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ESL Lexical Inferencing for the Unknown Words in Newspaper Editorials at Advanced Level

Muhammad Shafiq
Associate Professor, Emerson University Multan, Pakistan
Email: mshafiq3448@gmail.com
Naveed Ahmad
Chairman, Department of English, BZU, Multan, Pakistan

Abstract

The study aims at exploring the inferential behaviours of the ESL learners in generating the meanings of the unknown words faced in reading editorials of newspapers. It further notices the impact of instructional treatment on the use of knowledge sources and their relationship with success, the effect of syntactic property of the unknown words, and the difficulties faced in lexical inferencing while interacting with a text. The theoretical framework of knowledge sources adopted in the study was given by Bengeleil and Paribakht (2004). Data were collected through introspective verbal protocols and observation. The study used the texts of the editorials published in native newspaper The Washington Post. Flesch Reading Ease Measure was employed to compare readability of the editorials. The study includes pretest, instructional treatment and posttest. It uses Winograd and Hare's (1988) model of instruction due to its cognitive usefulness. The analysis of selected verbal protocols gave insight to the inferential behaviours of the subjects while using linguistic and non-linguistic knowledge sources in the pursuit of meaning of the unknown words. The instructional treatment had a significant effect on the sources in lexical inferencing. It was found out that the parts of speech of the unknown words had effect on ease or difficulty in deducing their meanings. The study sheds light on various reasons of incorrect inferences.

Key words: ESL Reading, Lexical Inferencing, Editorials, Introspection, Linguistic and Non-Linguistic Knowledge Sources, Syntactic Property of Unknown Words

1. Introduction

In order to learn a second or foreign language learners are exposed to language at target. Such input plays a pivotal role in the learning process of language because lexical competence is an important constituent of communicative competence. Vocabulary acquisition and reading comprehension primarily occurs through the process of lexical inferencing (Fraser, 1999; Hamouda, 2021; Laufer, 2020). In inferencing, the familiar attributes and contexts are utilized in recognizing that is unfamiliar (Carton, 1971). A more detailed definition of lexical inferencing is given by Haastrup (1991, p.40) that lexical inferencing involves

> making informed guesses as to the meaning of a word in light of all available linguistic clues in combination with the learner's general knowledge of the world, her awareness of context and her relevant linguistic knowledge.

Researchers and linguists have acknowledged the significant role played by newspapers in language classroom. Newspapers provide authentic material, and their use in the language classroom is "very much in keeping with current thinking and practice in teaching pedagogy" (Sanderson, 1999, p. 3). Editorials reproduce and legitimate the "mental models of news events and the general social cognition of the editors (van Dijk, 1993, p. 266). The present study attempts to investigate the following questions:

1. What is the effect of instructional treatment on the use of knowledge sources in inferring the meaning of the unknown words encountered during reading newspaper editorials?
2. What is the effect of instructional treatment on success in inferring the meaning of the unknown words encountered during reading newspaper editorials?
3. Do the parts of speech of the unknown words have some effect on the ease and difficulty in lexical inferencing?
4. What are the reasons of incorrect lexical inferencing?

2. Literature Review

A word has its own world. The meaning of a word can be known through its association it carries with other words (Jackson, 2002). Wallace (1982) has stated that knowledge of a word means ability to

recognize it in both spoken and written forms, to use it in proper grammatical form to pronounce it, to spell it, to know its collocations, level of formality and its connotations.

Haastrup (1991), the great grandmother of lexical inferencing, conducted a study of Danish learners of English. The subjects belonged to high-proficiency group and low-proficiency group. It was found that the high-proficiency group relied more on top-down clues. Contrarily, the low-proficiency group made a greater use of bottom-up clues. High-proficiency learners were found more flexible in their approach than the low proficiency learners. The full integration of top-level clues and bottom-up clues resulted in successful guessing.

Anvari and Farvardin (2016) have explored the lexical inferencing strategies employed by fifteen female EFL students and the characteristics of successful guessers. What was more important was the use of the strategies in right place in combination of other strategies if necessary. The successful learners used local clues as well as global clues in order to arrive at correct inferences. Azin et al. (2015) conducted their study to explore the effect of lexical inferencing from context on the retention of the new learnt words by EFL Iranian learners. The findings of the study revealed that the words learnt through cognitive effort enhanced learning and retention.

Comer (2012) has explored how English learners of Russian as a second language use lexical inferecning and other notable reading strategies when they read international texts written in Russian. The findings of the study demonstrated the subjects were able to use a repertoire of reading strategies and lexical inferencing. It is worth-mentioning that Russian learners did not often use sentence clues and paragraph clues in their attempts to generate the meanings of the test words. In their study Garza and Harris (2016) explored the effects of different degrees of unknown words on the abilities of the participants to use linguistic context in translation and lexical inferencing. The texts varied in the number of foreign words given in each sentence (e.g. zero through seven context words in each sentence). But care should be taken in this regard as there was a limit to the effectiveness of context strategy. The study provided the base-line for effectiveness of linguistic context strategy for lexical inferencing and translation.

Kaivanpanah and Rahimi (2017) have examined the effects of contextual clues and topic familiarity on the success rate in lexical inferencing task and retention of the newly learned words. The subjects of the study were sixty-seven Iranian EFL learners. First, using local contextual clues often led to

wrong guesses. Second, orthographic and phonetic similarity between the target word and some other word resulted in inaccurate responses. Third, compound words were wrongly inferred when these words were analyzed into their constituents.

Zaho et al. (2016) examined the predictive role of four learner factors in L2 incidental vocabulary learning through reading. The factors included L2 proficiency, anxiety, motivation and mastery of strategies. It was found that learners' levels of motivation fluctuated during the process of incidental vocabulary learning in L2 language. A newspaper editorial is an article in newspaper that gives the opinion of the newspaper on a topic of news (Sinclair, 1995, cited in Ansary & Babaii, 2004).

The major function of newspaper editorial is the expression and persuasive communication of opinions (van Dijk, 1996). Editorials are considered "complex speech acts" as these acts characterize "a set of sentences as a single utterance". (Le, 2010, p. 24). Though editorials are written in the form of a monologue, they are dialogical in the sense that they "take a stand to what has been said previously about a topic" (Tirkkonen-Condit, 1988, p. 146). In order to establish the generic integrity of a newspaper editorial Swales's genre definition may be taken as main reference. Based on the systemic functional (SF) theory of language and genre, Ansary and Babaii (2005) have identified four obligatory structural elements in newspaper editorials (i) run-on headline, (ii) addressing an issue, (iii) argumentation, and (iv) articulating a position.

3. Methodology

3.1 Participants

The participants recruited in the study were enrolled in M.A English programme at Education University Multan Campus. The participants had recently been promoted to the second semester. The researcher also taught the subjects the module of psycholinguistics in the first semester and was teaching them the module of novel in the second semester. The participants of the study were more acquainted with him.

In order to keep homogeneity among the subjects, a placement test was conducted for them. For that purpose the study adopted the vocabulary test, devised by Nation and Begler (2007). The fifth 1000 level test was selected. The age of the participants in the study ranged from twenty to twenty four. Their mean age was 21 years. There were 22 members (11 females and 11 males) in the control group. In the experimental group 22 members (11 females and 11 males) were recruited.

3.2 Theoretical Framework

The study has adopted the taxonomy presented by Bengeleil and Paribakht (2004). It is comprehensive as it covers all the major knowledge sources used in the task of lexical inferencing. It divides knowledge sources into two major headings – linguistic and non-linguistic sources. Linguistic sources include both L2 sources and L1 sources. Non-linguistic sources involve topic knowledge and world knowledge. In all, there are thirteen knowledge sources which are described in the hierarchical figure 1.

Knowledge Sources in Lexical Inferencing

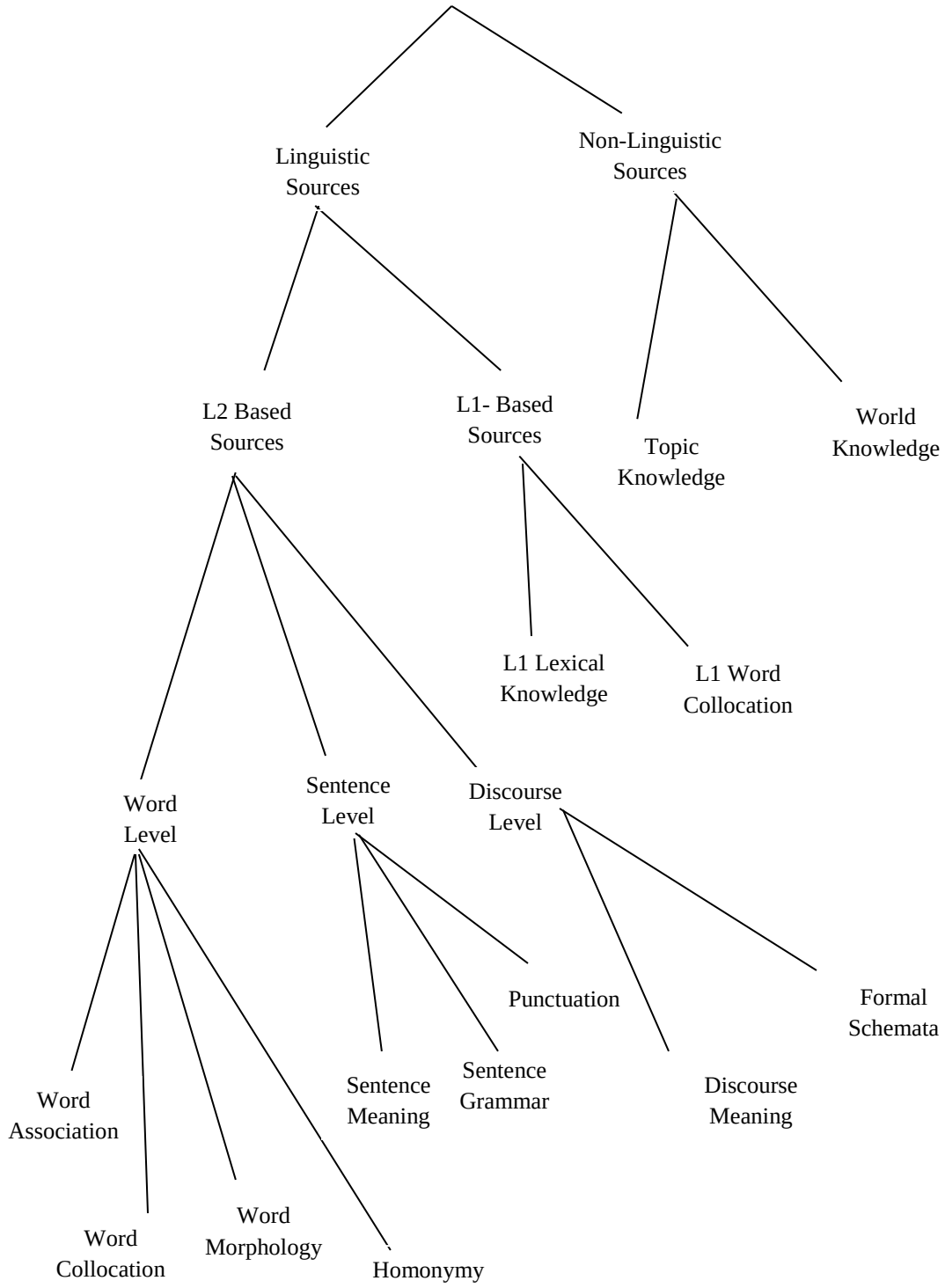

Figure 1: Knowledge Sources in Lexical Inferencing

(Source: Bengleil & Paribakht, 2004)

3.3 Instrumentation

The study used introspective verbal protocols and observation in order to collect data.

Pressley and Afflerbach (1995) regard verbal protocol analysis as a maturing research collection method. van de Wiel (2017) has remarked that verbal protocol studies examine knowledge and reasoning in a direct relation to the given tasks. Introspective mode is also called concurrent/online mode when the subjects verbalize their thoughts during the task. A single verbal protocol is a "link in a whole chain of evidence, stretching far into the past and the future that gradually develops, molds, and modifies our scientific theories" (Ericsson & Simon, 1993, p. 280). Most of the researchers on lexical inferencing have used verbal protocols in order to explore the knowledge sources and clues the language learners use in dealing with the unfamiliar words during reading (Comer, 2012; Frantzen, 2003; Haastrup, 2010; Nassaji, 2003; Paribakht & Wesche, 2000).

The observation of the participants is a unique research method which investigates the enormously varied experiences thoughts, feelings and activities. The researcher acted as participant-observer while taking notes in noticing the inferential behaviours of the participants' introspective verbal protocols and instructional treatment phase. The researcher recorded the verbal protocols of the participants in the pretest and the posttest conducted for both control and experimental groups. Even keen observation was made in the instructional treatment. A notebook was used for writing the major points observed in the data collection phase including instructional treatment phase.

3.4 Texts

The editorials used in the study were published in American newspaper *Washington Post* in August, 2011. Four editorials were selected. The first editorial *US action helped cause of freedom in Libya* described the happiness of people of Libya over the fall of Moammar Gaddafi. The second editorial *Somalia's hunger: A man–made crisis requires action* reported that Somalia was facing its worst draught in history. The militant group al-Shabab created hurdles in the way to provide food to the hungry Somailians. The third editorial *what's behind Britain's riots* described a comprehensive account of the causes of Britain riots. Some political solution was sought for. The fourth editorial *Solitary confinement should be a lost resort* described the innocent demands of the inmates at California's prison. Solitary confinement should be the last resort. As for the ecological validity, the study used the same

texts of the editorial for pretest and posttest. In order to avoid threat to its internal validity, the researchers should increase the time period between the administration of pretest and posttest (Bonate, 2000). The present study conducted the pre-test at the start of the second semester while the posttest was administered at the end of the semester. There was the gap of four months between the pretest and the posttest.

The study used the software of readability formula for Felsch Reading Ease Score (including text scale and readability level). Flesch (1948) introduced readability yardstick which was later developed by Kincaid et al., 1975.

Table 1: *Flesch Reading Ease Score of the Editorials*

Editorials	Text Scale	Readability Level
1. U.S. action helped cause of freedom in Libya	58.7	Fairly difficult
2. Somalia's hunger: A man-made crisis requires action	54.6	Fairly difficult
3. What's behind Britain's riots	43.5	Difficult
4. Solitary confinement should be a last resort	43.5	Difficult
Overall total	52.3	Fairly difficult to read

As shown in the table 1, the overall ease score of four editorials was 52.3 and their readability level was fairly difficult read.

3.5 Target words

Table 2: *Percentage of Target Words*

Editorials	Total words	Target words	Target words %
1. U.S. action helped cause of freedom in Libya	559	21	3.76

2. Somalia's hunger: A man-made crisis requires action	792	15	1.89
3. What's behind Britain's riots	495	17	3.43
4. Solitary confinement should be a last resort	762	20	2.62
Overall total	2008	73	3.64

As shown in the table 2 the overall percentage of the unknown words in the four editorials was 3.64.

3.6 Procedure

As for verbal protocol training, it was decided that the participants of the study would get training on verbalizing their thought for ten-day plan – one hour each day. They participants were allowed to read the texts of the editorial thoroughly when they met the research individually. They verbalized their thoughts in English or Urdu or in both languages during the inferencing task. The editorials selected for the study had the unknown words belonging to the content words (verbs, adverbs, nouns and adjectives). The editorials had 15-20 unknown words for the inferencers. The participants guessed the meaning of all bold unknown words in the texts.

All the verbal protocols sessions were audio-taped.

3.7 Instructional Treatment

It is worth-mentioning that no instructional treatment was given to members of the control group. They were taught 25 editorials with the conventional method. The experimental group received training on lexical infrencing. In instructional treatment 25 editorials published in *Washington Post* in August, 2011 were used. The editorials dealt with multiple topics dealing with national and international issues.

The instructional framework in the study was based on Winograd and Hare's (1988) explicit instruction model, consisting of five components of good strategy instruction: (i) what the strategy is, (ii) why the strategy should be learned, (iii) how to use the strategy, (iv) when and where strategy should be used, and (v) how to evaluate the strategy.

4. Data Analysis

Lexical inferencing provided rich and diverse data for analysis. In the verbal protocols single knowledge source and combined knowledge sources were used. The following codification scheme for verbal Protocols was used in the study.

I	=	Instructor
P	=	Participant
Words in bold Font	=	**Target Words**
Words in Italics	=	*Words from texts of editorials*
…	=	Pause
( )	=	The inferred meaning
{ }	=	English Translation of Urdu
{ ( ) }	=	Urdu Transliteration in English

Pretest of the control group

Somalia's hunger: A man-made crisis requires action

Example 1

Target word: Hampered

Sentence grammar

Punctuation

Sentence meaning

Topic knowledge

P: **Hampered** is past participle of the verb **hamper**…hmm…**ed** is coming after **hamper** and the word 'have' also comes before **hamper**…*In al-Shabab-controlled areas*. Two hyphens come in this long word which has three words *al*…, *Shabab*…And *controlled*.

The title goes on *Somalia's hunger: A man-made crisis requires action, man-made* has also hyphen.

I: What does **hampered** mean?

P: A difficult word … {in which difficulty I am caught}.

The participant hedges in the beginning of the verbalization of his thoughts. It means he is going to start his investigation. It is his syntactic knowledge which assists him to pay attention to the grammatical property of the target word. The uses of 'ed' at the end of the word and the use of 'have' before the unknown word are skillfully mentioned. The hyphens used in 'al-Shabab-controlled' attract the attention of the participant. Even the use of hyphen in the title 'man-made' is also noticed. Despite all this, the participant is unsuccessful in figuring out the meaning of the target word. He considers the target word a difficult word and utters a sentence in Urdu about the difficulty of the word.

Pretest of the experimental group

Solitary confinement should be a last resort

Example 2

Target word: Perilously **Word association**

Sentence meaning

World knowledge

P: **Perilously**… It means (very)… *It comes* **very** *close to the mentality of 'lock' em up and throw away the key"*… A cruel thing… *to lock* the prisoners and *throw away the key* into sea… for good… prisoners… till their death… even after their death... Their dead bodies are there in the prison. *It comes close* … I mean *(very) close to such mentality.*

The inferencer in this verbal protocol deciphers the meaning of the unknown word unsuccessfully. The word 'very' is guessed as meaning of the unfamiliar word 'perilously'. After this the participant pauses and reads the sentence which carries the difficult word. He does not stop giving his arguments. He reads the sentence is order to verify the guess he has made. The strategy of locking

the prisoners for good and throwing the key into the sea is called a cruel thing. He feels the barbarity shown to the prisoners. He reads 'for over' instead of 'forever.' The prisoners are kept in their prison till their death and even after their death. The emphasis on 'every' indicates that the wrong guess is inserted in the context.

Posttest of the control group

U.S. action helped cause of freedom in Libya

Example 3

Target word: Sustained **Word association**

Sentence meaning

I: {What is the meaning of **sustained**?

P: (Continued)… it means (continued).

I: How can you say so?

P: In spite of *criticism he* (continued) *his mission*. Obama is not afraid of the criticism on him. Yes, I am successful in hunting game for the correct meaning}.

The participant arrives at the correct meaning without giving any reason for doing this. When asked to give reason, she confidently informs that Obama shows bravery when the mission is continued in Libya. The immediate context in the sentences supports him to infer the correct meaning. More importantly, lexical inferencing is compared to a hunting game.

Posttest of the experimental group

What's behind Britain's riots

Example 4

Target word: Uprisings **Discourse meaning**

Word association

P: **Uprisings**… (upheavals) … (riots), (rebellions)… I think **uprisings** have all these meanings the (revolts) are **uprisings**… The *upheavals* are **uprisings**... the *riots* are **uprisings**… The (rebellions) are **uprisings**… All these meanings are in the editorial here and there, and there and here… They are, yes, they are… stealing, looting. Killing of *a black man, the frustrated fruit seller*… the death... killing himself… self-killing… suicide… All these things result in **uprisings**… **uprisings** is (the revolt) the revolt is **uprising**… sameness in meaning.

The participant reads the unknown word 'uprising'. Then three meanings are guessed – 'upheavals', 'riots' and 'rebellions'. It is worth-noticing that all these words are taken from the editorials. It is the knowledge source of discourse meaning which is activated. He also acknowledges the fact. He enumerates various incidents which are mentioned in the editorial. Various words are read. Even the meaning of 'self-immolation' is described as self-killing. The sameness in the meanings of 'uprising' and 'revolt' is described.

Posttest of the experimental group

Solitary confinement should be a last resort

Example 5

Target word: Drastic **Word collocation**

Discourse meaning

World knowledge

P: {**Drastic** *measures*… What are the such *measures? hunger strikes…modest demands… photo… phone call* and *calendars*… There are the things… keeping them with *contact… contact* with time and relatives… These are *modest goals* … I mean innocent *demands*… Why these *demands* not accepted? Why need to put (strict) *measures*… Jail life is a strict life as we know... no freedom.

I: Tell the meaning of **drastic**

P: I told you … already I have told you.

I: What have you told…?

P: (Strict)… I say… The previous passage gives me hint.. Sure … I am dead sure… It is the meaning I guess… What is the need of taking (hard) *measures* against the prisoners? *inmates* it is written for the prisoners… *strike* is there … *hunger strike …. Strike* when there is cruelty … I tell this … I tell this. Is it right, sir?}

The participant reads the target word 'drastic' with its collocate 'measure'. She defines what the writer means by 'modest demands'. The examples she gives are taken from the editorial. It means the discourse meaning is activated. 'Photo', 'phone', 'call' and 'calendars' make contact with the outside world. The world knowledge is activated when time and relations are mentioned. She regards the modest demands as innocent demands. Like the writer(s) of the editorial, she sympathizes with the prisoners. Jail life creates troubles for the inmates. When asked to describe the meaning of 'drastic', she describes its meaning as 'strict'. It is worth-noticing that she has already mentioned 'strict measures' and 'strict jail life'. Then the discourse meaning is activated. She asks the questions about the need of adopting such strict measures. Then the reason for the strike is described. It is the cruelty which gives rise to the strike. She seeks for confirmation from the researcher about the guess she has made.

Table 3: *Proportion Comparison between Different Knowledge Sources used by the Control Group and the Experimental Group in the Pretest*

Knowledge Source		x_1	n_1	x_2	n_2	p_1	p_2	p-value	Z
Word Level	Word Association	260	1116	230	1144	0.233	0.206	0.131	1.512
	Word Collocation	180	1116	198	1144	0.161	0.178	0.301	-1.035
	Word Morphology	450	1116	480	1144	0.403	0.431	0.185	-1.324
	Homonymy	202	1116	236	1144	0.181	0.212	0.067	-1.833
Sentence Level	Sentence Meaning	480	782	504	704	0.614	0.716	0.000***	-4.155
	Sentence Grammar	112	782	120	704	0.143	0.170	0.149	-1.444
	Punctuation	190	782	80	704	0.243	0.114	0.000***	6.456
Discourse Level	Discourse Meaning	150	230	160	260	0.652	0.615	0.399	0.843
	Formal Schemata	80	230	100	260	0.348	0.385	0.399	-0.843
L1-Based Sources	L1 Lexical Knowledge	110	150	86	130	0.733	0.662	0.191	1.307
	L1 Word Collocation	40	150	44	130	0.267	0.338	0.191	-1.307

Non-Linguistic Level	Topic Knowledge	80	370	84	390	0.216	0.215	0.978	0.028
	World Knowledge	290	370	306	390	0.784	0.785	0.978	-0.028

***P<0.001, P=N.S.

In the table 3 the results of the sample proportion comparison for each knowledge source in lexical inferencing was presented. There were nine L2 knowledge sources on three levels, two L1 knowledge sources and the remaining two sources on non-linguistic level.

For L2-based knowledge sources, there were no statistically significant differences regarding word level and discourse level sources. However, on sentence level there were significant statistical differences for the control group and the experimental group in the use of knowledge sources in the pretest. As for L1-based knowledge sources and non-linguistic level sources, there were no differences statistically in both groups in the pretest.

Table 4: *Proportion Comparison between Different Knowledge Sources used by the Control Group and the Experimental Group in the Posttest*

Knowledge Source		x_1	n_1	x_2	n_2	p_1	p_2	p-value	Z
Word Level	Word Association	150	1026	84	468	0.146	0.179	0.101	-1.642
	Word Collocation	280	1026	120	468	0.273	0.256	0.504	0.668
	Word Morphology	418	1026	224	468	0.407	0.479	0.010*	-2.579
	Homonymy	178	1026	40	468	0.173	0.085	0.000***	4.470
Sentence Level	Sentence Meaning	300	830	508	732	0.361	0.694	0.000***	-13.125
	Sentence Grammar	390	830	104	732	0.470	0.142	0.000***	13.903
	Punctuation	140	830	120	732	0.169	0.164	0.802	0.251
Discourse Level	Discourse Meaning	318	422	242	366	0.754	0.661	0.004**	2.851
	Formal Schemata	104	422	124	366	0.246	0.339	0.004**	-2.851
L1-Based Sources	L1 Lexical Knowledge	108	178	136	202	0.607	0.673	0.177	-1.350
	L1 Word Collocation	70	178	66	202	0.393	0.327	0.177	1.350
Non-Linguistic Level	Topic Knowledge	86	428	84	430	0.201	0.195	0.837	0.205
	World Knowledge	342	428	346	430	0.799	0.805	0.837	-0.205

*P<0.05, **P<0.01, ***P<0.001, P=N.S.

In the table 4 proportion comparison between different knowledge sources was presented as used by the control group and the experimental group in the posttest. While dealing with L2 knowledge sources, both groups had no significant statistical differences regarding knowledge sources of word association, word collocation and punctuation. But significant statistical differences were observed in the use of knowledge sources of word morphology, homonymy, sentence grammar, discourse meaning and formal schemata.

Regarding L1-based sources (L1 lexical knowledge and L1 word collocation) and non-linguistic sources (topic knowledge and world knowledge) no significant statistical differences were found in both groups in the posttest.

Table 5: *Proportion Success Comparison between Different Knowledge Sources used by the Control Group and the Experimental Group in the Pretest*

Knowledge Source		x_1	n_1	x_2	n_2	p_1	p_2	p-value	Z
Word Level	Word Association	90	270	50	227	0.333	0.220	0.005**	2.790
	Word Collocation	40	270	38	227	0.148	0.167	0.557	-0.590
	Word Morphology	105	270	111	227	0.389	0.489	0.025*	-2.240
	Homonymy	35	270	28	227	0.130	0.123	0.834	0.210
Sentence Level	Sentence Meaning	95	156	100	146	0.609	0.684	0.168	-1.380
	Sentence Grammar	26	156	21	146	0.167	0.144	0.584	0.550
	Punctuation	35	156	25	146	0.224	0.171	0.248	1.160
Discourse Level	Discourse Meaning	25	41	29	38	0.610	0.763	0.143	-1.460
	Formal Schemata	16	41	9	38	0.390	0.237	0.143	-1.146
L1-Based Sources	L1 Lexical Knowledge	13	25	26	35	0.500	0.714	0.088	-1.710
	L1 Word Collocation	12	25	9	35	0.500	0.286	0.088	-1.710

Non-Linguistic Level	Topic Knowledge	11	63	12	72	0.175	0.167	0.903	0.120
	World Knowledge	52	63	60	72	0.725	0.833	0.903	0.120

*P<0.05, **P<0.01, P=N.S.

Table 5 reveals the proportion success comparison between different knowledge sources used by both groups in the pretest. As for L2-based knowledge sources, significant statistical differences were noticed in the success rates in the knowledge sources of word association and word morphology. On sentence level and discourse level in L2-based knowledge sources no significant differences were observed for the control group and the experimental group.

Table 6: *Proportion Success Comparison between Different Knowledge Sources used by the Control Group and the Experimental Group in the Posttest*

Knowledge Source		x_1	n_1	x_2	n_2	p_1	p_2	p-value	Z
Word Level	Word Association	32	252	60	304	0.127	0.197	0.026*	-2.223
	Word Collocation	64	252	80	304	0.254	0.263	0.806	-0.246
	Word Morphology	130	252	15	304	0.516	0.049	0.000***	12.472
	Homonymy	26	252	14	304	0.103	0.046	0.009**	2.595
Sentence Level	Sentence Meaning	130	218	330	436	0.596	0.757	0.000***	-4.237
	Sentence Grammar	60	218	66	436	0.275	0.151	0.000***	3.786
	Punctuation	28	218	40	436	0.128	0.092	0.147	1.449
Discourse Level	Discourse Meaning	80	102	88	154	0.784	0.571	0.000***	3.511
	Formal Schemata	22	102	66	154	0.216	0.429	0.000**	-3.511
L1-Based Sources	L1 Lexical Knowledge	20	50	62	98	0.400	0.633	0.004**	-2.693
	L1 Word Collocation	30	50	36	98	0.600	0.367	0.004**	2.693
Non-Linguistic Level	Topic Knowledge	20	74	50	274	0.270	0.182	0.095	1.672
	World Knowledge	54	74	224	274	0.730	0.818	0.095	-1.672

*P<0.05, **P<0.01, ***P<0.001, P=N.S.

Table 6 presents the proportion success comparison between various knowledge sources as used by the control group and the experimental groups in the posttest. There were no significant success differences in the knowledge sources of word collocation and punctuation. Unlike the results of success comparison in the pretest, the proportion success differences were significant in the use of L1-based sources by both groups in the posttest. As for non-linguistic sources, no statistical sources differences are noticed in the knowledge of the topic and word knowledge sources used by the control group and the experimental group in the posttest.

Table 7: *Proportion of Success Comparison between Nouns, Verbs, Adjectives and Adverbs Used by the Control Group and the Experimental Group in the Pretest.*

Parts of Speech	n	x_1	x_2	p_1	p_2	p-value	Z
Nouns	682	147	152	0.216	0.223	0.743	-0.327
Verbs	418	198	171	0.474	0.409	0.051	1.901
Adjectives	396	69	77	0.174	0.194	0.451	-0.754
Adverbs	110	17	14	0.155	0.127	0.561	0.581

P=N.S.

As for proportion of success comparison between the parts of speech of the unknown words, it is revealed in table 7 that there are no significant statistical differences regarding nouns, verbs, adjectives and adverbs in the control group and the experimental group in the pretest.

Table 8: *Proportion of Success Comparison between Nouns, Verbs, Adjectives and Adverbs Used by the Control Group and the Experimental Group in the Posttest*

Parts of Speech	n	x_1	x_2	p_1	p_2	p-value	Z
Nouns	682	195	450	0.286	0.660	0.000***	-13.829
Verbs	418	214	344	0.512	0.823	0.000***	-9.800
Adjectives	396	102	234	0.258	0.591	0.000***	-9.249
Adverbs	110	22	61	0.200	0.555	0.000***	-5.425

***P<0.001

While dealing with the proportion of success comparison between the parts of speech of the unknown words in the posttest, it is found in table 8 that there were significant statistical differences regarding nouns, verbs, adjectives and adverbs for both groups in the posttest.

5. Conclusions

As the present study proves, engaging students in the task of lexical inferencing becomes a purposeful activity. Most of the participants in the study showed their enthusiasm in hunting the meanings of the unfamiliar words. It was interesting to notice the ways the ESL learners adopted to generate the meanings of the unfamiliar words in the editorials of the *Washington Post*. Undoubtedly, lexical inferencing became an intellectual guessing game for those who learnt the art of playing the game. In order to make an educated guess strategic inferencers connect "what is in the text with what is in their minds" (Beers, 2003, p. 62).

The findings of the study revealed that the instructional treatment had a significant positive effect on the use of knowledge sources by the experimental group in the posttest. In the pretest the total number of knowledge sources was 5276. The control group used 2648 (50.19) knowledge sources while the experimental group used 2628 (49.81%) knowledge sources. In the posttest both control and experimental groups had significant differences in the use of knowledge sources for generating the meanings of the unknown words. The control group used 2884 (56.75%) knowledge sources while the experimental group used 2198 (43.25%) knowledge sources. It meant the experimental group used less knowledge sources compared to the control group. The study is in consistent with the study of Nassaji's study (2003). It was found in both studies that quality mattered more than quantity.

The findings of the study showed the positive impact of instructional treatment on the success in lexical inferencing. In the pretest the control group made 555 (20.95) successful attempts with 2093 (79.40%) unsuccessful attempts. The experimental group made 518 (19.71) successful inferences and 2110 (80.29%) unsuccessful attempts. As revealed, there was no significant difference as far as the success was concerned for both control and experimental groups. In the posttest the control group made 696 (24.13%) successful inferences and 2188 (75.87) unsuccessful attempts. The experimental group made 1266 (57.60%) successful attempts and 932 (42.40%) unsuccessful attempts. The experimental

group made more successful attempts in deducing the meanings of the targeted words in the editorial than the control group in the posttest. Research on lexical inferencing has "identified a number of learner, text and contextual factors that influence the success in lexical inferencing" (Paribakht, 2010, p. 61).

Regarding the effects of parts of speech of unknown words on the ease and difficulty in lexical inferencing, it was surprising to notice that the same pattern was found in both pretest and posttest assigned to the control group and the experimental group. The hierarchy of order from difficulty to ease was as follows: adverbs, adjectives, nouns and verbs. The findings of the study about the order in ease and difficulty in guessing were in contrast with Liu and Nation's study (1985). They reported a different difficulty hierarchy in the order of adjectives, adverbs, nouns and verbs.

Though many causes of wild guessing were noticed, the intra-word level clues surpassed all other clues. Only the unknown words were given more priority by the participants of the study. Sometimes it appeared that only the target words were written without text. It meant all clues – sentential, pragmatic, discourse – were totally ignored. Out of ten major causes, six belonged to word level analysis – deceptive transparency, mistaken identity, incomplete morphological analysis, polysemy, hyphenated words, and mono-syllabic and bi-syllabic words. The rest are culture shock, more than one target word in sentence, insufficient context and deficient schemata. Strategies and activities may be devised to remove the hurdles in the process of lexical inferencing.

In order to assist language learners using lexical inferencing more successfully, teachers should encourage them to be strategic learners. The quantity of knowledge sources in lexical inferencing sources does not matter. On the other hand, the choice of proper knowledge source(s) may lead to successful attempts. Teachers should teach language learners the skill of "synthesizing individual word parts into a coherent and accurate meaning for the whole word, with the aid of the information in the surrounding context" (Parel, 2004, p.868). Frantzen (2003:185) has claimed that learners should maintain a "healthy skepticism" about the trustworthiness of contexts because they can suggest a variety of meanings." Natural learning atmosphere – pregnant with multiple approaches and strategies – can provide fruitful outcome (Aisha et al., 2021; Amjad et al., 2020).

The study is not without limitations. The subjects in the study were educated through semester system. It did not recruit the subjects who were taught via annual system. In the study it was made obligatory for the participants to guess all the unknown words in the task of lexical inferencing. But in actual reading of a text readers sometimes skip the unknown words, depending on the overall meaning of the text.

One area for further investigation would be the use of the newspaper editorials written by native writers and non-native writers. Future research on lexical inferencing can combine multiple techniques for data collection such as written tests, pair discussion, group discussion, eye-tracking and finger tracking.

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