

Multimedia Glosses for Enhancing Specific English Vocabulary: Saudi Vision 2030 and Transformation of Learning

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ABSTRACT

The present study investigated the role and influence of multimedia glosses on the learning of specific English vocabulary. This is in exact line with the recommendations of Saudi vision-2030 regarding technology integration for education. The vision advocates transformation of curricula and methods of teaching. Covid-19 pandemic taught us many lessons regarding limitations of traditional classrooms and routine teaching methods. In total, 52 learners of English for Specific purposes (ESP) were chosen following purposive-convenient sampling and grouped into control and experimental groups: n=25 and n=27 respectively. A test of specific English vocabulary was given to both the groups to further test them and ensure they were equal in level. Later, the learners were asked to attend 8 week reading sessions which utilised the experimental group in which the learners were exposed to practice reading computerized texts that integrated glosses. On the other hand, the controlled group took same reading texts, however without any glosses. When the training session (treatment) got over, the Specific English vocabulary test was given to both groups to investigate if there existed and significant difference in the learning of Specific English. Data analysis showed a significant difference between the learning of the two groups. Findings of the study demonstrated that multimedia glosses were helpful in enhancing learning of English for specific purposes (Medical English).

Keywords: English for specific purposes, medical English, multimedia glosses, vocabulary learning.



1. Introduction

1.1. Importance of technology and glosses

Technology is a necessity these days for all sorts of communication. It enhances communication for effective delivery. Covid 19 pandemic has already taught us big lessons regarding alternative and better mode of teaching-learning in given circumstances. Saudi vision 2030 lays greater emphasis on integration of technology to bring about modernization in every sphere of life. Transformation in learning/teaching or Education in general is one of the targets. It is interesting to note that most of the modern Saudi institutions have been ready to face any challenges like the covid 19 pandemic because of the technological preparedness.

Glosses can operationally be defined as a short definition or note that enhances comprehension processes. (Lomicka, 1998). Multimedia glosses offer learners opportunities through textual, visual, and auditory modalities and various modes such as video, picture, and text. Hyperlinks are usually used to indicate Verbal annotations in the texts for reading. (Mohsen & Balakumar, 2011). Researchers further continue that the hyperlinked words can be accessed in different forms of annotations through one of the options: either at the end of the text, in the margin, at the bottom of the screen, or in a pop-up window. Annotations in multimedia can facilitate the language learning process (Nation, 2001). Interesting and effective annotations can assist the readers of English comprehend important words better and easier. (Ko, 2005).

Nation (2013) observes that a gloss is nothing but a brief note or definitions of those words in the text which are unknown. Lomicka (1998, p. 41) states that glosses are usually provided for unknown words. Such a note or definition facilitates overall comprehension of the target language (English).

According to Jacobs, Dufon and Fong (1994) four key advantages for multimedia glosses can be found. First of all, these glosses enhance comprehension besides increasing vocabulary learning. It addition, these determine learners' preferences, and provide greater access and understanding of authentic texts or supplementary materials.

During almost two decades, a good number of studies have conducted with an aim of exploring the impact and effectiveness of glosses. (Hulstijn & Laufer, 2001; Mayer, 2001, 2002, 2005, Jones & Plass, 2002, Bowles, 2004, Ko, 2005, Makoto, 2006, Shahrokni, 2009, Ko, 2012, Zarei & Mahmoodzadeh, 2014, Varol & Ercetin, 2016,



Fathi & Sarkhosh, 2019, Tavasoli, Mowlaie, Abdolmajid& Rahimi, 2020). The comparative effects of different gloss types through screencast on vocabulary learning and working memory of Iranian EFL learners). Some studies in particular have confirmed that the integration of the multimedia glosses enhance learners' knowledge of vocabulary (Rouhi and Mohebbi, 2012; Ramezanali and Faez, 2019; Ouyang et al, 2020). However, it was not confirmed if the use of glosses achieved better learning in all the aspects and skills of English languages. Similarly all kinds of glosses were not equally helpful in enhancing learning of vocabulary in English. In this connection, AlSeghayer (2001) and Lin and Tseng (2012) reported that the glossing of text and video was more effective in learning unfamiliar words than that of text and picture.

Hence it is interesting to note the findings of Morett (2019) which confirm that viewing still images were proved better in learning than viewing iconic gestures (conveyed via video) while Andrä et al. (2020) contended that learning foreign language vocabulary with gestures (conveyed via dynamic video) was equally effective like with pictures, but the study was conducted at the primary level.

Though some studies support the effect of audio glosses that achieved higher vocabulary scores than those having access to textual glosses (Yeh and Wang (2003); Rassaei, 2018; Ramezanali and Faez, 2019). The findings of Kaplan Rakowski and Loranc-Paszylk (2019) presented entirely different results: the use of audio glosses (e.g.,word pronunciation), was not found appropriate and useful for vocabulary learning. Based on controversies related to multimedia use in modern classrooms of English language, the ultimate target of this study is to ascertain pedagogic use and effects of multimedia glosses such as the texts, audios, videos, and pictures on learning of ESP vocabulary.

1.2. Importance of vocabulary learning

It is commonly believed that vocabulary is the root of knowing a language. Reading, listening or comprehending will simply not be possible unless the learner know the target words. Vocabulary learning is rightly thought of as one of the most essential achievement of language learning (Nagy,1988; Koda,1989; Hu, M. & Nation, 2000; Curtis, & Long,2001; Quian, 2002; Cunningham, 2005; Webb, 2005; Nation,2006; Shen, 2008; Zhang & Annual, 2008; Milton, 2009; Yamamoto, 2011; Mehrpour, Razimjo & Kian, 2011). Later, Tong (2017) and Webb & Nation (2017) also confirmed similar idea. Linguistically, vocabulary and reading skill depend on each other. In other words, success or failure of reading and comprehension depends on how good the learner is at vocabulary knowledge. (Barrot, 2013). To be more specific,



Lee and Jeon (2017) observed that a certain amount of vocabulary is perhaps inevitable so learners are to read with comprehension with special reference to the reading of authentic material which is unseen and unfamiliar.

Though teaching of English in general and ESP in particular received due attention in Saudi Arabia, many English/ESP learners encounter learning difficulties. (Khan, 2011, 2016, Rassaei,2017). The causes of difficulties vary from learner to learner. (Khan, 2011,2016,2017) In some cases, it could be motivational or attitudinal issue. (Khan, 2011). Quite many studies explored the issues and problem of vocabulary learning such as in EFL Saudi learners context (Khan, 2011; Al-Saif& Milton, 2012; Hamouda, 2013; Sadik and Rahim, 2015; Khan, 2016a,b,c, 2017; Khan&Asif,2017; Al-Rabai, 2016; Al-Qahtani, 2016; Rafada & Madini, 2017). Keeping the finding of these mentioned studies and personal experience of the author, a vocabulary test of diagnostic nature was conducted for ESP learners at King Abdulaziz university, Jeddah. This served the purpose of a pilot study which interestingly revealed that more than 64% learners faced issues as they performed quite low.

Therefore, the present study aims at exploring effective strategy to enhance vocabulary learning especially for those ESL/EFL learners who are pursuing English for specific purposes (medical English). Due to the pedagogic relevance of technology, media, multimedia and their integration in ESP classrooms, the researcher undertook the current problem.

2. Literature Review

The literature review has been categorized into 4 sections: 1- concept and importance of multimedia glosses, 2- Theories behind technology and multimedia glosses, 3- Glosses and general vocabulary learning 4- Importance of ESP vocabulary learning and use of glosses.

2.1. Concept and importance of glosses

Though glossing is not a new area of research, it has not been largely explored by many researchers (Poole,2012), especially in the context of learning specific English for those learners who do not have required proficiency level even in general English. A gloss can be operationally defined as a brief note, comment, meaning (s)/synonyms, sound etc. In addition, a gloss may include a translation, short definition, an annotation, or brief explanation that is usually provided in any known language (L1 or L2). It appears either in the margins, footnote, or next to the difficult (unknown) words to facilitate target learners' comprehension.(O'Donnell, 2012; Nation, 2013; Yousefi & Biria, 2015;Chen, 2016). Similar studies supported integration of glosses for teaching



and learning of English or learning of ESP. (Khezrlou, Ellis, & Sadeghi, 2017). It is believed that primary purpose of integrating multimedia glosses is to provide a 'clue' to facilitate learners' comprehension in second or foreign language. Such glosses help additionally in the process of learning unknown or strange content.

Cha (2002) stated several benefits of glosses for language learners especially in vocabulary learning.) Shalmani & Razmjoo (2015) contended the role of gloss modalities and their pedagogic utilisation for reading comprehension. First, glosses help the English language learners in making errors due to guessing process (Nation, 2013). In this case, the study of Ghasemi, Khabiri (2018) demonstrated that description in-text glosses were found more effective than antonym in-text in improving reading comprehension.L1 glosses were quite effective for EFL Learners' Reading Comprehension. (Cheng and Good, 2009). Second, glosses also offer provide greater autonomy to learners in their reading (Ha, 2015, Wang and Lee, 2021). Third, they facilitate learners utilise their previous knowledge link with the target knowledge or skill in the text that ultimately leads reading skill. (Hong, 2010; Farvardin & Biria, 2011; Taylor, 2013). Wang and Lee (2021) recently found that glosses lead to effective learning of vocabulary (Zhao & Ren, 2017). It was also contended that there exist a connection between the role of L2-gloss frequency and learner proficiency in reading (Zhao & Ren, 2019). Finally, the learners are not supposed to consult dictionaries or translations for each difficult words. (Hong.2010; Vela.2015). In a recent study conducted revealed that L1 glosses led to greater learning than L2 glosses. (Yanagisawa, Webb & Uchihara, 2020). The researcher did not find found any interaction between language (L1, L2) and language proficiency: beginner, intermediate, advanced. The study did not reveal any significant difference among textual, pictorial and auditory modes of glossing.

2.2. Theories behind technology and multimedia glosses

Utilisation of glosses can find its connection with some theories especially Gardener's Multiple Intelligences Theory(MIT). Howard Gardner's multiple intelligence theory lays emphasis on differentiating human intelligence into specific modalities (rhythmic, visual, verbal, logical, kinesthetic, interpersonal, intrapersonal, naturalistic, & existential) (Gardner, 2011). The theory of multiple intelligence lead to the learner's style: audio, visual, kinesthetic, reading-writing etc. This has a close connection to bloom's taxonomy which emphasizes affective domain. (Bloom, Engelhart, Furst, Hill, and Krathwohl, 1956, and Bloom, Krathwohl, and Masia, 1984). Effect of multimedia in general and multimedia glosses on education is connected to taxonomy of learning objectives and even teaching strategies.



2.3. Glosses and general vocabulary learning

Many studies revealed multimedia glosses were very effective in improvement of vocabulary learning (Salem, 2006; Yanguas, 2009; Razagifard, 2010; Loucky & Tuzi, 2010:Hassan, 2010; Zoi,Bellou & Mikropoulos, 2011; Yun,2011; Tabatabaei&Shams,2011; & Neiriz. Poole. 2011,2012; Jalali 2012: Türk&Erçetin,2012; Rouhi & Mohebbi, 2012a,2013; Chiu, 2013; Oe & Alam, 2013; Cakmak, 2014; Rashtchi & Aghili, 2014; Hu, Vongpumivitch, Chang, & Liou, 2014; Moradan & Vafaei, 2016; Poole & Sung, 2016; Lee, 2017; Rassaei, 2018; Kongtawee & Sappapan, 2018; Zhao & Ren, 2019; Ouyang et al, 2020). Based on the literature review, it was concluded that to the best of knowledge of the researcher no research was carried out on the use of multimedia glosses to improve the learning of ESP vocabulary of Saudi EFL students. Therefore, the present study aims at researching the influence of multimedia glosses on Saudi learners' ESP vocabulary.

2.4. Glosses and ESP vocabulary learning

Despite the fact glosses are equally useful for ESP learning, not many studies are found in this area. Glossing is an important technique because it provides meanings of words in L1 or in a simple expression in a second language (Sulistianingsih and Sumartono,2016). In a very comprehensive study (Azizi, Hadipourfard and Bavali, 2022), it was found that the ESP learners were found confused while reading English text without a glossing technique. Based on the information elicited from preliminary research, glossing was incorporated as an effective technique for ESP for learner's comprehension. Glossing was identified as a motivator.

ESP learning in the medical/health context is not an easy task because many medical words are borrowed from other languages such as Greek and Latin, therefore glossing in L1 or L2 with images and sounds can be really useful. Webb and Nation (2008) recommended utilising glosses when learners encounter large number of unknown words. It is very normal in ESP (medical English) context. L1 glosses also facilitates ESP learners conceptualize and comprehend the words, provided they know it in their L1 already (Gardner, 2013). Even if they don't know, glosses can make the process easier even in ESP learning context.

2.5. Importance of the study

This age is characterized by technology and digital media. Multimedia use has created multiple opportunities for pedagogues and researchers for implementing these adopting in the field of language learning. The accessibility, feasibility and usability of multimedia in general and glosses have reinforced the gloss makers to integrate texts,



sounds, images, and video clips for difficult words. Learning English in general and ESP in particular is not easy, therefore some strategies of learning are needed. Integration of glosses of different types can yield far better results.

2.6.Need of glosses

As mentioned glosses (clues) can help a learner to comprehend the word 'gloss', a teacher can gloss (integrate information) from the website of Merriam-Webster (<u>https://www.merriam-webster.com/dictionary/gloss</u>). Different information can be elicited from the online source through glossing.

gloss 10f4 noun (1)	gloss 20f4 verb (1)
 gläs •) glös 1 : a surface luster or brightness : SHINE. 2 a : a deceptively attractive appearance selfishness that had a gloss of humanitarianism about it b : bright often superficial attractiveness show-biz gloss 3 : a viscous usually tinted cosmetic preparation used for adding shine and usually color to the lips : LIP GLOSS 	glossed; glossing; glosses transitive verb 1 a : to mask the true nature of : give a deceptively attractive appearance to → used with over the misery was general, where not glossed over by liberal application of alcohol — Marston Bates b : to deal with (a subject or problem) too lightly or not at all → used with over glosses over scholarly controversies rather than confronting them head-on
 gloss 3 of 1 noun (2) 1 a : a brief explanation (as in the margin or between the lines of a text) of a difficult or obscure word or expression b : a false and often willfully misleading interpretation (as of a text) 2 a : GLOSSARY b : an interlinear translation c : a continuous commentary accompanying a text 3 : COMMENTARY, INTERPRETATION 	glossed; glossing; glosses transitive verb 1 a : to provide a gloss for : EXPLAIN, DEFINE b : INTERPRET 2 : to dispose of by false or perverse interpretation trying to gloss away the irrationalities of the universe

The dictionary has different information about the target word 'gloss' including sound, meanings and different uses (verb, noun etc) of a word.

Example of the ESP context

Digestive system is one of the body systems. Human digestive system consists of



the gastrointestinal tract and other significant digestive organs such as the tongue, salivary glands, pancreas, liver, gallbladder etc). Digestion process starts from the breaking down of food into smaller and smaller parts and ends with proper absorption and assimilation into the body. There are three stages of digestion: the cephalic phase, the gastric phase, and the intestinal phase.

If this is the target text, the teacher needs to integrate many glosses as per the need of the students and objectives. The teacher may integrate a video of digestive system in order to make learning better, easier and result oriented. Similarly, images of salivary glands, pancreas, liver, gall bladder etc need to be displayed because the learners may not know these words and positions in the human body. Pronunciation and meanings of some unfamiliar words can be presented through glosses. Cephalic, gastric and intestinal are such words and phrases.

2.7.Objective of the study

2.7.1. To study the effect of different multimedia glosses on learning of vocabulary learning (ESP).

2.8 Hypothesis of the Study

Following hypothesis was formulated for the current study:

2.8.1. A statistically significant difference will exit between the means cores of the experimental and controlled groups in learning of vocabulary(ESP), and the mean score of the experimental group will be better.

3. Method

3.1.Design

For the present study is a pretest-posttest control group design was conceived which included an experimental group comprising 27 learners and a control group of 25 learners. A treatment (experiment) was given to both the groups in the form of an ESP vocabulary test. Later the scores of the tests were statistically measured.

3.2.Participants

Fifty two students pursuing specific for specific purposes (Medical English) at a college of a government university located at Jeddah city of Saudi Arabia, participated in the study. The participants were well equipped with technology and computers.

3.3.Instrument

Based on literature available and available tests, the researcher designed an ESP vocabulary test was constructed which was later employed as a pretest to see if the



learners' groups are equivalent, and a posttest to assess ESP vocabulary learning followed by the treatment (experiment). This test included 50multiple-choice (four options with one correct answer) questions assessing vocabulary learning.

As a matter of fact, a procedure of piloting was tried out on a group of 20 students to elicit item difficulty level and time allotted for the test. The item difficulty values of the designed test varied from 0.29to0.78. The required indexes of discrimination of the test items were found more than 0.11 which was within acceptable range. The students needed 75 minutestofinish the test comfortably.

The test's face validity was ascertained by seeking 6 experts' opinions on the content. Cronbach's Alpha method was utilized to measure the reliability which determined internal consistency of the test items.

3.4. Materials

Only six passages from ESP (medical) books were selected. A pilot study was administered to select difficult/unknown words to be glossed for enhancing learning of ESP. Next, the researcher handed them over to 2 instructors to find difficult or unknown words. In all, only 137wordswere identified and included in the list for glossing purpose.

3.5. Procedures

The experiment was conducted at King Abdulaziz university during 13 weeks. The experimental procedures were carried out in four phases. First a pre test was administered followed by organizing an orientation session for the learners. Next, actual reading sessions were conducted to see if glossing is going to be an effective technique of teaching which can enhance learning of ESP vocabulary.

ESP vocabulary test was given to all participants. Mann-Whitney U-test analysed the results of the pre test that indicated no significant difference (U= 241; p>0.05). Therefore, two groups were found equivalent. The results of the Mann-Whitney U-test are presented below in Table 1.

Table 1. Mann-Whitney U-test showing Mean scores difference 2410.735

Group	Ν	Mean Rank	Sum of Ranks	Mann-WhitneyU	Sig.(2-tailed)
Control	27	23.65	546		
Experimental	25	22.32	493		

3.6. Participants' orientation



In order that the target learners don't encounter difficulties during the reading sessions, participants of the experimental group were trained in an orientation session of 50 minutes. The instructor explained different glosses and the way they can be opened to see the meaning, images or the videos.

3.7. Reading Sessions

The researcher arranged for all the learners-participantsa8 week-reading sessions at a specific time and location. The instructor explained about the versions and types of the glossing software, the glossing patterns and reading task.

3.8. Post-testing

After the reading sessions were over, the researcher once again gave a test (post treatment test). The ultimate purpose of the post test was to find out significant difference between the two groups in ESP vocabulary learning.

3. Results

The researcher calculated Mean scores difference between the two groups on the ESP vocabulary, and analyzed using Mann-Whitney U-test which showed that experimental group scores were better, and there was a significant difference.(U=125;p<0.05).

Table 2. Mann-Whitney U-Test of the difference between the mean scores of the two groups on the posttest of ESP vocabulary learning.

Group	Ν	Mean Rank	Sum of Ranks	Mann-WhitneyU	Sig.(2-tailed)
Control	27	17.43	401		
Experimental	25	28.82	634		

1250.004

5.Discussion

The present study investigated how multimedia glosses exert affect on learners' ESP vocabulary learning. The study utilised only one hypothesis. The first hypothesis stated: there will be a

significant difference between the mean scores of the experimental group and the control group pin learning of vocabulary acquisition (ESP) and the mean score of the experimental group will be better.

Analysis of data revealed that the groups were not the same as regards a learning of ESP vocabulary, and there was a significant difference in the scores. Current findings are very much in line with many previous studies that support that integration of



glosses affect positively the learning of ESP vocabulary. The studies are: Salem,2006;Yanguas,2009Hassan, 2010; Razagifard,2010;Loucky & Tuzi, 2010; Yun,2011; Zoi, Bellou & Mikropoulos,2011; Tabatabaei & Shams,2011; Poole, 2011,2012; Jalali & Neiriz, 2012; Türk & Erçetin, 2012; Rouhi & Mohebbi, 2012, 2013; Chiu, 2013; Oe & Alam, 2013; Çakmak, 2014; Rashtchi & Aghili, 2014; Hu,Vongpumivitch, Chang, & Liou, 2014; Lee & Lee, 2015; Moazzeni, Bagheri, Sadighi, & Zamanian, 2014, 2015; Lee, Lee, & Lee, 2016; Moradan & Vafaei,2016; Choi, 2016; Poole & Sung,2016; Lee, Warschauer, Lee, 2017;Zhao & Ren, 2017; Kongtawee & Sappapan, 2018; Rassaei, 2018. There are many reasons why glossing have positively affected the learning outcomes. One of the main reasons is that the learners find resources then and there in many forms such as text, images, videos and sounds.

6. Conclusions, Recommendations, and Suggestions for Further Research

Taking clues from the findings and results of the present study, it was found that multimedia glosses are extremely helpful in ESP vocabulary learning. Based on the findings, it is recommended that multimedia glosses should be well utilised in teaching vocabulary in general and ESP in particular. Technology and multimedia should well be utilized in an English class. Teaching of vocabulary should be preferred because it is root of any language. ESP teachers should develop their pedagogic skills and technological awareness so they can design multimedia glosses.

A piece of research answer a few questions, however leaves a few questions to be answered in future researches. The researcher offered following suggestions for taking up future researches such as:

1- A comparative study traditional and gloss mediated teaching on ESP vocabulary learning,

- 2- Multimedia glosses and writing proficiency,
- 3- Effect of multimedia glosses on students' motivation,
- 4- Integration of multimedia glosses for teaching and learning grammar,
- 5- Multimedia glosses and feasibility of self-learning.

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