure of production affected by learners' grammatical system which may involve more implicit types of knowledge. Finally, the written production task is divided into two main questions: "picture description" and "fill-in-the blanks". Both questions are considered free response production tasks because subjects were not guided or instructed as they were only given pictures as cues.

The full description of the tasks will follow in chapter 5 and a detailed account for the demands of each task and the type of knowledge tested will be explained in (5.4.5) but it is important to note here than the classifications of tasks and the measured L2 knowledge is not a clear cut case. For example, Whong et al (2014) point out that "It cannot be assumed that production necessarily captures implicit knowledge" (p.556) because in production tasks learners can still draw from all types of L2 knowledge whether explicit or implicit. In addition, production tasks are limited to what learners "can" produce without giving a full picture of what learners acquired as underlying L2 knowledge. Accordingly, this study has employed more than one instrument to reach more concrete results about L2 knowledge but caution will be taken when interpreting the results of those tasks as being a strict indication of a specific type of L2 knowledge. This also assures that the study doesn't fall into the hypothetical debate on the nature of L2 knowledge as described earlier. The aim of this study is to find an instructional

treatment that can be used in the classroom to ensure that both types of knowledge can be developed by learners. In order to achieve this goal, this chapter outlined MOGUL as a framework that allows for explicit awareness to be learned alongside implicitly acquired modular knowledge. The following section will provide the necessary review of empirical findings from research that investigated instruction with English articles.

#### **4.7. Instructed SLA research on English articles**

A number of studies have been conducted to investigate the effect of instruction on the acquisition of English articles. In comparison to descriptive studies reviewed earlier in Chapter 3 this experimental type of research on article instruction is relatively less common. One of the first studies was Master's (1994) investigation on the effect of explicit instruction on written article production. Master conducted this study based on his earlier descriptive study on the acquisition of articles (1987) and his proposed "binary system" (1990) to teach articles. The study included 14 participants studying at ESL university classes in the US receiving instruction over a nine-week period. The instruction covered all the uses of articles: indefinite, definite, generic (the, a), and the zero article. The instrument was a cloze test used as a pre-test and post-test and the results showed a significant improvement of the experimental group after the instruction. However, the study had some limitations such as the small sample size, the use of only one instrument, and the lack of a delayed post-test to investigate long-term results.

Muranoi (2000) investigated the use of "focus on form" and the use of "focus on meaning" during interactive communicative tasks targeting English articles on two experimental groups. The study was conducted on 61 L1 Japanese learners of English with an additional group of 30 participants as a control group. The data was collected using two oral tests (story and picture descriptions) and a written grammaticality judgment test. The study also included a delayed post-test five weeks after the treatment. The results showed a significant improvement in favour of the experimental group that received formal focus on form over the group that received focus on meaning. However, the study couldn't be interpreted as favouring "explicit" focus on form only since it was embedded within a communicative task. Brender (2002) also investigated English article instruction on 56 L1 Japanese learners of English using a conscious-raising method. The instruction covered the use of all three articles and the study included a control group that didn't receive the instruction. The data was collected

using a cloze test in the form of an essay and a single post-test was conducted three weeks after the instruction. The results showed that both the experimental and control groups showed gains in post-test scores with no difference between the experimental and control groups' post-tests.

A number of studies were conducted on the use of English articles within writing tasks that included "corrective feedback". Those studies were involved in a debate over the usefulness of error correction in affecting real language acquisition which started with Truscott's (1996) article "*The case against grammar correction in L2 writing classes*" featured in *Language Learning*. Truscott's critique started a strong debate in a series of articles later on (e.g. Bruton, 2009; Chandler, 2009; Ferris, 1999; Truscott, 2007; 2009; 2010). In this debate, researchers reviewed the results of four studies on explicit instruction in the form of error correction on English articles by Bitchener (2008), Bitchener & Knoch, (2008), Ellis et al (2008) and Sheen (2007). Those studies were considered by Truscott (2010) as questionable in their claim of the benefit of correction because of many reasons but the most important one is that "the target of correction was selected for maximum simplicity" (p.333). The studies just chose one or two uses of articles oversimplifying this linguistic phenomenon and its complex semantic features. Even within his defence of corrective feedback Bruton (2009) couldn't deny that "it would need numerous writing tasks to cover just article use" (p.608) if researchers want to claim that corrective feedback really affected the acquisition of articles.

As an example I will review Ellis et al (2008) study that was conducted on three groups of L1 Japanese learners of English divided into two experimental groups and a control group. The experimental groups included 18 participants in each, one group receiving focused corrective feedback and the other unfocused corrective feedback. The control group included 13 participants and all three groups were tested using two instruments: a narrative writing task based on picture stories and an error correction test. The study was conducted in 10 weeks with pre-tests, treatment, post-tests with the timing of the delayed post-tests after a short period of three weeks. The focused group received corrective feedback on articles only while the unfocused group received corrective feedback on articles, past tense, prepositions, and vocabulary. This corrective feedback on "articles" only involved the distinction between the English articles *the* and *a* when used as first or second mention in the stories involved in the task without an in-depth look at the complex features involved in article interpretation. Accordingly, when

the results show that the experimental groups both improved significantly in the post-tests over the control group could we claim that the learners acquired the use of English articles? Ellis et al (2008) make a strong claim in their conclusion by suggesting improvement in writing by using explicitly learned rules on “article use” to monitor production. The problem of such a claim is that it assumes that the correction of errors in simple tasks could result in some form of “implicit” knowledge by testing subjects three weeks after the experiment let alone the methodological problem of oversimplifying the complex grammatical features of articles. Truscott (2010) addressed this problem that occurs within some pedagogical research frameworks by noting that language teaching should be informed with more detailed research “evidence” rather than “intuition” and “preconceptions” about what to teach or correct in the language classroom. This kind of research evidence that is called for and much needed in pedagogical research is what influenced the design of this current study which will provide classroom instruction based on the detailed description of article semantics and L1 transfer from GenSLA research.

In a recent study following a cognitive view of L2 knowledge, Akakura (2011) investigated the effect of instruction on what she described as “explicit” and “implicit” second language knowledge of English articles. This study has a stronger theoretical framework and methodological design compared to earlier studies of this type. To decide on what aspects of article use to teach in the explicit instruction treatment she chose to follow pedagogical models of article use combined with a cognitive grammar approach. Akakura dismissed what she named “linguistic-theory-based classification models”<sup>14</sup> of articles as being too conceptual to be learned by intermediate language learners. The study however faced a problem in teaching all the overlapping rules of articles described in pedagogical models so she conducted a pilot study on her targeted population to identify only the “problematic areas” that need to be targeted. This restricted the instruction to five article usages: 1) non-generic indefinite *a*, 2) non-generic indefinite *an*, 3) non-generic definite *the*, 4) generic *a/an*, and 5) generic *the*.

The participants of the study who were piloted to specify problematic areas in article use were 94 learners of English from 17 different L1 backgrounds 78% of whom were East Asian and the rest from different European and Middle Eastern languages.

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<sup>14</sup> In her review of related literature Akakura only included Huebner’s (1983) taxonomy of hearer and speaker knowledge as an example of linguistic-theory classification models of articles ignoring all other semantic classifications (e.g. Chierchia, 1998; Ionin, Ko, & Wexler, 2004; Kirfka et al, 1995).

The IELTS test was used to group them into proficiency levels which ranged from beginners to very advanced. They were then randomly assigned to an experimental and a control group and the experimental group received three lessons with online activities on how articles are used following a descriptive approach of Langacker's (2000) cognitive grammar and DeKeyser's (1998) output-based instruction. Four instruments were used to account for implicit and explicit knowledge following Ellis's (2005) criteria for measuring the two types of knowledge: an oral production task & elicited imitation (implicit), and a grammaticality judgment task & metalinguistic knowledge task (explicit). This gives this study a strong methodological basis because Ellis's criterion as noted by Hulstijn (2005) makes claims about explicit and implicit knowledge more "testable" (p.137) even if one doesn't agree with its premises.

The participants were tested immediately after the treatment in the first post-tests then six weeks later delayed post-tests were conducted to test the long-term effect. Results of the explicit test instruments reveal a slight effect size increase in the immediate and delayed post-tests of the experimental group compared to the control group ( $d=0.38$ ) and ( $d=0.43$ ). However, results of the elicited imitation task for the experimental group increased from  $d= -0.20$  in the pre-test to a large effect in the immediate post-test ( $d=0.79$ ) and continued to increase in the delayed post-test to reach ( $d=1.37$ ). In addition, there was a significant difference between the experimental and control groups on the elicited imitation task ( $p = .000$ ,  $d = 2.39$ ) and the oral production task ( $p = .025$ ,  $d = 0.47$ ). The overall results show a greater effect size in *implicit* knowledge post-tests in favour of the experimental group.

The major limitation of Akakura's study is that it dismisses the effect of the first language and possible L1 transfer on the second language acquisition process. The explicit instruction was tailored for this specific group of learners and couldn't be generalized to all L2 learners of English before piloting first and knowing the problematic areas for each targeted group. Akakura's study is an example of what Whong, Gil, & Marsden (2013) describe as classroom research with a property theory "gap" lacking the "fine-grained understanding of linguistic generalizations" (p.208) which is in this case the detailed description of universal article semantics and the understanding of the acquisition of English articles within a contrastive analysis of features as described in chapter 3 of this work.

Snape & Yusa (2013) conducted what could be regarded as the first study on the explicit instruction of articles based on the recent findings in the generative literature on definiteness, specificity and genericity (Ionin, Ko, & Wexler, 2004; Krifka et al, 1995). The participants were 16 L1 Japanese learners at a high intermediate proficiency level in English divided into two groups an experimental and a control. The instruments included three tasks: the forced choice task from Ionin, Ko, & Wexler (2004), the acceptability judgment task from Ionin et al (2011), and the transcription task from Pierce & Ionin (2011). The instruction group received three 70 minutes sessions over the course of three weeks then immediate post-tests were conducted and delayed post-tests three weeks later. The results of the forced choice task show no difference between the groups, and the acceptability judgment task shows a difference in the bare plural NP-level generics in favour of the control group. The results of the perception task show a significant improvement of the instruction group in perceiving the definite plural and the indefinite.

Snape & Yusa conclude that L1 Japanese learners of English at this proficiency level didn't benefit from the instruction on articles on definiteness, specificity and genericity as provided in this study. The reasons include the fact that those learners didn't receive any previous instruction on these complex concepts and three weeks were not enough to develop their understanding. The implication for instruction is that L1 Japanese learners should be taught how the definite article is used in specific and nonspecific contexts but there is no need to teach how the indefinite article is used because they will acquire this automatically. This means looking more closely at the semantic features of articles and refining what would be used in the instruction for this particular group from this L1 background. The researchers also note that learners use explicit strategies based on specificity which results in errors in definite non-specific contexts which makes explicit instruction beneficial in this area to overcome such explicit strategies. Article perception was also found to be teachable as learners improved in their perception post-tests after receiving instruction in perception. Finally, it is concluded that explicit instruction on article semantics is recommended over a long period of time to be considered effective in changing L2 knowledge.

My major conclusion of this review of research on article instruction is that there is a need for instruction to be nested in strong theoretical and methodological frameworks. Theoretical issues include: a) a clear description of the type of input that is used in the classroom, b) a clear description of the linguistic property itself and the

aspects that should be targeted by instruction, and c) a clear description of the role of L1 transfer. Methodological issues include: a) using more than one instrument, b) using delayed post-tests to examine long-term effect, and c) allowing sufficient time for instruction. Those issues will be considered in designing the current work as will be detailed in chapter 5.

Table 12 A summary of instruction studies on English articles

Study	Sample size	Instruments	Instruction	duration	Post-tests
<b>Master 1994</b>	14	Cloze test	Definite + indefinite articles, generic (a, the) + zero article	9 weeks	One immediate
<b>Muranoi 2000</b>	61	Oral story and picture description Written picture description Grammaticality judgment	L1 instruction article errors indefinite article, generic indefinites	1 week	Immediate and delayed 5 weeks later
<b>Brender 2002</b>	56	Written cloze test and essay writing	The, a, Ø	14 weeks	Immediate and delayed 3 weeks later
<b>Ellis et al 2008</b>	49	Picture description Error correction	The, a, Ø corrective feedback	6 weeks	Immediate and delayed 3 weeks later
<b>Akakura 2010</b>	94	Oral production, elicited imitation, grammaticality judgment, metalinguistic task	Generic (a, the) non generic (the, a)	One week	Immediate and delayed six weeks later
<b>Snape &amp; Yusa 2013</b>	16	Forced choice, acceptability judgment, perception transcription	Definiteness, specificity, genericity	3 weeks	Immediate and delayed 3 weeks later

#### **4.8. Instruction to foster a dual representation of knowledge**

This study was initially inspired by Whong's (2007) paper to bridge the gap between GenSLA and language pedagogy. In this paper, Whong suggested MOGUL as a language development model that ensures a modular view allowing the development of both formal and functional aspects of language in different knowledge stores. Recall Long & Robinson's (1998) critique of Sharwood Smith's hypothesis in section (4.4) on the "content" of input which was described as a "synthetic" syllabus. The application of the MOGUL model in the classroom would indeed benefit from Long's (1991) "analytic" meaning-based pedagogical approach with added "focus on form". Whong (2007) proposed a language lesson combining "focus on form" with "genre analysis" as those two approaches would "ensure that all types of language related knowledge are being fostered." (p.153).

##### **4.8.1. Explicit instruction: Focus on Form**

Approaches to language teaching started with focus on *analysing* the target language through grammar textbooks in "synthetic approaches" where the language is broken down to its smallest items then presented in linear sequences (Wilkins, 1976). Those approaches ignored the findings of SLA research on the process of language acquisition, morphosyntactic developmental sequences, L1-L2 relationships and form-function mappings. This resulted in a shift in the field of language pedagogy from traditional synthetic approaches that "focus on formS" to another extreme view of "focus on meaning" (Long & Robinson, 1998). Krashen's hypothesis made a great impact in the field of language learning with the publication of the "Natural Approach" by Krashen & Terrell (1983). The approach combined language acquisition theory with a curriculum for the foreign language classroom offering a striking alternative from the mainstream grammar-focused approaches at that time. The natural approach provided "naturalistic" language acquisition in the classroom while decreasing any explicit grammar study or correction of errors (Richards & Rogers, 2001). Wilkins (1976) named the extreme meaning-based approaches "analytic". Those meaning-based approaches held the view that adult learners are capable like children of acquiring a language and accessing the innate knowledge when they encounter sufficient quantities of positive evidence. The two approaches: grammar-based vs meaning-based resulted in a heated debate among classroom teachers favouring one of the two extreme views (Doughty & Williams, 1998).

Again, the findings of more SLA studies found problems in purely meaning-based analytic approaches suggesting that older learners no longer have the capacity of young children and adult learners may be fluent but not native-like. White (1991) also noted that L1 could cause the “unlearnability” of some grammatical forms. Research found some advantage for learners who received formal instruction which lead to a *middle view* suggesting that meaning-focused language teaching can be improved with some attention to form. In a seminal work, Long (1988, 1991) introduced “focus on form” which is different from earlier synthetic approaches to language learning of “focus on formS”.

Long’s definition of “focus on form” entails that an effective explicit input strategy involves engagement in *meaning* before attention to linguistic features. Long’s focus on form received great attention as it dealt with the limitations of an analytic approach while bringing out its strength. Long & Robinson (1998) explain that during a meaning-focused lesson focus on form entails “an occasional shift of attention to linguistic code features” (p.23) this could be done by the teacher or students. Table 11 summarizes the three approaches to language teaching in relation to focus on meaning or form as explained above adapted from Long & Robinson (1998).

Table 13 Options in language teaching (taken from Long & Robinson, 1998. P.16)

<b>Option 2</b>	<b>Option 3</b>	<b>Option 1</b>
<i>Analytic</i>	<i>Analytic</i>	<i>Synthetic</i>
Focus on <b>meaning</b>	Focus on <b>form</b>	Focus on <b>formS</b>
Natural Approach etc.	Task-Based etc.	Grammar Translation etc.

#### **4.8.2. Implicit instruction: Reinforced genre analysis**

The studies of Systematic Functional Linguistics (SFL) following Michael Halliday’s (1978) views linked human linguistic choices to societies cultures, and ideologies. Halliday defined “linguistic texts” as *recurring* in contexts and situation types that are specific to a certain culture and this approach to cultural contexts and systematic text types influenced pedagogical applications of genre analysis (Paltridge, 2001). In 1990, John rce published *Genre Analysis: English in academic and research settings* which introduced genre analysis as a pedagogical approach in English for Specific Purposes (ESP) contexts. Swales developed ESP genre analysis with focus on English academic research genres for university level students. Paltridge (2001)

describes genre analysis as an “organizing tool” for language learning providing academic genres through a theme-based course.

In “genre analysis” for non-native language contexts, texts are analysed at the discourse, sentence and word level focus on form in this sense would provide a “natural complement” by adding analysis and explicit explanation of other linguistic levels of syntax and phonology (Whong, 2011, p. 152). Whong’s suggestion is that the “genre” approach would provide the meaning-based natural input through authentic language texts of certain discourse communities while features of the text could be explicitly highlighted through “focus on form” which will come after attending to meaning.

If the authentic texts that are used in the classroom were further *reinforced* with the targeted linguistic form this would enable us to test what Trahey (1996) described as a “combination” of positive and negative evidence. This study took on this proposal to investigate the effectiveness of “explicit” instruction that is combined with meaningful input allowing learners to encounter the targeted linguistic property more frequently. Trahey & White (1993) followed up White’s (1991) original study to compare the groups that received explicit instruction with groups that receive only positive input flood. The follow up study highlighted the importance of having more than one experimental group for comparison and this would be ensured in the present study by providing a group that will receive the same natural input reinforced with the targeted linguistic property but without the explicit instruction.

#### **4.9. Building an instructional framework for this study**

The aim of this study is to build on results from GenSLA research on acquisition of English articles, grounding classroom research on solid theoretical assumptions about the language. The linguistic features of English articles that are proposed to be resistant to acquisition and problematic for L1 Najdi Arabic speakers were specified based on the contrastive analysis of features. As such, classroom instruction will be provided on those linguistic structures in an attempt to accelerate the acquisition process and recovery from L1 transfer. Bearing in mind that there is agreement among all different approaches to SLA that acquired ‘implicit’ knowledge is the ultimate aim of any language learning context (Whong, Marsden, & Gil, 2013).

A decision must be made on the chosen terminology for this current work. In light of previous research, this study used the term “reinforced input with explicit focus

on form” to refer to the explicit instruction carried out to target the specific linguistic features of English articles. This “reinforced input” involves explicit grammar instruction and negative evidence but it also involves presenting this instruction in modified texts that are reinforced with the target structure to create a combination between positive and negative evidence. To investigate more “instructional” combinations, another experimental group was exposed to the same “reinforced input” but without the explicit instruction on articles to see if reinforced positive evidence alone would be effective. This type of input was named “implicit reinforced input” as the target structure is implicitly provided in the classroom.

#### **4.10. Chapter 4 summary and conclusion**

The following list will summarize what has been presented in this chapter so far and the assumptions made by this current work following GenSLA theories:

- 1) A modular/generative view of language acquisition doesn’t necessarily reject negative or explicit grammar instruction in the classroom.
- 2) Some linguistic structures are resistant to acquisition and problematic.
- 3) Non-modular linguistic knowledge can develop for the resisting linguistic structures following explicit instruction and can be automated resulting in fluency.
- 4) Previous research has shown that explicit instruction could be beneficial.
- 5) The need to provide the correct “input” that would trigger the acquisition of the target structures.
- 6) Any explicit instruction should focus on the specific linguistic structure and must be guided by a detailed analysis of the language to avoid “confusing” instruction for learners.

The methodological issues found in previous research in general and research targeting English articles in particular should be addressed. Some limitations of previous research include: 1) the lack of delayed post-tests allowing enough time to test long term gains, 2) the lack of control groups for comparison, 3) the lack of some combinations of “input” in the same experiment, 4) the use of instruments that test explicit grammatical knowledge rather than production tests that tap into underlying knowledge, 5) the short duration of the explicit instruction treatment, and 6) the lack of a linguistic theory to precisely target specific structures based on a comparison between L1 and L2 in a framework predicting areas and causes of acquisition difficulties.

Finally, the study adopts the MOGUL processing model which accounts for language development within a “dual knowledge” view. The language teaching method proposed is ‘*genre analysis*’ (Swales, 1990) of extensive authentic samples of text that will serve as positive input priming the learner for ‘*focus on form*’ (Long, 1991) in which explicit explanation about specific points of language is provided and hopefully stored as metalinguistic knowledge. This corresponds to the idea of ‘priming’ the learner by implicit positive input before providing explicit instruction that could be stored as metalinguistic knowledge alongside modular linguistic knowledge as required by MOGUL (Whong, 2007).

Following this clear theoretical framework, the next chapter will present the research questions and methodological design including the treatment, procedure and material.

## **Chapter 5: Methodology**

### **5.1. Introduction**

The previous chapters (3 & 4) established the theoretical framework of this study which brings together two usually-separate research areas by exploring classroom instruction on the problematic properties of English articles as defined by GenSLA research. This chapter presents the methodology of the main experiment organised as follows: section 5.3 will summarise the pilot study of this work and its limitations and conclusions as it was conducted before reaching the detailed frameworks outlined in chapter 3 & 4, section 5.4 will present the main experiment methodology starting with the research questions and revised hypotheses followed by the procedure and instruments and ending with the instructional material used in the intervention.

### **5.2. Ethical issues**

The ethical approval was obtained from the University of Leeds research ethics committee (Appendix A1). The permissions for conducting both the pilot and main study were also obtained from King Saud University Riyadh. The participants were given full description of the project orally and through information sheets (Appendix A2 & A3) without disclosing the subject of instruction (the specific linguistic features related to articles). Proper compensation was given to participants after taking their permission to be involved in both studies through signed consent forms (Appendix A4 & A5).

### **5.3. The pilot study: The acquisition of English articles by L1 Najdi Arabic speakers**

The pilot study of this work was conducted at the start of this project in (2012) aiming to gather information on the acquisition of English articles by L1 Najdi Arabic learners and to confirm the assumptions about the learning task facing L1 Najdi Arabic speakers when learning English articles. The pilot found an overall similarity with the results of other studies conducted on other L1 Arabic learners of English (e.g. Almahboob, 2009; Sarko, 2009a, 2009b) showing the easy acquisition of the English indefinite article and the L1 transfer of some features related to the definite article in

some indefinite contexts. The results of the pilot also supported the development of a more detailed framework for the main study later on to specify the problematic areas.

### **5.3.1. Hypotheses of the pilot study**

Information on the acquisition of English articles by the target population of the study was gathered to test the following hypotheses:

**Hypothesis 1:** The acquisition of the use of the definite article *the* in definite contexts will not be problematic as learners will transfer their L1 knowledge of the definite article according to the Full transfer/Full access hypothesis (Schwartz & Sprouse, 1996).

**Hypothesis 2:** Acquiring the use of an overt indefinite article *a* in indefinite specific and non-specific contexts will be part of a developmental stage as learners advance in their proficiency and as such it will not represent persistent acquisition difficulties because it requires less complex “feature re-assembly” according to the Feature Assembly Hypothesis (Lardiere, 2008, 2009) and because it involves a feature that is frequently encountered in the input.

**Hypothesis 3:** Acquisition difficulties and persistent problems are expected in aspects of article use that manifest a cross-linguistic variation between Najdi Arabic (L1) & English (L2) in the [-definite] [+generic] feature combination which involves more complex “feature re-assembly” and less evidence in the input. In addition to difficulties related to syntactic constraints on [-definite] contexts with relative clause modification.

### **5.3.2. Research questions**

The following research questions were investigated to validate the initial assumptions made by this study on the problematic areas and proceed with the instructional treatment in the main study accordingly.

**RQ1:** Will the second language groups show target-like performance on those two contexts that are assumed to be easier to acquire: a) the use of the article *the* in definite contexts, and b) the use of the indefinite article *a* in indefinite contexts?

**RQ2:** Will the second language groups show target-like performance on those two “indefinite” contexts that are assumed to be more difficult to acquire a) generic contexts and b) contexts involving RC modification with an overt complementiser.

### 5.3.3. Participants

After excluding incomplete tests and low proficiency levels, 36 participants were included in this study. Participants were divided as follows: the control group of 7 native English speakers all undergraduate students at the University of Leeds, and the experimental group of 29 L1 Najdi Arabic native speakers learning English as undergraduate students of the English department at King Saud University, Riyadh.

The use of a language proficiency test was needed to group the participants into proficiency levels to answer the research questions. Therefore, a well-known widely used proficiency test, the ‘Michigan Test of English Proficiency’ MTELP was chosen. The test is a general language proficiency placement test for non-native English speakers who will need to use English for academic purposes. It is a multiple choice test targeting three skills, grammar, vocabulary and reading. The grammar and vocabulary parts include 40 items each. The reading part contains four reading passages with five multiple choice questions on each passage with a total of 20 test items. The total mark for the test is 100 and test instructions state that the test time limit is 75 minutes. The following are examples of test items.

**a) Grammar example:**

Is this Mary’s answer?

Yes its \_\_\_\_\_.

- a) she
- b) she’s
- c) her
- d) hers

**b) Vocabulary example:** select the word that has the closest meaning to the underlined word

He eventually found the answer

- a) never
- b) almost
- c) finally
- d) suddenly

**c) Reading example:**

St. Louis is a city set apart in the Midwest; in the region, yet not entirely of it; French in origin; German in settlement and development; swaddled at birth in furs and skins brought in by forerunners of the pioneers.....

The first permanent settlers of St. Louis were ....

- a) slave owners
- b) French hunters
- c) Germans
- d) Eastern industrialists

In addition, a short background questionnaire including information on age, years of formal study of L2, and the native language of both parents was given to the participants and written in their native language (provided with English translation as Appendix B1).

The results of the language proficiency test (MTELP) resulted in grouping the L1 Najdi speakers into four proficiency levels. The native control groups' scores were used as reference as detailed in the following tables (12 & 13)

Table 14 Pilot study Native English college level students' results on MTELP proficiency test

<b>Part. Code</b>	<b>Score</b>
NS1	91
NS2	91
NS3	90
NS4	90
NS5	89
NS6	88
NS7	86
Mean	89.28571
St.Dev	1.799471

Table 15 Pilot study Najdi learners' group division following MTELP scores

<b>Score on PT</b>	<b>Level</b>	<b>Number of participants</b>
Above 86	Very advanced	3
70-85	Advanced	7
55-70	High intermediate	9
48-55	Intermediate	10

Three Najdi learners were grouped together as (very advanced) because they averaged around the native controls' mean score and further investigation into their backgrounds showed that one has a native English mother, the other has two bilingual parents who spoke to her in English, Arabic and French since childhood, and the third has bilingual parents as well and used to travel to the US for months every year. The average mean of years of formal English learning at school is M= 17.6 for the high advanced group, M= 15.7 for the advanced group, M= 7.3 for the high intermediate group, and M=10.8 for the intermediate group. Only two participants from the advanced group lived in an English speaking country and one student from the high intermediate group.

### 5.3.4. Instrument

The instrument was the “forced choice task” used in Ionin, Ko, & Wexler’s (2004) study and include 76 items covering seven categories of article use combinations ( $\pm$  definite,  $\pm$  specific). More items were added from the modified task used in Hawkins et al’s (2006) study. The task allowed for a choice of four items (the, a, an,  $\emptyset$ ), and included 60 items divided into the following contexts:

1. Definite
2. Indefinite
3. Indefinite with relative clause
4. Indefinite generic

Examples of the test items are as follows:

**a) Definite contexts:**

*At the end of a chess tournament*

Laura: Are you ready to leave?

Betsy: No, not yet. First, I need to talk to \_\_\_ winner of this tournament, she is my good friend, and I want to congratulate her!

*the    a    an     $\emptyset$*

**b) Indefinite contexts:**

*In a “Lost and Found”*

Clerk: Can I help you? Are you looking for something you lost?

Customer: Yes... I realize you have a lot of things here, but maybe you have what I need. You see, I am looking for \_\_\_ green scarf. I think that I lost it here last week.

*$\emptyset$     an    a    the*

**c) Indefinite generic:**

A: Alice and Harry have been discussing what kind of pet they should get.

B: What will they get?

A: They both seem to like \_\_\_ dogs.

*an     $\emptyset$     the    a*

**d) Indefinite head of relative clause with overt complementiser**

A: Excuse me.

B: How can I help?

A: I would like to buy \_\_\_ CD that I have been trying to find for ages.

*$\emptyset$     an    a    the*

### 5.3.5. Procedure

The study was conducted in August/September 2012. The native control group was composed of undergraduate students at the University of Leeds, the aim of the study was explained to them and they all read the information letter and signed the consent forms before taking the tests. The tests took place in a quiet room at the university and took an hour and a half to complete and the subjects were remunerated for their participation. As for the Najdi Arabic speakers, the tests were administered at their University in Riyadh in a familiar setting. Permission was granted from the English department to access students during their study hours. The students were briefed on the study and given information letters and consent forms. Students who wished not to participate were allowed to leave. A total of 160 students were tested but 131 students were excluded because of incomplete tests or scores below lower intermediate levels on the language proficiency test. The participants filled out the background questionnaire first then they took the language proficiency test followed by the forced choice task.

### 5.3.6. Results

#### 5.3.6.1. Group total scores

The total accurate scores of the test were calculated for all groups and descriptive statistics revealed the means and standard deviations as detailed in table 14.

Table 16 Pilot study total accurate results on the Forced choice task

Groups	Total	Mean	Std. D
Native controls	411/420 97.8%	58.57	0.78
High Advanced	178/180 98.8%	59.33	1.15
Advanced	391/420 93%	56	3.10
High Intermediate	443/540 82%	47.87	5.43
Intermediate	482/600 80.3%	48.3	5.73

Accurate answers of the native control group reached a percentage of 97.8% and the high advanced learners with a percentage of 98.8% were very close and highest among all participant groups. Accuracy decreases as the proficiency level decreases to reach a percentage of 80.3% accurate answers for the intermediate group.

In order to reveal if this difference is statistically significant several Multiple Analyses of Variance MANOVA were carried out and results showed that there was a statistically significant difference at the  $p < .05$  level between the *groups* [  $F = 42.819$ ,

p= .001]. Post-hoc comparisons indicated a statistically significant difference of (p= .001) between the mean score of the advanced group and both intermediate groups. The two intermediate groups had close mean scores and no significant difference was found between them (p=.337). Table 15 shows the comparisons between the control native group and the participant groups.

Table 17 Pilot study Post-Hoc between groups on the Forced Choice Task total scores

		Mean Difference	Std. Error	Sig. p value
<b>Native Controls</b>	<b>High Advanced</b>	-.0127-	.02662	.633
	<b>Advanced</b>	.0452	.02062	.028
	<b>H. Intermediate</b>	.1558	.01944	<b>.001*</b>
	<b>Intermediate</b>	.1729	.01901	<b>.001*</b>

\*The mean difference is significant at the 0.05 level.

The previous results indicate that both the high advanced and advanced groups achieved target-like performance on this test of English articles. To investigate results much further, analysis of participants' scores on each context will follow.

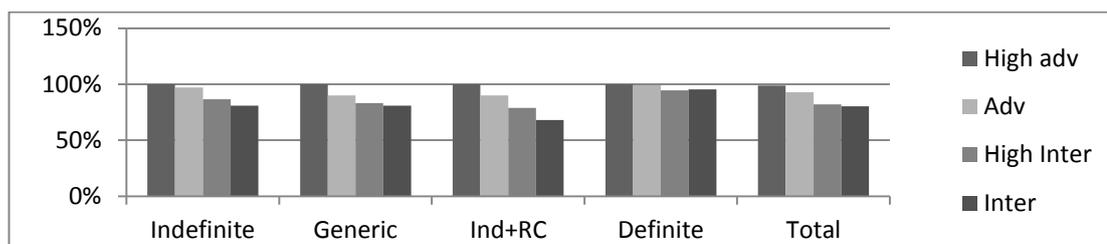
### 5.3.6.2. Group scores on test contexts

The overall performance of the participant groups on each test category show that average accuracy levels are different from one category to the other as shown in table (16) and demonstrated in figure (7) Results increase with proficiency levels but the range of accurate results varies considerably between categories. Results of the definite category are within a range from the lowest 95.5% of the intermediate group to the highest 99.2% for the control group. Both the indefinite and generic categories averaged lower reaching 81% for the intermediate group. The indefinite with relative clause category showed the lowest averages with the intermediate group accurate scores reaching only 68%.

Table 18 Pilot study overall accurate results of participant groups on each test category

Group	Indefinite		Generic		With Relative Clause		Definite	
<b>Native</b>	70/70	100%	68/70	97%	66/70	94.2%	139/140	99.2%
<b>High adv</b>	30 / 30	100%	30/30	100%	30/30	100%	60/60	100%
<b>Adv</b>	68/70	97.1%	63/70	90%	63/70	90%	139/140	99.2%
<b>High Inter</b>	78/90	86.6%	75/90	83.3%	71/90	78.8%	171/181	94.5%
<b>Inter</b>	81/100	81%	81/100	81%	68/100	68%	191/200	95.5%

Figure 7 Comparison of group marks on test categories



Results of the MANOVA statistical analysis of the interaction between the mean scores of *groups* and *question categories* show that those differences between group results on question categories are indeed significant [ $F = 4.857$ ,  $p = .001$ ]. Then several One-way ANOVAs were conducted on the mean scores of each question category to reveal each significant difference.

The three hypotheses of this pilot study assumed full acquisition of the use of English articles in definite contexts and initial difficulties in indefinite specific and non-specific contexts. This means that those contexts will not need to be targeted by instruction. The hypotheses predicted more persistent difficulties in indefinite generic contexts and indefinite contexts when modified by a relative clause and as such will benefit from targeted instruction.

The results are presented below according to the context starting with the definite contexts:

#### **a) Definite contexts:**

The results show that the definite context scores had the highest accuracy levels among all groups of the study with even the intermediate group scoring 95.5% accurate answers. There was no statistically significant difference between the native control group and advanced groups including but a significant difference was found between the native control group and the intermediate ( $p = .038$ ) and high intermediate ( $p = .043$ ) second language groups.

### **b) Indefinite contexts:**

Results of the indefinite context are shown in table (17) showing the percentage of errors and correct choices for all participant groups.

Table 19 Pilot study indefinite context accurate results and error rates

Group	Indefinite context Target article a		
	The	a/an	Ø
Native	0/70	70/70	0/70
	0%	100%	0%
High advanced	0/30	30 / 30	0/30
	0%	100%	0%
Advanced	1/70	68/70	1/70
	1.5%	97%	1.5%
High Intermediate	9/90	78/90	3/90
	10%	86.6%	3.4%
Intermediate	12/100	81/100	7/100
	12%	81%	7%

The results of indefinite contexts (where the target answer is the use of the overt indefinite article *a*) show that intermediate learners scored only 81% accurate answers, and their mistakes varied between using the definite article 12% and a bare noun 7%. However, as proficiency levels increase the accuracy percentages increase as well with high intermediate learners scoring 86.6% and advanced learners reaching 97% accurate answers.

To reveal if those differences between groups are statistically significant, Post-Hoc tests on the mean scores of groups on this category showed a significant difference between the mean scores of the native control group and both the intermediate ( $p = .001$ ) and high intermediate ( $p = .003$ ) groups. The advanced group accurate results were close to the native control group showing no significant difference ( $p = .546$ ) between their mean scores.

### **c) Generic contexts**

Results of the generic context showing the percentage of errors and correct choices for all participant groups are shown in table 18 below.

Table 20 Pilot study generic context accurate results and error rates

<b>Generic context:</b>			
<b>Target Ø</b>			
<b>Group</b>	<b>The</b>	<b>a/an</b>	<b>Ø</b>
Native	2/70 (2.9%)	0/70 0%	68/70 (97.1%)
High advanced	0/70 0%	0/70 0%	30/30 (100%)
Advanced	6/70 (8.5%)	1/70 (1.5%)	63/70 (90%)
High Intermediate	15/70 (26.7%)	0/70 0%	75/90 (83.3%)
Intermediate	19/100 (19%)	0/70 0%	81/100 (81%)

The results of generic contexts (where the target answer is the use of a bare noun) show that intermediate learners scored only 81% accurate answers and the total error percentage of 19% was the error of using the definite article. As proficiency levels increase the accuracy percentages increases slightly to 83.3% for the high intermediate group, reaching 90% accurate answers for the advanced group.

To know if those differences between mean score results of the groups are statistically significant, Post-Hoc tests on this category revealed a significant difference between the mean scores of the native control group and both the intermediate ( $p = .001$ ) and high intermediate ( $p = .007$ ) groups.

**d) Indefinite with RC:**

Results of the indefinite with RC context showing the percentage of errors and correct choices for all participant groups are shown in table 19 below.

Table 21 Pilot study indefinite with RC context accurate results and error rates

<b>RC:</b>			
<b>Target: items 1-6: a/an 7-10 Ø</b>			
<b>Group</b>	<b>The</b>	<b>a/an</b>	<b>Ø</b>
Native	3/70 (4.2%)		66/70 (94.2%)
High advanced	0/70 0%		30/30 (100%)
Advanced	5/70 (7.1%)		63/70 (90%)
High Intermediate	13/90 (14.4%)		71/90 (78.8%)
Intermediate	28/100 (28%)		68/100 (68%)

The results of indefinite contexts with RC constructs show that intermediate learners scored only 68% accurate answers. As proficiency levels increase the accuracy percentages increases slightly to 78.8 % for the high intermediate group, reaching 90% accurate answers for the advanced group.

Post-Hoc tests on this category revealed a significant difference between the mean scores of the native control group and both the intermediate ( $p = .001$ ) and high intermediate ( $p = .017$ ) groups. The dominant error was to use the definite article *the* with indefinite head nouns when there is a relative clause constructs with an overt complementiser (e.g. A: Our prime minister is very determined to help poor people. B: That's good. A: Yes, I admire *a* politician *who* has principles.)

To reveal if there was a significant difference found between the contexts of the task for each proficiency level group, several one-way ANOVAs were conducted. The results of the intermediate group show that the accuracy scores on the “definite context” were significantly higher than all other three contexts of the test (table 20).

Table 22 Pilot study Post-Hoc between test categories of the intermediate group

		Mean Difference (I-J)	Std. Error	Sig. p value
Definite	Indefinite	.145	.046	.002*
	Generic	.145	.046	.002*
	RC	.275	.046	.001*

\*The mean difference is significant at the 0.05 level.

On the other hand, the results of the advanced group show a different pattern as accuracy levels were similarly high on both “definite” and “indefinite” context. Interestingly, the results show a significant decrease in the accuracy scores of the two categories “generic” and “RC” when compares to the scores of the two contexts “definite” and “indefinite” (table 21).

Table 23 Pilot study Post-Hoc between test categories of the advanced group

		Mean Difference (I-J)	Std. Error	Sig. p value
Definite	Indefinite	.021	.036	.555
	Generic	.093	.036	.011*
	RC	.093	.036	.011*

\*The mean difference is significant at the 0.05 level.

### 5.3.7. Discussion and limitations

A consistent finding in the results presented above was a difference between intermediate and high intermediate second language learners and native speakers on all test categories while the advanced groups were target-like even in the assumed problematic areas.

Accordingly, the answer is “no” to question 1 of this study on whether all second language groups will show target-like performance on the predicted ‘easier to acquire’ two categories: definite and indefinite. Only advanced L1 Najdi Arabic learners of English were target-like while intermediate learners didn’t achieve target performance. The same applies to question 2 on the predicted difficult categories. The advanced L1 Najdi Arabic learners were target-like on the two categories generic and non-generic with RC showing no persistent problems as expected.

However, when looking closer at the results of each group, a difference was found between the test contexts of the advanced group. The within-test comparisons show a difference in the performance of the advanced group with better results on the definite and indefinite without RC contexts when compared to the generic and non-generic with RC contexts. The raw percentages of the advanced group also show this difference with high accuracy percentages in definite (99.2%) and indefinite without RC (97.1%) categories and lower accuracy in generic (90%) and non-generic with RC (90%) categories. However, with no statistically significant differences in comparison to native speakers this fact could not validate the two hypotheses of the study.

To explain these results some important limitations of this pilot study should be taken into consideration:

1. The small number of participants when divided into proficiency groups may have affected the statistical power of the test.
2. The native control group didn’t perform as expected on the two categories ‘generic’ (97%) and ‘RC’ (94.2%).
3. The generic items in the test only included plural generics.
4. The language proficiency test MTELP was difficult even for native English speakers (M= 89) which may have led to the inaccurate grouping of second language learners.

### **5.3.8. Conclusion**

The pilot study was an attempt to investigate the acquisition of English articles among the targeted population of L1 Najdi Arabic speakers to make decisions about problematic areas and instruction. Some methodological issues with the pilot didn't allow for making concrete predictions but the overall results showed a difference between intermediate and high intermediate second language learners and native speakers. A slight difference was also found in the performance of advanced second language learners showing that they performed better in indefinite contexts that didn't involve relative clause modification or generic interpretation. Accordingly, the conclusion and limitations found from this pilot in addition to the conclusions of the theoretical reviews in chapters 3 and 4 were all used in designing and refining the following main study methodology.

#### 5.4. The main experiment: The role of input in the acquisition of English articles by L1 Najdi Arabic speakers (an experimental design)

It is important to summarise the conclusions of the previous chapters which led to the revision and formulation of the study methodology:

1. Chapter 3 arrived at the following conclusion: the acquisition of English articles by L1 Najdi Arabic speakers following a contrastive analysis of features is predicted to involve the non-problematic [+definite] contexts and the problematic [-definite] contexts with different levels of difficulty arranged below from easier to acquire to the hardest:

a) [-definite] [-specific] involving the selection of new functional morphology (the indefinite article: *a*).

*Indefinite non-specific:* I am new in this school. I am hoping to find *a good friend*.

b) [-definite] [+specific] involving associating the overt indefinite article with specificity.

*Indefinite specific:* I am in town for a week. I am visiting *a friend* from college.

c) [-definite] [+generic] [+plural] involving the disentangling of L1 features allowing only definite plural generics and reassembly of L2 features.

*Indefinite generic plural:* sentence-level: *Lions* are dangerous.  
NP level: *Dinosaurs* are extinct.

d) [-definite] [+generic] [-plural] involving the disentangling of L1 features allowing only singular definite generics and reassembly of L2 features allowing the new functional element (indefinite *a*) a generic reading in singular contexts.

*Indefinite generic singular:* sentence-level: *A lion* is dangerous.

e) [-definite] [ $\pm$ specific] involving a specific morphological requirement in L1: the use of the definite article with RC modification. The process involves syntactic restrictions rather than feature re-assembly.

*Indefinite with RC:* I bought *a table that* has steel legs (*specific*). I want to buy *a table that* has steel legs. (*non-specific*)

2. Chapter 4 arrived at the following conclusions:
  - a) Explicit instruction in the classroom could be beneficial when informed by a detailed description of the targeted linguistic structures that make up the content of instruction which means targeting the difficult areas only.
  - b) The development of metalinguistic knowledge along with modular linguistic knowledge in a dual knowledge view of acquisition following MOGUL allows for experimenting with different input combinations in the classroom within a modular view of language.
3. Care should be taken to avoid methodological problems found in the pilot study and in previous research by:
  - a) Using different instruments to investigate the use of English articles targeting different types of knowledge.
  - b) Using instruments that test the exact targeted linguistic structures and contexts.
  - c) Conducting delayed post-tests to examine long term results.
  - d) Having a “control” group of second language learners receiving no special treatment.
  - e) Providing more than one instructional treatment.
  - f) Avoiding insufficient short instruction time.

In light of the information above, the following sections of this chapter will outline the methodology of this study starting with the research questions and hypotheses, then the procedure and the participants followed by details of the instruments and instructional material.

### 5.4.1. Research questions and hypotheses

The main goal of this study is to investigate the application of GenSLA findings in the language classroom. The specific goals aim at a) predicting the difficulties in the acquisition of English articles by L1 Najdi Arabic speakers, b) designing the content of instruction based on those predictions to enable learners to accelerate the re-assembly process and recovery from L1 transfer showing development in their ILG, and c) testing how to carry out the instruction in the classroom by providing two types of input. As such care was taken in framing the research questions and hypotheses to achieve those goals.

The research questions and hypotheses were revised after the pilot study following: a) the contrastive analysis of features in the acquisition of English articles by L1 Najdi Arabic speakers as presented in chapter 3 framed within GenSLA theories (Almahboob, 2009; Azaz, 2014; Sarko, 2009a, 2009b; Schwartz & Sprouse 1996; Slabakova, 2008, 2009; Lardiere, 2008, 2009) and b) the instruction suggested by Whong (2007, 2011) using focus on form (Long, 1991) and genre analysis (Swales, 1990) to foster the acquisition of both modular and non-modular knowledge (Truscott & Sharwood Smith, 2004; Truscott, 2015).

Accordingly the research questions and their subsequent hypotheses of the main study are as follows:

**RQ 1.** Will the results of Najdi Arabic second language learners of English reflect the levels of feature reassembly difficulty of the proposed difficulty cline and the syntactic difficulty involving relative clause modification?

In accordance with the semantic universal features of articles (Ionin, Ko, & Wexler, 2004; Ionin & Montrul, 2010, Ionin et al, 2011), the FT/FA (Schwartz & Sprouse, 1996), and the contrastive analysis of features (Lardiere, 2008, 2009, Slabakova, 2009) in addition to findings of previous research on L1 Arabic learners of English (Almahboob, 2009; Azaz, 2014; Sarko, 2009a, 2009b):

*H 1: The acquisition of the use of the article **the** in [+definite] combinations will not be problematic as learners will transfer their L1 knowledge. The acquisition of the use of an overt article **a** in [-definite] [-plural] combinations will involve simple feature re-assembly supported by ample evidence in the input. On the other hand, more complex feature re-assembly along with less evidence in the input will lead to more difficulties in*

*acquiring the [-definite], [+generic] combination. Difficulties are also expected in [-definite] contexts with relative clause modification.*

**RQ 2.** Will the classroom input provided by this study result in improvement from the pre-tests?

**RQ 3.** Which type of “input” would be more effective in improving the ILG of the learners: (a) Implicit reinforced input, or (b) Reinforced input with explicit focus on form.

**RQ 4.** Will the effect hold over the eight-weeks delayed post-test period?

In accordance with Whong (2007, 2011) on using focus on form (Long, 1991) and genre analysis (Swales, 1990) to foster the acquisition of both modular and non-modular knowledge (Truscott & Sharwood Smith, 2004; Truscott, 2015):

**H 2:** *The group that received explicit reinforced input will show improvement and accuracy in the post-tests when compared to the pre-test and to the implicit instruction group and both groups will perform better than the uninstructed control group. The explicit instruction is expected to show long term effect.*

The final two research questions address the possible effect of the language proficiency and the instruments on the results:

**RQ 5.** Will the language proficiency have an effect on the results?

**RQ 6.** Will the results vary across the instruments?

#### **5.4.2. Procedure**

To investigate the role of ‘input’ in the acquisition process this study followed a quasi-experimental design on three intact groups of Najdi Arabic speakers at the English department of King Saud University, Riyadh. The groups were three sections taking an advanced English writing course; the sections were randomly assigned to be ‘Implicit instruction group’, ‘Explicit instruction group’ and ‘Uninstructed control group’. The experiment took place on the second semester of the academic year 2013/2014 which started February 2<sup>nd</sup> and ended May 29<sup>th</sup>.

The procedure started with three pre-tests on English articles given to all three groups in addition to a group of native English speakers who are language teachers at the Preparatory year at King Saud University. The two experimental groups received 12

hours of instruction using two different types of reinforced input on the targeted noun types while the uninstructed control group received regular course material.

The two types of reinforced input given to the two experimental groups were:

- 1) Implicit reinforced input on the targeted structures: students were exposed to authentic English texts enhanced with the targeted noun types and articles.
- 2) Reinforced input with explicit focus on form: students were given extra explanations on the targeted noun types and articles.

The post-tests were administered immediately after the end of the instructional period which lasted for five weeks. Eight weeks after the post-tests another delayed test was administered. The following table 22 shows the timeline of the procedure.

Table 24 Main study procedure timeline

Group	Day 1 week 1 February 4 <sup>th</sup>	Between Week 2 - 6 February 11- March 11 12 hours of instruction	End of week 6 March 13	Week 14 May 6 8 weeks later
Implicit instruction group		Implicit input		
Explicit instruction group	Pretests	Implicit + Explicit input	Post-tests	Delayed posttests
Uninstructed control group		No treatment		

### 5.4.3. Participants

#### 5.4.3.1. Background questionnaire

The total number of participants who were included in this study is 54 undergraduate students studying at the English department at King Saud University in Riyadh. They are all Najdi Arabic native speakers and second language learners of English. A background questionnaire provided information about age, exposure to English (at home or by living in an English speaking country), in addition to the number of years of formal English learning at school (Appendix B1). The subjects all fall in an age range from 21-24 years old and they are all second language learners who never lived in an English speaking country and learned English primarily through formal instruction. The years of formal English learning were calculated from the first year they took language classes which vary in Najdi Arabia between private and public schools. Some schools start as early as pre-school while most schools start on seventh grade. Table (23) shows the average mean score of years of formal English learning. To ensure homogeneity an unpaired t-test between the uninstructed control group and experimental group's mean scores of years of formal English learning revealed a two-tailed p value of (0.14) which is statistically insignificant.

Table 25 Main study participants' average on the number of years studying formal English

Group	N	Years of Formal English Learning	
		Mean	SD
Implicit instruction group	22	11.31	3.92
Explicit instruction group	22	11.31	3.57
Uninstructed control group	10	9.30	2.21

#### 5.4.3.2. Language Proficiency test

The results of the pilot study questioned the validity of the MTELP in giving a correct indication of the language proficiency level as the test was designed to test language skills rather than proficiency. Therefore, the Oxford Quick Placement Test OQPT (Oxford, 2001) paper and pen version 1 (cover page attached as Appendix B2) was used in this study after consulting other similar studies on English articles (Hawkins et al, 2006; Sarko, 2009a, 2009b). The test placed the participants in three categories: elementary, lower intermediate and upper intermediate. The study started with 24 students in the (implicit instruction group), 27 students in the (explicit instruction group) and 17 students in the (uninstructed control group). However, the numbers decreased as some students dropped the course and others didn't attend the full hours of instruction or didn't take the post-tests. The final number of students who were included in the study is shown in (table 24).

Table 26 Main study participants proficiency on the Oxford Quick Placement Test

Group	Elementary	Lower Intermediate	Upper Intermediate	Total students
Implicit instruction group	7	10	5	22
Explicit instruction group	3	15	4	22
Uninstructed control group	3	6	1	10

#### 5.4.4. Instruments

The predicted difficulties were laid out in Chapter 3 and detailed in a cline of difficulty following a contrastive analysis of features in Figure (4). The following table (25) will provide examples of the predicted problematic areas by L1 Najdi Arabic speakers following the difficulty cline.

Table 27 The predicted problematic areas on article use

Feature Combinations: [-definite]	Singular	Plural
[+generic] Feature re-assembly	Incorrect use of <i>the</i> when <i>a</i> is required (e.g. What pet will he buy? - He favours <i>*the cat</i> .)	Incorrect use of <i>the</i> when $\emptyset$ is required (e.g. Since I like <i>*the trees</i> , maybe I will study forestry.)
[-generic] Syntactic condition	incorrect use of <i>the</i> with RC modification when <i>a</i> is required (e.g. She met <i>*the man</i> who I knew at school)	Incorrect use of <i>the</i> with RC modification when $\emptyset$ is required (e.g. He told <i>*the jokes</i> that everybody knows.)

This requires that the data collected would account for the use of the contexts detailed in (table 26) below in addition to the inclusion of the comparably less problematic definite and indefinite contexts for comparison:

Table 28 The description of the four major NP types targeted by this study

	[-definite]	
	Singular	Plural
+generic	a ✓	$\emptyset$ ✓
-generic with RC	a ✓	$\emptyset$ ✓

This study arrived at the conclusion that more than one instrument is needed in this type of research based on the findings of previous research in addition to the limitations of the pilot study. Therefore, three instruments were chosen to provide different perspectives on learners' knowledge of articles as will be explained in the following section:

1. Instrument 1: Forced choice task (Ionin, Ko & Wexler, 2004; Hawkins et al, 2006). (Appendix B3)
2. Instrument 2: Sentence repetition task: recall of oral sentences (based on the perception task in Pierce & Ionin, 2011; Snape & Yusa, 2013). (Appendix B4)
3. Instrument 3: Written production task (Ionin, 2003; Sarko, 2009b). (Appendix B5)

#### 5.4.4.1. Instrument 1: Forced choice task

Similar to the pilot study, items for this task were replicated from the forced choice task in Ionin, Ko, & Wexler's (2004) study and Hawkins et al's (2006) version to cover all required contexts. This task allowed for eliciting more controlled data through forced choice as learners were asked to choose the most appropriate article *a*, *the*, or  $\emptyset$  basing their choice on the provided context. As such, the task draws learners' attention to article choices available tapping into more explicit knowledge of articles.

After using this instrument in the pilot study, some modifications were necessary to include all the targeted noun types following the contrastive analysis of features. In addition, some modifications were needed on wording and the format of the items. The final modified version included the following contexts and feature combinations:

1. [+definite] [ $\pm$ plural]
2. [-definite] [ $\pm$ plural]
3. [-definite] [ $\pm$ plural] with RC.
4. [-definite] [ $\pm$ plural] [+generic]
5. [-definite] [-plural] [+generic]

Table 29 Main study forced choice task [-definite] noun types and target article

[-definite] NPs	generic singular	generic Plural	Non-generic singular	Non-generic Singular + RC	Non-generic Plural	Non-generic Plural + RC
<b>Target article</b>	a	$\emptyset$	a	a	$\emptyset$	$\emptyset$

An example of the test items is provided in the following example:

##### Type 1: Generic Indefinite Singular (Answer: indefinite a )

*1. Two friends catching up*

*A: My daughter is doing postgraduate work at university.*

*B: What is she studying?*

*A: She's studying \_\_\_\_\_ rare bird found only in Scotland.*

$\emptyset$      an     a     the

#### 5.4.4.2. Instrument 2: The sentence repetition task

The repetition task involved listening to sentences produced by a native speaker as many times as needed then writing down the sentences on paper. Load on working memory was avoided by giving the participants the chance to hear the sentences as many times as they wanted. The goal of including this task in this study is to investigate the ability to *produce* the English articles *the*, *a*, and  $\emptyset$  in different contexts that require different feature combinations following the proposed difficulty cline. This gives us another perspective on the knowledge of English articles as learners filter language that they heard through their own grammatical system. The instrument was adopted from Pierce & Ionin's (2011) study on Mandarin and Korean speakers and Snape & Yusa's (2013) study on Japanese speakers. The original test focused on perception because of the phonological differences between English and Mandarin 7 Korean. However, the focus of the current test is on the correct production of the target articles that learners heard from a native speaker to show access to grammatical knowledge. In comparison to the forced choice task the type of knowledge this task would tap into is somehow restricted but less explicit.

The task items were modified for the purpose of this study. The [+definite] singular and plural items remained as they appeared in the original task but the [-definite] items were slightly modified to cover the areas specified by the difficulty cline following a contrastive analysis of features similar to the forced choice task<sup>15</sup>:

1. [+definite] [+plural]
2. [+definite] [-plural]
3. [-definite] [ $\pm$ plural]
4. [-definite] [ $\pm$ plural] with RC.
5. [-definite] [+plural] [+generic]
6. [-definite] [-plural] [+generic]

The task included 18 sentences with a total of 54 items.. A sentence example:

*He said that a teacher from this school taught the students myths instead of real facts.*

*Indefinite*

*Definite pl. Generic pl.*

The sentences were recorded by a native speaker of English who is a language teacher at the PY at King Saud University in Riyadh. The sentences were written on a word doc with the stress pattern displayed using bold font on the words to be stressed

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<sup>15</sup> The only difference is having two categories in the definite context [+plural] and [-plural] resulting in six categories for this task compared to five categories in the forced choice task.

and instructing the reader to follow this pattern. The stress pattern avoided any stress on the target nouns of the study. The recordings were presented to participants as an audio file using the sound system in the class without giving them the chance to read the sentence. Each participant was asked to write down exactly what they heard and were allowed to listen to the sentences many times until they were sure of their answer.

#### **5.4.4.3. Instrument 3: The written production task**

The aim of including a writing task is to examine article production providing a less restricted task in comparison to the other two tasks. The advantage of including a production task is to examine if the predicted errors defined above will occur even without focusing learners' attention on articles like elicitation tasks (Ionin, 2003). Accordingly, the type of knowledge this task is expected to tap into can be considered underlying knowledge but without strictly excluding the possibility that learners can make use of their explicit knowledge.

In Ionin's (2003) production task there were five questions targeting four contexts:

1. Indefinite specific.
2. Indefinite non-specific.
3. General Nouns.
4. Narrow scope indefinite/and or definite.

For the purpose of this study and time limitations, three contexts were chosen to cover the main contexts: a) [+generic] and b) [-definite] with RC, in addition to c) [-definite] [+specific] without RC for comparison. The first question used in Ionin's study targeting the indefinite specific was used and another question in the form of a picture description targeting generic DPs was added. Then, the use of relative clause modification was presented in a more restricted (fill-in-the-blank format) because it is difficult to elicit such a structure by a question. Table 29 shows the questions, the targeted noun type and the target article choice

The modified task in this study accounted for the following contexts:

1. [-definite] [+specific] [-plural]
2. [-definite] [+generic] [ $\pm$ plural]
3. [-definite] [ $\pm$ plural] with relative clause modification.

Table 30 Main study written production task questions, noun types and target article

Question	NP type	Target article
<u>Question 1:</u> Write about something you lost and how you lost it, or a gift that you received and how you received it...	Non-generic [-definite] [+specific] Speaker knowledge	Indefinite <i>a</i>
<u>Question 2:</u> Write your opinion about the main “ <i>issue</i> ” in the pictures... (two pictures one of children eating junk food and another of a Saudi woman driving a car)	[-definite] [+generic]	Bare plural noun $\emptyset$ OR Indefinite <i>a</i> + <i>singular noun</i>
<u>Question 3:</u> fill in the gap in the following sentences...	[-definite] with RC modification	Indefinite <i>a</i> + <i>sing.</i> $\emptyset$ + <i>pl.</i>

The questions were presented to participants on one paper. The task was presented first before the forced choice task and the repetition task to avoid focusing students’ attention on articles. Each question was followed by a specific space to limit the answers to one or two sentences. The instructions also guided the participants to limit their answers to one or two sentences. The generic question included pictures that represented an issue and participants were asked to describe the ‘issue’ in one or two sentences. Finally, the third question on the relative clause was given in a fill-in the blanks format.

The task was piloted with a few Najdi Arabic participants at first to look at how they might answer the questions and what possible noun combinations they would use. The expected noun combinations for question 1 on the [-definite] [+specific] [-plural] ranged between a) the target use of *a* with [-definite] [+specific] [-plural], and b) the non-target use of *the* or  $\emptyset$  with [-definite] [+specific] [-plural]. Other answers were noted and expected like: the incorrect use of *a* with [+plural] or  $\emptyset$  with [-plural], colloquial *this* (e.g. I got *this* really nice watch), and possessive pronouns (e.g. *my* gift).

The expected noun-combinations for question 2 on generic use ranged between: a) the target use of *a* [-plural] or  $\emptyset$  [+plural] with [-definite] [+generic] and b) the use of *the* with [-definite] [+generic] [ $\pm$ plural] features signalling the effect of L1 transfer. Other answers were noted and expected like: incorrect use of *a* with [+plural] or  $\emptyset$  with [-plural], the correct use of *the* with [+definite] [-generic] features avoiding use of the generic feature with the DP (e.g. the boys in the picture are...) and the use of a DP without articles or generic reference (e.g. two boys are in the picture...).

The expected combinations for question 3 on the [-definite] with relative clause modification and an overt complementiser ranged between: a) the target use of *a* [-plural] or  $\emptyset$  [+plural] with [-definite] and RC, and b) the use of *the* with [-definite] RC signalling the effect of L1 transfer. Other answers were noted and expected like: incorrect use of *a* with [+plural] or  $\emptyset$  with [-plural], colloquial *this*, indefinite pronouns (e.g. anything).

Table 31 Main study written production task coding for the expected noun combinations

Question	Expected combinations	Code
<b>Question 1</b> [-definite] [-generic]	Target use <i>a</i> [-definite] [+specific] [-plural]	5
	Colloquial referential <i>this</i> + NP	4
	Possessive pronoun + NP	3
	Wrong combination: <i>a</i> [+plural]. Or $\emptyset$ [-plural]	2
	Non-target: <i>the</i> or $\emptyset$	1
<b>Question 2</b> [-definite] [+generic]	Target use [-definite] [+generic]: <i>a</i> [-plural] or $\emptyset$ [+plural]	4
	Wrong combination: <i>a</i> [+plural]. Or $\emptyset$ [-plural]	3
	[+definite] [-generic] <i>the</i> + NP	2
	L1 transfer [+definite] [+generic] <i>the</i> + NP	1
	No generic reference or use of articles	0
<b>Question 3</b> [-definite] [-generic] With RC	Target use [-definite] with RC: <i>a</i> [-plural] or $\emptyset$ [+plural]	5
	Colloquial referential <i>this</i> +NP	4
	Indefinite pronouns + NP	3
	Wrong combination: <i>a</i> [+plural]. Or $\emptyset$ [-plural]	2
	L1 transfer of restriction on RC with [+definite]: use of <i>the</i> + NP	1
	Irrelevant answer	0

#### 5.4.5. Study instruments and measuring linguistic knowledge

A summary of the study instruments, the type of knowledge they tap into and the demands of each task is shown in table 31.

Table 32 Main study instruments

<b>Forced choice task</b>	<b>Sentence repetition task</b>	<b>Written production task</b>
Constrained choice	Constrained production	Free production
Explicit knowledge	Explicit/implicit knowledge	Implicit knowledge
Focus on form	Focus on meaning & form	Focus on meaning

Note that these are general indications but we can't dismiss that learners' may tap into different types of knowledge while performing each task. The forced choice task provides specific choices for article choice which makes it constrained, focusing more on explicit knowledge and form. On the other hand, when learners perform the sentence repetition task the language they encounter will be filtered by their own ILG and the meaning of the sentences even if they were to focus on form or explicit grammatical knowledge which makes this instrument somehow in the middle of the spectrum. Finally, the written task allows us to examine more free production and implicit knowledge while learners focus on meaning.

## 5.4.6. Instructional material

### 5.4.6.1. A review of article instruction in textbooks

Before looking at how the content of instruction will be laid out, this study needs to account for what kind of instruction the participants have taken previously on English articles. This will help in designing the material and in interpreting the findings of the study. Three grammar books are taught in the English department at KSU and they are:

- 1) Writing good sentences: 3<sup>rd</sup> edition (Faulkner, 1950)
- 2) Interaction access: A communicative grammar (Werner, Nelson, & Spaventa, 1993)
- 3) Understanding and using English grammar: International edition (Schrammfer Azar, 2002)

In Faulkner (1950), which is the book taught to level 1 students, the description of articles lists them as definite and indefinite with elaboration on the use of *an* with words that begin with certain letters. The article *the* is described as related to the demonstrative adjective *that* and the indefinite articles *a/an* as closely related to the numeral adjective *one*. The communicative grammar book by Werner, Nelson, & Spaventa (1993) used with level 2 students mention the indefinite articles *a/an* as meaning “one” or “any” in one lesson on count and non-count nouns.

The only description of article use is found in Schrammfer Azar (2002) used in teaching grammar to level 3 students. The book offers two tables of guidelines on “article usage” with fill-in-the blanks exercises. The first table of guidelines specifies the following:

- a) Using *a* or  $\emptyset$  for generic nouns: a speaker uses generic nouns to make generalizations. A generic noun represents a whole class of things it is not a specific real concrete thing (e.g. A banana is yellow,  $\emptyset$  Bananas are yellow,  $\emptyset$  Fruit is good for you).
- b) Using *a* or *some* indefinite nouns: indefinite nouns are actual things but they are not specifically identified. The listener doesn't know or need to know which specific thing is referred to e.g. I ate a Banana. *Some* is used with indefinite plural count nouns e.g. I ate some Bananas and indefinite non-count nouns e.g. I ate some fruit.
- c) Using *the*: definite nouns: A noun is definite when both the speaker and the listener are thinking about the same specific thing.  
(p.112)

The table ends with a small footnote on singular generic indefinite nouns (e.g. A doctor heals sick people) and definite nouns (e.g. The elephant is the largest mammal). The second lesson also includes a table of guidelines and fill-in-the-blanks exercises:

- a) Use *the* when you know or assume that your listener is familiar with and thinking about the same specific thing or person you are talking about.
  - b) Use *the* for the second mention of an indefinite noun.
  - c) Do not use *the* with a plural count noun (e.g. apples) or a non-count noun (e.g. gold) if you are making a generalization.
  - d) A singular count noun is preceded by a marker (a, or an), (one, each, or every), (the), (this, or that).
- (p.115)

As shown above the grammar books (even the communicative ones) given to the participants of this study previously do not offer opportunities to look at authentic texts or practice article use other than fill-in-the blanks exercise. Moreover, the descriptions focus on definiteness only and the specific feature is not mentioned with the descriptions specific and definite used interchangeably to mean “definite”. The generic interpretation of nouns doesn’t account for NP-level and sentence level generics and the different semantic meanings as expected.

Therefore, I can conclude that the formal instruction on articles the participants of this study have encountered in the last three years of studying at the English department is not sufficient nor is it similar to the instruction that will be provided by this study<sup>16</sup>. The one lesson found on the generic use of articles in level three is presented in what is described by Long & Robinson (1998) as a “synthetic focus on formS” different from the proposed analytic focus on form adopted by this study.

#### **5.4.6.2. Designing the instructional material**

Two input combinations were used to reach more concrete results and allow a controlled comparison between two experimental groups receiving modified classroom input. The “implicit instruction group” received input that is implicitly reinforced with the target structures and the “explicit instruction group” received the same reinforced input with explicit focus on form. The long term effect of such instruction will also be accounted for by using delayed post-tests conducted two months after the instruction ends.

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<sup>16</sup> We can’t make further claims on instruction the participants took in their school years or if they took language courses outside the university.

To develop the instructional material, two trends in English language teaching were used based on Whong's (2007) recommendation. The first is '*genre analysis*' of extensive authentic samples of text that will serve as reinforced 'input' priming the learner for the following '*focus on form*' in which explicit explanation about specific points of language is provided and hopefully stored as metalinguistic knowledge as explained earlier in chapter 4.

#### **5.4.6.2. Lesson plans**

Care was taken in designing the lesson plans in detail showing how instruction was provided in the classroom to both groups and the lesson sequence. As explained above, the instructional material was designed to engage students in *meaningful* input through providing analysis of authentic texts as examples of the 'research genre' on introductions, methods, & results (Swales, 1990). The texts were reinforced with the targeted noun types and provided in class with a sound file recorded by a native speaker following a stress pattern that stressed the nouns. This gave the students the chance to read the text and listen to it more than once. Following this engagement in meaning of enhanced texts explicit grammatical input was presented for both experimental groups but while 'explicit instruction group' received grammar focus on the target noun types the other group 'implicit instruction group' received grammar focus on verb tenses. The reason for giving both groups explicit instruction in the second part of the lesson is to control the experiment as much as possible in terms of class procedure, time and lesson sequence. Since the study is targeting noun types, the "implicit instruction group" was instructed on verbs.

All in all, the whole instructional period lasted five weeks and students were given 12 class hours of instruction as shown in (Table 31). Lessons (1, 2, 3, 6, &9) followed the same sequence providing text, genre analysis, grammar focus then grammatical activities. The lesson ended after each exercise was discussed and students were allowed to ask questions (Table 32).

As lessons progressed, students were ready to start producing written texts following the techniques studied and the genre. Therefore, another lesson sequence was necessary for those production-based lessons. Lessons (5, 7, 8, 10, & 11) targeted production by individual and group activities. Each student had access to a computer in the class using Microsoft word they each logged onto the same file each lesson. The lessons started with warm-up and recap of writing techniques and grammar rules; then

guided writing activities were conducted with specific grammatical instructions for each group. Writing was guided by written instructions and specific feedback was given on structure and grammar (Table 33). An example of an in-class production worksheet is provided in (Appendix C1).

Lesson (4) and three home assignments aimed at giving students the chance to look at a variety of texts to analyse (Appendix C2). The texts were also reinforced with the noun types but only (explicit instruction group) were explicitly instructed to notice the nouns bolded in the text. (Implicit instruction group) were instructed to notice how the verb tenses were used. Assignments were corrected and feedback on the grammatical forms was given to students in writing.

Table 33 Main study lesson plans schedule and timeline

Lesson	Week day	Genre Analysis: Research genre	Implicit instruction group Grammatical focus	Explicit instruction group Grammatical focus
<b>55 min.</b>		<b>Both groups</b>	<b>Explanation+ rule + exercises.</b>	
1	11 <sup>th</sup> Feb	Introductions: Move 1: Establishing territory.	The simple past and the present perfect.	English articles: <i>a, the</i> & the <i>zero</i> article. The generic feature noun-level and sentence level generics.
2	13 <sup>th</sup> Feb	Introductions: Move 2: Establishing a problem.	The passive tense shifting focus.	Relative clauses; function of relative clauses with nouns (limiting and defining).
3	16 <sup>th</sup> Feb	Introductions: Move 3: Providing a solution.	The future passive.	The feature [ $\pm$ definite], speaker and hearer knowledge. Spot generic nouns.
4	18 <sup>th</sup> Feb	In class analysis 1: Four introductions.	Raising awareness of verb tenses in texts. Assignment feedback on tense errors.	Raising awareness of noun types. Assignment feedback on noun types.
5	20 <sup>th</sup> Feb	In class Production: group work writing an introduction.	Focus on tense choices.	Focus on noun choices.
6	23 <sup>rd</sup> Feb	Research genre: The methods section.	Simple past & Passive past.	Generic plurals and regular plurals.
7-8	25 <sup>th</sup> Feb 27 <sup>th</sup> Feb	Production: Write an introduction and a methods section.	Written guidelines and rules of verb tenses given so far.	Written guidelines and rules on noun types given so far.
9	2 <sup>nd</sup> Mar	Research genre: Results & conclusions	Verb tenses highlighted in text. Online quiz on verb tenses.	Noun types highlighted in text. Online quiz on articles.
10-11	4 <sup>th</sup> Mar 6 <sup>th</sup> Mar	In class production: Write the results and conclusion.	Guidelines on verb tenses.	Guidelines on noun types.
12	9 <sup>th</sup> Mar  11 <sup>th</sup> Mar	Review for midterm + Links to grammar online activities on Blackboard with tracking feature. Midterm exam	Review all rules and new exercises. Three links on verb tenses games.  Grammar focus included	Review all rules and new exercises. Three links on article games.  Grammar focus included

Table 34 Main study task sequence used in lessons (1,2,3,6,9)

<b>Task sequence</b>	<b>Time</b>	<b>Goal</b>
1. Warm up: pre-reading	3 minutes	Orient students to context and lesson
2. Reading (individual and read aloud)	5 minutes	Processing/exposure
3. Listening (whole class) to recorded text while following on paper or on slide.	10	Processing/ listening comprehension
3. Genre analysis	15 minutes	Analyse research genre: structure, language.
4. Explicit grammar presentation	7 minutes	Present rule in written format explanation and examples.
5. Grammatical analysis	5 minutes	Identify examples of given rule in text.
6. Grammatical exercise	10 minutes	Practice applying the rule individual and group activities. Then looking at the correct answer after discussion.
<b>Total time of session</b>	55 minutes	

Table 35 Main study task sequence used in lessons (5, 7, 8, 10, & 11)

<b>Task sequence</b>	<b>Time</b>	<b>Goal</b>
1. Warm up: Lesson objective	5 minutes	Orient students to context and lesson
2. Recap: writing techniques	5 minutes	Focusing attention on learned technique to use in writing task.
3. Recap: grammatical rules	5 minutes	Raising awareness of grammatical form.
3. Writing	25 minutes	Individual and/or group work. Teacher circulating giving direct guidance or feedback.
4. Whole class discussion and questions	10 minutes	Point out major problems and difficulties.
5. Instruction for assignment or next class.	5 minutes	Summarise lesson and task: achievements and goals.
<b>Total time of session</b>	55 minutes	

### 5.4.5.3. Description of texts

The targeted subjects are English major students studying specialized linguistics, criticism and literature courses. The intervention was introduced during an advanced writing course and since the students were required to write research papers the texts were collected from authentic published articles but reinforced to have a large number of indefinite nouns modified by a relative clause and generic nouns as targeted by the study. The reinforced texts were presented to both groups but the difference was in the grammar focus that followed. The main introduction analysed in the first three lessons was from an article entitled (Patterns of Comprehension and Production of Nouns and Verbs in Agrammatism: Implications for Lexical Organization) by Kim & Thompson and published in *Brain and Language*, Volume 75 (2000). Both groups were presented with the text to read silently then it was read aloud twice through a recording by a native speaker. Each group would then see the text with a different highlighted pattern of the grammatical focus as shown in a sample lesson (Appendix C3). More introductions were modified and enhanced with target nouns and used in class analysis and assignments (Campbell et al, 2007; Swales & Feak, 1994; Gerrard, 1991). More texts were used as samples of the methods section of research genre based on Swales (1990) samples shown in (Appendix C4). Further analysis of the results section of a research genre was provided with similarly enhanced texts from (Kim & Thompson, 2000) and highlighted grammatical focus (Appendix C5). More texts were read directly from Swales' (1990) book in class.

### 5.4.5.4. Description of grammatical focus and feedback

To control the study, all grammatical focus, feedback and error correction followed the pattern described earlier:

Implicit instruction group: received explicit rules, exercises, feedback, and error correction on *verb tenses only* while receiving implicitly reinforced input.

Explicit instruction group: received explicit rules, exercises, feedback, and error correction on the targeted *noun types only* while receiving implicitly reinforced input.

## 1) Implicit instruction group grammatical focus:

The grammatical rules were presented directly in written form through a PowerPoint presentation with an example as in the following sample:

### Past and present perfect rules:

- *The simple past tense is used to describe a completed activity that started in the past and ended in the past a date is mostly specified. I went to the hospital yesterday.*
- *The present perfect tense is used to describe actions that began in the past and are still continuing into the present/ just ended or happened in the past without a specific date. I have gone to the hospital.*

The rule was then re-stated with direct instructions on how the tense is used in writing. Then individual and group exercises followed:

### Past and present perfect exercises:

*Choose past or present perfect. Explain why?*

- *Recent studies (showed / have shown) that.. (have shown... why? It is unclear when they were conducted.)*
- *The studies (were not completed/ have not been completed) yet... (why? The word (yet))*

## 2) Explicit instruction group grammatical focus:

The grammatical rules on the targeted noun types were presented directly in written form through a PowerPoint presentation with an example as in the following sample:

### Generic noun rules:

Noun-level generics: *Refer to a well-established (kind) with a verb that describes this kind: Use: the+ sing or Ø+ plural*

*The dinosaur is extinct. ✓*

*Dinosaurs are extinct. ✓*

*A dinosaur is extinct. X*

Sentence level generics: *State generalizations based on properties of individual objects in characterizing sentences which could be tested by adding (usually or typically). Use: a+ sing or Ø+ plural<sup>17</sup>*

*A dog barks. ✓*

*Dogs bark. ✓*

*The dogs bark. X*

---

<sup>17</sup> The restricted use of definite singulars in sentence-level generics (Ionin et al, 2011, p.250) was avoided to avoid confusing the learners.

The rule was also restated with direct instructions on how to use generic nouns in writing. Then exercises followed:

Generic nouns exercise:

Choose all the sentences that fit the meaning:

*These woods are really beautiful. And you can do a lot there: you can hike, pick mushrooms, have picnics. But be very careful, and don't leave food around! Otherwise, you might attract bears. You see...*

- The brown bear is very common in these woods.
- A brown bear is very common in these woods.
- Brown bear is very common in these woods.
- Brown bears are very common in these woods.
- The brown bears are very common in these woods

Full description of all the rules given to (explicit instruction group) targeting the noun types of this study is provided bellow (Table 36)

Table 36 Main study targeted noun types explicit rules

	Lesson	Grammatical Rule
1	One	The English language has three articles: the, (a/an), Ø
2	One	The zero article Ø is the most frequently occurring free morpheme in the English language.
3	One	When to use the zero article? Mass non-count :I have Ø Milk Plurals: I have Ø eggs. Generics: I saw Ø Children. Abstract concept: Ø Prison kills the soul.
4	Two	Noun-level generics: Refer to a well-established (kind) with a verb that describes this kind: Use: the+ sing or Ø+ plural
5	Two	Sentence level generics: State generalizations based on properties of individual objects. Use: a+ sing or Ø+ plural
6	Three	A relative clause is a clause that modifies the noun. Relative clauses can appear with or without a complementiser (that, which, who..)
7	Three	Relative clauses with nouns: If the noun is indefinite: A car :It becomes a defining relative clause: A car that gets 50 miles per hour.
8	Three	Relative clauses with nouns: If the noun is definite The car: It becomes a limiting relative clause The car that won the race.
9	Six	(The) is not generic: The general function of the is to identify that the speaker and hearer identify the noun. The article the occurs with non-generic nouns and is always interpreted non-generically at first. It is used rarely to indicate generic reference in very specific cases with singular nouns (the dinosaur, the bear, ...) When the article the is with a plural noun it is never generic.
10	Six	Generic plurals and regular plurals: When you are talking about a specific group of people or a plural noun you can use (the + plural). A generic plural is different because you are talking about the kind or a generalization not a specific thing or group.

## Chapter 6: Results

### 6.1. Introduction

This chapter presents the results of the statistical analyses that were conducted in order to answer the research questions of this study as presented in chapter 5. Three instruments were used to collect information on the targeted contexts. The effect of administering two types of input on two groups of second language learners was analysed by comparing the results of the two post-tests conducted after the intervention with the results of the initial pre -tests. In addition, a group of uninstructed second language learners from the same level taking the same courses was used as a control group for further analyses of the results.

### 6.2. Pre-intervention results

The statistical analysis will start with descriptive results and tests for normality and homogeneity. Then inferential statistical analyses will be used to investigate differences between the groups in their knowledge of English articles in different contexts before the intervention. A closer look at individual results on some contexts when needed will follow. The pre-tests analyses will aim at answering question 1 of this research:

**RQ 1.** Will the results of Najdi Arabic second language learners of English reflect the levels of feature reassembly difficulty of the proposed difficulty cline and the syntactic difficulty involving relative clause modification?

## 6.2.1. Forced choice task

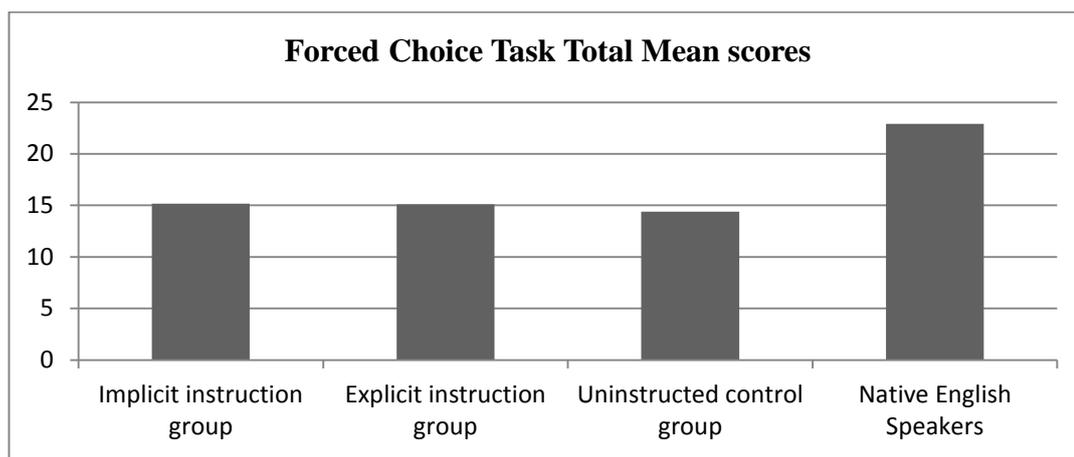
### 6.2.1.1. Pre-test descriptive statistics and normality tests

The correct choices for English articles in the 24-item forced choice task were calculated as accuracy scores and descriptive statistics revealed the means and standard deviations of the total test scores for all four groups as shown in table (37). There is a clear difference between the total accurate score of native English speakers in comparison to all three second language learner groups as shown in the graph representation of the mean scores (Figure 8). This difference is confirmed to be statistically significant by the One way between groups ANOVA test [ $F= 10.72$ ,  $p=.0001$ ]. Post-hoc comparisons using the Tukey HSD indicate that the mean scores of the three second language learner groups the ‘implicit instruction group’ ( $M=15.18$ ,  $SD= 5.05$ ) ( $p=.0001$ ), ‘explicit instruction group’ ( $M=15.09$ ,  $SD= 4.01$ ) ( $p= .0001$ ) & ‘uninstructed control group’ ( $M= 14.4$ ,  $SD= 3.5$ ) ( $p=.0001$ ) were statistically different from native English speakers ( $M= 22.9$ ,  $SD=.737$ ) before the intervention with no statistically significant difference found between the second language learners groups. The effect size is calculated using Cohen’s  $d$  (Field, 2009, Norris & Ortega, 2000) and the results show a very large effect of the difference between native English speakers and the three groups ‘implicit instruction’ ( $d= 2.05$ ), ‘explicit instruction’ ( $d=2.58$ ) and ‘uninstructed control’ ( $d =4.02$ ).

Table 37 Main study forced choice task pre-test descriptive statistics

<b>Groups</b>	<i>n</i>	Total		Mean	<i>SD</i>
<b>Native English speakers</b>	10	229/240	95.4%	22.9	.737
<b>Implicit Instruction Group</b>	22	334/528	63.2%	15.18	5.05
<b>Explicit instruction Group</b>	22	332/528	62.8%	15.09	4.01
<b>Uninstructed control group</b>	10	144/240	60%	14.4	3.5

Figure 8 Main study forced choice task pre-test mean scores



The test of normality using the Kolmogorov-Smirnov statistics assesses the normality of the distribution of scores, a non-significant result ( $>.05$ ) for each group indicates normality (Pallant, 2001, p. 58) as shown in table (38) below and figures (9, 10, 11, & 12).<sup>18</sup>

Table 38 Main study forced choice task test of Normality between groups

Group	Kolmogorov-Smirnov		
	Statistic	df	Sig.
<b>Implicit instruction Group</b>	.106	22	.200
<b>Explicit instruction Group</b>	.107	22	.200
<b>Uninstructed control group</b>	.171	10	.200
<b>Native English speakers</b>	.254	10	.067

<sup>18</sup> It is important to point out that although the groups' results haven't violated the normality assumption, the test of homogeneity of variance was violated (Levene's statistics =  $p < .005$ ).

Figure 9 Main study forced choice task Implicit Instruction Group normal Q-Q plot

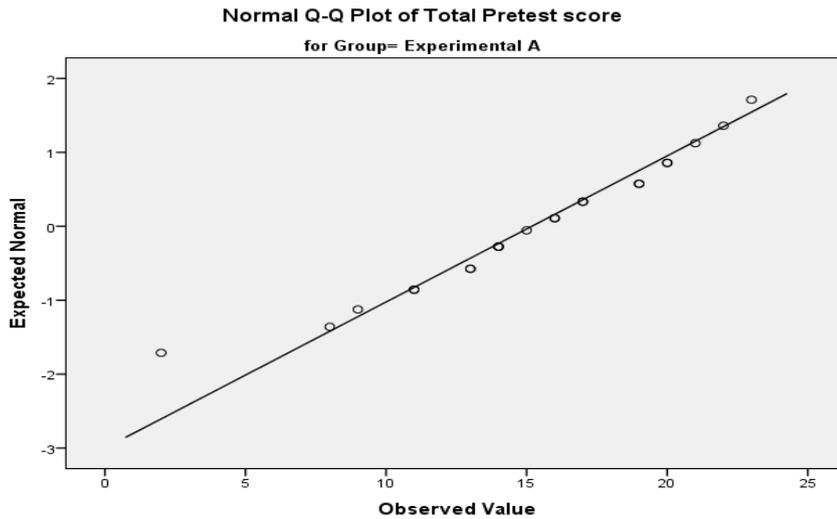


Figure 10 Main study forced choice task Explicit Instruction Group normal Q-Q plot

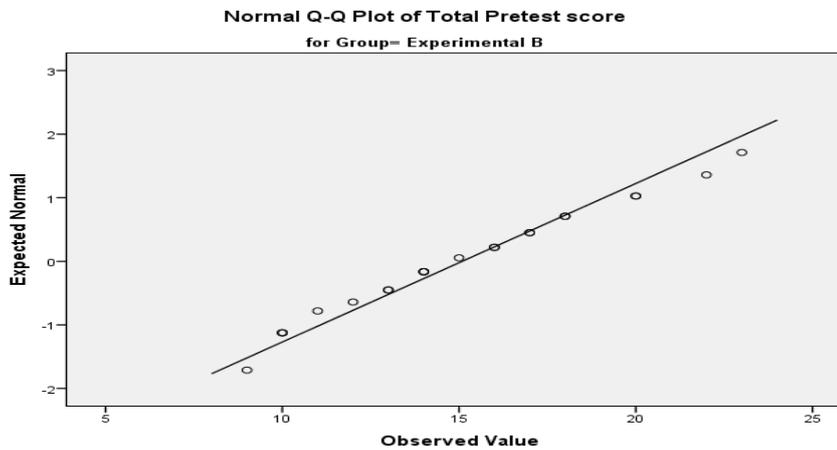


Figure 11 Main study forced choice task Uninstructed control Group normal Q-Q plot

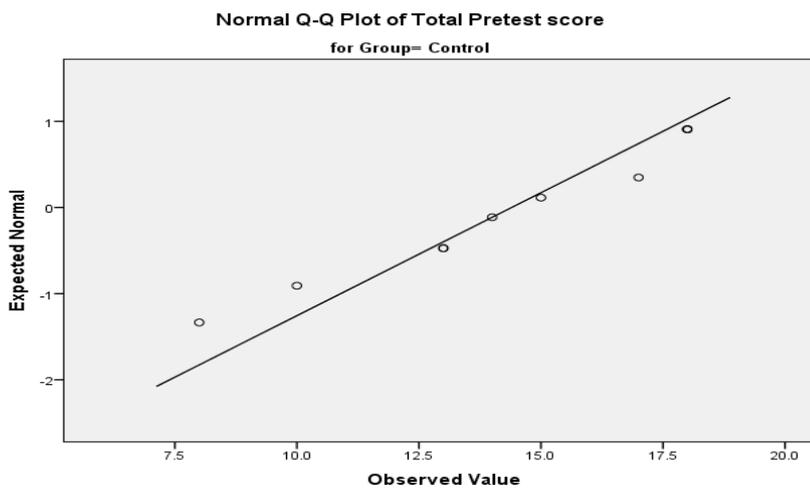
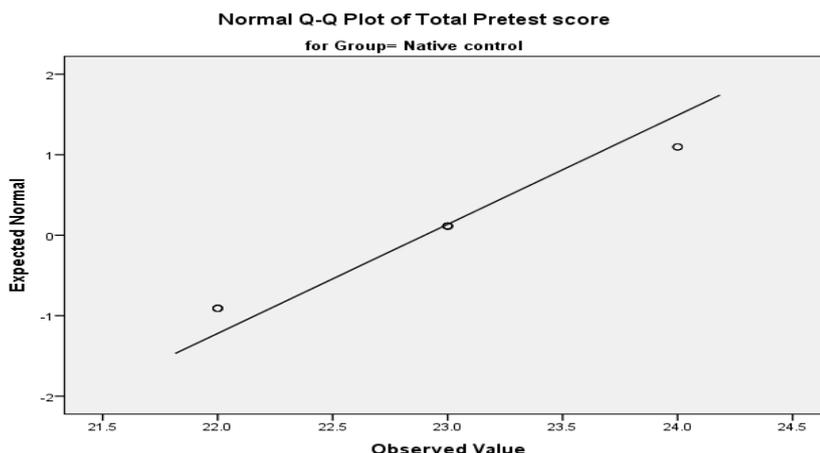


Figure 12 Main study forced choice task Native English speakers normal Q-Q plot



### 6.2.1.2. Pre-test inferential analyses

To answer RQ1 on whether the results reflect the levels of feature reassembly difficulty as proposed by the difficulty cline in addition to the syntactic difficulty with relative clause modification, the results of the task were further divided using the context as a dependent variable. Note that the four [-definite] contexts: 1) [+generic] [-plural], 2) [+generic] [+plural] 3) [-definite] [±plural] with RC, 4) [-definite] [±plural] without RC were represented in the task by four items for each type and the fifth context [+definite] [±plural] was represented by eight items. The average mean score and standard deviation were calculated for all groups as shown in (table 39) to allow further investigation and mean comparisons between the second language learners' groups and native English speakers.

Table 39 Main study forced choice pre-test mean scores on the five contexts

Group	[+generic] [-plural]		[+generic] [+plural]		[-definite] [±plural] RC		[-definite] [±plural]		[+definite] [±plural]	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Native	4.00	.00	4.00	.00	3.9	.31	3.4	.51	7.6	.51
Implicit	2.27	1.07	2.04	1.17	2.5	1.3	2.09	1.26	5.81	1.73
Explicit	1.9	.81	1.9	1.37	2.7	.93	2.31	1.24	6.2	1.74
Control	2.4	1.07	1.8	.63	2.8	1.03	2.4	1.26	4.9	1.28

A One Way between groups ANOVA shows a significant difference ( $p < .01$ ) between the second language learners and native speakers on two contexts only: [+generic] [-plural] [ $F=12.831, p=.0001$ ], [+generic] [+plural] [ $F=9.979, p=.0001$ ]. The other contexts show variation as some groups were target like and others were not. The following table (40) shows the detailed results of the differences found between the

groups using the Post-hoc Tukey HSD tests and the calculated effect sizes indicating a very large effect for all differences using Cohen's  $d$ <sup>19</sup> (Field, 2009).

Table 40 Main study forced choice pre-test noun contexts and effect size

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig. P value	$d$
[+generic] [-plural]	Native speakers	Implicit	1.72727*	.34318	.0001*	1.9
		Explicit	2.09091*	.34318	.0001*	3
		Control	1.60000*	.40242	.001*	2.1
[+generic] [+plural]	Native speakers	Implicit	1.95455*	.41887	.0001*	2
		Explicit	2.09091*	.41887	.0001*	1.8
		Control	2.20000*	.49116	.0001*	4.9
[-definite] [±plural]	Native speakers	Implicit	1.30909	.44962	.025*	1.3
		Explicit	1.08182	.44962	.087	-
		Control	1.00000	.52723	.240	-
[-definite] [±plural] RC	Native speakers	Implicit	1.4000*	.39501	.004*	1.4
		Explicit	1.17273	.39501	.022*	1.7
		Control	1.10000	.43762	.068	-
[+definite] [±plural]	Native speakers	Implicit	1.78182	.59173	.019*	1.4
		Explicit	1.37273	.59173	.105	-
		Control	2.70000*	.69387	.001*	2.7

\*. The mean difference is significant at the 0.05 level.

Answering RQ 1, the results of the groups' choices of articles in the predicted feature re-assembly difficulty in generic contexts were not target like. However, the results on the other three contexts: [+definite], [-definite] with and without relative clause was inconsistent as some groups showed target performance and others didn't. This signals less problematic acquisition in these contexts when compared to the generic contexts according to this instrument. Accordingly, the results of this instrument support the feature reassembly difficulty cline but the difficulties on the [+definite] feature doesn't support the cline and more analyses with post-tests is required. The syntactic difficulty with relative clause modification was also found with two groups.

<sup>19</sup> Effect size was measured following Norris & Ortega (2000) considered large when  $d > 0.8$ , medium when  $.05 < d < 0.8$ , and small when  $0.2 < d < .05$ .

## 6.2.2. Sentence repetition task

### 6.2.2.1. Pre-test descriptive statistics and normality tests

The correct production of articles in the 36-item sentence repetition task were calculated as accuracy scores and descriptive statistics revealed the means and standard deviations of the total test scores for all four groups as shown in (table 41). A difference is found between the total accurate score of native English speakers in comparison to all three second language learner groups as shown in the graph representation of the mean scores (Figure 13).

Table 41 Main study repetition task pre-test descriptive statistics

Groups	<i>n</i>	Total		Mean	<i>SD</i>
<b>Native English Speakers</b>	10	357/360	99.1%	35.7	.48
<b>Implicit instruction group</b>	22	449/792	56.6%	20.4	6.82
<b>Explicit instruction group</b>	22	392/792	49.49%	17.81	7.94
<b>Uninstructed control group</b>	10	188/360	52.2%	18.8	5.76

Figure 13 Main study sentence repetition task pre-test mean scores

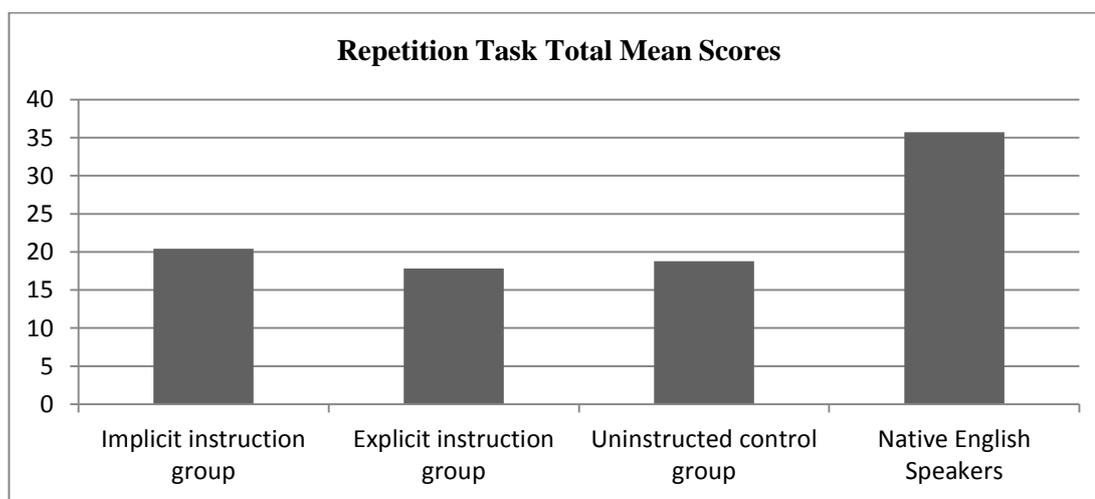


Table (42) shows the results of the (Kolmogorov-Smirnov test) with no significant values violating the assumption of normality for the second language learner groups. The native control group scores violated the assumption of normality because of high accurate results across the group.<sup>20</sup>

<sup>20</sup> Similar to the forced choice task, the sample also violated the test of homogeneity (Levene's statistics  $p=.0001$ ). Thus, an alpha level of  $p<.01$  was set for significance in the following tests.

Table 42 Main study sentence repetition task pre-test Normality

Group	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Implicit instruction	.112	22	.200	.958	22	.454
Explicit instruction	.149	22	.200	.925	22	.098
Uninstructed control	.214	10	.200	.908	10	.265
Native speakers	.433	10	.0001	.594	10	.0001*

The results of the ANOVA confirmed a statistically significant difference at the  $p < .01$  level in the pre-test mean scores between the four groups [ $F = 18.524$ ,  $p = .0001$ ] indicating that the three second language learner groups ‘implicit instruction group’ ( $M = 20.4$ ,  $SD = 6.82$ ) ( $p = .0001$ ), ‘explicit instruction group’ ( $M = 17.81$ ,  $SD = 7.94$ ) ( $p = .0001$ ) & ‘uninstructed control group’ ( $M = 18.8$ ,  $SD = 5.76$ ) ( $p = .0001$ ) were statistically different from native English speakers ( $M = 35.7$ ,  $SD = .48$ ) with no statistically significant difference found between the second language learners. Cohen’s  $d$  effect size shows a very large effect when comparing the difference between native English speakers with all three groups ‘implicit instruction’ ( $d = 3.11$ ), ‘explicit instruction’ ( $d = 3.12$ ) and ‘uninstructed control’ ( $d = 5.4$ ).

### 6.2.2.2. Pre-test inferential analyses

To answer RQ1 on whether the results reflect the levels of difficulty as proposed by the difficulty cline in addition to the syntactic difficulty with relative clause modification, the results of the task were further divided using the context as a dependent variable. The means and standard deviations of the groups on the six contexts were calculated (table 43). A one way between the groups ANOVA was conducted between the participant groups on the four [-definite] contexts: 1) [+generic] [-plural], 2) [+generic] [+plural] 3) [-definite] [ $\pm$ plural] with RC, 4) [-definite] [ $\pm$ plural] without RC and the two [+definite] [+plural] and [+definite] [-plural] contexts.<sup>21</sup>

<sup>21</sup> Note that each context appeared six times in the task with the exception of the ‘generic plural’ as it appeared 8 times and the ‘generic singular’ 4 times.

Table 43 Main study sentence repetition task pre-test mean scores on the six contexts

Group	[+generic] [-plural]		[+generic] [+plural]		[-definite] [±plural]		[-definite] [±plural]	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Native	3.9	.316	8.00	.00	6.00	.00	6.00	.00
Implicit	1.3	1.2	5.45	1.71	2.91	1.84	2.55	1.92
Explicit	.82	.90	4.91	2.09	2.50	1.99	2.59	1.68
Control	.80	.91	5.5	1.71	3.20	1.68	1.7	1.25

Group	[+definite] [-plural]		[+definite] [+plural]	
	Mean	SD	Mean	SD
Native	5.8	.42	6.00	.00
Implicit	4.05	.99	4.05	1.43
Explicit	3.32	1.3	3.45	1.81
Control	4.00	.94	3.6	1.07

The results of the ANOVA show a significant difference ( $p = <.05$ ) between second language learners and native speakers on all four [-definite] contexts: [+generic] [-plural] [ $F=24.244$ ,  $p=.0001$ ], [+generic] [+plural] [ $F=7.603$ ,  $p=.0001$ ], [-definite] [±plural] [ $F=9.998$ ,  $p=.0001$ ], [-definite] [±plural] with RC [ $F=15.253$ ,  $p=.0001$ ]. In addition to the [+definite] [-plural] [ $F=12.602$ ,  $p=.0001$ ], and [+definite] [+plural] [ $F=7.784$ ,  $p=.0001$ ]. The detailed Post-Hoc Tukey HSD results show that all second language learners were non-target like in the production of English articles in this task.

Table 44 Main study sentence repetition pre-test noun contexts and effect size

Dependent Variable	(I) Group	(J) Group	Mean Dif. (I-J)	Std. Error	Sig. P value	$d$
[+generic] [-plural]	Native English speakers	Implicit	2.581	.383	.0001*	2.5
		Explicit	3.081	.383	.0001*	3.9
		Control	3.100	.449	.0001*	4.5
[+generic] [+plural]	Native English speakers	Implicit	2.545*	.660	.002*	1.7
		Explicit	3.090	.660	.0001*	2.1
		Control	2.500	.774	.011*	2.06
[-definite] [±plural] RC	Native English speakers	Implicit	3.091	.662	.0001*	2.0
		Explicit	3.500	.662	.0001*	2.1
		Control	2.800	.777	.003*	2.3
[-definite] [±plural]	Native English speakers	Implicit	3.455	.605	.0001*	2.1
		Explicit	3.409	.605	.0001*	2.4
		Control	4.300	.709	.0001*	4.8
[+definite] [-plural]	Native English speakers	Implicit	1.754	.404	.0001*	2
		Explicit	2.481	.404	.0001*	2.2
		Control	1.800	.473	.002*	2.4
[+definite] [+plural]	Native English speakers	Implicit	1.954	.545	.004*	1.6
		Explicit	2.545	.545	.0001*	1.6
		Control	2.400	.639	.002*	3.1

\*The mean difference is significant at the .05 level

Accordingly, the results of this instrument don't confirm RQ1 as this group of L1 Najdi Arabic speakers were not target like on all six contexts showing no different difficulty levels.

### 6.2.3. Written production task

#### 6.2.3.1. Comparison with native English speakers

The written production task included five questions representing the targeted contexts. As described in (5.4.4.3), the coding procedures involved giving a code that represents a noun combination for each answer. Therefore, when the data from this test was analysed the answers were not on a scale format representing accuracy mean scores. The data was calculated as categorical data to investigate the noun combinations produced by the participant groups.

The first test conducted was the non-parametric Mann-Whitney U<sup>22</sup> as an alternative to the t-test for independent samples allowing us to see the differences between each group of second language learners compared to native English speakers on all five questions. The results of the test are shown in tables (45, 46 & 47) below.

Table 45 Main study written task pre-test Mann-Whitney between the implicit instruction group & Native English speakers

	[-definite]	[+generic]	[+generic]	[-definite] RC	[-definite] RC
<b>Mann-Whitney U</b>	76.000	85.000	108.000	63.000	90.000
<b>Wilcoxon W</b>	329.000	338.000	361.000	316.000	343.000
<b>Z</b>	-1.515	-1.284	-.107	-2.203	-1.415
<b>Sig. (2-tailed) p value</b>	.130	.199	.915	<b>.028*</b>	.157

Table 46 Main study written task pre-test Mann-Whitney between the explicit instruction group & Native English Speakers

	[-definite]	[+generic]	[+generic]	[-definite] RC	[-definite] RC
<b>Mann-Whitney U</b>	62.000	85.000	105.000	67.500	95.000
<b>Wilcoxon W</b>	315.000	338.000	160.000	320.500	348.000
<b>Z</b>	-2.354	-1.286	-.299	-2.045	-1.206
<b>Sig. (2-tailed) p value</b>	<b>.019*</b>	.198	.765	<b>.041*</b>	.228

<sup>22</sup> The difference for this non-parametric test is significant at the .05 level.

Table 47 Main study written task pre-test Mann-Whitney between the uninstructed control group & Native English Speakers

	[-definite]	[+generic]	[+generic]	[-definite] RC	[-definite] RC
<b>Mann-Whitney U</b>	50.000	32.000	44.000	13.000	25.000
<b>Wilcoxon W</b>	105.000	87.000	99.000	68.000	80.000
<b>Z</b>	.000	-1.680	-.730	-3.078	-2.492
<b>Sig. (2-tailed) p value</b>	1.000	.093	.465	<b>.002*</b>	<b>.013*</b>

Answering RQ1 of this study, all second language learners showed non-target performance with the syntactic difficulty involving relative clause modification. No statistically significant differences were found on the assumed feature reassembly difficulties involving the [+generic] feature following the difficulty cline.

The results of the explicit instruction group also show non-target performance on the [-definite] non generic *without* relative clause modification ( $p = .019$ ).

Several Mann-Whitney tests were conducted between the second language learners and no significant difference was found in the results on all questions except two differences found on the second relative clause question between the implicit instruction group and the uninstructed control (Mann-Whitney  $U = 70.0$ ,  $p = .03$  two tailed) and the explicit instruction group and the uninstructed control (Mann-Whitney  $U = 60.0$ ,  $p = .003$  two tailed). More investigation into this difference will follow with the results on the percentage of article choice.

### 6.2.3.2. Percentages of article choice

To further investigate the results, a detailed account of the data showing the choices of second language learners compared to native speakers was explored using the Chi-square. This test produces descriptive statistics in a crosstab format showing the frequency of cases found in each category. The results of the Chi-square on the first and second generic questions are shown in table (48 & 49).

Table 48 Main study written task pre-test Chi-square test on the *first* generic question

	Implicit instruction group	Explicit instruction group	Uninstructed control group	Native English speakers
No generic reference or use of articles	0.0 % (0)	0.0 % (0)	10% (1)	10% (1)
L1 transfer [+definite] [+generic] <i>the</i> + NP	18.2 (4)	13.6% (3)	20% (2)	0.0% (0)
[+definite] [-generic] <i>the</i> + NP	13.6 % (3)	22.7% (5)	20% (2)	0.0% (0)
Wrong combination: <i>a</i> [+plural]. Or $\emptyset$ [-plural]	4.5% (1)	0.0% (0)	0.0% (0)	0.0% (0)
Target use [-definite] [+generic]: <i>a</i> [-plural] or $\emptyset$ [+plural]	<b>63.6%</b> <b>(14)</b>	<b>63.6%</b> <b>(14)</b>	<b>50.0%</b> <b>(5)</b>	<b>90.0%</b> <b>(9)</b>
<b>Total <i>n</i></b>	22	22	10	10
<b>Chi-square</b>	11.989			
<b><i>p</i></b>	>.447			

Table 49 Main study written task pre-test Chi-square test on the *second* generic question

	Implicit instruction group	Explicit instruction group	Uninstructed Control group	Native English speakers
No generic reference or use of articles	0.0 % (0)	4.5 % (1)	0.0% (0)	20% (2)
L1 transfer [+definite] [+generic] <i>the</i> + NP	18.2 (4)	0.0% (0)	10% (1)	0.0% (0)
[+definite] [-generic] <i>the</i> + NP	4.5 % (1)	9.1% (2)	0.0% (0)	0.0% (0)
Wrong combination: <i>a</i> [+plural]. Or $\emptyset$ [-plural]	4.5% (1)	4.5% (1)	0.0% (0)	0.0% (0)
Target use [-definite] [+generic]: <i>a</i> [-plural] or $\emptyset$ [+plural]	<b>72.7 %</b> <b>(16)</b>	<b>81.8%</b> <b>(18)</b>	<b>90.0%</b> <b>(9)</b>	<b>80.0%</b> <b>(8)</b>
<b>Total <i>n</i></b>	22	22	10	10
<b>Chi-square</b>	15.130			
<b><i>P</i></b>	>.234			

Table (48) shows that native English speakers used a generic noun to answer this question with a high percentage of 90% and only 10% opting for ‘no generic reference to issue’. Second language learners showed a different pattern although the majority of each group used the correct article for generic reference ‘implicit instruction group’ = 63.6%, ‘explicit instruction group’ = 63.6%, & ‘uninstructed control’ = 50%. The effect of L1 transfer was found as L1 Najdi Arabic speakers used *the* with the [+generic] feature ‘implicit instruction group’=18.2%, ‘explicit instruction group’ =13.6% and ‘uninstructed control’ = 20%. A percentage of learners opted to use a definite noun *without* generic reference: ‘implicit instruction group’= 13.6%, ‘explicit instruction

group' = 22.7%, and 'uninstructed control' = 20%. However, the chi-square test showed a non-significant difference between groups  $p=.447$ .

Table (49) also shows a chi-square non-significant difference between the groups. Note that the percentage of using the correct article for generic reference is higher in this question among the second language learners 'implicit instruction group' = 72.7%, 'explicit instruction group' = 81.8% and 'uninstructed control' = 90%.

The results of the Chi-square test on the first non-generic with RC context was not significant ( $p=.29$ ) unlike the significant difference found on the previous comparison using the Mann-Whitney test (table 50). The percentages show that 90% of native English speakers used the indefinite article (*a* or  $\emptyset$ ) with the noun and only one native speaker 10% used an indefinite pronoun 'anything'. On the other hand, second language learners recorded low percentages in using the correct indefinite article when followed by a relative clause (implicit instruction, 50%), (explicit instruction, 54.5%), and (uninstructed control, 20%). The answers showed L1 transfer in using [+definite] *the* but there was a higher percentage in using the [-definite] *a* or  $\emptyset$  which means they identified the noun as being [-definite].

Table 50 Main study written task pre-test Chi-square test on the *first* [-definite] with RC question

	Implicit instruction group	Explicit instruction group	Uninstructed control group	Native English speakers
Irrelevant answer	4.5 % (1)	9.1% (2)	0.0% (0)	0.0% (0)
L1 transfer of restriction on RC with [+definite]: use of <i>the</i> + NP	9.1% (2)	4.5% (1)	20% (2)	0.0% (0)
Wrong combination: <i>a</i> [+plural]. Or $\emptyset$ [-plural]	22.7 % (5)	22.7% (5)	40% (4)	0.0% (0)
Indefinite pronoun + NP	4.5% (1)	4.5% (1)	0.0% (0)	10% (1)
Colloquial referential <i>this</i> +NP	9.1 % (2)	4.5% (1)	20% (2)	0.0% (0)
Target use [-definite] with RC: <i>a</i> [-plural] or $\emptyset$ [+plural]	50.0% (11)	54.5% (12)	20.0% (2)	90% (9)
Total <i>n</i>	22	22	10	10
Chi-square	17.357			
<i>P</i>	>.298			

The results of the second [-definite] with RC question (table 51) does show a significant difference between groups using the chi-square test (p=.034) which confirms the Mann-Whitney significant results. The difference is found between the explicit and implicit groups compared to the uninstructed control group which scored a very low accuracy percentage on this question. The percentages of choosing the correct indefinite article was high for the two groups: Implicit instruction: 82%, and explicit instruction: 86% while the results of the uninstructed control was very low reaching only 50% in accuracy. The uninstructed control group was also the only group that exhibited the expected transfer of L1 restriction in using the definite article *the* while the other two groups similar to the first question identified the noun as being [-definite] but were not accurate in choosing the correct [-definite] article *a* or  $\emptyset$ .

Table 51 Main study written task pre-test Chi-square test on the *second* [-definite] with RC question

	<b>Implicit instruction group</b>	<b>Explicit instruction group</b>	<b>Uninstructed control group</b>	<b>Native English speakers</b>
<b>Irrelevant answer</b>	4.5 % (1)	0.0% (0)	0.0% (0)	0.0% (0)
<b>L1 transfer of restriction on RC with [+definite]: use of <i>the</i>+ NP</b>	0.0% (0)	0.0% (0)	20% (2)	0.0% (0)
<b>Wrong combination: <i>a</i> [+plural]. Or <math>\emptyset</math> [-plural]</b>	9.1 % (2)	4.5% (1)	30% (3)	0.0% (0)
<b>Indefinite pronoun + NP</b>	4.5% (1)	9.1% (2)	0.0% (0)	0.0% (0)
<b>Colloquial referential <i>this</i> +NP</b>	0.0 % (0)	0.0% (0)	0.0% (0)	0.0% (0)
<b>Target use [-definite] with RC: <i>a</i> [-plural] or <math>\emptyset</math> [+plural]</b>	<b>81.8%</b> <b>(18)</b>	<b>86.4%</b> <b>(19)</b>	<b>50.0%</b> <b>(5)</b>	<b>100%</b> <b>(10)</b>
<b>Total n</b>	22	22	10	10
<b>Chi-square</b>	22.288			
<b>P</b>	<.034			

It is important to note that the task investigated the noun contexts using only two items per context which may have affected the power of the analysis as it is a small sample. However, the results of this pre-test will be needed to compare the performance of the groups in the post-tests to investigate the effect of the instruction on language development.

### 6.2.1. Pre-test results summary

This section will summarise the findings of the three tasks and answer RQ5 on the differences found in the pre-tests.

RQ5 is related to the differences in the results of the tasks as follows:

**RQ 5.** Will the results vary across the instruments?

Indeed, the results of the pre-tests vary across the three instruments:

a) The forced choice task confirmed that this level of L1 Najdi Arabic learners of English didn't achieve target performance on this pre-test of English articles in the predicted feature reassembly difficulties of the [-definite] [+generic] [±plural] combination. Less difficulty was found on the [-definite] [±plural] combination as two out of three groups (explicit & control) were target-like confirming that it was less difficult as predicted by the difficulty cline. However, results of the [+definite] context shows unpredicted difficulties for two groups when compared to native English speakers (implicit & control). As to the syntactic difficulty with relative clause modification, this instrument also shows two out of three groups to be non-target like (implicit & explicit).

b) The sentence repetition task confirmed that this level of L1 Najdi Arabic learners of English didn't achieve target performance on this pre-test of English articles in all the [+definite] and [-definite] contexts with no different difficulty levels when compared to native speakers.

c) The Written production task confirmed that this level of L1 Najdi Arabic learners of English didn't achieve target performance on this pre-test of English articles in the [-definite] context modified by a relative clause with significant differences between the explicit & implicit groups when compared to the uninstructed control. The feature reassembly difficulties involving the [+generic] feature were not supported by this instrument as the test didn't show statistically significant difference when compared to native speakers.

Therefore, answering RQ5 we can confirm that the results indeed vary across the three instruments as follows:

- a) The predictions of reassembly difficulties in the [-definite] [+generic] [ $\pm$ plural] combination was supported by the results of the forced choice task and sentence repetition task. However, the written production task shows no statistically significant difference when compared to native speakers.
- b) The predicted syntactic difficulty involving relative clause modification was supported by the results of the three instruments when L1 Najdi Arabic learners were compared to native English speakers.
- c) The participants exhibited difficulties in using target English articles in all contexts when performing the sentence repetition task.
- d) Although not significantly different from native speakers, the participants' ILG showed evidence of L1 transfer in the written task [+generic] context.

The following section will present the results of the two post-tests conducted after the intervention on all three groups of Najdi Arabic second language learners of English to investigate differences in their ILG when compared to these pre-test.

### 6.3. Post intervention results

The post-tests were conducted five weeks after the pre-tests, during which all three groups took regular language courses and the two groups: ‘implicit instruction’ & ‘explicit instruction’ were given 12 hours of specific instruction following the objectives of this study. Then, after eight weeks -during which no specific instruction was given to any group- delayed post-tests of the same tasks were conducted. In the following sections, the post-intervention results of each task will be presented with detailed results of the groups and the categories to answer RQ 2, 3, 4, 5, & 6:

**RQ 2.** Will the classroom input provided by this study result in improvement from the pre-tests?

**RQ 3.** Which type of “input” would be more effective in improving the ILG of the learners: (a) Implicit reinforced input, or (b) Reinforced input with explicit focus on form.

**RQ 4.** Will the effect hold over the eight-weeks delayed post-test period?

**RQ 5.** Will the language proficiency have an effect on the results?

**RQ 6.** Will the results vary across the instruments?

#### 6.3.1. Forced choice task post-tests

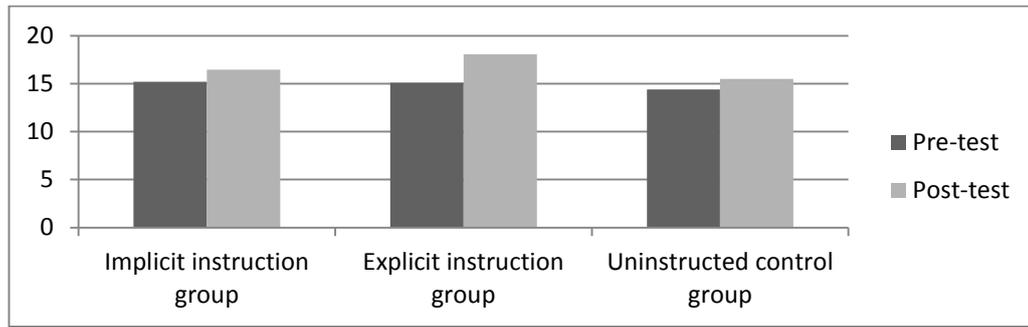
##### 6.3.1.1. Forced choice descriptive and inferential statistics of pre- & post-tests

Descriptive statistics of the first immediate post-test accuracy scores were calculated and the results show an increase in the scores of all three second language learner groups when compared to pre-test scores (table 52). It is also noted that the ‘explicit instruction group’ recorded the highest increase in total scores when compared to the ‘implicit instruction group’ and the ‘uninstructed control group’ as shown in (figure 14).

Table 52 Main study forced choice task pre- & post-tests descriptive statistics

Groups	<i>n</i>	Pre-Test				Post-test 1			
		Total	Mean	<i>SD</i>	Total	Mean	<i>SD</i>		
<b>Implicit instruction</b>	22	334/528	63.2%	15.18	5.05	362/528	68.5%	16.45	4.57
<b>Explicit instruction</b>	22	332/528	62.8%	15.09	4.01	397/528	75.1%	18.04	3.07
<b>Uninstructed control</b>	10	144/240	60%	14.4	3.5	155/240	64.5%	15.5	3.65

Figure 14 Main study forced choice task pre- and post-tests mean scores



To reveal if the increase was statistically significant, a paired sample t-test was conducted between the total test scores for each group before and after the intervention. The t-test shows a significant increase at the  $<.05$  level in the post-test total scores of the two instructional groups and no significant increase for the uninstructed control group as shown in table 53.

Table 53 Main study forced choice paired sample t-test for the groups' total scores in the pre-test and post-test

Group	Paired Differences						t	df	Sig. p value
	Mean dif	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Implicit instruction	-1.273	2.604	.555	-2.427	-.118	-2.293	21	<b>.032*</b>	
Explicit instruction	-2.955	2.699	.575	-4.151	-1.758	-5.135	21	<b>.0001*</b>	
Uninstructed control	-1.100	2.923	.924	-3.191	.991	-1.190	9	<b>.264</b>	

\*The mean difference is significant at the 0.05 level.

This result answers RQ2 by confirming that the two types of instruction resulted in a significant increase in the two experimental groups' results on this instrument from the pre-test. This significant increase was not found in the results of the uninstructed control group.

To further explore the results and answer RQ3 specifying whether instruction has affected the specific contexts that were predicted to be difficult, paired sample t-tests were conducted between the categories of the test for each group. The mean scores along with the  $t$  and  $p$  values are summarised in table 54 below.

Table 54 Main study forced choice task paired sample t-test on the pre- & post-test categories

	Implicit Instruction				Explicit instruction				Uninstructed control			
	pre	post	<i>t</i>	<i>p</i>	pre	post	<i>t</i>	<i>p</i>	pre	post	<i>t</i>	<i>p</i>
[+generic] [-plural]	2.27	2.23	.29	.7	1.91	2.73	-4	<b>.001*</b>	2.4	2.1	.89	.39
[+generic] [+plural]	2.05	2.14	-.41	.6	1.91	3.55	-6.5	<b>.0001*</b>	1.8	1.9	-.28	.78
[-definite] [±plural]	2.09	2.73	-2.7	<b>.01*</b>	2.32	3.18	-2.5	<b>.018*</b>	2.4	2.5	-.18	.85
[-definite] [±plural] RC	2.64	2.77	-.64	.5	2.77	3.14	-1.3	.201	2.8	2.6	.5	.59
[+definite] [±plural]	5.82	6.55	-2.5	<b>.02*</b>	6.23	5.45	2.1	<b>.04*</b>	4.9	6.4	-2.6	<b>.02*</b>

\*The mean difference is significant at the 0.05 level.

The analysis shows a significant increase in the explicit instruction group's results on three [-definite] contexts: 1) [+generic] [-plural], 2) [+generic] [+plural] 3) [-definite] [±plural] as detailed in (table 53) above. On the other hand, the implicit instruction group recorded a significant increase on the [-definite] [±plural] contexts and the other increase on the [+definite] [±plural] was similar to the uninstructed control. These results partially answers RQ3 that the type of classroom input resulting in more improvement is the reinforced input with explicit focus on form but further analyses is needed to confirm this assumption.

Surprisingly, the explicit instruction group unlike the other two groups recorded a significant *decrease* ( $p = .04$ ) in the mean score of the [+definite] [±plural] context from pre-test ( $M = 6.23$ ,  $SD = 1.7$ ) to post-test ( $M = 5.45$ ,  $SD = 1.5$ ). The other two groups 'implicit instruction' and 'uninstructed control' showed a significant *increase* in their accuracy scores on this context. The reason for this decrease will be explored in the next section when looking at the detailed percentages of article choice in the categories of the task.

To answer RQ4 on the long term effect of the instruction paired sample *t*-tests were conducted between the results of the post-tests and the delayed post-tests. The results are summarised in table 55.

Table 55 Main study forced choice task paired sample t-test on the post-tests & delayed post-test categories

	Implicit Instruction				Explicit instruction				Uninstructed control			
	Post 1	Post 2	<i>t</i>	<i>p</i>	post 1	post 2	<i>t</i>	<i>p</i>	pos t1	post 2	<i>t</i>	<i>p</i>
[+generic] [-plural]	2.23	2.14	.37	.71	2.73	2.32	1.9	.07	2.1	2.1	.0	1
[+generic] [+plural]	2.14	2.14	.00	1	3.55	3.36	1.1	.25	1.9	2.1	-.51	.61
[-definite]	2.73	2.41	1.3	.2	3.18	2.77	1.3	.19	2.5	2.6	-.23	.82
[-definite] RC	2.77	2.55	1.4	.17	3.14	2.86	1	.32	2.6	2.3	.75	.46
[+definite] [±plural]	6.55	6.45	.26	.79	5.45	6.18	-3	<b>.006*</b>	6.4	5.6	.76	.46

\*The mean difference is significant at the 0.05 level.

As shown in table 54 above, all three groups sustained their results from the post-test to the delayed post-test. Only the results of the explicit instruction group show a significant increase on the [+definite] context ( $p = .006$ ) as the mean scores increased again ( $M = 6.18$ ,  $SD = 1.53$ ) from an unexpected decrease in the immediate post-test ( $M = 5.45$ ,  $SD = 1.56$ ). This increase after the initial decrease will be explored in the next section.

### 6.3.1.2. The percentages of article choices

The ‘explicit instruction’ group’s results in choosing the article *the* for [+definite] [ $\pm$ plural] changed across the three tests but didn’t exhibit a steady improvement as with the ‘implicit instruction’ and the ‘uninstructed control’ groups. Instead, this group’s results were target-like in the pre-test but then significantly decreased in the immediate post-test only to increase again in the delayed post-test as shown in (table 56).

Table 56 Main study forced choice [+definite] context: time and group

	Implicit Instruction group			Explicit instruction group			Uninstructed control group		
	Pre-test	Post-test 1	Post-test 2	Pre-test	Post-test 1	Post-test 2	Pre-test	Post-test 1	Post-test 2
<i>Mean</i>	5.81	6.54	6.45	6.2	5.45	6.18	4.9	6.4	5.6
<i>SD</i>	1.73	1.62	1.79	1.74	1.56	1.53	1.28	1.56	3.02

The decrease of the explicit instruction group’s results in the post-test was accompanied by an increase in the group’s results on the [-definite] [+generic] [ $\pm$ plural] combinations. We need to look at the choices of articles for these contexts together to explain the results. Table 57 below shows the percentage of article choice in the three contexts [+definite] [ $\pm$ plural], [-definite] [+generic] [+plural] and [-definite] [+generic] [-plural].

Table 57 Main study forced choice percentage of article choice in [+definite] and [+generic] contexts: Explicit instruction group

Explicit instruction group	[+definite][ $\pm$ plural] (target <i>the</i> )			[+generic] [+plural] (target $\emptyset$ )			[+generic] [-plural] (target <i>a</i> )		
	<i>the</i>	<i>a</i>	$\emptyset$	<i>the</i>	<i>a</i>	$\emptyset$	<i>the</i>	<i>a</i>	$\emptyset$
Pre-test	78.9%	14.2%	5.6%	43.1%	3.4%	48.8%	31.8%	50%	18.1%
Post-test 1	67.6% ↓	14.7%	16.4% ↑	6.8% ↓	2.2%	88.6% ↑	27.2%	68.1% ↑	2.2% ↓
Post-test 2	77.8% ↑	11.3%	9% ↓	11.36%	1.1%	86.3%	26.1%	62.5%	11.3%

N= 22

Note in the results of the immediate post-test the sharp decrease in using *the* in the [-definite] [+generic] [+plural] context from 43.1% to 6.8% and the increase in using the target  $\emptyset$  from 48.8% to 88.6% this increase was statistically significant according to the t-test (p= .0001) signalling that learners established the target use of  $\emptyset$

in this context. However, this was accompanied by a decrease in using *the* in [+definite] [±plural] contexts of the immediate post-test from 78.9% to 67.6% and an increase in using  $\emptyset$  from 5.6% to 16.4%. This change in the [+definite] context was also significant according to the t-test results ( $p = .04$ ).

The results of the delayed post-test [+definite] [±plural] context then shows an increase in using *the* again to 77.8% along with a decrease in using  $\emptyset$  which explains the significant t-test results ( $p = .006$ ). On the other hand, the use of the target  $\emptyset$  in [-definite] [+generic] [+plural] remained high in the delayed post-test signalling that the change in the participants' ILG found in the immediate post-test was sustained.

This suggests that learners may have went through a 'developmental stage' in which they successfully re-assembled the [-definite] [+generic] [+plural] features onto the target article  $\emptyset$  and disentangled those features from the article *the*. However, at this stage they may have overgeneralized this to [+definite] [-generic] [+plural] combinations as well. It is then possible that after this initial stage they developed their accuracy - similar to natural phases of acquisition- to recover and choose the appropriate target articles  $\emptyset$  for [-definite] [+generic] [+plural] and *the* for [+definite] [-generic] [+plural].

Also note in table 57, the results of the [-definite] [+generic] [-plural] showing another relationship between using the target article *a* and the article  $\emptyset$  while the percentage of using *the* remained stable in all three times. The immediate post-test showed a significant improvement in this context according to the t-test ( $p = .001$ ) and the results show that the use of the target *a* increased from 50% to 68.1% along with a decrease in using  $\emptyset$  from 18.1% to 2.2% showing that those learners initially realised that the English [+generic] feature can be combined with the [-definite] feature and as such they were using the  $\emptyset$  article. The improvement found in their ILG is that they realized that the [-definite] [+generic] feature when mapped with the [-plural] feature it is encoded in English with the article *a*. This is consistent with the proposed difficulty cline suggesting more difficulties in the feature combinations [-definite] [+generic] [-plural] as will be discussed later in chapter 7.

With the two other groups ‘implicit instruction’ and ‘uninstructed control’ their results show variability in choosing the articles in generic contexts with the effect of L1 transfer apparent from high percentages of using *the*. What is important for the comparison with the explicit instruction group is that the percentages of article choice didn’t change much across the three tests as shown in table 58.

Table 58 Main study forced choice percentages in [+generic] contexts: Implicit instruction and uninstructed control groups

	Implicit instruction group				Uninstructed control group			
	[+generic] [+plural] (target $\emptyset$ )		[+generic] [-plural] (target <i>a</i> )		[+generic] [+plural] (target $\emptyset$ )		[+generic] [-plural] (target <i>a</i> )	
<b>Pre-test</b>	37.5 % <i>the</i>	52.2% $\emptyset$	36.3% <i>the</i>	54.5% <i>a</i>	45% <i>the</i>	47.5% $\emptyset$	36.3% <i>the</i>	50% <i>a</i>
<b>Post-test 1</b>	37.5% <i>the</i>	52.2 % $\emptyset$	30.6% <i>the</i>	56.8% <i>a</i>	45% <i>the</i>	45 % $\emptyset$	38.6% <i>the</i>	50% <i>a</i>
<b>Post-test 2</b>	31.8% <i>the</i>	53.4 % $\emptyset$	36.3% <i>the</i>	55.6% <i>a</i>	37.5% <i>the</i>	52.5 % $\emptyset$	40.9% <i>the</i>	47.7% <i>a</i>

On the other hand, the predicted syntactic difficulty with [-definite] [ $\pm$ plural] when modified by a relative clause didn’t show a significant improvement from the pre-test for all three groups. Tables (59 & 60) below show the percentage of article choice for the two groups that showed non-target pre-tests on this context: explicit instruction and implicit instruction. Note that the explicit instruction group’s results show a drop in using *the* in both singular and plural contexts and an increase in using the target articles *a* &  $\emptyset$  but this was not statistically significant and the delayed post-test results changed again to a pattern similar to the pre-test.

Table 59 Main study forced choice implicit instruction group percentage of article choice in [-definite] with RC

Implicit instruction group	[-definite] [- plural]+RC (target <i>a</i> )				[-definite] [+plural]+RC (target $\emptyset$ )			
	<b>Pre-test</b>	22.7% <i>the</i>	70.4% <i>a</i>	15.9% <i>the</i>	61.3% $\emptyset$			
<b>Post-test 1</b>	22.7% <i>the</i>	75% <i>a</i>	13.6% <i>the</i>	63.6% $\emptyset$				
<b>Post-test 2</b>	29.5% <i>the</i>	65.9% <i>a</i>	22.7% <i>the</i>	61.3% $\emptyset$				

N=22

Table 60 Main study Forced choice explicit instruction group percentage of article choice in [-definite] with RC

Explicit instruction group	[-definite] [-plural]+RC (target <i>a</i> )			[-definite] [+plural]+RC (target $\emptyset$ )		
Pre-test	22.7%	<i>the</i>	72.7% <i>a</i>	15.9%	<i>the</i>	68.1% $\emptyset$
Post-test 1	15.9%	<i>the</i>	79.5% <i>a</i>	6.8%	<i>the</i>	75% $\emptyset$
Post-test 2	20.4%	<i>the</i>	72.7% <i>a</i>	20.4%	<i>the</i>	70.4% $\emptyset$

*N* = 22

### 6.3.1.3. Forced choice task interaction of variables

To fully answer RQ2 & RQ3 on the effect of instruction more tests are needed. We have seen with the initial paired sample t-tests that the two instructional groups improved from pre-test and that the explicit instruction group showed more improvement on the contexts of the task compared to the implicit instruction group. However, we can't confirm that this is the result of instruction without looking at the results of the groups compared to each other across the three times. Moreover, the effect of language proficiency must be accounted for (as it is not equivalent across the groups) to answer RQ 5.

To show this interaction between the variables, linear regression models were conducted with the categories of the test held as dependent variables<sup>23</sup>. Regression analysis was conducted in line with formula 1 below:

$$Y_{in} = \beta_0 + \beta_1 G_j + \beta_2 T + \beta_3 I + \varepsilon_i$$

Where,

$Y_{in}$  – a set of five dependent variables: 1) [+generic] [-plural], 2) [+generic] [+plural], 3) [-definite] [ $\pm$ plural], 4) [-definite] [ $\pm$ plural] with RC and 5) [+definite] [ $\pm$ plural].

$\beta_0$  – intercept;

$\beta_1$  - regression coefficient for the group variable ( $G_j$  - control group, implicit and explicit groups);

$\beta_2$  - regression coefficient for the time variable (T - pre-test condition, immediate post-test measurement and delayed effect);

$\beta_3$  - regression coefficient for the interaction effect between group and time (I);

$\varepsilon_i$  - error term, normally distributed with mean zero and independent of predicted values ( $N(\mu=0; \sigma^2)$ ).

<sup>23</sup> The dependent variables and the control variable were mean centred prior to the regression analysis.

Regression models were fitted using the whole sample for each dependent variable. The upshots of regression analysis for the forced choice task are reported in Table 61.

The table is organised as follows: (model 1) in which a key control variable (language proficiency) was implemented. Thereafter, hypothesised predictors were added to the regression equation one by one such that (model 2) corresponds to the equation with the control variable, group effect and time variable. Then (model 3) is a full model captured by formula 1, with interaction effects of time and group<sup>24</sup>. Because the model is composed of three groups and three time periods their interaction effect will effectively produce a 3X3 contingency table. As such, changing reference categories (omitted variable) is warranted to account for all possible combinations. This was accomplished in (model four), which is identical to (model 3) except for omitted categories (implicit group and post-test), allowing to fully represent the interaction effect specified in formula 1.

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<sup>24</sup> for the sake of brevity only additional independent variables for each model are reported in the table.

Table 61 Main study regression estimates for the forced choice task

	Total score	[+generic] [-plural]	[+generic] [+plural]	[-definite] [±plural]	[-definite] [±plural]	[+definite] [±plural]
	Estimate (t-value)					
<b>Model 1</b>						
Proficiency	<b>0.667***</b> (11.33)	<b>0.334***</b> (4.488)	<b>0.419***</b> (5.833)	<b>0.393***</b> (5.406)	<b>0.463***</b> (6.603)	<b>0.534***</b> (7.993)
<b>Adjusted R-squared</b>	0.442	0.106	0.170	0.149	0.209	0.281
<b>Model 2 (reference categories: control group and pre experiment measurements)</b>						
Group implicit	-0.125 (0.769)	-0.163 (-0.768)	-0.064 (-0.341)	-0.280 (-1.389)	-0.157 (-0.787)	0.084 (0.446)
Group explicit	0.054 (0.328)	-0.103 (-0.478)	<b>0.521**</b> (2.749)	-0.036 (-0.180)	0.039 (0.194)	-0.161 (-0.841)
Time post	<b>0.453**</b> (3.233)	0.250 (1.370)	<b>0.548***</b> (3.392)	<b>0.527**</b> (3.047)	0.154 (0.899)	0.146 (0.898)
Time delayed	0.292 (2.083)	0.054 (0.294)	<b>0.520**</b> (3.219)	0.294 (1.703)	-0.085 (-0.499)	0.209 (1.282)
<b>Adjusted R-squared</b>	0.471	0.099	0.295	0.192	0.208	0.283
<b>Model 3 (reference categories: control group and pre experiment measurements)</b>						
Group implicit X Time post	0.041 (0.103)	0.246 (0.484)	-0.006 (-0.016)	0.449 (0.920)	0.311 (0.642)	-0.436 (-0.974)
Group explicit X Time post	0.436 (1.108)	<b>1.079*</b> (2.126)	<b>1.166**</b> (2.672)	0.639 (1.309)	0.521 (1.077)	<b>-1.282**</b> (-2.865)
Group implicit X Time delayed	0.047 (0.119)	0.158 (0.311)	-0.159 (-0.364)	0.099 (0.203)	0.378 (0.781)	-0.036 (-0.080)
Group explicit X Time delayed	0.496 (1.260)	0.684 (1.348)	<b>0.877*</b> (2.008)	0.213 (0.436)	0.546 (1.129)	-0.420 (-0.940)
<b>Adjusted R-squared</b>	0.379	0.113	0.331	0.180	0.196	0.341
<b>Model 4 (reference categories: implicit group and post experiment measurements)</b>						
Group explicit	0.293 (1.332)	0.44 (1.552)	<b>1.023***</b> (4.190)	0.332 (1.215)	0.280 (1.034)	<b>-0.681**</b> (-2.722)
Time delayed	-0.181 (-0.826)	-0.088 (-0.309)	0.000 (0.000)	-0.266 (-0.976)	-0.210 (-0.777)	-0.051 (-0.205)
Group explicit X Time delayed	0.053 (0.172)	-0.308 (-0.765)	-0.138 (-0.400)	-0.076 (-0.197)	-0.042 (-0.110)	-0.462 (-1.305)
<b>Adjusted R-squared</b>	0.379	0.113	0.345	0.180	0.196	0.312

Note: unstandardized regression coefficients are reported.  
**Significance codes: ‘\*\*\*’ p<0.001; ‘\*\*’ p<0.01; ‘\*’ p<0.05.**

The first model shows the relationship between the results and language proficiency as a control variable across all times and groups. The analysis shows a positive relationship between language proficiency and the results of the instrument across groups and times with significant  $p < 0.001$  levels. This answers RQ 5 confirming that language proficiency did have an effect on the results. As language proficiency increased the accuracy scores increased on all categories of the test explaining 10% of the variance on the [+generic] [-plural] ( $R^2 = .106$ ,  $t = (4.488) = 0.334$   $p < 0.001$ ), 17% of the variance on the [+generic] [+plural] ( $R^2 = .17$ ,  $t = (5.833) = 0.419$   $p < 0.001$ ), 14% of the variance on the [-definite] [ $\pm$ plural] ( $R^2 = .149$ ,  $t = (5.406) = 0.393$   $p < 0.001$ ), 20% of the variance on the [-definite] [ $\pm$ plural] with RC ( $R^2 = .209$ ,  $t = (6.603) = 0.209$   $p < 0.001$ ), and 28% of the variance on the [+definite] [ $\pm$ plural] ( $R^2 = .281$ ,  $t = (7.993) = 0.534$   $p < 0.001$ ).

Recall that all three groups were comprised of three proficiency levels: elementary, lower intermediate and upper intermediate. However, the percentage of the proficiency levels wasn't equal in each group. The percentage of the low elementary proficiency level participants in the three groups was as follows: implicit (31%), explicit (13.6%) and control (30%). Accordingly, the results of the explicit instruction group should be interpreted with caution because it is the group with the lowest percentage of low elementary proficiency level participants.

The second model was conducted to confirm the significant effect of instruction on the test categories by testing the relationship between the dependent variables and the interaction effects between the two independent variables: group and time with the reference categories: control group and pre-experiment measures.

The analysis confirms the explicit instruction group's results in the paired sample t-tests showing significant improvement when compared to the control and pre-test in the post test of the two generic categories: [+generic] [-plural] ( $p < 0.05$ ) and the [+generic] [+plural] ( $p < 0.01$ ). However, the interaction shows that this effect when compared to the control group results was only maintained in the delayed post-test results of the [+generic] [+plural] ( $p < 0.05$ ) category.

The third model was used to explain the interaction and compare the results of the explicit instruction group to the control and pre-test measures and the fourth model shows the results of the explicit group compared to the implicit instruction group and the delayed post-test as reference categories.

Models 3 & 4, show that the effect of instruction given to the explicit instruction group is found on the [+generic] [+plural] category only. The results of the delayed post-test does indeed show that the improvement was sustained with no significant decrease. The only decrease is found on the [+definite] [ $\pm$ plural] post-test but then it increased in the delayed post-test as explained earlier in (6.3.1.2). The results are further clarified when we look at the graph plots of the interaction on the two categories: [+generic] [+plural] and [+generic] [-plural] in the following figures 15 & 16.

Figure 15 Forced choice task interaction between time & group [+generic] [+plural]

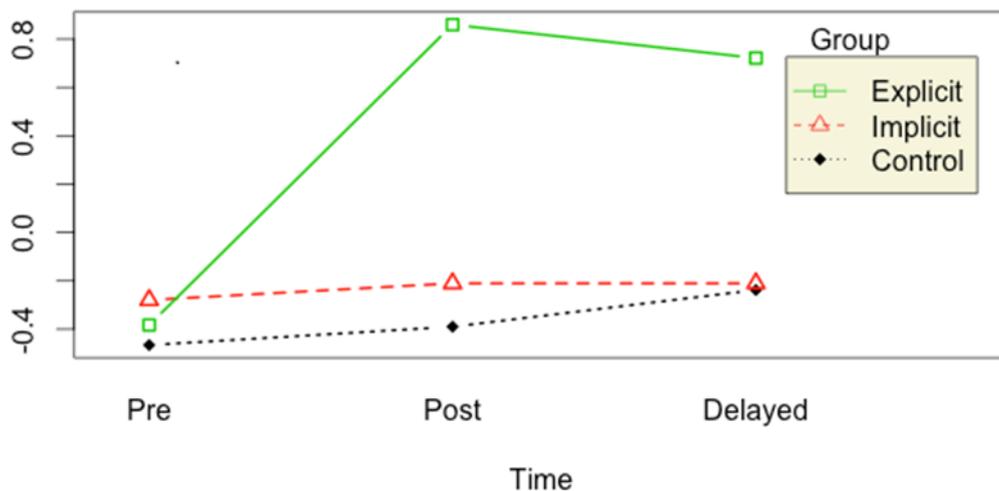
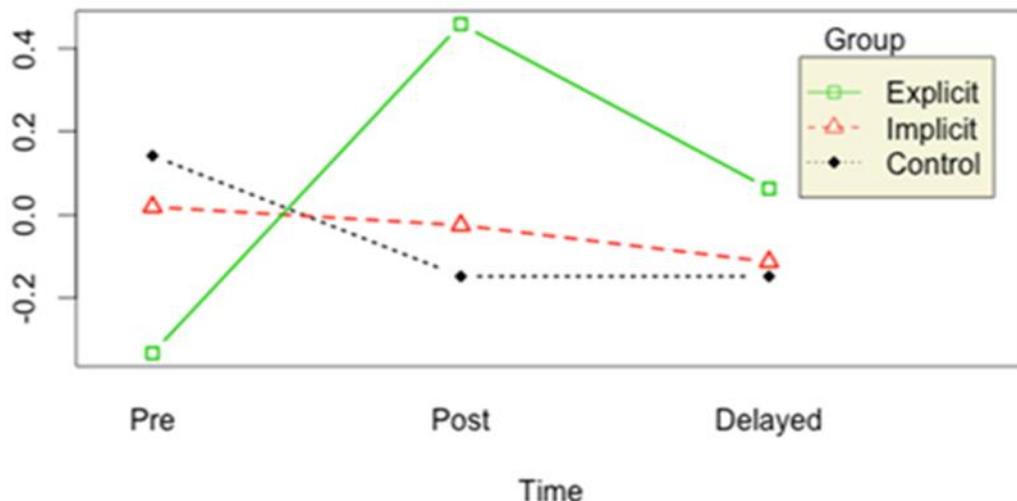


Figure 16 Forced choice interaction between time & group [+generic] [-plural]



Note how the results of the explicit instruction group clearly increased in the post-test of the two categories from the pre-test. The effect of explicit instruction on the generic plural (figure 15) is found on both post-tests as the group's results didn't decrease and the results of the other two groups remained lower in comparison. This is not the case with the generic singular delayed post-test (figure 16) as the results of the

explicit instruction decreased (although not recording a significant decrease in the paired sample t-test) to be closer to the results of the other two groups thus showing a non-significant difference in the regression model analysis on delayed post-test scores.

This answers RQ 2 & RQ 3 by confirming that only the explicit instruction resulted in a significant improvement from the pre-test. The improvement was found on the [-definite] [+generic] [-plural] and [-definite] [+generic] [+plural] contexts. However, the effect of the explicit instruction was sustained in the delayed post-tests on only one context: the [-definite] [+generic] [+plural]. The following section will present a summary of the results of this instrument.

#### 6.3.1.4. Forced choice task contexts: summary of results

The post intervention results of the forced choice task can be summarised as follows:

- a) The two experimental groups showed improvement on the overall accuracy scores of the post-tests when they were compared to their pre-tests. This improvement was not found with the uninstructed control group results.
- b) All three groups including the uninstructed control group improved in using *the* in [+definite] contexts when comparing the pre-test to both post-tests with the exception of the explicit instruction group recording a significant decrease in the immediate post-test.
- c) The results show a relationship between the decrease in using *the* in [+definite] contexts and the increase in using target  $\emptyset$  in [+generic] [+plural] contexts of the explicit instruction group.
- d) The results of the two groups: explicit instruction and implicit instruction in the pre-test showed difficulties with the [-definite] with relative clause. The post-test comparisons show no significant improvement from the pre-test.
- e) The only group that showed improvement in the [-definite] [+generic] [ $\pm$ plural] combination was the explicit instruction group.
- f) The explicit instruction group's significant improvement over the other two groups was sustained on the long-term only in the [+generic] [+plural] category and the improvement in the [+generic] [-plural] didn't hold over the eight weeks delayed post-test period.
- g) The results of the explicit instruction group should be interpreted in light of the higher proficiency level of the group since language proficiency was confirmed to be a confounding variable.

### 6.3.2. Sentence repetition task post-tests

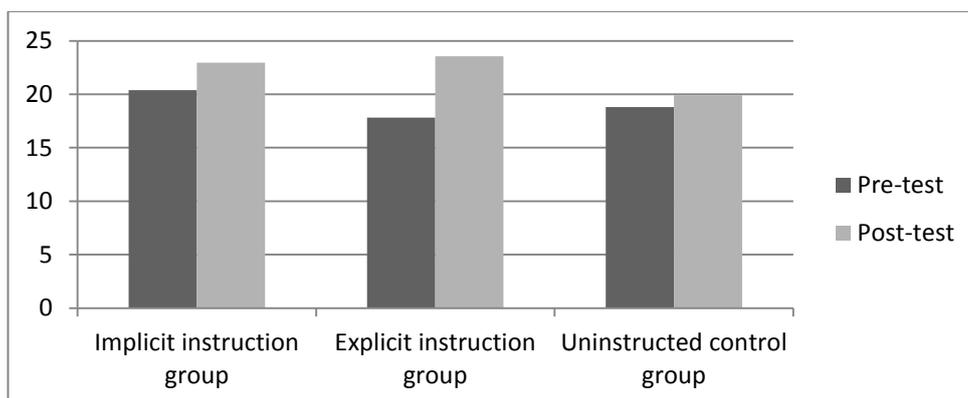
#### 6.3.2.1. Sentence repetition descriptive and inferential statistics for pre- & post-tests

The correct production of articles in different contexts in the post-test were calculated as accuracy scores and descriptive statistics revealed the means and standard deviations of the total test scores for all four groups. The results of the post-tests accuracy scores for all second language learner groups show an increase when compared to the pre-tests as shown in (table 62) and figure (17).

Table 62 Main study sentence repetition task pre- and post-test descriptive statistics

Groups	n	Pre-Test			Post-test				
		Total	Mean	SD	Total	Mean	SD		
Implicit instruction	22	449/792	56.6%	20.4	6.82	505/792	63.76%	22.95	6.7
Explicit instruction	22	392/792	49.49%	17.81	7.94	528/792	66.6%	23.54	6.1
Uninstructed control	10	188/360	52.2%	18.8	5.76	199/360	55.27%	19.9	5.1

Figure 17 Main study sentence repetition task pre- and post-test descriptive statistics



To reveal if the increase was statistically significant, a paired sample t-test was conducted between the total test scores for each group before and after the intervention. Similar to the forced choice task, the t-test shows a significant increase at the <.05 level in the post-test total scores of the two instructional groups while the increase found with the uninstructed control group's scores was statistically non-significant as shown in table 63.

Table 63 Main study sentence repetition paired sample t-test for the groups' total scores in the pre-test and post-test

Group	Paired Differences					t	df	Sig. p value
	Mean dif	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Implicit instruction	-2.545	3.143	.670	-3.939	-1.152	-3.799	21	<b>.001*</b>
Explicit instruction	-5.727	3.894	.830	-7.454	-4.001	-6.899	21	<b>.0001*</b>
Uninstructed control	-1.100	3.957	1.251	-3.930	1.730	-.879	9	.402

\*The mean difference is significant at the 0.05 level.

This result answers RQ2 by confirming that the two types of instruction resulted in a significant increase in the two experimental groups' results on this instrument from the pre-test similar to the forced choice task. To further explore the results and answer RQ3 specifying which type of instruction was more effective in improving the use of the target articles, paired sample t-tests were conducted between the categories of the test for each group. The mean scores along with the *t* and *p* values are summarised in table 64 below.

Table 64 Main study sentence repetition task paired sample t-test on the pre- & post-test categories

	Implicit Instruction				Explicit instruction				Uninstructed control			
	pre	post	<i>t</i>	<i>p</i>	pre	post	<i>t</i>	<i>p</i>	pre	post	<i>t</i>	<i>p</i>
[+generic] [-plural]	1.32	1.68	-1.4	.162	.82	1.91	-4.8	<b>.0001*</b>	.8	.5	.8	.43
[+generic] [+plural]	5.45	6.0	-1.4	.162	4.91	6.23	-4.3	<b>.0001*</b>	5.5	5.8	-.4	.69
[-definite] [±plural]	2.55	3.45	-3	<b>.005*</b>	2.59	3.55	-2.9	<b>.008*</b>	1.7	3.3	-4.7	<b>.001*</b>
[-definite] [±plural] RC	2.91	3.05	-.49	.62	2.50	3.82	-3.9	<b>.001*</b>	3.2	2.6	1.7	.11
[+definite] [-plural]	4.05	4.32	-.97	.34	3.32	3.77	-1.2	.22	4	3.7	.58	.57
[+definite] [+plural]	4.05	4.45	-1.4	.15	3.45	4.36	-2.3	<b>.03*</b>	3.6	4	-1.1	.26

\*The mean difference is significant at the 0.05 level.

The analysis shows a significant increase in the explicit instruction group's results on *all five* contexts except the [+definite] [+plural] as detailed in (table 64) above. This significant increase in the five contexts was not found with the other two groups except for one context: [-definite] [ $\pm$ plural] as the implicit instruction group showed a significant increase ( $p=.005$ ) from pre-test ( $M=2.55$ ,  $SD= 1.9$ ) to post-test ( $M=3.45$ ,  $SD= 1.5$ ) and the uninstructed control ( $p= .001$ ) from pre-test ( $M= 1.7$ ,  $SD=1.2$ ) to post-test ( $M= 3.3$ ,  $SD=1.3$ ). Note that the results of the explicit instruction group improved according to the paired sample  $t$ -test on producing the correct article in the context with the relative clause syntactic difficulty. This improvement was not found in the forced choice task results. More details on the difference between the results of the tasks will be summarised later to fully answer RQ6.

To answer RQ4 on the long term effect of the instruction paired sample  $t$ -tests were conducted between the results of the post-tests and the delayed post-tests. The results are summarised in table 65.

Table 65 Main study sentence repetition task paired sample  $t$ -test on the post-test & delayed post-test categories

	Implicit Instruction				Explicit instruction				Uninstructed control			
	post 1	post 2	$t$	$p$	post 1	post 2	$t$	$p$	pre	post	$t$	$p$
[+generic] [-plural]	1.68	1.45	1.3	.2	1.91	1.5	1.4	.15	.5	1.1	-2.7	<b>.02*</b>
[+generic] [+plural]	6.0	5.5	1.4	.16	6.23	6.36	-.64	.52	5.8	6.2	-.88	.39
[-definite] [ $\pm$ plural]	3.45	3.55	-.4	.69	3.55	3.23	1.5	.14	3.3	3.1	.34	.73
[-definite] [ $\pm$ plural] RC	3.05	3.5	-1.5	.14	3.82	3.68	.61	.54	2.6	3.6	-2	.07
[+definite] [-plural]	4.32	3.77	1.8	.07	3.77	4.05	-.92	.36	3.7	3.3	.88	.39
[+definite] [+plural]	4.45	4.36	.26	.79	4.36	4.41	-.14	.89	4	4.8	-1.3	.19

\*The mean difference is significant at the 0.05 level.

As shown in table 64 above, all three groups sustained their results from the post-test to the delayed post-test. Only the results of the uninstructed control group show a significant increase on the [-definite] [+generic] [-plural] context ( $p = .02$ ) as the mean scores increased from the immediate post-test ( $M = .50$ ,  $SD = .7$ ) to the delayed post-test ( $M = 1.1$ ,  $SD = .73$ ). After this increase, the mean score of the uninstructed control group which was very low in the pre-test and immediate post-test became somehow similar to the other two groups: implicit instruction ( $M = 1.4$ ,  $SD = 1.1$ ) and explicit instruction ( $M = 1.5$ ,  $SD = 1.1$ ).

The next section will provide a regression model to confirm the initial results of the paired sample t-tests and compare the results of the groups across the three times in addition to finding out the effect of language proficiency.

### 6.3.2.2. Sentence repetition task interaction of variables

Similar to the forced choice task, a regression model was conducted with the categories of the task held as dependent variables. The regression analysis was conducted in line with formula 1 as mentioned earlier in (6.3.1.3.) With one difference in the number of dependent variables as this task has six as follows:

$$Y_{in} = \beta_0 + \beta_1 G_j + \beta_2 T + \beta_3 I + \varepsilon_i$$

Where,

$Y_{in}$  – a set of five dependent variables: 1) [+generic] [-plural], 2) [+generic] [+plural], 3) [-definite] [ $\pm$ plural], 4) [-definite] [ $\pm$ plural] with RC, 5) [+definite] [-plural], and 6) [+definite] [+plural]

$\beta_0$  – intercept;

$\beta_1$  - regression coefficient for the group variable ( $G_j$  - control group, implicit and explicit groups);

$\beta_2$  - regression coefficient for the time variable ( $T$  - pre-test condition, immediate post-test measurement and delayed effect);

$\beta_3$  - regression coefficient for the interaction effect between group and time ( $I$ );

$\varepsilon_i$  - error term, normally distributed with mean zero and independent of predicted values ( $N(\mu=0; \sigma^2)$ ).

Regression models were fitted using the whole sample for each dependent variable. The upshots of regression analysis for the sentence repetition task are reported in table (66) organised similar to the forced choice task regression.

Table 66 Main study regression estimates for sentence repetition task

	[+generic] [-plural]	[+generic] [+plural]	[-definite] [±plural]	[-definite] [±plural]	[+definite] [-plural]	[+definite] [+plural]
	RC					
	Estimate (t-value)	Estimate (t-value)	Estimate (t-value)	Estimate (t-value)	Estimate (t-value)	Estimate (t-value)
<b>Model 1</b>						
Proficiency	<b>0.538***</b> (8.079)	<b>0.465***</b> (6.651)	<b>0.464***</b> (6.632)	<b>0.571***</b> (8.791)	<b>0.328***</b> (4.343)	<b>0.370***</b> (5.031)
<b>Adjusted R-squared</b>	0.285	0.212	0.211	0.321	0.100	0.131
<b>Model 2 (reference categories: control group and pre experiment measurements)</b>						
Group implicit	0.271 (1.453)	<b>-0.413*</b> (-2.134)	0.001 (0.005)	<b>-0.366*</b> (-2.025)	0.085 (0.396)	-0.149 (-0.722)
Group explicit	0.135 (0.712)	-0.383 (-1.954)	-0.100 (-0.516)	-0.343 (-1.874)	-0.222 (-1.026)	-0.340 (-1.632)
Time post	<b>0.466**</b> (2.932)	<b>0.486**</b> (2.945)	<b>0.644***</b> (3.941)	0.281 (1.823)	0.188 (1.032)	<b>0.394*</b> (2.248)
Time delayed	<b>0.338*</b> (2.123)	<b>0.520**</b> (2.745)	<b>0.566**</b> (3.457)	<b>0.464**</b> (3.015)	0.043 (0.238)	<b>0.478**</b> (2.725)
<b>Adjusted R-squared</b>	0.317	0.266	0.278	0.360	0.104	0.170
<b>Model 3 (reference categories: control group and pre experiment measurements)</b>						
Group implicit X Time post	0.576 (1.315)	0.146 (0.319)	-0.422 (-0.913)	0.429 (1.008)	0.447 (0.884)	0.006 (0.012)
Group explicit X Time post	<b>1.207**</b> (2.757)	0.607 (1.322)	-0.394 (-0.853)	<b>1.118**</b> (2.626)	0.589 (1.165)	0.328 (0.665)
Group implicit X Time delayed	-0.142 (-0.324)	-0.363 (-0.791)	-0.244 (-0.529)	0.111 (0.261)	0.334 (0.660)	-0.569 (-1.152)
Group explicit X Time delayed	0.331 (0.757)	0.450 (0.979)	-0.466 (-1.010)	0.456 (1.070)	<b>1.116*</b> (2.204)	-0.158 (-0.321)
<b>Adjusted R-squared</b>	0.341	0.275	0.267	0.377	0.120	0.163
<b>Model 4 (reference categories: implicit group and post experiment measurements)</b>						
Group explicit	0.126 (0.515)	0.066 (0.259)	-0.009 (-0.035)	0.368 (1.544)	-0.472 (-1.670)	-0.113 (-0.410)
Time delayed	-0.197 (-0.806)	-0.271 (-1.055)	0.055 (0.215)	0.265 (1.113)	-0.426 (-1.507)	-0.058 (-0.213)
Group explicit X Time delayed	-0.158 (-0.456)	0.352 (0.970)	-0.250 (-0.684)	-0.344 (-1.023)	0.639 (1.598)	0.088 (0.225)
<b>Adjusted R-squared</b>	0.341	0.275	0.267	0.377	0.120	0.163

Note: unstandardized regression coefficients are reported.

Significance codes: ‘\*\*\*’ p<0.001; ‘\*\*’ p<0.01; ‘\*’ p<0.05.

The first model shows the relationship between the results and language proficiency as a control variable across all times and groups. The analysis indeed shows a positive relationship between language proficiency and the results of this instrument across groups and times with significant  $p < 0.001$  levels. This answers RQ 5 confirming that language proficiency did have an effect on the results of this instrument as well. As language proficiency increased the accuracy scores increased on all categories of the test explaining 28% of the variance on the [+generic] [-plural] ( $R^2 = .285$ ,  $t = (8.079) = 0.538$   $p < 0.001$ ), 21% of the variance on the [+generic] [+plural] ( $R^2 = .212$ ,  $t = (6.651) = 0.465$   $p < 0.001$ ), 21% of the variance on the [-definite] [ $\pm$ plural] ( $R^2 = .211$ ,  $t = (6.632) = 0.464$   $p < 0.001$ ), 32% of the variance on the [-definite] [ $\pm$ plural] with RC ( $R^2 = .321$ ,  $t = (8.791) = 0.571$   $p < 0.001$ ), 10% of the variance on the [+definite] [-plural] ( $R^2 = .100$ ,  $t = (4.343) = 0.328$   $p < 0.001$ ), and 13% of the variance on the [+definite] [+plural] ( $R^2 = .131$ ,  $t = (5.031) = 0.370$   $p < 0.001$ ).

The second model was conducted to test the relationship between the dependent variables and the interaction effects between the two independent variables: group and time with the reference categories: control group and pre-experiment measures. The analysis confirms the results of the paired sample t-tests on the significant improvement in the explicit instruction group's post-test when compared to the control and pre-test in one generic category only the [+generic] [-plural] ( $p < 0.01$ ) and on the syntactic difficulty in [-definite] [ $\pm$ plural] with relative clause ( $p < 0.01$ ). However, the interaction shows that this effect was not maintained in the delayed post-test results on both contexts. The only context that showed a significant difference in the delayed post-test was the [+definite] [-plural] ( $p < 0.05$ ).

The third and fourth models were used to compare the results of the explicit instruction group to the control group and pre-tests and the implicit instruction group and the post-test as reference categories. No difference is found between the results of the explicit instruction group and implicit instruction on any category. The results also show that the results of the explicit instruction group found in the post-test didn't significantly change in the delayed post-test. To further explain the results the plots of the interaction are presented below.

Figure 18 sentence repetition task interaction between time & group [+generic] [-plural]

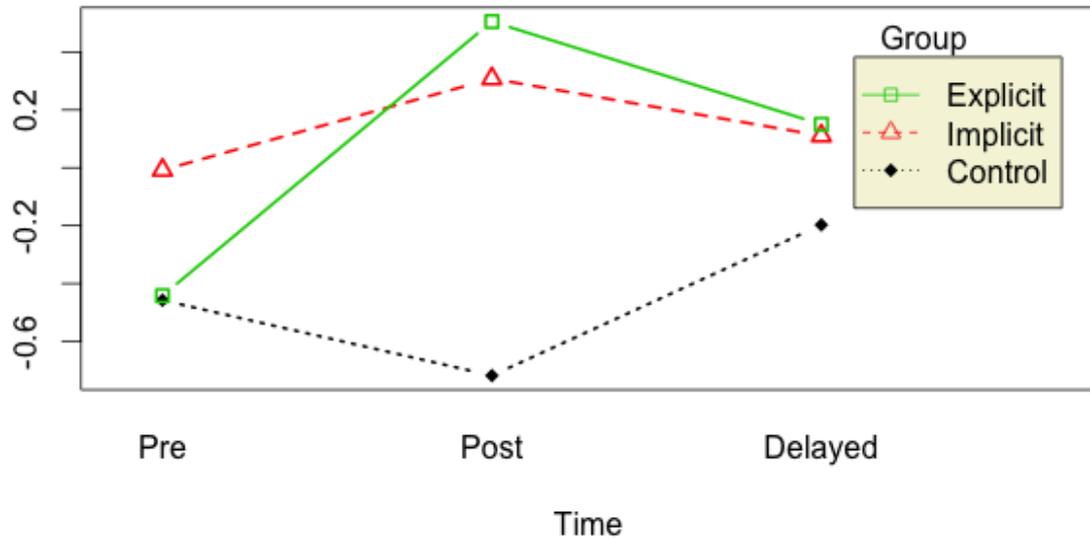
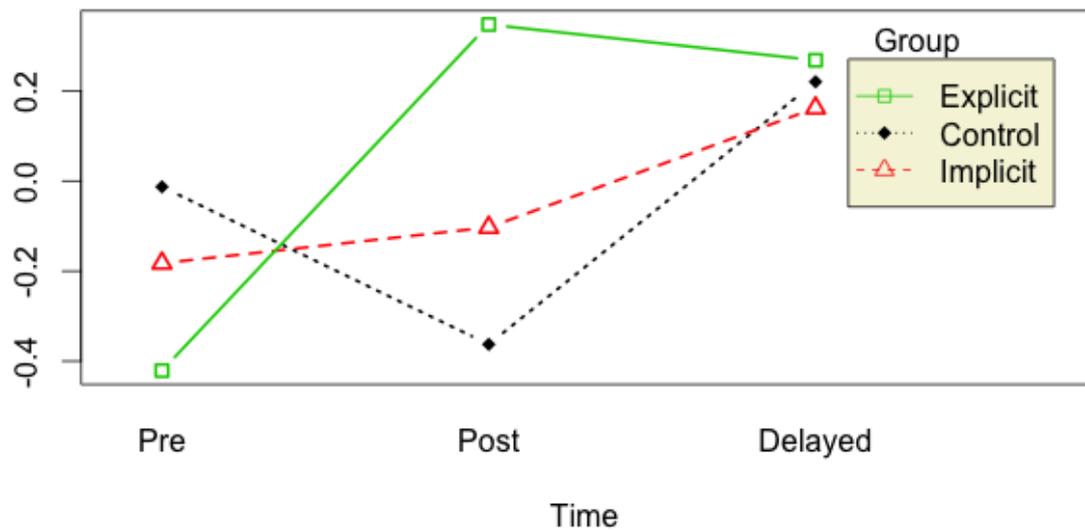


Figure 18 shows how the results of the explicit instruction group increased in the post-test in comparison to the pre-test and the control group. However, the results of the implicit instruction group also increased although not recording a significant difference from control and pre-test it was not significantly different from the explicit instruction results. The plot also shows how the results of the two instructional groups came together in the delayed post-test to a similar level explaining why the delayed comparisons didn't show a significant difference. The results of the control group also increased in the delayed post-test after a clear drop in the post-test (as shown also in the t-test results table 66) which explains why the significant difference found in the post-test in favour of the explicit instruction group was not found in the delayed post-test interaction.

Figure 19 sentence repetition task interaction between time & group [-definite] with RC



Note in figure 19 how the results of the explicit instruction group increased from pre-test to post-test with a clear difference when compared to the two other groups. However, the plot shows why the delayed post-test results show that this significance wasn't sustained as the results of the two other groups also increased to be similar to the explicit instruction group's results. This means that with more time the other two groups improved as well.

The following section will summarise the results of this instrument.

### 6.3.2.3. Sentence repetition task: summary of results

The post- intervention results of the sentence repetition task can be summarised as follows:

- a) The two experimental groups showed improvement on the overall accuracy scores of the post-tests when they were compared to their pre-tests. This improvement was not found with the uninstructed control group results.
- b) All three groups including the uninstructed control group improved from pre-test to post-test in producing the target articles in [-definite] [ $\pm$ plural] contexts.
- c) The uninstructed control group's score on the [+generic] [-plural] improved significantly in the delayed post-test.
- d) The explicit instruction group showed significant improvement in two contexts: [+generic] [-plural] and [-definite] [ $\pm$ plural] with relative clause when compared to pre-tests and the control group.
- e) The explicit instruction group's significant improvement was sustained on the long-term but the other two groups also improved in the delayed post-test.
- f) The results of the implicit instruction group on the [+generic] [-plural] was not significantly different from the explicit group in the post-test and the control group's results also improved in the delayed post-test to a similar level.
- g) The results of the implicit group and control group on the [-definite] [ $\pm$ plural] with relative clause also improved in the delayed post-test to a non-significant difference when compared to the explicit group.
- h) The results of the explicit instruction group should be interpreted in light of the higher proficiency level of the group since language proficiency was confirmed to be a confounding variable.

### 6.3.5. Written production task post-tests

#### 6.3.5.1. Written production pre- & post-test comparison

To answer RQ 2 on whether the classroom input will have an effect on the post-test scores of each group compared to their pre-tests, a non-parametric test was conducted between the pre-tests and post-tests of each group. The Wilcoxon Signed Rank Test was used because it is designed for repeated measures when subjects are measured on two occasions. Table (67) shows the result of the Wilcoxon test between the written task pre-tests and post-tests with no statistically significant difference found for all groups on all questions except the explicit instruction group on the [-definite] context. Recall that the explicit instruction group was the only group that recorded a low score on this context pre-test with a significant difference from native speakers unlike the other two groups.

Table 67 Main study written task Wilcoxon test for the groups' total scores in the pre-test and post-test

	Implicit Instruction		Explicit instruction		Uninstructed control	
	Z	p	Z	p	Z	p
1- [+generic]	-.604 <sup>b</sup>	.54	-1.732 <sup>b</sup>	.08	-1.633 <sup>c</sup>	.1
2- [+generic]	-.272 <sup>b</sup>	.78	-1.378 <sup>c</sup>	.16	-.447 <sup>c</sup>	.65
[-definite]	-1.314 <sup>b</sup>	.18	-2.575 <sup>b</sup>	<b>.01*</b>	-1.342 <sup>b</sup>	.18
1-[-definite] RC	-.052 <sup>b</sup>	.95	-.514 <sup>b</sup>	.6	-1.480 <sup>c</sup>	.13
2-[-definite] RC	-.272 <sup>b</sup>	.78	-.542 <sup>c</sup>	.58	-1.518 <sup>c</sup>	.12

\*The mean difference is significant at the 0.05 level.

The non-parametric Mann-Whitney test was conducted between the results of the three groups to answer RQ2 & 3 looking for a significant improvement in the post-test results. The test didn't find any significant difference between the three groups in the post-test. Moreover, the previous difference found on the pre-test of the second relative clause question between the explicit and implicit group when compared to the control is not found in the post-test as shown in table (68) below.

Table 68 Main study written task post-test Mann-Whitney between the three groups of second language learners

	[-definite]	[+generic]	[+generic]	[-definite]	[-definite]
				RC	RC
<b>Implicit instruction &amp; Explicit instruction</b>					
<b>Mann-Whitney U</b>	231.000	209.000	231.000	231.000	242.000
<b>Wilcoxon W</b>	484.000	462.000	484.000	484.000	495.000
<b>Z</b>	-1.000	-1.033	-.344	-.314	.000
<b>Sig. (2-tailed) p value</b>	.317	.302	.731	.753	1.000
<b>Implicit instruction &amp; Uninstructed control</b>					
<b>Mann-Whitney U</b>	104.000	108.000	91.000	106.000	103.000
<b>Wilcoxon W</b>	159.000	361.000	344.000	161.000	158.000
<b>Z</b>	-.582	-.101	-1.078	-.194	-.452
<b>Sig. (2-tailed) p value</b>	.561	.919	.281	.846	.651
<b>Explicit instruction &amp; Uninstructed control</b>					
<b>Mann-Whitney U</b>	99.000	97.000	96.000	101.000	103.000
<b>Wilcoxon W</b>	154.000	152.000	349.000	156.000	158.000
<b>Z</b>	-1.483	-.738	-.842	-.445	-.452
<b>Sig. (2-tailed) p value</b>	.138	.461	.400	.657	.651

### 6.3.5.2. The percentage of article choice

To fully answer RQ3 on the possible effect of instruction on improvement from the pre-test another Chi-square was conducted on the post-tests. Tables (69 & 70) show the results of the generic first and second questions of the pre- & post-tests together.

Table 69 Main study written task pre-& post-test Chi-square test on the first generic question

	Implicit instruction group		Explicit Instruction group		Uninstructed control group	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
No generic reference or use of articles	0.0 % (0)	0.0 % (0)	0.0 % (0)	0.0 % (0)	10% (1)	0% (0)
L1 transfer:[+definite] [+generic] <i>the</i> + NP	18.2% (4)	9.1% (2)	13.6% (3)	0.0 % (0)	20% (2)	20% (2)
[+definite] [-generic] <i>the</i> + NP	13.6 % (3)	22.7% (5)	22.7% (5)	18.2% (4)	20% (2)	0.0% (0)
Wrong combination: <i>a</i> [+plural]. Or $\emptyset$ [-plural]	4.5% (1)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	10 % (1)
Target use [-definite] [+generic]: <i>a</i> [-plural] or $\emptyset$ [+plural]	<b>63.6%</b> (14)	<b>68.2 %</b> (15)	<b>63.6%</b> (14)	<b>81.8 %</b> (18)	<b>50.0%</b> (5)	<b>70.0 %</b> (7)
<b>Total <i>n</i></b>	22		22		10	
Pre-test	Chi-square 11.989 $p >.447$					
Post-test	Chi-square 20.935 $p >.051$					

Table 70 Main study written task pre-& post-test Chi-square test on the second generic question

	Implicit instruction group		Explicit Instruction group		Uninstructed control group	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
No generic reference or use of articles	0.0 % (0)	0.0 % (0)	4.5 % (1)	9.1 % (2)	0.0% (0)	0.0% (0)
L1 transfer:[+definite] [+generic] <i>the</i> + NP	18.2 (4)	18.2 (4)	0.0% (0)	4.5% (1)	10% (1)	0.0% (0)
[+definite] [-generic] <i>the</i> + NP	4.5 % (1)	0.0 % (0)	9.1% (2)	13.6% (3)	0.0% (0)	0.0% (0)
Wrong combination: <i>a</i> [+plural]. Or $\emptyset$ [-plural]	4.5% (1)	9.1% (2)	4.5% (1)	0.0% (0)	0.0% (0)	10 % (1)
Target use [-definite] [+generic]: <i>a</i> [-plural] or $\emptyset$ [+plural]	<b>72.7 %</b> (16)	<b>72.7 %</b> (16)	<b>81.8%</b> (18)	<b>72.7%</b> (16)	<b>90.0%</b> (9)	<b>90.0%</b> (9)
<b>Total <i>n</i></b>	22		22		10	
Pre-test	Chi-square 15.130 $p >.234$					
Post-test	Chi-square 19.275 $p >.082$					

First, it should be noted that although the use of singular generics was expected, the majority of the answers of the participants were bare plural generics. Only two answers in all the pre-tests and post-tests of all three groups on the two generic questions were singular generics:

a) *I think that a woman has the right to drive.* (p.22 implicit group pre-test)

b) *A woman should drive.* (p.49 explicit group post-test)

Therefore the results of this instrument on the generic context will inform us on the [-definite] [+generic] [+plural] combination only.

The results of the Chi-square on pre-tests and post-tests do not show a statistically significant difference between the groups on both generic questions. Note that the results of the implicit instruction group target use increased from 63% to 68.2% and the L1 transfer pattern decreased from 18.2% to 9.1%. The explicit instruction group showed more increase in using the target generic from 63.6% to 81.8% and the L1 transfer pattern decreased from 13.6% in the pre-test to 0%. However, the uninstructed control group also showed an increase in using the target generic from 50% to 70% but the percentage of the L1 transfer pattern remained the same at 20%. The second generic question shows different results with the explicit instruction group scoring a lower target percentage from pre-test 81.8% to post-test 72.7% while the other two groups sustained almost similar results in both pre-test and post-test.

The result is somehow similar to the sentence repetition task in which the increase in the explicit instruction group's result was not significant when compared to the results of the control group which similarly improved in the post-tests. Thus, this instrument answers RQ3 that both types of input didn't result in a significant improvement that could be attributed to the instruction on the use of the generic plural.

The results of the [-definite] with relative clause questions are presented in the following tables (71 & 72) showing the percentages in pre-tests and post-tests.

Table 71 Main study written task pre-& post-test Chi-square test on the *first* [-definite] with RC question

	Implicit instruction group		Explicit Instruction group		Uninstructed control group	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Irrelevant answer	4.5 % (1)	4.5 % (1)	9.1% (2)	0.0% (0)	0.0% (0)	0.0% (0)
L1 transfer of restriction on RC with [+definite]: use of <i>the</i> + NP	9.1% (2)	13.6% (3)	4.5% (1)	13.6% (3)	20% (2)	0.0% (0)
Wrong combination: <i>a</i> [+plural]. Or $\emptyset$ [-plural]	22.7 % (5)	18.2 % (4)	22.7% (5)	18.2% (4)	40% (4)	40% (4)
Indefinite pronoun + NP	4.5% (1)	4.5% (1)	4.5% (1)	0.0% (0)	0.0% (0)	0.0% (0)
Colloquial referential <i>this</i> +NP	9.1 % (2)	0.0 % (0)	4.5% (1)	0.0% (0)	20% (2)	0.0% (0)
Target use [-definite] with RC: <i>a</i> [-plural] or $\emptyset$ [+plural]	<b>50.0%</b> (11)	<b>59.1%</b> (13)	<b>54.5%</b> (12)	<b>68.2%</b> (15)	<b>20.0%</b> (2)	<b>60.0%</b> (6)
<b>Total <i>n</i></b>	22		22		10	
Pre-test	Chi-square 17.357 <i>p</i> >.298					
Post-test	Chi-square 12.651 <i>p</i> >.395					

Table 72 Main study written task pre-& post-test Chi-square test on the *second* [-definite] with RC question

	Implicit instruction group		Explicit Instruction group		Uninstructed control group	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Irrelevant answer	4.5 % (1)	4.5 % (1)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
L1 transfer of restriction on RC with [+definite]: use of <i>the</i> + NP	0.0% (0)	0.0% (0)	0.0% (0)	4.5 % (1)	20% (2)	0.0% (0)
Wrong combination: <i>a</i> [+plural]. Or $\emptyset$ [-plural]	9.1 % (2)	9.1 % (2)	4.5% (1)	9.1% (2)	30% (3)	20 % (2)
Indefinite pronoun + NP	4.5% (1)	0.0% (0)	9.1% (2)	0.0% (0)	0.0% (0)	0.0% (0)
Colloquial referential <i>this</i> +NP	0.0 % (0)	0.0 % (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Target use [-definite] with RC: <i>a</i> [-plural] or $\emptyset$ [+plural]	<b>81.8%</b> (18)	<b>86.4%</b> (19)	<b>86.4%</b> (19)	<b>86.4%</b> (19)	<b>50.0%</b> (5)	<b>80 %</b> (8)
<b>Total <i>n</i></b>	22		22		10	
Pre-test	Chi-square 22.288 <i>p</i> <.034*					
Post-test	Chi-square 6.213 <i>p</i> <.718					

The result of the Chi-square on the first question is non-significant between the groups on both pre-tests and post-tests. The percentages also show an improvement for all groups from pre-test to post-test Implicit: from 50% to 59.1%, explicit: from 54.5% to 68.2% and control: from 20% to 60%. Again the high increase in the explicit instruction group's results was also found with the uninstructed control group's results rejecting the effect of input on the increase.

The result of the Chi-square on the second question was significant on the pre-test ( $p = .03$ ) showing a difference between the groups. This difference is not found in the post-test as the results of the uninstructed control increased. Accordingly, this instrument answers RQ3 that both types of input didn't result in a significant improvement that could be attributed to the instruction on the use of the [-definite] with relative clause modification.

#### 6.4. A summary of the results of the three instruments

The following summary will relate the results of the instruments to fully answer RQ6. The comparison will be on the results of the forced choice task and the sentence repetition task since the results of the written production show no significant differences after the intervention as all groups including the uninstructed control showed improvement from pre-test.

a) The results of the two instruments ‘forced choice’ and ‘repetition’ show an overall improvement on accuracy scores of the two instructional groups and no similar improvement for the uninstructed control.

b) The forced choice task showed improvement of all groups on the [+definite] context except for the explicit group in the immediate post-test. This improvement is not found in the repetition task results.

c) The sentence repetition task showed improvement of all groups on the [-definite] [±plural] context. This improvement is found in the forced choice task results of the two experimental groups only.

d) The sentence repetition task showed improvement of all groups on the [-definite] [±plural] with relative clause with a significant increase for the explicit group in the post-test only. This improvement is not found in the forced choice task results.

e) The forced choice task showed sustained significant improvement in favour of the explicit instruction group on the [-definite] [+generic] [+plural] context. This improvement is not found in the results of the repetition task.

f) The sentence repetition task showed significant improvement in favour of the explicit instruction group on the [-definite] [+generic] [-plural] post-test. This improvement is also found in the results of the forced choice task post-test. The increase was sustained in the delayed post-test of the repetition task but not found in the delayed post-test of the forced choice task.

g) Language proficiency was found to affect the results of both tasks and results should be interpreted accordingly.

## Chapter 7: Discussion & Conclusion

### 7.1. Introduction

In this chapter, the results of the experimental study will be summarised in relation to the proposed research questions and evidence will be found for/or against the proposed hypotheses of this study. In addition, the chapter will discuss the implication of the results on the adopted SLA hypotheses and theories on language acquisition and instruction. Methodological issues related to the instruments will be presented along with the shortcomings of this research. The chapter will end with a summary of findings and directions for future research.

### 7.2. A summary of the results answering the research questions

The study started with pre-tests of three different tasks before any treatment was given to the groups. The three tasks were chosen to provide results on the acquisition of English articles in different contexts through testing: a) correct choice, b) correct controlled production and c) correct free production. The same three tests were conducted after the treatment as immediate post-tests and eight weeks later as delayed post-tests.

The following is a summary answering the five research questions:

#### 7.2.1. Research question 1 on the levels of difficulty

**RQ 1.** Will the results of Najdi Arabic second language learners of English reflect the levels of feature reassembly difficulty of the proposed difficulty cline and the syntactic difficulty involving relative clause modification?

The results did show the predicted performance but only when we look at the *combined* results of the three tasks and compare them to the post-tests. However, the results also suggest that the division of feature re-assembly into problematic and non-problematic is not as strictly divided and is rather closely related to the type of instrument as follows:

- a) The forced choice task pre-tests confirmed non-target performance by all groups on the feature re-assembly difficulties of the [+generic] feature. The syntactic difficulty involving relative clause modification was also found in the results of two groups.

- b) The sentence repetition task confirmed non-target performance by all groups on all contexts in the pre-test with no different difficulty levels when compared to native speakers.
- c) The written production task showed no difficulty in producing bare plural generics but confirmed non-target performance by all groups on the syntactic difficulty with relative clause.

Those results show a striking similarity with Almahboob's (2009) results on L1 Arabic learners of English in the generic context in the forced choice and written tasks. Almahboob also found non-target results in the forced choice task and target-like results in the written production task. This led him to conclude that the difficulties found in the forced choice task was a result of the task itself that made learners aware of substitution and omission as a choice as opposed to the written task which gave them a chance to choose freely. The results are also partially similar to Sarko's (2009a, 2009b) results on L1 Syrian Arabic learners confirming a difficulty with non-generic indefinite contexts when modified by a relative clause and difficulties in singular generics. However, the written task of this study didn't provide evidence on the generic singular as learners produced only [+generic] [+plural].

We can also answer RQ1 by looking at the results of the uninstructed control group in the pre-tests and post-tests. The results of the control group in the forced choice task showed significant improvement in the immediate post-test results on the [+definite] [ $\pm$ plural] ( $p=.02$ ). The results of the sentence repetition task showed significant improvement in the immediate post-test of the [-definite] [ $\pm$ plural] context ( $p=.0001$ ). Those results show that improvement was found in the contexts that are proposed to be easier to acquire in the difficulty cline (figure 4). The only significant improvement in the more difficult generic contexts was found eight weeks later in the repetition task delayed post-test of the control group on the [+generic] [-plural] ( $p=.02$ ) confirming that learners took more time to arrive at the target use of articles with the [+generic] feature.

Accordingly, when analysing the post-test results of each task care was taken in relating the post-tests to the pre-tests to find a significant change that can be attributed to the intervention and not found with the uninstructed control group. At the same time these differences found in the pre-tests showed that the type of task was an important factor in the assessment and any conclusions should be linked to the type of task and eventually the type of knowledge exhibited by the task as will be detailed later in (7.3).

### 7.2.2. Research questions 2&3 on the two types of input

**RQ 2.** Will the classroom input provided by this study result in improvement from the pre-tests?

**RQ 3.** Which type of “input” would be more effective improving the ILG of the learners: (a) Implicit reinforced input, or (b) Reinforced input with explicit focus on form.

The analyses showed that the results of the two instruments ‘forced choice’ and ‘repetition’ show an overall improvement on accuracy scores of the two instructional groups and no similar improvement for the uninstructed control. In the forced choice task, the results of the two instructed groups significantly improved (implicit:  $p=.032^*$ , explicit:  $p=.0001^*$ ) while the uninstructed control group didn’t ( $p=.264$ ). Similarly, in the sentence repetition task (implicit:  $p=.001^*$ , explicit:  $p=.0001^*$ , control:  $p=.402$ ).

Accordingly, we can answer RQ2 that the two types of instruction resulted in improvement from the pre-tests.

To answer RQ3 on which type of instruction affected the predicted difficulties showing improvement in the learners’ ILG we need to look at the detailed results of the tasks.

- a. The results of the forced choice task show improvement in the explicit instruction group’s target use of articles on the feature re-assembly difficulties involving [-definite] [+generic] [ $\pm$ plural] combinations.
- b. The results of the sentence repetition task show improvement in the explicit instruction group’s target use of articles on the feature re-assembly difficulties on the [-definite] [+generic] [-plural] only in addition to improvement on the target use of articles on the syntactic difficulty in [-definite] contexts with relative clause modification.
- c. The results of the written production task show that learners from the three groups improved in using the target articles on all contexts.

However, with language proficiency taken into consideration, the effect of explicit instruction might have been supported by the fact that this group had a low percentage of elementary level learners.

### 7.2.3. Research question 4 on the long-term effect

**RQ 4.** Will the effect hold over the eight-weeks delayed post-test period?

- a) The effect of the ‘reinforced input with explicit focus on form’ that was found in the immediate post-test of the forced choice task was sustained when learners were tested after eight weeks on the [+generic] [+plural] and remained significantly higher when compared to the other two groups.
- b) The effect of the explicit input that was found in the immediate test of the sentence repetition task was sustained on the [+generic] [-plural] and on the [-definite] with relative clause but didn’t remain significantly higher when compared to the other two groups.

Therefore, we could confirm that the ‘reinforced input with explicit focus on form’ had some effect on the generic feature re-assembly and the syntactic difficulty with relative clause when learners were tested immediately after the instruction and eight weeks later as they retained the knowledge they have acquired. This means that the instruction did *accelerate* the re-assembly process resulting in faster improvement when compared to the results of the other two groups.

### 7.2.4. Research question 5 on the effect of language proficiency

**RQ 5.** Will the language proficiency have an effect on the results?

Yes language proficiency was found to have a positive effect on the accuracy results of the two tasks: forced choice and sentence repetition. In order to fully understand the effect we must look at how language proficiency levels were found in the three intact groups by looking at table (26) from chapter five.

Table 26 Main study participants proficiency on the Oxford Quick Placement Test

Group	Elementary	Lower Intermediate	Upper Intermediate	Total students
Implicit instruction group	7	10	5	22
Explicit instruction group	3	15	4	22
Uninstructed control group	3	6	1	10

Note that the percentage of low elementary level participants is higher in the implicit group and uninstructed control. However, the majority of learners of all groups fall into the lower intermediate level. With proficiency as a factor we might say that the explicit instruction is effective when paired with intermediate level proficiency.

### 7.2.5. Research question 6 on the effect of the instruments

**RQ 6.** Will the results vary across the instruments?

Yes there was a clear difference between the results of the three instruments.

1. **The forced choice task** showed a pre-test difficulty in singular and plural generic contexts then post-test improvement in favor of the explicit instruction group on plural generics only. The task confirmed a persistent difficulty in the [-definite] with relative clause that wasn't affected by instruction.

2. **The sentence repetition task** showed a pre-test difficulty in all contexts then post-test improvement in favor of the explicit instruction group on the generic singular only and the indefinite with relative clause.

3. **The written task** showed improvement for all groups (including the control) on the indefinite with relative clause. The task didn't confirm a difficulty in the generic context among all groups' pre-tests and post-tests.

A discussion of the effect of the tasks on the contexts will follow.

### 7.3. Discussion of the instruments and type of knowledge

One of the issues raised at the start of this project was the inclusion of different instruments to investigate the data from different perspectives. After consulting previous research and considering time limitations, this study employed the following instruments: a) the forced choice task (adapted from Ionin, Ko & Wexler, 2004 and Hawkins et al, 2006), b) the sentence repetition task (adapted from Pierce & Ionin, 2011 and Snape & Yusa, 2013) and c) the written production task (adapted from Ionin, 2003 and Sarko, 2009b).

Recall how the tasks were described in relation to the type of knowledge they are expected to elicit as detailed in table (32) from chapter five.

Table 32 Main study instruments

<b>Forced choice task</b>	<b>Sentence repetition task</b>	<b>Written production task</b>
Constrained choice	Constrained production	Free production
Explicit knowledge	Explicit/implicit knowledge	Implicit knowledge
Focus on form	Focus on meaning & form	Focus on meaning

The forced choice task was revised after the pilot study and the contexts targeted by the study were included. The task allowed for flexibility in adjusting the items to exclude and separate contexts. However, these specific results obtained by this task provide evidence on more explicit types of knowledge. As such the task had to be supported by other tests that give chance to more implicit types of knowledge as well. The effect of explicit instruction was found to affect the explicit instruction group's post-test results showing significant improvement on the generic contexts and the indefinite. The effect of instruction was the greatest with the [+generic] [+plural] context of this task as the results of the two post-tests showed significant differences between the explicit instruction group and the other two groups. This would mean that explicit instruction strongly affects explicit knowledge. However, when tested eight weeks later we can't dismiss the fact that this explicit knowledge was retained and may have turned into implicit knowledge as will be explored in (7.4.4).

Another fact that has to be noted is that the *implicit* instruction group's overall results also improved significantly on this task's post-test showing a difference from the uninstructed control group. In addition, another significant improvement was found on the [-definite] [±plural] of the implicit instruction group's results and not found with the control group.

The forced choice task could benefit from adding more [+definite] combinations to confirm the predictions on [+definite] [±specific] contexts and to compare [+definite] generics to the [-definite] generic items since feature re-assembly affected [+definite] contexts as well as we have seen in the results of the explicit group's post-tests.

On the other hand, the sentence repetition task as described earlier involves the constrained production of the exact sentences that learners hear from a native-speaker recording. The correct answers mean that learners correctly "identified" articles in spoken utterances then correctly produced them. As such, the task gives more insight on more implicit types of knowledge as learners filter the language they hear by their own ILG. The results show improvement in the overall accuracy of this task for both the explicit *and* implicit instruction groups. However, the explicit instruction group also did better on this task on many noun contexts -similar to the forced choice task- with significant improvement in the feature re-assembly difficulty of the [+generic] [-plural] and the syntactic difficulty with the [-definite] [±plural] with relative clause. This means that the explicit instruction provided by this study did affect the type of knowledge that

was tested by a controlled production task which may involve the use of more implicit types of knowledge. This also means that explicit instruction affected the *speed* of acquisition especially when we consider that the other two groups improved as well in the delayed post-tests.

Finally, the written task was a short task involving three sections: a) short question asking for a short one-sentence answer, b) two pictures asking for a short description of the issue, and c) fill in the blanks. The written production task was designed to be short because of the limitation of time when using three instruments at three times with three groups of participants. A drawback of the written task is that although it is written to elicit certain contexts, there is actually no control over the contexts produced by the participants as was found in previous studies (Ionin, 2003; Sarko, 2009b). This was clearly found with the generic contexts that involved the description of the pictures as described above when a number of learners avoided using the generic context which affected the results of this context contradicting the finding of the other two instruments. Moreover, participants always produced the generic plural which leads to the question on whether the generic singular could be elicited through a production task. The more controlled fill-in-the-gap part of the task provided more clear results on the [-definite] with relative clause context but didn't show improvement that could be related to the instruction. As such, the written production task of this study didn't provide evidence for the predicted difficulties or the role of input in the acquisition process.

In order to better understand the results of the written task, we need to look closely at the statistical power of the analyses. For example, the target-like performance in the written task pre-test could be related to the short task and statistical power. It is important to note that the results of the Chi-square test although not statistically different from native speakers do show a high percentage of non-target errors in the overuse of the definite article. For example, the results of the first generic question (with a picture of two children eating junk food) show that learners chose to use the article *the* when describing the picture (implicit instruction group 31%, explicit instruction group 36.3%, and uninstructed control 40%). Those high percentages could have marked a significant difference from native speakers but the analysis excluded "definite contexts without making generic reference to the issue".

This signals an important factor in analyzing production data which is “avoidance”. A considerable percentage of learners *avoided* using generic reference to the issue (13.6% implicit, 22.7% explicit, 20% control) and described the pictures using anaphoric reference like for example “The two boys are eating...”. This was also found with the second question using sentences like “The woman in the picture is driving a car...”. Those non-generic sentences were grammatical and were not included as incorrect use of generic nouns but they show that learners avoided generic reference when answering the question which clearly asked for a description of the ‘issue’. In comparison, native English speakers didn’t show the same pattern and they used generic nouns in both questions with the exception of only one answer in the whole task. This explains the limitations of production data as explained by Whong et al (2014) because it can never show the whole picture of the underlying L2 knowledge “in terms of grammaticality or interpretation.” (p.556).

Another point that was noted after analyzing the data is that the tasks of this study didn’t include a [+definite] generic context. The inclusion of definite singular generics in the tasks and in the instruction could have given us more perspective on the acquisition of generics by L1 Najdi Arabic learners. The fact that English has sentence-level and NP level generic NPs while L1 Najdi Arabic expresses those levels of generic interpretation by encoding them onto one morpheme *al* should be explored in more detail. Recall that the results of the explicit instruction group in [+definite] contexts decreased immediately after the instruction to be non-target like when the group’s results on the [-definite] [+generic] [+plural] reached target performance.

#### **7.4. Discussion of findings in relation to SLA theories**

The answers to the research questions presented above provide evidence for a number of theories about SLA that have been reviewed in chapter 3: Full Transfer/ Full Access (Schwartz & Sprouse, 1996), Form-meaning mappings following the Feature Re-assembly Hypothesis (Lardiere, 2008), the Bottleneck Hypothesis (Slabakova, 2008) reaching the description of difficulties following a contrastive analysis of features (Lardiere, 2009; Slabakova, 2009). In addition to the theories on the role of input in SLA that were reviewed in chapter 4: the language processing model MOGUL (Truscott & Sharwood Smith, 2004; Truscott, 2015), and the meaning-based analytic syllabus with focus on form (Long, 1991).

#### 7.4.1. Full Transfer/ Full Access

The results of the forced choice task pre-tests provide support for the Full Transfer/Full Access hypothesis by showing that the ILG of this level of L1 Najdi Arabic speakers exhibits a) L1 grammatical properties, and b) restructuring away from L1 grammatical properties. The two contexts that revealed this were the contexts involving the [+definite] feature and the [-definite] feature without relative clause:

The results of the forced choice task show:

- 1) Steady improvement on the use of target articles with the [+definite] feature across the three times. This provides evidence for initial mapping of L1 features of *al* onto the L2 article *the*. The decrease in the results of the explicit group's post-test also show evidence of re-assembly as learners disentangle the [+generic] features from L1 *al* onto the target  $\emptyset$  and *a*. At this stage learners may have overgeneralized the rule until more input leads them to the correct mappings.
- 2) The results of the use of target articles with the [-definite] [ $\pm$ plural] features showed target performance in using the target *a* &  $\emptyset$  on the pre-test of the explicit and control groups. Significant improvement was also found in the results of the implicit group in the post-tests showing restructuring away from L1 properties.

The results of the sentence repetition task show:

- 1) The results of the [-definite] [ $\pm$ plural] context improved significantly from pre-test for all three groups showing restructuring from L1.
- 2) The results of the [+definite] contexts didn't show improvement unlike the results of the forced choice task maybe because the context is affected by the mapping of the generic features.

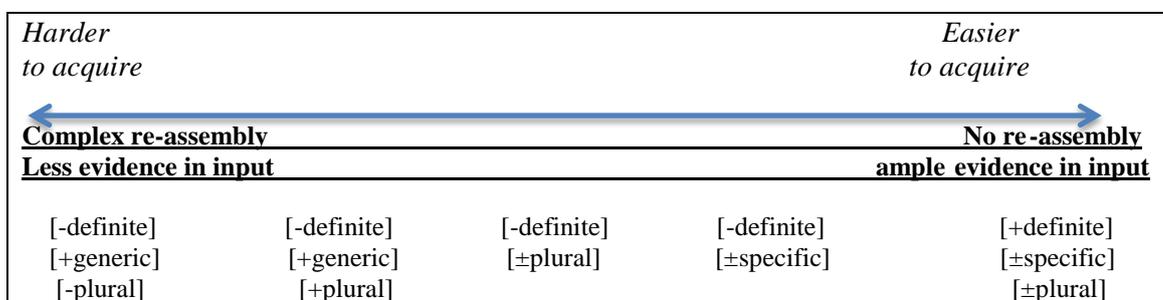
The results of the written task show target performance in the [-definite] without relative clause of all three groups in the pre-test and improvement in the post-test results of the explicit group as well. The [+definite] context was not tested in the written task.

### 7.4.2. The predictions following a contrastive analysis of features

This study started out with an outline of the features related to English articles in different noun contexts as acquired by L1 Najdi Arabic speakers. The outline specified the contexts that were predicted to be easier to acquire because of easier mapping actions and ample evidence in the input to those that require more complex re-assembly operations with less evidence in the input following a contrastive analysis of features (Lardiere, 2009; Slabakova, 2009).

The re-assembly predictions that were explained in chapter 3 and adopted in this study with L1 Najdi Arabic speakers in the acquisition of English articles involve generic contexts as shown in figure (4):

Figure 4 A difficulty cline based on a contrastive analysis of features on the acquisition of English articles by L1 Najdi Arabic speakers



According to this description, acquiring the target use of *a* &  $\emptyset$  for [-definite] [±plural] is predicted to be easier than acquiring the use of articles with the [+generic] feature. The generic singular is also predicted to be more problematic than the generic plural and the most difficult context to acquire by L1 Najdi Arabic speakers.

Evidence for the predictions of the difficulty cline is found when looking at the pre-test and post-test results of all groups.

- 1) The results of all groups on the [-definite] [± plural] context as explained above in the previous section supports the placement of this context on the difficulty cline as easier to acquire than generics for less complex re-assembly with ample evidence in the input.
- 2) The results of the [-definite] [+generic] [+plural] varied across the instruments as all groups were not target-like in the forced choice task and sentence repetition pre-test but the written production showed that they were all target-like. Explicit instruction was found to improve accuracy on this context in the forced choice task immediate and delayed post-tests. This means that this type

of instruction was sufficient to accelerate the re-assembly of L2 features for the generic plural. The effect of explicit instruction on the generic plural was not found in the sentence repetition task.

- 3) The results of the [-definite] [+generic] [-plural] was found to be problematic in the pre-tests of all groups in the forced choice and sentence repetition tasks. Explicit instruction was found to improve accuracy on this context in the forced choice and sentence repetition task post-test. The effect of explicit instruction over the two other groups was not sustained in the results of the delayed post-tests.

#### **7.4.3. The syntactic difficulty with relative clause modification**

The results of this context vary across the tests. The results of the forced choice task show that the two groups that were not target-like didn't show any significant improvement in the post-tests. In contrast, the results of the repetition task show an improvement in the post-test of the explicit instruction group and the written task shows improvement on the uninstructed control group's results.

The results support the observation made by Sarko (2009a; 2009b) that the difficulties in indefinite specific contexts in the earlier version of the forced choice task was not a result of fluctuation related to specificity as concluded by Almahboob (2009) but rather a result of the presence of a relative clause and transfer of L1 restrictions.

These results suggest that this context is problematic for learners when the task gives them substitution and omission as choices. Improvement found in the results of the other two tasks that involve free production (the writing task) and constricted production (the repetition task).

Finally, the results of the explicit instruction group in the sentence repetition task post-test supports the claim that the instruction was successful in making learners realize that the L2 doesn't have the L1 syntactic restriction on indefinite nouns modified by a relative clause.

#### 7.4.4. A modular dual knowledge view: MOGUL

Recall that this study adopted MOGUL (Sharwood Smith, 2004; Truscott & Sharwood Smith, 2004; Truscott & Sharwood Smith, 2011) as a language processing model that allows for the development of modular and non-modular linguistic knowledge. The acquisition of a linguistic property is proposed to occur through the reinforcement of input which leads to a higher activation level in order for the linguistic item to become part of the permanent language store. Linguistic items that learners seem to acquire naturally become part of the modular store while learned metalinguistic items *can* become part of the non-modular store. The model allows us to make assumptions about the effect of instruction as it suggests the concept of “metafluency” where those items that received explicit instruction *can* become automatic and effortless.

It is crucial to restate that this study isn’t trying to make assumptions about the type of knowledge that was acquired or learned. The aim is to find out if the instructional treatment led to the development of knowledge that could be described as automatic, effortless and part of a permanent knowledge store. To answer this question we must look at the two types of instruction again and look at how they affected the results differently.

It was explained earlier (7.2.2) how each type of input affected the different noun contexts. Therefore, in this section I will limit the description to the effect of input on L2 knowledge after the instruction and the long term effect without looking at all the other details. The aim is to relate the type of instruction to the learned L2 knowledge. Since we don’t want to make claims about the type of knowledge whether explicit or implicit we could look at three conditions that are required for the type of knowledge targeted by this study: 1) Significant improvement from the pre-test, 2) Faster improvement in areas outlined in the difficulty cline, 3) Faster improvement on the syntactic difficulty with relative clause and 4) Long-term improvement. Table (73) will summarise how those conditions were met with each type of instruction and task.

Table 73 Conditions on the type of targeted knowledge as achieved by the instruction groups

Conditions:	Explicit instruction group			Implicit instruction group			Uninstructed control group		
	FC	R	W	FC	R	W	FC	R	W
Significant improvement from the pre-test	✓	✓	×	✓	✓	×	×	×	×
Faster improvement in areas outlined in the difficulty cline	✓	✓	×	×	×	×	×	×	×
Faster improvement on the syntactic difficulty with relative clause	×	✓	×	×	×	×	×	×	×
Long term effect	✓	✓	×	×	×	×	×	×	×

\*FC: Forced choice task R: Repetition task W: Written production task

As shown in table (73), the explicit instruction group was the group that met most of the conditions. The theoretical framework of this study used the language processing model MOGUL to allow for providing explicit instruction in the classroom as it explains that explicit knowledge could be stored and accessed automatically in a non-modular store. However, we can't arrive at a definite conclusion that this is exactly what happened with the participants of this study. The actual process in the mind of language learners isn't a clear cut case and would need rigorous testing with instruments outside the scope of this study to confirm such assumptions. What we can conclude is that regardless of whether the knowledge has become part of a modular or non-modular store, the *performance* of the learners shows a positive effect of the explicit instruction on L2 knowledge that increased, became similar to target knowledge, and didn't fade away with time.

#### **7.4. Discussion of the instruction**

This study adopted Whong's (2011) suggestion of combining genre analysis with focus on form to foster all types of L2 knowledge. Focus on form was suggested (Long, 1991, Long & Robinson, 1998) as an analytic approach with a shift of attention to the linguistic form through explanations, discussion or correction between teachers and students. The genre approach was suggested to provide the meaning-based input then the chosen texts were reinforced by the target structure to provide an implicit type of input without explicit focus on the form.

The results suggest that the analytic focus on form was indeed successful for learners to develop knowledge on the targeted structures as explained earlier. The combination with a genre-analysis approach was beneficial as it provided lessons that were structured and interesting for learners. It was observed that learners were engaged in the lesson from the start as they listen and read to reach meaning and analyze structure.

The objective of this research was to reach a conclusion about: a) the type of instruction and b) the amount of instruction needed to accelerate the complex re-assembly process that faces language learners with some linguistic properties. The instructional treatment involved 12 hours of instruction during five weeks. The lessons were divided as follows:

- a) Five lessons targeted reading and listening to text, genre analysis, grammar focus, grammar exercise.
- b) Five lessons targeted production through writing activities after warm up and recap of major grammar rules.
- c) Two lessons targeted analysis of similar texts and revision of rules.

Table (36) from chapter five shows the explicit grammatical rules provided to the explicit instruction group through four major lessons<sup>25</sup>.

Table 36 Main study targeted noun types explicit rules

	Lesson	Grammatical Rule
1	One	The English language has three articles: the, (a/an), Ø
2	One	The zero article Ø is the most frequently occurring free morpheme in the English language.
3	One	When to use the zero article? Mass non-count :I have Ø Milk Plurals: I have Ø eggs. Generics: I saw Ø Children. Abstract concept: Ø Prison kills the soul.
4	Two	Noun-level generics: Refer to a well-established (kind) with a verb that describes this kind: Use: the+ sing or Ø+ plural
5	Two	Sentence level generics: State generalizations based on properties of individual objects. Use: a+ sing or Ø+ plural
6	Three	A relative clause is a clause that modifies the noun. Relative clauses can appear with or without a complementiser (that, which, who..)
7	Three	Relative clauses with nouns: If the noun is indefinite: A car :It becomes a defining relative clause: A car that gets 50 miles per hour.
8	Three	Relative clauses with nouns: If the noun is definite The car: It becomes a limiting relative clause The car that won the race.
9	Six	(The) is not generic: The general function of the is to identify that the speaker and hearer identify the noun. The article the occurs with non-generic nouns and is always interpreted non-generically at first. It is used rarely to indicate generic reference in very specific cases with singular nouns (the dinosaur, the bear, ...) When the article the is with a plural noun it is never generic.
10	Six	Generic plurals and regular plurals: When you are talking about a specific group of people or a plural noun you can use (the + plural). A generic plural is different because you are talking about the kind or a generalization not a specific thing or group.

The results could be interpreted in light of the instruction as follows:

- 1- Explicit instruction that was presented to learners after attention to meaning of authentic texts that were reinforced with the target structures was beneficial.
- 2- Explicit instruction was more effective than implicit instruction.
- 3- Learners realized to a certain extent after the explicit instruction how to re-assemble the target features and that the L1 syntactic restriction wasn't required in the L2.
- 4- The mixed results of the tasks may signal that the *amount* of instruction should increase in order for learners to develop the concepts. The explicit grammatical rules could be repeated to reach eight lessons instead of four.

<sup>25</sup> Note that revisions, explicit exercises, corrections and explanations also supported these four lessons as described above.

- 5- The context that was most affected by the instruction was the generic plural and the reason could be because the lessons focused on this context more than the other two contexts.
- 7- The instruction didn't affect the generic singular context. The reason behind that as discussed above could be the complexity of the re-assembly process but there might be another factor related to the instruction itself that aimed at accelerating the re-assembly process. Note that the explicit generic singular rule was presented as an explicit rule in lesson two while the generic plural was included in lesson two and repeated in a different way in lesson six. Moreover, in lesson two it was mentioned as equally interchangeable with the bare plural. Although the structure was discussed again throughout the lessons through analysis and exercises, the results suggest giving more attention to this structure in the explicit description of the grammatical rule and clearly addressing the restrictions on sentence-level and NP level genericity.
- 8- The instruction might be more effective with the inclusion of definite singular generics for comparison.

Therefore, this study suggests that the explicit instruction following an analytic focus on form on reinforced texts is indeed recommended to improve learners' ILG. The amount of instruction could benefit from an increase in the lessons provided and more details on English generic interpretation expressed by definite and indefinite NPs.

## 7.5. Evidence for and against the hypotheses of the study

In this section I will summarise the effect of the results and the discussion above on the hypotheses of this study:

*In accordance with the semantic universal features of articles (Ionin, Ko, & Wexler, 2004; Ionin & Montrul, 2010, Ionin et al, 2011), the FT/FA (Schwartz & Sprouse, 1996), and the contrastive analysis of features (Lardiere, 2008, 2009, Slabakova, 2009):*

**H 1:** *The acquisition of the use of the article the in [+definite] combinations will not be problematic as learners will transfer their L1 knowledge. The acquisition of the use of an overt article a in [-definite] [-plural] combinations will involve simple feature re-assembly supported by ample evidence in the input. On the other hand, more complex feature re-assembly along with less evidence in the input will lead to more difficulties in acquiring the [-definite], [+generic] combination. Difficulties are also expected in [-definite] contexts with relative clause modification.*

The findings of the forced choice task support the hypothesis but the results of the repetition task give another perspective. The repetition task didn't show target performance on the pre-test of the [+definite] context and no improvement in the post-test. As learners advance in their L2 knowledge the transfer of L1 properties of the definite article might face some difficulties that were not anticipated by previous research (Almahboob, 2009; Garcia Mayo, 2009; Hawkins et al, 2006; Sarko, 2009a, 2009b). This doesn't necessarily reject the FT/FA but rather suggests that the re-assembly process that involves the [+definite] feature may lead to developmental errors in [+definite] contexts as we have seen in the immediate post-test results of the explicit instruction group in the forced choice task. The instruction that aimed at accelerating the re-assembly process may have given us a picture of the stages that learners will go through which involve a stage of non-target [+definite] results.

The results of the written task doesn't provide evidence for the mapping of the [+definite] feature but it does show that learners performed well on the [-definite] [+specific] question with improvement found on the post-test of the explicit instruction group. The task doesn't support H1 as it shows that learners performed well on the [+generic] [+plural] combination in pre-test and post-test.

*In accordance with Whong (2007, 2011) on using focus on form (Long, 1991) and genre analysis (Swales, 1990) to foster the acquisition of both modular and non-modular knowledge (Truscott & Sharwood Smith, 2004; Truscott, 2015):*

**H 2:** *The group that received explicit reinforced input will show improvement and accuracy in the post-tests when compared to the pre-test and to the implicit instruction group and both groups will perform better than the uninstructed control group. The explicit instruction is expected to show long term effect.*

Findings show support for this hypothesis because the explicit instruction group did achieve and sustain improvement marking a difference in the results when compared to the other two groups. The results suggest more instruction time to allow for the acceleration of feature re-assembly and recovery from L1 in all the target contexts. The results also support that both experimental groups performed better than the uninstructed control group as the implicit instruction group showed improvement from the pre-tests not found with the control group.

## **7.6. Shortcomings**

Similar to other research, this study tried to control for variables that may affect the results. The study targeted students at level 7 in the English department at KSU in Riyadh which allowed for control over age, proficiency level, and L1 background. However, other issues came up involving the control group and instructional treatment. It was necessary to have a control group to allow for comparison with the experimental groups and the availability of a third section of students at the same level taking the same course allowed for this. The teacher of the control group was approached at the beginning of the semester and her help was crucial to allow for time to conduct the pre-test and post-tests. There was no control over the lessons the control group received but the teacher was asked to not give direct or indirect instruction on English articles. The participants at this level only take content courses with no grammar or language courses. The experimental groups were instructed not to share any instruction or material with the other groups but further control over this variable outside the class is not possible as some students may do extra work or exchange information regardless of the instructions not to.

Another limitation found in experimental research is finding large numbers of participants committed to the research from start to end. This limitation was also encountered in this study and resulted in the initial number of participants who first signed up to take the course to decrease to those who didn't drop the course and attended all the lessons and pre- and post-tests. One way to resolve this to ensure an acceptable number of students to participate was to reward students with grades and being the researcher and teacher of this class I was able to do so because the research content was related to the course objectives and learning outcomes.

### **7.7. Summary and directions for future research**

The current research adopted a GenSLA view of the acquisition of English articles following the findings of the major studies on the semantic universals of definiteness and specificity (Hawkins et al, 2006; Ionin, Ko, & Wexler, 2004) and genericity (Ionin et al, 2011). Theories on the acquisition process, the role of L1, and form-meaning mappings provided the detailed analysis of the difficulties facing learners (Cho & Slabakova, 2015; Schwartz & Sprouse, 1996; Slabakova, 2008; Lardiere, 2008; 2009). Accordingly, three problematic properties of the English indefinite contexts facing the L1 Arabic speakers targeted by this study were defined as feature re-assembly difficulties with the [+generic] feature and syntactic difficulty with relative clause modification (Azaz, 2014; Almahboob, 2009; Sarko, 2009a, 2009b). The findings of the different instruments provide support for the proposed difficulty cline.

The study followed the proposals made by White (1989, 1991) to define the type of input that could resolve “unlearnability” problems facing language learners on certain L2 grammatical properties. This study proposed “instruction” on the problematic areas to accelerate the assembly process and recovery from L1 transfer. Two types of instruction were provided: a) explicit instruction and b) implicit instruction in order to define the type of instruction that will result in sustainable target-like knowledge. Snape & Yusa (2013) conducted an experimental study giving three hours of instruction during three weeks on specificity and genericity but their results were inconclusive suggesting that the amount of instruction wasn't enough.

To overcome problems with the amount of instruction that faced many previous studies (Gil, Marsden & Whong, 2013; Hirakawa, 2013; Trahey & White, 1993;

Trahey, 1996) this research involved 12 hours of instruction over the course of four weeks. The explicit instruction resulted in improvement on some of the targeted contexts but the results of the instruments varied.

Directions for future research could involve considering the amount of instruction when designing similar research by looking at experimental designs that target long-term instruction for periods of four months and over. This would give the chance to elaborate on each rule and context without boring the learners as instruction would be repeated over a long period of time rather than having lessons all given in four consecutive weeks. Another thing is to look at how instruction on the perception of articles could affect the results on the problematic contexts by including computer-based perception activities as found in Snape & Yusa's (2013) study.

One important issue to consider in future research is the choice of measurements that would test the assumptions of the study and bring out the use of the targeted contexts. The use of 'online' tasks is suggested to give more evidence on the effect of instruction on the type of knowledge. It is also necessary to refine the written production task and include [+definite] contexts while allowing for more lengthy free production to arrive at better conclusions. Other measures of production data could be used such as the oral production task used in Hawkins et al (2006) and Snape (2006) which examines articles in speech as learners listen to a short story then they are given written prompts to help them recall the story orally. Moreover, the use of grammaticality judgment tasks similar to the task in Ionin et al (2011) could add perspective on the subtle differences between how learners master certain L2 rules and how they restrict the use of linguistic properties in certain contexts.

All in all, the main contribution of this study shows that GenSLA theories could indeed inform classroom instruction by shedding the light on the areas of language that could benefit from instruction because of form-meaning mapping difficulties through a contrastive analysis of features (Lardiere, 2009; Slabakova, 2009). In this regards, Cho & Slabakova (2015) recently asserted the "effectiveness of investigating the acquisition of L2 semantic features and functional morphology, as well as their instruction, from the point of view of the feature-based contrastive approach." (p.20)

More research is called for to refine the 'type' and 'amount' of instruction or what could be described as the *quantity* and *quality* of instruction needed to accelerate re-assembly processes and recovery from L1 transfer. Instruction which is informed by

generative theory is proposed to be effective in fostering the type of L2 knowledge that is described as being target-like, effortless, and retained by learners after time. Findings of such studies will serve as a shared ground informing both researchers and language teachers about language development and classroom instruction.

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## Appendices A: Research Ethics Documents

### Appendix A1: The ethical approval letter

Performance, Governance and Operations  
 Research & Innovation Service  
 Charles Thackrah Building  
 101 Clarendon Road  
 Leeds LS2 9LJ Tel: 0113 343 4873  
 Email: [j.m.blaikie@leeds.ac.uk](mailto:j.m.blaikie@leeds.ac.uk)



**UNIVERSITY OF LEEDS**

May Abumlhah  
 School of Modern Languages and Cultures  
 University of Leeds  
 Leeds, LS2 9JT

**PVAR Faculty Research Ethics Committee  
 University of Leeds**

14 February 2016

Dear May

**Title of study:** The role of input in the acquisition of English articles: An investigation into interface difficulties.  
**Ethics reference:** PVAR 11-095

I am pleased to inform you that the above research application has been reviewed by the Arts and PVAC (PVAR) Faculty Research Ethics Committee and I can confirm a favourable ethical opinion as of the date of this letter. The following documentation was considered:

Document	Version	Date
PVAR 11-095 Ethical_Review_Form_V3_MayAA.pdf	1	14/07/12
PVAR 11-095 InformationSheet_MainStudy_MayAA.pdf	1	14/07/12
PVAR 11-095 InformationSheet_PilotStudy_MayAA.pdf	1	14/07/12
PVAR 11-095 ConsentForm_MayAA.pdf	1	14/07/12
PVAR 11-095 approval_email.pdf	1	14/07/12

The reviewers made the following comments and suggestions:

UREC form section or title of supporting documentation	Comment
A10	The researcher mentions that this study will be conducted during lecture time – will this be a problem, will the time need to be made up elsewhere? Or is it felt that the research will complement the students' studies and therefore this will not be a problem for the students/ lecturers?
C2/ C5/ C9	It may be a little too ambitious to obtain over 100 questionnaires with 60 questions within 2 weeks.
C18	As there is fieldwork involved in the project a risk assessment must be completed by the researcher, and approved by your supervisor and/ or School Health and Safety representative.

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval, including changes to recruitment methodology. All changes must receive ethical approval prior to implementation. The amendment form is available at [www.leeds.ac.uk/ethics](http://www.leeds.ac.uk/ethics).

## Appendix A2: Information sheet pilot study

### Consent to take part in: The role of explicit instruction in the acquisition of English: An investigation into interface difficulties. The pilot study.

موافقة على المشاركة في البحث المعنون: دور التدريس المباشر في اكتساب اللغة الانجليزية: دراسة في الصعوبات المرتبطة ببنية اللغة. الدراسة التجريبية.

You are being invited to take part in a research project. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

This research will try to find out if the acquisition of certain English grammatical features is difficult for Arab learners of English. Then a new way of teaching grammar will be used to help improve learning. You have been chosen because you are native Arab speakers and you are studying English at high intermediate/advanced levels. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep (and be asked to sign a consent form) and you can still withdraw at any time without it affecting anything. You do not have to give a reason.

You will be asked to give some background information about yourself, when did you study English, for how long, did you study in private or public schools...etc  
Then you will take a basic English proficiency test with sections on grammar, vocabulary, and comprehension.

The tests for this research will include two types, a multiple choice test where you will read a dialogue with a gap and you have to choose from four options to fill the gap. The other test will include pictures that show a situation accompanied by a description of the picture, then you will be presented with a sentence and you have to decide if it is appropriate to the picture and story or not by choosing True or False.

Whilst there are no guaranteed immediate benefits for those people participating in the project, it is hoped that this study will help improve English language learning. All the information that we collect about you during the course of the research will be kept strictly confidential. You will not be able to be identified in any reports or publications.

The results of this study will be included in my PhD dissertation that will hopefully be finished and available in three to four years. I am aiming to produce a paper sooner within the next year and you can have access to that paper by emailing me. The data collected here may also be used in future related research.

Thank you for taking the time to read this information. For any questions or comments please contact the researcher:

May Abumlhah  
mlmaa@leeds.ac.uk  
0096614646356

Supervisor:  
Dr. Melinda Whong, Deputy Head of School  
School of Modern Languages and Cultures | University of Leeds | Leeds LS2 9JT | UK  
Tel: +44 (0)113 343 7627 | Fax: +44 (0)113 343 3566

### **Appendix A3: Information sheet main study**

#### **Consent to take part in: The role of explicit instruction in the acquisition of English.**

موافقة على المشاركة في البحث المعنون: دور التدريس المباشر في اكتساب اللغة الانجليزية: دراسة في الصعوبات المرتبطة ببنية اللغة..

You are being invited to take part in a research project. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

This research will try to find out if the acquisition of certain English grammatical features is difficult for Arab learners of English. Then a new way of teaching grammar will be used to help improve learning. You have been chosen because you are native Arab speakers and you are studying English at high intermediate/advanced levels. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep (and be asked to sign a consent form) and you can still withdraw at any time without it affecting anything. You do not have to give a reason. You will be asked to give some background information about yourself, when did you study English, for how long, did you study in private or public schools...etc Then you will take a basic English proficiency test with sections on grammar, vocabulary, and comprehension.

The tests for this research are three tests, a) a multiple choice test where you will read a dialogue with a gap and you have to choose from four options to fill the gap, b) a fill-in the blanks and picture description test, and c) a listening test where you will listen to sentences through a recording and you will be asked to write down the sentences you have heard after listening as many times as you wish.

The project includes a semester-long one hour instructional course. You will receive activities, practice and information on English grammar. At the end of the semester you will take the same tests again. You will be asked to take the tests for the third time after eight weeks.

Whilst there are no guaranteed immediate benefits for those people participating in the project, it is hoped that this study will help improve English language learning. All the information that we collect about you during the course of the research will be kept strictly confidential. You will not be able to be identified in any reports or publications.

The results of this study will be included in my PhD dissertation that will hopefully be finished and available in three to four years. I am aiming to produce a paper sooner within the next year and you can have access to that paper by emailing me. The data collected here may also be used in future related research.

Thank you for taking the time to read this information. For any questions or comments please contact the researcher:

May Abumlhah  
mlmaa@leeds.ac.uk  
0096614646356

Supervisor:

Dr. Melinda Whong, Deputy Head of School

School of Modern Languages and Cultures | University of Leeds | Leeds LS2 9JT | UK

Tel: +44 (0)113 343 7627 | Fax: +44 (0)113 343 3566

## Appendix A4: Consent form pilot study

### Consent to take part in

#### The role of explicit instruction in the acquisition of English: An investigation into interface difficulties.

	Add your initials next to the statements you agree with
I confirm that I have read and understand the information sheet dated 14/Sep/2012, explaining the above research project and I have had the opportunity to ask questions about the project.	
I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline. Contact researcher on: 0096614646356	
I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research.	
I agree for the data collected from me to be used in relevant future research.	
I agree to take part in the above research project and will inform the lead researcher should my contact details change.	

Name of participant	
Participant's signature	
Date	
Name of lead researcher May Abumlhah	
Signature	
Date*	

\*To be signed and dated in the presence of the participant.

## Appendix A5: Consent form main study

### Working title of the project:

The role of input in the acquisition of English by Najdi speakers.

**Name of researcher:** May Abumelha

Email: [mayabumelha@gmail.com](mailto:mayabumelha@gmail.com) [mlmaa@leeds.ac.uk](mailto:mlmaa@leeds.ac.uk)

### Please initial the box: ✓

1. I confirm that I understand the above study and had a chance to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time.

3. I agree to take part in the above study.

\_\_\_\_\_

Name

4-Feb-2-14

Date

\_\_\_\_\_

Signature

## Appendices B: The study instruments

### Appendix B1: Background questionnaire pilot study and main study

#### معلومات عامة Background Questionnaire

1. الاسم Name: \_\_\_\_\_
2. العمر Age: \_\_\_\_\_
3. كم مضى عليك وانت تتعلمين الانجليزية كمادة في المدرسه: How long have you been learning English in school  
أ) 15 عام + (ان كنت تدرسينها منذ رياض الاطفال) 15 years + (If you have been studying English since preschool)  
ب) 12 عام + (ان كنت تدرسينها منذ الصف الاول الابتدائي) 12 years + (If you have been studying English since grade one elementary)  
ت) 6 اعوام + (ان كنت تدرسينها من المرحلة المتوسطة) 6 years+ (If you have been studying English since secondary school)
4. هل سبق لك العيش في بلد اجنبي حيث اللغة الام الانجليزية؟ Have you lived in a country where the native language is English  
نعم لا
5. اذا كانت الاجابة بنعم فاي بلد؟ If your answer is yes, which country?
6. هل اللغة الام لاحد والديك اللغة الانجليزية؟ Is English the first language of one of your parents?  
نعم لا
7. هل تعرفين لغة ثالثة غير الانجليزية والعربية؟ Do you know a third language other than English and Arabic?  
نعم لا
8. اذا كانت الاجابة بنعم فما هي؟ If your answer is yes what is this third language



**Oxford University Press  
and  
University of Cambridge Local Examinations Syndicate**

Name: .....

Date: .....

# **quick placement test**

Version 1

This test is divided into two parts:

**Part One (Questions 1 – 40) – All students.**

**Part Two (Questions 41 – 60) – Do not start this part unless told to do so by your test supervisor.**

**Time: 30 minutes**

## Appendix B3: The Forced Choice Task: (categories and NP types)

### **Type 1: Generic Indefinite Singular**

#### **Answer: indefinite (a)**

##### *1. Two friends catching up*

A: My daughter is doing postgraduate work at university.

B: What is she studying?

A: She's studying \_\_\_\_ rare bird found only in Scotland.

Ø     an     a     the

##### *2. Parents talking about their children:*

A: Terry and Liz are arguing over what pet to buy.

B: What does Terry want?

A: He wants \_\_\_\_ cat.

a     the     Ø     an

##### *3. Friends talking:*

A: We should have recycle bins to collect glass bottles.

B: Why?

A: Because \_\_\_\_\_ bottle needs years to break down, and this is bad for our environment.

Ø     an     a     the

##### *4. Mother and child:*

Child: Mom I have a question.

Mother: yes, dear.

Child: The teacher says that \_\_\_\_ baby can't breathe in its mother's tummy.

a     the     Ø     an

### **Type 2: Generic Indefinite Plural**

#### **Answer: Bare noun Ø**

##### *1. Conversation between father and son*

Father: Many scientists now say that global warming is happening.

Son: What do you think is causing it?

Father: Some people blame \_\_\_\_ cars, but I'm not so sure.

the     a     an     Ø

2. *Co-workers chatting while reading newspapers*

Sam: That country hopes to improve its economy.

David: How?

Sam: By welcoming \_\_\_\_ tourists.

*the a an Ø*

3. *High school friends talking*

Debbie: I would like to study something different at university.

Rena: Like what?

Debbie: Since I like \_\_\_\_ trees, maybe I can study forestry.

*the a an Ø*

4. *Chat between mother and aunt*

Mother: Alice and Harry have been discussing what kind of pet they should get.

Aunt: What will they get?

Mother: They both seem to like \_\_\_\_ dogs.

*the a an Ø*

**Type 3: Non-generic Indefinite Singular (1,2 without RC, 3,4 with RC modification.**

**Answer: indefinite (a)**

7. *Phone conversation*

Rob: Hi, Christina, do you have time to talk?

Christina: I'm sorry, but I'm meeting with \_\_\_\_ student from my English class, he needs help with his homework.*the a an Ø*

**Specific**

2. *Two neighbours chatting:*

A: Rose is happy.

B: Why?

A: She got \_\_\_\_ car for her birthday. I wonder what it looks like?

*the a an Ø*

**Non-Specific**

8. *Two neighbours chatting*

Lynette: Philippa has been shopping..

Brie: What did she get?

Lynette: She bought \_\_\_\_ book which is one of my favourites.

*the a an Ø*

**Specific+ RC**

4. *Friends out for a walk:*

A: I'm bored.

B: Where do you want to go?

A: Let's try \_\_\_\_\_ restaurant that we haven't been to before.

*an    Ø    the    a*

**Non-Specific +RC**

**Type 4: Non-generic Indefinite Plural (1,2 without overt RC complementiser, 3,4 with overt RC complementiser.)**

**Answer: Bare noun Ø**

1. *Conversation between brother and sister*

A: I need to get some money quickly.

B: How will you do that?

A: I will sell \_\_\_\_\_ books from grandma's collection.

*an    Ø    the    a*

**Specific**

2. *Neighbours chatting:*

A: Lionel is decorating his new house.

B: Is he?

A: He's ordered \_\_\_\_\_ plants for his lounge. I wonder what they will look like?

*Ø    an    a    the*

**Non-Specific**

4. *Morning chat between co-workers*

A: I visited the famous old-fashioned tea shop yesterday.

B: Oh yes?

A: They served me \_\_\_\_\_ biscuits that are so soft they melt in your mouth.

*the    a    an    Ø*

**Specific+ RC**

4. *Two friends chatting:*

A: Do you know what our city needs?

B: what?

A: It needs \_\_\_\_\_ buildings that have character and vibe!

*a    the    Ø    an*

**Non-Specific+ RC**

**Type 5: Definite contexts: Singular & Plural (specific & non-specific with & without RC)**

**Answer: definite the**

1. *At the end of a chess tournament*

Laura: Are you ready to leave?

Betsy: No, not yet. First, I need to talk to \_\_\_ winner of this tournament, she is my good friend, and I want to congratulate her!

*the a an Ø*

***Singular+specific***

2. *Classmates chatting*

Rachel: I took introductory linguistics courses in my first term.

Dorothy: I see you have kept several books.

Rachel: Yes, my sister is going to do \_\_\_ courses next year.

*the a an Ø*

***Plural+ Specific***

3. *Two reporters*

Reporter 1: Guess what? I finally got an important assignment!

Reporter 2: Great! What is it?

Reporter 2: This week, I am interviewing \_\_\_ governor who is my hero!

*the a an Ø*

***Singular+ specific + RC***

4. *Two friends talking:*

Kathy: My daughter loves that new comic strip about super mouse.

Elise: Well, she is in luck! Tomorrow, I'm having lunch with \_\_\_ creators who are old friends of mine from college.

***Plural+ Specific + RC***

5. *Interview:*

Reporter: Several days ago Mr. Peterson was murdered, are you investigating his murder?

Policeman: Yes, but we are still trying to find \_\_\_ murderer of Mr. Peterson but we still don't know who he is.

*the a an Ø*

***Singular +non-specific***

6. *At a gallery:*

Sarah: Do you see those beautiful paintings?

Mary: Yes, they are wonderful.

Sarah: I would like to meet \_\_\_ authors of those paintings but unfortunately I have no idea who they are since none of them is signed.

*the a an Ø*

***Plural+ non-specific***

7. *Two friends at a party*

Ron: Could I have some water, please?

Jack: Sure, I'll bring you another glass.

Ron: Just use \_\_\_\_ glass that I had juice in.

*the a an Ø*

***Singular + non-specific + RC***

8. *At a supermarket:*

Sales clerk: May I help you sir.

Customer: Yes! I'm very angry! I bought some meat but it's completely spoiled! I want to talk to \_\_\_\_ supervisors; I don't know who they are but I want to see them right now!

*the a an Ø*

***Plural+ non-specific + RC***

## Appendix B4: The Sentence Repetition Task

1. He said that a teacher from this school taught the students myths instead of real facts.  
IS DP GP
2. I know that a trainer gives the dog a reward that is exciting.  
GS DS IS
3. I don't know if children give a person that they like all the answers.  
GP IS DP
4. They say that students of this school gave citizens the hope for a better tomorrow.  
IP GP DS
5. I'm not sure if the professor taught students who had cheated values.  
DS IP GP
6. I wonder if the doctors of this hospital always ask a patient specific questions before surgery.  
DP GS IP
7. She said that a woman from her town teaches the locals new ideas.  
IS DP GP
8. I know that a teacher can give the student a mark that is unacceptable.  
GS DS IS
9. I don't know if women give a man that they don't trust the keys to their hearts.  
GP IS DP
10. They say that members of this club gave people the chance to use the pool.  
IP GP DS
11. I'm not sure if the teacher taught students who failed the course clear concepts.  
DS IP GP
12. I wonder if the workers here ask a client detailed questions like this.  
DP GS IP

### **The final format with stress patterns in bold as read by the native speaker:**

1. **He** said that a teacher from **this school** taught the students myths instead of **real facts**.
2. **I know** that a trainer **gives** the dog a reward that **is** exciting.
3. I **don't** know if children give a person that they **like** all the answers.
4. They **say** that students of **this** school gave citizens the hope for a better **tomorrow**.
5. I'm not **sure** if the professor taught students who had **cheated** any values.
6. I **wonder** if the doctors of **this** hospital always ask a patient specific questions **before** surgery.
7. **She** said that a woman from her **town** teaches the locals new ideas.
8. I know that a teacher can give the student a mark that is **unacceptable**.
9. I don't know if women **will** give a man that they **don't trust** the keys to their hearts.

- 10. They say that members of **this** club gave people the chance to use this **pool**.
- 11. I'm not sure if the teacher taught students who **failed** the course clear concepts.
- 12. I wonder if the workers **here** ask a client detailed questions **like this**.

**Paper filled by participants:**

**TEST 2** \_\_\_\_\_ **NAME:** \_\_\_\_\_  
 \_\_\_\_\_

Listen to the audio files and write each sentence you heard exactly.

Sentence 1	
Sentence 2	
Sentence 3	
Sentence 4	
Sentence 5	
Sentence 6	
Sentence 7	
Sentence 8	
Sentence 9	
Sentence 10	
Sentence 11	
Sentence 12	

## Appendix B5: The Written Production Task

**Please answer the following:**

1. Write about something valuable you lost and how you lost it. OR about something you received as a gift and how you received it. **(In no more than two sentences)**

-----  
-----  
-----

2. Write **one sentence on each picture** showing your opinion about the main issue:



-----  
-----  
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-----  
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**4. Fill in the gaps in the following sentences :**

a. Sally is a typical teenager, she follows new trends and the trend now is (*all about glitter!*) She is talking to her sister who is in Paris right now in a clothes shop:

Please look for \_\_\_\_\_ that has glitter all over it!

b. Donna is at the local bookstore. The shopkeeper comes to ask her what she is looking for and she answers:

I'm not exactly sure, I'm looking for \_\_\_\_\_ which would be interesting for young children and adults alike.

## Appendices C: The classroom material

### Appendix C1: In-class production sheet

#### **Implicit instruction group: Sample worksheet: with grammar focus guidelines:**

Use the following guidelines to structure the introduction and method part of your paper:

General information: You work in a bank in the client services department, you are asked to conduct a study on how to improve e-banking services. Here are the details:

<b>Information</b>	<b>Structure</b>	<b>Grammar focus</b>
Field: Banking, market research, client services.	Move 1 step 1: claim centrality in the field, start general, use 1-2 sentences.	*Use present perfect tense.
Topic: Use of electronic services and e-banking, client satisfaction. Internet banking need by customers.	Move 1 step 2: define key concepts, state knowledge about the topic. 1-2 sentences.	*Use present perfect , and if you need the present tense to define.
Previous research: Daniele (1999) survey UK banks were just starting to offer e-services. Yakhlef (2001) e-services and client satisfaction. Karjaluoto (2002), attitude of clients to technology.	Move 1 step 3: review previous research. Compare or contrast. Add researchers if you want. 2-3 sentences. Cite correctly.	*Simple past tense with specific dates. You may use generic nouns here also.
Gap: you found little research on Najdi banks. Only a related study by Kassim (2005) on competition between banks in Qatar to attract clients (products and services).	Move 2: Indicate your gap. Use move 2 language . 1-2 sentences.	Present perfect+ passive.
Your study: You will target the clients of this bank to know their attitudes and satisfaction on e-banking services.	Move 3: Announce your research.	Simple present tense.
Methods: You wrote a survey, Likert scale (from 1-5), 400 copies, gathered clients' emails, send by email, print out also and distributed on clients when they came to the bank. You ended up with 150 completed surveys.	Methods: Write one paragraph stating what you did. Follow a sequence, first, second, ... There is no hypothesis here your survey aims to gather information as you stated above in move 3.	Simple past tense.

**Explicit instruction group: Sample worksheet with grammar guidelines:**

Use the following guidelines to **structure** the introduction and method part of your paper:

**General information:** You work in a bank in the client services department, you are asked to conduct a study on how to **improve e-banking services**. Here are the details:

<b>Information</b>	<b>Structure</b>	<b>Grammar focus</b>
<b><u>Field:</u></b> Banking market research, client services.	<b><u>Move1 step 1:</u></b> claim centrality in the field, start general, use 1-2 sentences.	*Use generic nouns (Ø+plural OR a+ singular)
<b><u>Topic:</u></b> Use of electronic services and e-banking, client satisfaction. Internet banking need by customers.	<b><u>Move 1 step 2:</u></b> define key concepts, state knowledge about the topic. 1-2 sentences.	*Start with first mention indefinite nouns then use the in second mention.
<b><u>Previous research:</u></b> Daniele (1999) survey UK banks were just starting to offer e-services. Yakhlef (2001) e-services and client satisfaction. Karjaluoto (2002), attitude of clients to technology.	<b><u>Move 1 step 3:</u></b> review previous research. Compare or contrast. Add researchers if you want. 2-3 sentences. Cite correctly.	You may use generic nouns here also.  *Use relative clause modification when needed (e.g. a client who....)
<b><u>Gap:</u></b> you found little research on Najdi banks. Only a related study by Kassim (2005) on competition between banks in <b>Qatar</b> to attract clients (products and services).	<b><u>Move 2:</u></b> Indicate your gap. Use move 2 language . 1-2 sentences.	Specific nouns, definite.
<b><u>Your study:</u></b> You will target the clients of this bank to know their attitudes and satisfaction on e-banking services.	<b><u>Move 3:</u></b> Announce your research.	
<b><u>Methods:</u></b> You wrote a survey, Likert scale (from 1-5), 400 copies, gathered clients' emails, send by email, print out also and distributed on clients when they came to the bank. You ended up with 150 completed surveys.	<b><u>Methods:</u></b> Write one paragraph stating what you did. Follow a sequence, first, second, ... There is no hypothesis here your survey aims to gather information as you stated above in move 3.	Here the nouns will mostly be definite.

## Appendix C2: Text Analysis

**Indicate the moves in the following introductions:**  
**(Note the noun types in bold)**

### **Field: Management/BA**

Because of their organizational role, **managers** must sometimes act in ways that negatively affect their **subordinates** (e.g., denying a request for promotion, or discussing negative feedback). Molinsky and Margolis (2005) called these acts “necessary evils”. Those tasks, although unpleasant, are necessary because they are important components of being **a manager**. Not surprisingly, prior work in the area of *organizational justice* clearly documented the importance of having **a manager who** will perform such necessary evils. According to Folger and Cropanzano’s (2001) *fairness theory*, **employees** compare their own treatment with the treatment of other employees in the organization. Our goal in this article is to explore the usefulness developing **a sociolinguistic theory that** accounts for perceptions of justice and emotional responses of anger among **employees**.  
*Campbell et al (2007) (modified)*

### **Field: Applied Linguistics**

Many commentators have noted that sentence **connectors** (e.g. however) are an important and useful element in expository and argumentative **writing**. ESL writing **textbooks** have regularly included **chapters** on sentence **connectors** (e.g. Herbert 1965). Some attention has also been given to the position of sentence connectors in **clauses** and **sentences**. Quirk and Greenbaum (1973) observed that the normal position is initial but that certain connectors, such as hence and overall ‘are restricted, or virtually restricted, to initial position’ (p. 248). The only attempt known to us to explain **differences that** are based on *semantic grounds* is an unpublished paper by Salera (1976), discussed in Celce-Murcia and Larsen-Freeman (1983). **The Salera paper** dealt only with adversatives like ‘however’ and suggested that initial position reflects something contrary to expectation. However, neither of these studies provided any descriptive evidence of the actual positions of sentence connectors in academic **texts**. In **the present paper**, we report on ‘**sentence connector position**’ in **a sample that** consists of twelve published articles. **The sample** will provide evidence on the pattern of connector use in those academic texts.

*The Position of Sentence Connectors in Academic English*

*CB Feak and JM Swales 1996 (modified)*

### **Appendix C3: Highlighted grammar focus lesson (introduction genre)**

#### **Implicit instruction group: Lesson 1: Move 1: Highlighting verb tenses:**

Comprehension and production of nouns and verbs **have been studied** in several neurological populations including aphasic patients. Researchers investigating production of nouns and verbs in aphasic patients **have reported** dissociations between these word classes (Berndt, Mitchum, Haendiges, & Sandson, 1997; Miceli, Silveri, Nocentini, & Caramazza, 1988). Agrammatic aphasic patients **show** more difficulty naming verbs than nouns, while anomorphic aphasic subjects **show** the opposite pattern, suggesting that selective impairment in lexical representation and/or the lexical retrieval process can occur along the form class category. Miceli et al.'s (1988) Italian-speaking agrammatic aphasic subjects also **showed** such dissociations in comprehension, but this finding **has not held up** across studies (Berndt et al., 1997); most studies **have shown** a selective deficit in verb production, with comprehension remaining relatively unimpaired. (Kim & Thompson, 2000)

#### **Explicit instruction group: Lesson 1: Move 1: Highlighting noun types:**

**Comprehension** and **production** of **nouns** and **verbs** have been studied in several neurological **populations** including aphasic **patients**. **Researchers** investigating production of **nouns** and **verbs** in aphasic **patients** have reported dissociations between these word classes (Berndt, Mitchum, Haendiges, & Sandson, 1997; Miceli, Silveri, Nocentini, & Caramazza, 1988). Agrammatic aphasic patients show more difficulty naming **verbs** than **nouns**, while anomorphic aphasic **subjects** show **the** opposite **pattern**, suggesting that selective impairment in **lexical representation** and/or **the** lexical retrieval **process** can occur along **the** form class **category**. Miceli et al.'s (1988) Italian-speaking agrammatic aphasic **subjects** also showed such dissociations in **comprehension**, but **this finding** has not held up across **studies** (Berndt et al., 1997); most studies have shown a selective deficit in verb **production**, with **comprehension** remaining relatively unimpaired. (Kim & Thompson, 2000)

#### Appendix C4: Sample texts (methods genre)

##### **Implicit instruction group: Lesson6: The method of the study: Grammar focus: verb tenses:**

To test the hypothesis, 10 casual conversations **were recorded**. All conversations **were** between males and females. Then, the conversations **were transcribed** following transcription symbols. The data **was analysed** by looking at the number of direct and indirect speech acts in the speech of males and females. Finally, the percentages **were calculated** to show the differences as predicted by the hypothesis.

##### **Explicit instruction group: Lesson6: The method of the study: Grammar focus: nouns:**

To test **the hypothesis**, 15 research **articles** were randomly selected. Each of **the selected articles** has been divided by author into four sections. The number of authors per article ranged from two to four and no author appeared twice in the corpus. **The corpus** contained 39.578 words, and **the average length** of **the articles** was 2635 words.

## Appendix C5: Highlighted grammar focus lesson (results genre)

### **Implicit instruction group: Lesson 9: The results and conclusion: Grammar focus verb tenses**

The results on all experimental tasks **are shown** in Tables 3&4. Analysis of data **indicated** statistically significant differences across the seven experimental tasks. Performance on verb naming and verb categorization tasks **was** lower than the other tasks. Findings from this study **were** consistent with previous studies by Miceli et al. (1988) and Berndt (1990) in that performance of agrammatic aphasic subjects **showed** a selective deficit in the production of verbs as compared to nouns. The selective deficit **supports the hypothesis** of this study concerning verb production deficiency. However, any hypothesis based on the data from the present study **should take** into account the limitations of the tasks used. It is hoped that this study **will serve** as an invitation for researchers to continue exploring this deficit.

### **Explicit instruction group: Lesson 9: The results and conclusion: Grammar focus: nouns:**

**The results** on all experimental tasks are shown in Tables 3&4. Analysis of **data** indicated statistically significant differences across **the** seven experimental **tasks**. **Performance** on verb naming and verb categorization tasks was lower than the other tasks. Findings from this study were consistent with previous studies by Miceli et al. (1988) and Berndt (1990) in that performance of agrammatic aphasic subjects showed **a selective deficit** in the production of verbs as compared to nouns. **The selective deficit** supports **the hypothesis** of this study concerning verb production deficiency. However, any hypothesis based on **the data** from **the present study** should take into account **the limitations** of **the tasks** used. It is hoped that this study will serve as an invitation for researchers to continue exploring **this deficit**.