



Examining On-Line Long-Term Vocabulary Supportive Feedback Strategies

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Abstract

Most language teachers accept that not all of what is taught in the classroom remains in the students' long-term memory and that the situation is far from the ideal input=output analogy. Although CALL enthusiasts proclaimed that language learning would be enhanced by the introduction of the machine in the language classroom, results remain comparatively poor in vocabulary long-term retention particularly when all information is provided and executed on screen.

This systematic experimental study examines retainment of two vocabulary supportive feedback strategies (SFS) in an on-line language learning set-up, following a typical pre/treatment-treatment-after/treatment pattern. The participants were treated with the two SFs in order to learn 12 vocabulary items half of which were offered with the traditional method and the other half with the experimental.

Results show that the SFS which involved an off-screen task performed statistically better than the one by which all learning was to be executed on-screen. Similarly to previous studies, most subjects did not select the strategy they learned better with as their favorable strategy. Finally, results seem to support a claim that the human brain is not the perfect organism often portrait to be, as the hypothesis input=output was rejected.

Keywords: feedback, vocabulary learning, vocabulary supportive feedback strategies, short-term memory

1. Introduction

Every language teacher with a minimum classroom experience realises that the input=output hypothesis does not apply in this profession. Despite the many efforts teachers invest in the field, it is impossible for learners to benefit 100% of what is being shown by the human or the machine on the teaching board/screen. This claim has been supported by evidence (Entwistle & Ramsden 1983; Elen & Lowyck, 2000) in that there is no direct relationship between teaching and actual student performance.

Despite the advances in artificial intelligence, human-computer interaction, and virtual learning for providing supportive feedback of higher quality, utilising different types of media in an individualised, self-pacing rythm, the actual practical results have not shown a significant increase in learning outcome.

The question that is aimed to be investigated empirically relates to the type of supportive feedback strategies that would need to be employed to best perform the job and increase outcome in the long-term memory of the learner. This study wishes to contribute to research in this direction by examining long-term memory retainment of different SFSs. It is hypothesised that an off-screen SFS would result to a higher word retainment in comparison to the traditional SFS that is typically provided in most dedicated language learning sites and dictionaries.

The study unfolds by an opening chapter on supportive feedback and relevant research and moves on to present the methodology employed to investigate the issue. Results and contribution of findings to the topic are offered in Discussion.

2. Supportive feedback and research in the area

The distinction of supportive feedback, from its corrective counterpart, was proposed by Ypsilandis (2002) to define the mechanism teachers and computers use to enrich initial input with support material. This mechanism does not aim to correct any learner product and it is used at an earlier stage of the learning process, when students require explanations on initial input (Ypsilandis, 2006; 2014). While research on corrective feedback has been increasing in

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recent decades, research on supportive feedback remains poor. It seems that both teachers and research scholars concentrate on employing and testing different types of corrective feedback that can be automated with current technology (Ferreira Cabrera, 2007; Wu, Hwang, Milrad, Ke and Huang, 2007), something that is considered a great deal to be the teacher's job, while leaving the coaching aspect fairly unchallenged. In this light, learning failure, which results after testing, is often attributed to poor learner preparation and dedication.

A number of studies however have attempted to investigate this issue. In Ellis' (1993) study three different SFSs were used (Ellis uses the term clarifications), namely 'implicit explanations', 'explicit rule explanations' and 'both clarifications together'. Results showed that all three groups had difficulties to apply the recently learned knowledge in practice or to generalise knowledge in new sentences. This finding was also registered in studies by other scholars (Michas and Berry, 1994; deGraaf, 1997; Alanen, 1995 and DeKeyser, 1995). DeKeyser (2006) reports on studies which experimented with the explicit/implicit feedback type, with no significant results between the two treatments. The above studies and those reported in DeKeyser (2006) typically use different groups each with a distinct different treatment. Ypsilandis (2006, 2014) experimented in small scale studies in a slightly different manner. Ypsilandis explored short and long-term vocabulary retainment using one group treated with both SFSs. Despite the fact that no statistically significant differences have been so far registered between the SFSs tested, the number of words retained after an hour was always higher than the number of words retained after one week and significantly lower than the original 100% target. This finding concurs with the claims of Entwistle & Ramsden (1983) and Elen & Lowyck (2000).

3. Method

3.1 The subjects

The 48 subjects were all 4th, 5th and 6th grade primary school learners varying from 9 to 12 years old (with two subjects at 13), living on Kalymnos island (Greece).

3.2 Design and Procedure

Ypsilandis' experiments traditionally test SFSs in twos (the traditional vs the experimental). The two strategies (dependent variables) tested were: a) a hypertexted direct strategy (passive learning) over b) an experimental strategy that involved some off screen\']=[-0pp[[[task (active learning). The traditional direct SFS typically provides word definition and morphological information in the target language (English), and the equivalent term in the subjects' mother tongue. The experimental SFS required the subjects to write 3 examples on paper, including the new vocabulary item. The two strategies, with the analogous content, were hypertexted and linked to a number of words equally and evenly distributed in an electronically presented text. Long-term memory was measured by examining retention of the vocabulary item after one week. An initial test was used to secure which items were new to the sample before treatment and the second (after the treatment) to measure one week long-term retainment. The treatment period required the subjects to read a text and study all hyperlinked words. At a later stage subjects registered their favourable SFS and best SFS for their learning on a short questionnaire.

3.3 Apparatus and Materials

Three types of tools are used. A list of the hyperlinked words to register participants knowledge. An electronic text appearing in a browser with the hypelinked words and the introspective questionnaire registering the subjects' preferences.

4. Analysis

4.1. Descriptive statistics of the independent variables

All subjects (except two cases) were using the internet, mostly for communication and much less for finding information of any type or entertainment. Table (1) presents the scores in more detail. Notice, that it is the valid percent that is of importance here, which excludes missing values.



Table 1.

PURPOSE OF USING NET					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	COMMUNICATION	15	31,3	34,1	34,1
	INFORMATION	2	4,2	4,5	38,6
	ALL	25	52,1	56,8	95,5
	ENTERTAINMENT	2	4,2	4,5	100,0
	Total	44	91,7	100,0	
Missing		99	4	8,3	
	Total	48	100,0		

A Pearson r test between the two scale variables (age and hours per week on the net) showed no statistically significant correlations. On the other hand, 'age' was found to correlate significantly with the total number of words remembered after one week (Pearson $r=.375$, $p<0.01$, 2-tailed). The higher the age, the higher the number of words retained.

Most learners found the program useful (except in two cases) and 23 (47.9%) declared they 'learn new words' while 6 (12,5%) saw it as a game. 10 (20,8%) participants thought the program provided information about them to the teacher! The off screen task was found to be their preferred vocabulary SFS and the strategy they thought they learn better with (table 2).

Table 2.

Preferred Strategy to receive feedback		Strategy they think they learn better with
Direct/Traditional	18 (38,3%)	15 (31,3%)
Off-Screen Task	29 (61,7%)	31 (64,6%)

A Chi-Square test showed that there is a statistically significant correlation between these two variables at the $p<.001$ level of significance (2-tailed) with 2 degrees of freedom (Fisher's exact test at 16,3). This denotes that subjects of this sample select the same SFS in both questions. A Cramer's V test showed that the relationship is so strong to the level of the two variables measuring the same concept.

4.2. Statistics of the dependent variables

Table 3 (left) below clearly shows that most retention scores concentrate between 0 and 2 words after one week with the direct method of SFS. This is confirmed by the Mean, Median and Mode all at (1). Standard Deviation is at (1,0). On the other hand, retention scores of the off-screen task (Table 3, right side) are higher and vary between 0 and 4 words at the same period. Mean is at 1,96, Median and Mode at (2). Standard Deviation is at 1,3. While most subjects select the off-screen task as their favourable strategy, a qualitative subject by subject analysis showed that the absolute majority of the participants do not successfully select the SFS they actually learn better with.

Table 3.

NUMBER OF WORDS REMEMBERED DIRECT METHOD ONE WEEK					NUMBER OF WORDS REMEMBERED WRITING STRATEGY ONE WEEK				
	Frequency	Percent	Valid Percent	Cumulative Percent		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	35,4	35,4	0	8	16,7	16,7	16,7
	1	18	37,5	37,5	1	9	18,8	18,8	35,4
	2	10	20,8	20,8	2	16	33,3	33,3	68,8
	3	1	2,1	2,1	3	9	18,8	18,8	87,5
	4	1	2,1	2,1	4	4	8,3	8,3	95,8
	5	1	2,1	2,1	100,0	5	2	4,2	4,2
	Total	48	100,0	100,0		Total	48	100,0	100,0

A paired sample T test ($t=5.8$, $df=47$) to investigate the difference between the scores in the two testing conditions (direct and off-screen) revealed that the experimental off-screen SFS was statistically significant higher than the traditional direct SFS at the $p<.01$ level (2-tailed). However, scores of both SFSs were statistically significant ($t=26,2$ and $t=21,9$ $df=47$) from the starting score (new words) at $p<.001$ level.



5. Summary and Discussion

The alternative hypothesis has been confirmed by the evidence in this study in that the off-screen SFS showed higher retention than the direct traditional and that this element in CALL, which has been neglected for years, would need to be activated in dedicated language learning site design. Notice also that both SFSs perform well in vocabulary item retention, which shows that the human brain adapts to both situations. However, participants do not realize the difference between the two questions (preferred SFS and SFS that they learn better with), a reaction that occurred in previous Ypsilandis' (2006, 20114) studies. The concept here is 'if I like it, I learn better with it' despite the fact that results do not support this belief. Finally, age seems to be a significant factor of word retention. Whether this relates to brain maturity or to higher language learning experience would be difficult to answer at this point. Among the shortcomings of this study remain the small number of subjects, the short treatment period and the non exclusion of children with learning difficulties which may have had a significant negative impact on test scores. Overall, it may be possible to conclude that a) the human brain has a mind of its own (i.e. it does not obey the 100% vocabulary learning command), b) the individual is not aware of his/her mind learning preferences.

References

- [1] Alanen, R. "Input enhancement and rule presentation in second language acquisition", In R.W. Schmidt (ed.), *Attention and Awareness in Foreign Language Learning*. Honolulu: University of Hawai'i Press, 1995, 259-302.
- [2] deGraaf, R. "The eXperanto experiment: effects of explicit instruction on second language acquisition", *Studies in Second Language Acquisition*, 19, 1997, 249-276
- [3] DeKeyser, R. "Learning second language grammar rules: an experiment with a miniature linguistic system", *Studies in Second Language Acquisition*, 17, 1995, 379-410.
- [4] DeKeyser, R. "Implicit and Explicit Learning", In Doughty, C.J. and M.H. Long (Eds.). *The Handbook of Second Language Acquisition*. Blackwell Publishing, 2006
- [5] Entwistle, N. J. & P. Ramsden *Understanding Student Learning*, London: Croom Helm. 1983
- [6] Elen, J. & J. Lowyck "Homogeneity in students' conceptions about the efficiency of instructional interventions: origins and consequences for instructional design", *Journal of Structural Learning and Intelligent Systems*, 14, 2000, 253-265.
- [7] Ellis, N. "Rules and instances in foreign language learning: interactions of explicit and implicit knowledge", *European Journal of Cognitive Psychology*, 5, 1993, 289-318.
- [8] Ferreira-Cabera, A. "An Empirical Study of Effective Corrective Feedback Strategies with Implications for Technological Applications in Applied Linguistics", *Proceedings of the BAAL Conference, 2007*, 29-32
- [9] Michas, I.C. and D.C. Berry "Implicit and explicit processes in the second-language learning task", *European Journal of Cognitive Psychology*, 6, 1994, 357-381
- [10] Ypsilandis, G.S. "Feedback in Distance Education", *C.A.L.L. Journal* Vol. 15 No2, Swets & Zeitlinger Publishers, 2002, 167-181.
- [11] Ypsilandis, G.S. "On Feedback provision strategies in CALL software", Keynote at the *Motivation in Learning Language for Specific and Academic Purposes* conference. *Proceedings of the 5th International Conference on Language Learning for Specific and Academic Purposes*, published by the University of Macedonia Press, 2006
- [12] Ypsilandis, G.S. "A preliminary study on supportive feedback strategies in language education", in *The Multilingual Brain* (eds.) Heiner Boettger and Gabriele Gien, EAP, 2014, 187-207.
- [13] Wu, P-H, G-J. Hwang, M. Milrad, H-R. Ke, Y-M. Huang "An innovative concept map approach for improving students' learning performance with an instant feedback mechanism", *British Journal of Educational Technology*, Blackwell Publishing, 2011, 1-16.