SCAFFOLDINGAND REINFORCEMENT: USING DIGITAL LOGBOOKS IN LEARNING VOCABULARY

Salma Hasan Almabrouk Khalifa
salmauum@yahoo.com
Ahmad Affendi Shabdin
affendi@uum.edu.my
School of Education and Modern Languages, Universiti Utara Malaysia

ABSTRACT: Reinforcement and scaffolding are tested approaches to enhance learning achievements. Keeping a record of the learning process as well as the new learned words functions as scaffolding to help learners build a comprehensive vocabulary. Similarly, repetitive learning of new words reinforces permanent learning for long-term memory. Paper-based logbooks may prove to be good records of the learning process, but if learners use digital logbooks, the results may be even better. Digital logbooks with an extended page with hyperlinked information on word-knowledge may work both ways – as scaffolding to learning as well as reinforcement to the learning process. In the present paper the researcher has suggested for the development of a software called 'Vocabulary log book,' which combines the features of Microsoft Word, online dictionary and online grammar books, so that the information needed by learners of a foreign language to learn its lexicon is available on a single page. The researcher believes that such a page will help learners master the new words quickly and efficiently.

KEYWORDS: reinforcement, scaffolding, vocabulary learning, digital logbook, memory strategy

INTRODUCTION

Vocabulary is the most important element in human languages that playsan extremely crucial role in learners' ability to communicate clearly and concisely in speech and writing. As Anderson & Freebody (1981) put it, "there is a relationship between students' vocabulary knowledge and their understanding of what they read" (cited by Francis and Simpson, 2003: 66). In a foreign/second language classroom, new words and phrases are introduced nearly every day. Learners must feel comfortable and confident using vocabulary orally and in their writing in order to learn and build upon ideas.Although knowledge of grammar is essential to learn a foreign language, still the major chunk of the corpus of any language is made up of lexicon. Furthermore, at the initial stageof learning a foreign language, vocabulary may be given priority, as Wilkins (1972) states that, "Without grammar very little can be conveyed, without vocabulary nothing can be conveyed" (pp.111-112). The grammatical aspect of a language is commonly present in its words - in their forms, categories, collocation, association and combination in sentences. English language also crams much linguistic information in its lexicon, not just semantic information but syntactical information, and even extra-linguistic information through stress, tone, rhythm and punctuation, etc., making lexical items even more important.

Vocabulary learning is also closely relatedto good memorizationtechniquesso that the learners retain all the different aspects of the knowledge of words in long-term memory to recall and use them at appropriate moments(Schmitt, 2000). Learners employ different strategies and techniques as aids to their memory, and one such technique is the use of logbooks where they maintain a record of new learnt words and the process

of their learning (Țurloiu & Stefánsdóttir, 2011). Logbooks can serve a better purpose if they are digitized(Currano& Leifer, 2009). In digital format, the logbook may be linked to another programme page where the new learnt words will be hyperlinked to all the aspects of their knowledge – spelling, pronunciation, meaning, and grammar, etc. on a single webpage. The second reference to the word will help learners retain the word-knowledge in their long-term memory. The present study is a small research conducted with a limited number of learners to measure the rate of success of reinforcement and scaffolding achieved through digitized logbooks, and based on the results obtained suggests for the development of a software for vocabulary learning.

THE PROBLEM STATEMENT

English is taught as a foreign language in Libyan schools. Only the lexical items found in the textbooks used in classrooms are taught by teachers. Learners need to learn the major part of the essential vocabulary independently. They generally refer to a dictionary to learn the paraphrased meaning of the word and usually in their own mother tongue. Since many learners only managed to store their vocabulary knowledge in their short-term memory, the tendency to forget the meaning of the word learnt in isolation is fast. Another issue is word orthography. Learners usually find it difficult to spell words correctly especially words which have strange pronunciations or have similar sounds to other known words. A word is not just the meaning paraphrased into another language. A word is an aspect of sounds, letters, stress, tone, affixation, usage, and so on. It also exists in relation to other words in the language. It is natural that learners forget the 'paraphrase' wordas quickly as they memorize it. This problem in learning new words might be solved if learners learn all the aspects of the word-knowledge at the same time. But, in common language, this knowledge is found scattered in pieces – in dictionaries, thesauruses, and grammar books, separately. In digital format too, the information is not available at one place. For instance, Microsoft Word is equipped with word-meaning and thesaurus, but not with grammatical information. Online dictionaries provide sound files, but they need to be installed separately. If all the knowledge aspects of a word can be found at one place, does this help learners to learn and retain this knowledge in their long-term memory.

OBJECTIVE

The objective of the present research study is to suggest for the development of a software with the effects of scaffolding and reinforcement through digital logbook on learners' vocabulary learning, especially on the vocabulary learning experience of Libyan EFL (English as a Foreign Language) learners. The specific objectives of the research are to determine:
  i. whether keeping a record of the learning process as well as of the new learnt words could function as scaffolding to help learners build a comprehensive vocabulary,
  ii. Whether repetitive learning of new words could reinforce permanent learning for long-term memory.

RESEARCH QUESTIONS

Does keeping a record of the learning process as well as of the new learn words could function as scaffolding to help learners build a comprehensive vocabulary?
Does repetitive learning of new words reinforce learning with long-term memory?

SIGNIFICANCE OF THE STUDY

The present study attempts to make suggestions for developing a software in the form of a digital logbook which functions as scaffolding to help foreign language learners learn and retain the lexicon of the language. The word-knowledge information available online and linked to the entries made by learners in this digital logbook will be accessible to them anytime. If learners access the information for a second time, this repetition may function as reinforcement making vocabulary learning stored permanently in their long-term memory. Similar studies in Libyan context and in the Arab world are still lacking. It is hoped that the findings of the present study would assist the second/foreign language learners of English to incorporate new and modern technology in acquiring and retaining new lexical items in a faster and more effective way.

LITERATURE REVIEW

A logbook is commonly a written record of the activities one has carried out (Patel & Chotai, 2011). For example, a 'vocabulary logbook' would be a record of the new vocabulary items one has learnt. In making a record of the activity, one has to go through repetition of the process of the activity; so, in case of vocabulary learning, it may work as *scaffolding*to memory. Based on the logbook that learners use, a software program may be developed which would provide hyperlinked information required to know all the meaning and grammatical aspects of a word in the foreign language, i.e., spelling, pronunciation, part of speech, word formation rule, synonyms/antonyms, and meaning of the word with example usage . This program is known as 'Vocabulary log book.' One would enter the new learnt word in a digital file, in alphabetical order. Later, if one wishes to check any aspect of the knowledge of the word, one would click on the word which would open a new page containing all the required information on the word in question. For example, a learner learns a new word 'contented.' The learner records the new learnt word in his/her *Vocabulary log book* file and makes a logbook entry as well. He/she does not use the word for a short period of time, for example ten days, and therefore forgets its meaning or correct pronunciation. Then suddenly he/she comes across the word in a different context again, but does not recall the knowledge aspect of the word. He/she would then refer to his/her *Vocabulary log book*where he/she would find all the knowledge aspects of the word. This second learning of the word will work as *reinforcement* and will make the learning stored permanently in the memory of the learner.

In language learning contexts, the term 'scaffolding' is used to mean any support, material or strategy, that helps the learners grasp the elements of the target language easily. Ovando, Collier, & Combs (2003: 345) use the term 'scaffolding' to refer to any "contextual supports for meaning through the use of simplified language, teacher modelling, visuals and graphics, cooperative learning and hands-on learning." They state that the teacher of second language has to facilitate that support for his/her learners. Scaffolding may be used for a particular period of time. Then, "as students become more proficient, the scaffold is gradually removed" (Diaz-Rico & Weed, 2002: 85). Scaffolding may be of three different types, as explicated below:

  i. Simplifying the language: The teacher presents language as simplified chunks, for instance, short reading passages, using present tense in speech, and avoiding idiomatic expressions.
 ii. Asking for completion, not generation: The teacher does not ask the students to create new sentences but asks the students to choose answers from a given list, or to complete a partially finished outline or fill-in the blanks paragraph.
iii. Using visuals: The teacher presents information and then asks the students to respond through the use of graphic organizers, like, graphs, tables, charts, outlines, graphs, and the likes.
iv. Modern technology can be used very effectively as a means to provide sufficient scaffolding to learners, and research has proven that such scaffolding decreases achievement gaps in learning (Proctor, Dalton, & Grisham, 2007; Jimenez, 2003; Strangman & Dalton, 2005; Goldenberg, 2008).

Reinforcement is a thing that strengthens or encourages something (Diaz-Rico & Weed, 2002). In language learning contexts, the teacher presents the information and then uses some related activity as a reinforcement to help the students understand it. In the present study, digital logbook and related (suggested) software are used as visual scaffolding devices, while second repetition of learning of a word is used as reinforcement for effective learning behaviour. Positive reinforcement encourages learners to learn the lexicon of the target language faster (August, et al., 2005; Smetana, et al, 2009; Mancilla-Martinez, 2010)

Logbooks are a good account of first person narratives. To enhance teaching of vocabulary, logbooks can be used to gather authentic data on learners' preferred activities and the process of learning new words, thus, to find a pattern and build further strategies on this pattern. Research studies on the use of logbooks to build vocabulary and enhance autonomy in vocabulary learning show good results (Papadopoulou, 2007; Pemberton, et al, 2009; Tang, et al, 2016). Tang et al. (2016) report that in a programme in which at "stage 2 was an eight week self-report study in which participants were provided with vocabulary learning logbooks to record their vocabulary learning experiences…. The data collected helps understand the usefulness of vocabulary learning, and how university students tackle new words in an independent vocabulary learning environment." Dam (2009) maintains that logbooks can be a good answer to the question 'how to induce learner autonomy?' Dam believes that "it would facilitate evaluation- a most important issue in an autonomous classroom" (129).

In the present study, the researcher used learners' logbook information to find a pattern in the activities and strategies used by the participants and used that information for further experimentation.

3.0 MATERIALS AND METHODS

A combination of quantitative and qualitative research methods were followed in the present study. Quantitative method has been used to analyze the data collected from the participants' logbooks. Qualitative method has been used in interpreting the results obtained, especially the interpretation of the relationship between digital scaffolding and their impact on the performance of learners in learning new lexical items of a foreign language, in this case, English.

A selection of students used logbooks to make an account of their daily activities in vocabulary learning. Logbook report has been compiled by the researcher to collect information on what the participants did to learn new vocabularies on their own at home (in terms of techniques and strategies they applied). This information were later used to suggest the development of a software that could take care of the needs of vocabulary learners.

3.1. METHODOLOGY

The students were provided with some instructions to use logbooks, and these instructions were adopted from (Al-Shuwairekh, 2001: 292). The instructions to use logbooks were as follows:

i.   Take a few minutes each day to ask yourself whether you did something in order to learn vocabulary at home.
ii.   If the answer is yes, write down what you did. Be as specific as possible.
iii. Describe briefly how you did what you did.
iv.   How you discover the meanings of new words (e. g., using dictionary, asking acolleague)?
v.   What techniques do you use in order to learn new lexical item?
vi.   The logbooks of the six participating students were analyzed to find a pattern. The information thus gathered was utilized to prepare a digital logbook and associated pages called 'Vocabulary log book,' simulating linked pages on the web.

3.2 RESEARCH SETTING AND THE PARTICIPANTS

The present research was conducted at a selected Libyan schools. In Libya, English is taught as a foreign language. Teaching of English in Libyan schools begins from Standard 5, and by the time a student joins university s/he has 6 years of English teaching. The participants selected for the study were secondary school students whose next step in education is university; so, they have learnt English language for 6 years, sufficient to understand the requirements of the present research. Also, the rationale behind the selection is that these students have gained knowledge of English language and are ready to make use of a wider range of vocabulary items, either for further studies or for their own business.

3.3 THE INSTRUMENT OF DATA COLLECTION

Data for the study were collected through logbooks. Every student was given this form to fill it up from their logbook.

Please record the new words learned and tick the appropriate boxes to indicate the strategies used in learning the words

Date	Source e.g., newspaper, TV, films, course book, novels, etc.	New words knowledge : 1. Pronunciation 2. Spelling 3. Meaning 4. Parts of speech 5.Synonym/ antonym 6.Other forms	Memory Strategies							Cognitive Strategies			Determination strategies			Metacognitive strategies	Social strategies	
			Study spelling of the new word	connect the new word to its synonyms and antonyms	Connect words with images in mind	use Affixes and roots to remember the words	Using the new word in sentences	connect the new word to a personal experience	Paraphrase of the new word	Repeat word loudly	Writing the new word many times	Make my own lists of new words	Consult dictionary	Identify the part of speech of the new word	Break the new word up into the main parts	Watching movies & TV	Guess from context	Ask other people	Ask teacher for paraphrase of

4.0 DATA COLLECTION

As mentioned above, data were collected through paper-based logbooks. Data from paper-based logbooks were collected to find a pattern in the learners' use of strategies and activities to learn new vocabulary items.

4.1 DATA ANALYSIS

4.1.1 Analysis of Data Obtained through Logbooks

The data obtained from logbookswere analysed by using content analysis. showed that all ten students applied different vocabulary learning strategies to learn new words. But, there is a pattern in their use of strategies. Most participants used four different types of VLSs (Vocabulary Learning Strategies), i.e., *Memory Strategies, Cognitive Strategies,Determination Strategies* and *Metacognitive Strategy.* And, from the these

categories of vocabulary learning strategies, *Memory Strategies* were the most used by all ten participants, whereas Metacognitive strategies were the least used, practiced by only two students.

The data revealed that although students' overall use of vocabulary learning strategies increased, it showed the way that they keeping the words in their memory. It also showed that students preferred using *Memory Strategies* followed by *Determination Strategies* in their attempt to get to the meaning of unknown words. Among the *Memory Strategies,* the students mostly utilized: *study the spelling of the new word, connect the new word to its synonyms* and *antonyms* beside *using the new word in sentences, connect words with images in mind, use affixes and roots to remember the words*, *connect the new word to a personal experience* and paraphrase *of the new word.* In terms of *Determination Strategies, using a bilingual dictionary* (English / Arabic) was the most frequently applied strategy by secondary school students. The other strategies applied were: *identify the part of speech of the new word, guess the meaning of the new word from the contex*t and *break the new word up into the main parts*.

The students were given a lists of words by the researcher to enable them to select and use their own best strategy according to their needs. Some students did not depend only on the given list; they also used vocabulary learning strategies to learn other words which were not included in the list. In other words, these learners have moved forward to become self-directed learners and having autonomy in vocabulary learning. Most of these words were related to their majors Basic Science and Humanities. For example, Student Six revealed that she learnt the word *false memory syndrome* by watching a TV programme called "*The Doctors*", and *bacillary* which she found in instructions of cream usage. Student Five mentioned that she learnt the words *interrelated cultures* and *Apps* by using her phone. Hence, undertaking some out-of-class sources was also an indication of their awareness of having some control over their own learning.

Thus, based on learners' major preference for strategies and activities, the researcher designed a digital logbook and an associated webpage. The digital logbook was similar in appearance as the paper-based logbook, except that the words entered in its columns were to be linked to an extended webpage that would provide all the information on the word-knowledge. The extended page is proposed to look as follows:

_____

Extended

extend + ed

Word Root of extend. The Latin word tendere, meaning to "stretch" or "to spread," and its form tentus give us the roots tend, tent, and tens. Words from the Latin tendere have something to do with stretching or spreading. A tent is a temporary shelter made from stretched out fabric.

"extend" in British English

 See all translations

extend*verb*

 UK /ɪk'stend/ US /ɪk'stend/

extend verb (INCREASE)

B2 [T] to add to something in order to make it bigger or longer:

We have plans to extend our house (= to make it bigger).

The government has produced a series of leaflets designed toextend (= increase)public awareness of

the *dangers* of *AIDS*.

We're *planning* to extend *our* *publishing* of children's *books* (= *increase* it).

B2 [T] to make something last *longer*:

The *bar* has *recently* extended *its* *opening* *hours* (= made them *longer*).

I need to extend my *visa* (= make it last *longer*).
More examples
They *planned* *to extend the* *car* *park*, *freeing* *existing* *parking* *spaces* *for* *visitors*.
We had to *wait* *months* *for the* *council* *to* *approve* *our* *plans* *to extend the* *house*.
The *company* *is* *hoping* *to extend* *its* *market* *still* *further*.
The *deadline* *for* *applications* *is being extended, in* *part* *because of the* *postal* *strike*.

Thesaurus: synonyms and related words
Stretching the body
crane

distend

outstretched

reach

stretch
stretch (yourself) out
extend verb (STRETCH

[T] to *stretch* something out:
We've extended a *clothesline* *(= made it* *reach*) *between two* *trees* *in the* *garden*.
He extended his *hand* *as a* *greeting* *(=* *held* *out his* *hand* *for someone to* *shake* *it).*
Thesaurus: synonyms and related words
extend verb (REACH)

B2 [I usually + adv/prep] to *reach*, *stretch*, or *continue*:
The Sahara Desert extends **for** *miles*.
The *path* *extends* **beyond** *the end of the* *road*.
Rain is *expected* *to extend* **to** *(=* *arrive* *in) all* *parts* *of the* *country* *by this* *evening*.
The *effects* *of this* *legislation* *will extend (=* *reach*) *further* *than the* *governmentintends*.
extend verb (OFFER)

[T] FORMAL to *offer* or give something to someone:
I should like to extend my *thanks* **to** *you for* *your* *kindness*.
The *chairperson* *extended a* *warm* *welcome* **to** *the* *guest* *speaker*.
The *government* *is extending* *aid* *to* *people* *who have been* *affected* *by theearthquake*.
[+ two objects] *The* *bank* *has* *agreed* *to extend*
 us *money/extend* *money* **to** *us (=* *lendus* *money) to* *buy* *our* *house*.
Thesaurus: synonyms and related words
Giving, providing and supplying
accommodate

accord

administer

administration

assignment
award

deliver

hand sth around

hand sth back

hand sth in
hand sth out

hand sth over

invest

lay

spare

step
step forward

supplier
 supply
 supply chain
See more results »
extend verb

[I + adv/prep] to include or affect someone or something:
*Parking restrictions do not extend **to** disabled people.*
Her new-found tolerance does not extend to single mothers.
The invitation did not extend to family members.
extend verb (USE ABILITY)

[T] to cause someone to use all their ability:
She feels that her job doesn't extend her enough.
Browse
extend
extendable
extended

The proposed software combines the features available in Microsoft Word, online dictionaries and grammar information available online. The novelty in the proposal is that all this information should be available on a single page. The assumption behind this thought is that if learners have to look for the information to learn all the

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knowledge aspects a new word in different sources, they tend to lose interest and do not learn the words properly. Information available on a single page will make their learning easier and complete.

5.0 CONCLUSION

To conclude, the present research was primarily based on empirical research. The researcher collected data from paper-based logbooks of the research participants and found a pattern in their use of vocabulary learning strategies and other activities. This information is used to suggest that since learners usually use Memorization Strategies, Determination Strategies and some of Cognitive Strategies to learn new words, a software which provides all the required information involved in using these vocabulary learning strategies (such as consulting a dictionary, finding synonyms / antonyms, and learning the word formation rule, etc. on a single page) should be developed. The software will function as a scaffolding to learning, and as learners tend to forget word meanings quickly, relearning of the new learned words will function as reinforcement to their learning process helping the learners learn the lexicon of the target language for long-term memory.

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