The Effect of Input Enhancement on Vocabulary Learning: Is There An Impact upon Receptive And Productive Knowledge?

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Abstract

This article reports on a quasi-experimental study investigating the effectiveness of two different teaching approaches, explicit teaching and explicit teaching combined with textual and aural input enhancement used to teach lexical items to elementary level learners of Turkish in a higher education context. Forty participants were divided into two equal groups and given a pre-test measuring productive and receptive knowledge of nine targeted lexical items naming common types of food and drink. Each group was then given sixty minutes instruction on 'restaurant Turkish', using a direct communicative approach. Group one (contrast group) received explicit teaching only, while group two (treatment group) received the same teaching but also used a menu where the target words were bolded (textual input enhancement) and listened to the target words modelled by the teacher three times (aural input enhancement). Following the treatment, tests measuring productive and receptive knowledge of the target items were administered. This process was repeated with a delay of two weeks following the treatment. Analysis of gain scores for receptive and productive tests made at the pre-, post- and delayed stage reveal larger gains for the treatment group in each test. These were statistically significant when compared with the contrast group's scores for production at the immediate post-test stage. Within group tests showed that each treatment had a significant impact on receptive and productive knowledge of vocabulary targeted, with a larger short term effect on the treatment group. Previous studies in this area have tended to focus on the use of input enhancement in relation to the learning of grammatical forms but these results demonstrate some clear benefits when teaching lexis, which have clear implications for further research and teaching.

Key words: Input enhancement; textual enhancement; aural enhancement; Turkish vocabulary; beginners

Introduction

The importance of learning vocabulary explicitly from the early stages of studying a second language is now well-established (e.g., McCarthy, 1999; Schmitt, 2000.) While there has also been a great deal of research which gives clear suggestions and about how many and which lexical items and chunks may be of primary importance to teach learners (e.g., O'Keeffe, McCarthy & Carter, 2007; Shin & Nation, 2007), there is less consensus about how instruction can best aid this process. There is evidence that explicit teaching of grammatical and lexical items has a greater impact upon learning than implicit teaching (Norris & Ortega, 2000, 2001; Spada & Tomita, 2010) but as yet there are no definitive answers to the type of explicit teaching which results in the most effective learning of second languages. It may also be the case that the effects of explicit teaching can be increased

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through making the input learners receive as salient as possible. One area of consistent focus in the research has been upon the use of input enhancement (IE) as a means of promoting noticing and learning and in particular upon the use of textual enhancement (TE) of various kinds. TE commonly involves enhancing a text though making target items bold, italicised or underlined.

The impact of TE has been researched in regard to a range of second languages alongside forms of explicit teaching (e.g., Alanen, 1995) and as a variable in its own right (e.g., Petchko, 2011) but results have been mixed (Han, Park & Combs, 2008). Aural enhancement (AE), whereby listening texts are manipulated to increase the saliency of target items (such as making the recording of those items louder or repeating target items) has been researched a great deal less, and what results which are available are similarly inconclusive (e.g., Reinders & Cho, 2011). However, much TE research has focused upon grammatical structures as opposed to lexical items and AE and TE have been under-researched in combination with explicit teaching. This study is an attempt to fill this gap and provide some evidence that TE can be a useful addition to vocabulary learning, as it can quickly draw learners' attention to the form and use of a word, something Nation (1999) suggests can be helpful. As a strategy, TE has the benefit of being potentially extremely versatile. It could be used for incidental learning or targeted learning based on resources such as Coxhead's Academic Word List (2000) or even used by learners themselves as a deliberate learning strategy. The use of such strategies by learners has been identified by Folse (2004) as an essential feature of successful vocabulary learning.

Input Enhancement

The term 'input enhancement' is credited to Sharwood Smith (1991, 1993), who suggested that some form of enhancement may be helpful to make input more salient to learners. Without such salience, he suggests, learners may fail to notice forms within the input they receive because much input is likely to be processed for meaning. Noticing, as described by Schmidt (1990, 1995, 2001, 2010) can be defined broadly as 'conscious registration of attended specific instances of language' (Schmidt, 2010, p.725). It is this conscious registration which is considered to be the first step needed to convert input into intake and input enhancement may be viewed as one type of 'consciousness raising' (Sharwood Smith, 1981) activity, which teachers and researchers can use to help learners notice forms within input they comprehend. Sharwood Smith (1993) suggests a number of methods which might be used to enhance input, including the bolding of texts for visual input and repeating targeted items for aural input. The use of input enhancement would seem to be of particular relevance in the instruction of beginners since in the initial stages of learning a new language all input is potentially significant to the learner and there is often little indication as to which pieces of language are essential or more useful in the long term.

There have been a number of studies aimed at investigating the effect of input enhancement upon the learning of targeted forms. Many studies of this nature have focussed upon textual enhancement (TE), either as a variable of its own or in combination with other variables such as input flood or explicit rule-based instruction. In a review of the research in this area Han, Park and Combs (2008) found that most research has sought to compare TE with another form of instruction such as explicit rule-based instruction or output practice and that TE has often been combined with additional means to augment its effect, such as asking learners to attend to the targeted form. Studies have generally focused on grammatical forms in a variety of languages, including English relative clauses (Doughty, 1991), Spanish impersonal imperative (Leow, 2001), French past participle agreement in relative clauses (Wong, 2003) and English passive forms (Lee, 2007), although some studies have concentrated upon lexical items (e.g., Kim, 2003; Petchko, 2011). Treatments have varied greatly in length from fifteen minutes to two weeks as have sample sizes, which have varied from fourteen to two hundred and fifty nine participants (Han, Park & Combs, 2008). Generally, studies have employed an experimental design, employing a pre-test, treatment and immediate post-test design, with a tendency not to include a delayed-test. Results have mostly been measured by analysing productive and receptive tests statistically, although there is inconsistency in the type of test employed. For example, some studies (e.g. Reinders & Cho, 2011) have just used one receptive test type, commonly a grammaticality judgement test. Several studies have attempted to measure noticing through

measures such as think-aloud protocols (e.g., Alanen, 1995; Rosa & O'Neill, 1999) and to employ such data to demonstrate that learners who noticed aspects of the targeted language achieved better results in tests.

Perhaps because of the varied nature of the studies, results indicating positive effects for TE have themselves been mixed in terms of its impact upon noticing and learning of the targeted forms. Doughty (1991), Shook (1994) and Alanen (1995) for example, all report that TE had some positive effects on learning of the targeted forms, whilst Izumi (2002) and Wong (2003) report that there were no positive effects on learning. Other studies report mixed results, with TE having a positive impact in the area of noticing but not in terms of learning (e.g., Izumi 2002), and in some cases there were no discernible effects with regard to noticing or learning (e.g., Leow, Egi, Nuevo & Tsai, 2003; Petchko, 2011). Jourdenais, Stauffer, Boyson and Doughty (1995) did find that TE had a significant impact upon noticing and immediate production of the targeted forms but the lack of delayed test makes it difficult to suggest the forms were acquired. A possible cause of the mixed results may also be simply that not all studies have sought to measure both noticing and learning (Han, Park & Combs, 2008, p.602) and there has often been a presumption that TE will cause noticing and therefore learning will follow and thus it is only noticing of the forms in focus which needs to be measured. This is in itself not entirely unreasonable if we accept Schmidt's often quoted assertion that 'noticing is the necessary and sufficient condition for converting input to intake' (Schmidt, 1990, p.129) but there is a case for suggesting that researchers need to differentiate between what learners have noticed and what they appear to have acquired and are able to produce. Although these are not mutually exclusive, we would suggest that not every aspect of language which learners notice will be acquired, in the sense that learners will be able to produce it. Measuring an internal process (noticing) is also not without difficulty and the use of measures such as think-aloud protocols have been criticised. Barkaoui (2011, p.53) identifies the issue of veridicality in such approaches where relationships between the unconscious processing and the measurement process are indirect at best and relationships can only be inferred. Dornyei (2007, p.148) notes that thinking aloud whilst performing a task it is not a natural process and therefore requires some training. This training may result in what Stratman and Hamp Lyons (1994) term *reactivity* in that it influences the kind of data produced so that learners produce more (or fewer) instances of noticing than they would otherwise do. The method also relies on a learner's ability to verbalise what they have noticed and it will clearly be the case that some learners may be more confident at expressing this in a written form, either as they notice, or after noticing. For these reasons, as we will discuss, we suggest that noticing can be measured through testing receptive knowledge and learning through testing productive knowledge and areas of crossover can then be analysed.

While studies in TE have been frequent, those employing aural enhancement (AE) have been much less frequent. H. Y. Kim (1995) reports on an early study which attempted to explore whether AE could influence the phonological aspects which learners perceive in connected speech. Two groups of Korean learners of English were asked to listen to a series of short texts and complete a visual comprehension task, choosing a picture which best matched each passage. For one group, the speed of speech was slower with more frequent pausing at phrase boundaries, while the other group listened to the texts at normal speed. Immediately following the listening, students were asked what they had heard and why they chose each picture. Student reports suggested that the elements of speech which students comprehended most easily were words which contained tonic syllables within a tone unit, suggesting that slower speech may allow a greater chance to perceive these elements. However, results indicated that there were no statistically significant differences between the groups in terms of comprehension.

There have also been a number of studies conducted using enhanced listening materials, particularly with video (e.g., Baltova, 1999; Hernandez, 2004; Grgurović & Hegelheimer, 2007). However, these studies have focussed upon different effects of TE upon listening, such as the extent to which listening comprehension and intake can be aided by subtitled video or by using transcripts while listening. Although the effects have been positive in some cases (e.g., Baltova, 1999) these results have not been consistent across a number of studies (Perez & Desmet, 2012). In addition, use of subtitles and transcripts is perhaps better described as TE and not AE because nothing has been done to enhance the recordings themselves.

Jensen and Vinther (2003) did examine the use of repetition of listening materials as a form of AE. Students learning Spanish were played the same DVD material three times and given different treatments. Each group heard the clip three times, either fast-slow-fast, fast-slow-slow or fast-fast-fast as treatment between pre- and post-tests. No significant differences were found between the treatment types but there was a significant effect of all treatments when compared to a control group. This suggests that all forms of repetition as AE had a positive effect in this study. Reinders and Cho (2010, 2011) conducted a study using digital technology to aurally enhance adverb placement and passives with sixteen Korean learners of English. The volume was raised on each instance of the targeted structures in an audio file given to students, whilst a contrast group was given the same audio file but without the targeted structures being enhanced. Each group was asked to listen to the audio file once and were given no further instructions. Despite the interesting nature of the study, no statistical differences were found in the test results of each group and some participants even reported that the raised volume was distracting.

Whilst the body of research in TE in particular is plentiful, there are clearly some elements which have been under-researched and aspects of study design which have been inconsistent. The first of these is the failure in some cases to provide both receptive and productive tests as a measure of the treatment given, something Schmitt (2010) suggests is vital when assessing receptive and productive knowledge as aspects of vocabulary learning. Clearly, if a learner can recognise a correct form in a measure such as a grammaticality judgement test, this only provides evidence of receptive knowledge of the item in question. It cannot be equated with an ability to produce the target items. Providing both types of test can help us to measure noticing (receptive tests) and learning (productive test)s. Tests of lexis also have to be developed in order to assess the aspects of lexical knowledge that are relevant to the situation. Nation (1999, p.340) sets out a table detailing different levels of word knowledge for both reception and production both in terms of written and spoken contexts. At the early stages of learning, such as the situation within which the learners in this study were in, assessment is most likely to be mainly receptive in nature with only limited production being possible.

Secondly, as we have noted, not all studies have not employed a longitudinal element, in the form of a delayed-test, something Schmitt (2010) also suggests is essential if we wish to provide evidence of durable learning. This weakness is also one which Han, Park and Combs (2008) recognise and one which they argue must be addressed if we hope to provide more reliable results in future TE studies. Although there is disagreement about what constitutes an acceptable delay, it is generally recognised that a week or more is needed after treatment in order to establish longer term effects of any intervention (Schmitt, 2010).

Thirdly, there have been notably fewer studies which have attempted to assess the impact of TE and AE on the learning of lexical items. Those that have focussed upon lexical items (e.g., Bishop, 2004, Choi, 2016; Y.Kim, 2003; Petchko, 201) have not employed both TE and AE as treatment variables and have also found little effect for TE. Y. Kim (2003) sought to investigate the effect of TE and implicit, explicit or no lexical elaboration (explicit = meaning plus definition, implicit = appositive phrase, following the target items) on two hundred and ninety seven Korean learners of English. The findings show that TE alone did not have a significant effect on learners' ability to recognise form or meaning of the lexical items, whilst lexical elaboration of both types aided meaning recognition of the item. Bishop (2004) assessed the effects of TE on noticing formulaic sequences in a reading text and overall comprehension of that text. Two groups were compared—a control group which read an unenhanced text and an experimental group which read a text with targeted formulaic sequences typographically enhanced. Students were able to click on words or sequences they were unsure and these were often provided with an explanation of the meaning. They then answered a series of comprehension questions on the text. Results showed that the TE group clicked on the enhanced formulaic sequences significantly more than single words and they also performed significantly better on the comprehension test, when compared with the control group. Petchko (2011) explored the impact of TE upon incidental vocabulary learning whilst reading with forty seven intermediate students of English as a foreign language. Students in the treatment group had twelve non-words enhanced, whilst the control group did not. Non-words were chosen to ensure that the meaning of the treatment alone was measured. Both groups were given productive and receptive tests to measure

the effects of the treatment upon their recognition of word meaning and recall of the target items' meanings. Although both groups made gains when recognising form and recalling meaning in post-tests, there were no statistically significant differences found between the groups' scores in either test. Cho (2016) investigated the effect of TE on the learning of collocations. Two groups were compared – one which read a passage with target collocations enhanced in the text and another group which read the text without the collocations being enhanced. Groups received a post-test on the target collocations following the reading and a test to check their recall of the whole text. They also had their length of eye fixation measured using eye tracking software. Results showed that the TE group performed significantly better than the contrast group on the target collocations test and also spent more time looking at the enhanced forms. However, they also recalled significantly less of the non-enhanced text. This suggests that while TE can increase noticing of targeted lexis, the increased attention on these items may reduce the ability to recall texts. As these results found mixed effects for TE alone, there seems to be a clear need for more studies which attempt to investigate the impact of TE alongside AE on the learning of lexical items. Such attempts are particularly merited when we consider the argument that one important way for learners to increase their vocabulary is to notice form and meaning (Schmidt 1990) as much as possible when they encounter them and TE and AE are one way this could be achieved. This would seem to be particularly the case when investigating the impact upon beginners learning an L2, as a large part of their time can usefully be spent trying to acquire a basic vocabulary as quickly as possible (McCarthy, 2004). Nation (2006) emphasises the need for a deliberate approach to the learning of vocabulary and TE and AE potentially offer a way to direct learning to the most important vocabulary. While the current study investigates the use of TE and AE in the classroom, both types of input enhancement could also form the basis for self-directed study or independent learning strategies.

Research Questions

To our knowledge, no studies have attempted to combine AE and TE with explicit instruction. Whilst the effects of TE are mixed and AE has been under-researched, there is a great deal of evidence which demonstrates the benefits of explicit instruction in language teaching, in developing lexical, pragmatic grammatical and pragmatic competency (e.g., Alsadhan, 2011; Halenko and Jones, 2011; Norris & Ortega, 2000, 2001; Spada & Tomita, 2010). The current study is an attempt to address some of these issues through a focus on comparing TE/AE alongside explicit vocabulary teaching, in comparison to explicit vocabulary teaching alone. It also attempts to address the lack of a longitudinal element in some studies though the inclusion of a delayed-test, which can provide evidence of durable learning (Schmitt, 2010, p.268) and to measure both receptive and productive knowledge through these tests. The study seeks to answer the following research questions:

1. To what extent does TE and AE+ explicit teaching improve the receptive knowledge of the target lexical items when compared to explicit teaching alone?
2. To what extent does TE and AE+ explicit teaching improve the productive knowledge of the target lexical items when compared to explicit teaching alone?

Methodology

Participants

The participants consisted of two groups of 20 first year undergraduate students. All students were studying for a degree in TESOL and Modern Languages combining TESOL with Arabic, Chinese, French, German, Japanese or Spanish as their main second language. English was the first language of all participants. The research was conducted as part of four hours of classes which students undertook in order to experience learning a second language through Direct Method teaching, as beginners. Students had undertaken just two hours of classes in Turkish prior to the study taking place and none had studied the language previously. In total there were

nineteen male and twenty one female participants, with a mean age of 21.5 in the contrast group and 22.6 in the treatment group. Participants were randomly assigned to each group.

Research Design

The study followed a quasi-experimental classroom research design, as outlined by Dornyei (2007) and Cohen, Canion and Morrison (2011) and here described as such because there was no control group employed but rather two groups who received different types of instruction, which took place within a classroom setting. Although a control group (receiving no instruction but undertaking each test) would have been an addition to the study, this was not possible, as the participants undertook instruction as part of their undergraduate programme. In addition, the intention was to measure the effects of a key variable in the instruction upon the learning of the targeted lexis (in this case types of input enhancement) and not whether instruction itself has any effect. The study employed a pre-test, treatment, post- and delayed test structure, with the delayed tests taking place two weeks after instruction and representing the longitudinal aspect of the study. The design can be summarised in Table 1.

Table 1
Research Design

	Pre-test	Treatment	Post-test	Delayed post-test (2 weeks after instruction)
Contrast group $N = 20$	Receptive and productive vocabulary tests Focused on target items e.g. *ayran* (a drink made from yoghurt, salt and water)	One hour of explicit teaching only focussed on 'restaurant Turkish' including food and drink items tested in the pre-, post and delayed tests	Receptive and productive vocabulary tests Focused on target items Turkish e..g. *ayran* (a drink made from yoghurt, salt and water)	Receptive and productive vocabulary tests Focused on target items Turkish e.g. *ayran* (a drink made from yoghurt, salt and water)
Treatment group $N = 20$	Receptive and productive vocabulary tests Focused on target items e.g. *ayran* (a drink made from yoghurt, salt and water)	One hour of explicit teaching with textual and aural input enhancement for the target lexical items focussed on 'restaurant Turkish' including food and drink items tested in the pre-, post- and delayed tests	Receptive and productive vocabulary tests Focused on target items e.g. *ayran* (a drink made from yoghurt, salt and water)	Receptive and productive vocabulary tests Focused on target items e.g. *ayran* (a drink made from yoghurt, salt and water)

A number of items were included in tests, based upon several factors. Firstly, two items were chosen as they contained a potential cognate (*salata* [salad] and *alkollu* [alcoholic]) but also contained a word which would not be recognisable to the learners. The second set of items were not recognisable but were used multiple times in various forms (*içecekler* [drinks]) and finally words were chosen which would be entirely unfamiliar and would not be easily translatable into English (*ayran* [a drink made from yoghurt, salt and water]) and *beyaz/kırmız şarap* [white/red wine]. All students were first given a productive and then a receptive test focussing on the target

items, for reasons outlined in the literature review (see appendix A for the target items and appendix B for a sample of the tests). The productive test entailed learners translating the target items into English and the receptive test entailed learners reporting whether they believed they knew the target item or not. As noted earlier, tests of lexis have to be developed in order to assess the aspects of lexical knowledge that are relevant to the situation. As the classes focused on learners at beginner level, this meant that the test needed to centre on establishing meaning of new lexis and then the linking of form to this (Batstone & Ellis, 2009) and thus the focus was on whether learners were able to recognise the words and link them to the appropriate forms. To ensure reliability each receptive test also contained an equal number of real and invented words following Nation's (1999) format for vocabulary recognition tests. The addition of these words reduces the likelihood of participants simply ticking all of the options. The order of items was changed for each test.

Each group received an hour of explicit instruction about 'restaurant Turkish' using a direct, communicative method, meaning all instruction was delivered in the target language. Implicit teaching was taken to be 'learning without awareness of what has been learned' whilst explicit teaching was taken to mean 'the learner is aware of what has been learned' (Richards & Schmidt, 2002, p.250) .This was realised by the teacher explicitly stating the aims and intended outcomes of the class before it started. The lesson followed a presentation and practice framework. Students were first shown pictures of the items and drilled on them. Explanations of items which were not immediately obvious from the picture were given in Turkish (e.g. *ayran* [a drink made from yoghurt, salt and water]). Later on in the lesson the menu was presented in enhanced and unenhanced form (see appendix A). Finally, the students did a short role-play based on a model dialogue where they took the part of customers in a café while the teacher took the role of the waiter.

The treatment group were given identical materials to the contrast group but each targeted word was bolded for this group, in order to operationalise TE. Aural enhancement was operationalised by the instructor modelling each targeted item three times for the experimental group and only once for the contrast group. This procedure was intended to replicate the oral repetition which Sharwood Smith suggests (1991) can be used for aural input enhancement. Students in the treatment group were not given any additional instruction, such as asking them to pay attention to the enhanced words. Both groups were asked not to revise the words between classes.

Test data was analysed for statistical significance using between group and within group measures. To answer the two research questions, gain scores at pre-post, post-delayed and pre-delayed stages were compared using an independent samples t-test to compare groups. Productive and receptive gains were also compared for each group using paired samples t-tests. Effect sizes were measured where significance was found, using Pearson's *r,* which Cohen (1988) suggests can be considered in the following ways: small effect = 0.10, medium effect = 0.30, large effect = 0.50.

Results and Discussion

Research Question 1: To what extent does TE and AE + explicit teaching improve the receptive knowledge of the target lexical items when compared to explicit teaching alone?

Table 2 gives the descriptive statistics for the receptive tests, for group 1 (the contrast group, who received explicit teaching only) and for group 2 (the treatment group, who received explicit teaching and AE/TE).

Table 2
Receptive Test Results

	Pre-test	Post-test	Delayed test
Group1 (contrast)	*M* = 1.5000	*M* = 6.5550	*M* = 5.6500
N = 20	*SD* = 1.73205	*SD* = 2.21181	*SD* = 260111
Group2 (treatment)	*M* = 1.5000	*M* = 8.2000	*M* = 6. 9000
N = 20	*SD* = 1.60591	*SD* = 1.43637	*SD* = 1.94395

Note. Maximum score = 9

It is clear from this data that both groups made gains from pre- to post and pre- to delayed tests. Paired sample t-tests show that these gains were significant for both groups. For the contrast group, gains at the pre-post stage were most positive (M =*5.05000*, SD = 2.68475) $t(19)$= 8.412, p = <.001, r = 0.88 and were maintained to some degree at the pre-delayed stage (M = 4.15000, SD = 2.49789) t (19) = 7.430, p = <.001, r = 0.86. Although there was notable attrition from the post to delayed stage (M =-.9000, SD = 2.82657*)*, this was not found to be significant. For the treatment group, gains were largest at the pre-post stage (M = 6.70000, SD = 2.51522) t (19) = 11.913, p <.001, r = 0.94 and were maintained to some degree at the pre-delayed stage (M = 5.4000, SD = 3.20197) t (19) = 7.542, p =.001, r = 0.87. There was also attrition at the post to delayed test stage (M = -1.3000, SD = 1.97617), but this was not found to be significant. These results show that both types of instruction had a durable benefit for the receptive knowledge of the target lexis. They also show that the gains were larger in general and the effect sizes larger at the pre-post and pre-delayed stages for the treatment group, indicating a clear short term benefit for explicit teaching combined with TE and AE. However, despite these notable gains, when compared with independent samples t-tests, no statistically significant differences were found between the groups at any of the test stages.

Research Question 2: To what extent does TE and AE+ explicit teaching improve the productive knowledge of the target lexical items when compared to explicit teaching alone?

Table 3 gives the descriptive statistics for the productive tests, for group 1 (the contrast group, who received explicit teaching only) and for group 2 (the treatment group, who received explicit teaching and AE/TE).

Table 3
Productive Test Results

	Pre-test	Post-test	Delayed test
Group1 (contrast)	M = .9000	M = 4.9500	M = 3.6000
N = 20	SD = 9.6791	SD = 2.13923	SD = 2.23371
Group2 (treatment)	M = .0000	M = 6.3500	M = 3.5000
N = 20	SD = .0000	SD = 2.32322	SD = 2.94690

Note. Maximum score = 9.

It is again clear from this data that both groups made gains from pre to post and pre to delayed tests. Paired sample t-tests show that these gains were also significant for both groups. For the contrast group, gains at the pre-post stage were most positive (M =*4.0500*, SD = 2.13923) $t(19)$= 8.467, p <.001, r = 0.88 and were maintained to some degree at the pre-delayed stage (M = 2.70000, SD = 2.22663) t (19) = 5.423, p<.001, r = 0.78. Again there was notable attrition from the post to delayed stage (M = - 1.3500, SD = 2.51888), and this was found to be significant, t (19) = - 2.397, p = .027, r = 0.47. For the treatment group, gains were again largest at the pre-post stage (M = 6.35000, SD = 2.32322) t (19) = 12.224, p <.001, r = 0.78 and were maintained to some degree at the pre-delayed stage (M = 3.50000, SD = 2.94690) t (19) = 5.132, p <.001, r = *0.47*. There was also attrition at the post to delayed test stage (M = -2.85000, SD = 2.79614) and this was found to be significant, t (19) = - 4.558, p <.001, r = 0.72.

These results show that both types of instruction had a durable benefit for the productive knowledge of the target lexis. They also again show that the gains were larger in general at the pre-post stage for the experimental group indicating a clear short term benefit for experimental teaching combined with TE and AE. An independent samples t-test also revealed that there was a significant difference (with a medium effect size) between the groups in terms of their pre-post gains, demonstrating the superiority of the results for the treatment group (Contrast group: M = 4.0500, SD = 2.3923; treatment group; M = 6.3500, SD =2.32322) t (38) = -3.257, p =. 002, r = 0.46).

Overall, results for both tests show what we might expect at this level, both types of treatment helped learners to improve their receptive and productive knowledge of the target lexical items. The effects of the instruction were not sustained over time but gains made at pre-delayed were significant for both groups and for both test types. The greater gains for the treatment group in general and at the post test stage in particular, indicate that experimental teaching plus AE/TE had a stronger effect in this study, particularly in terms of productive knowledge. This suggests that an addition of AE/TE to explicit teaching can aid learning of lexis and could heighten noticing and retention of targeted lexis. The absence of significant differences between the groups at the delayed tests stages may be due to the fact that TE/AE are a relatively implicit form of input enhancement (Gasgoine, 2006) and may impact on learners for a short time only. To ensure a longer lasting effect, students at elementary levels in particular, may need very explicit forms of TE and AE to accompany explicit teaching. Gasgoine (2006), for example, found a positive effect for explicit input enhancement in a study investigating diacritics in beginners learning French and Spanish. Her study found that learners who were asked to re-type a passage in either French or Spanish and given keycodes showing them how to produce diacritics had a significantly higher recall of diacritics than a control group. This suggests that explicit measures such as asking students to pay attention to the enhanced forms may be more effective at this level, particularly if combined with repeated and longer exposure to the targeted items. Lastly, it is possible that administering a post-treatment questionnaire to assess whether the AE and TE did in fact draw learners' attention to the targeted items could have demonstrated the impact of these enhancements upon noticing. White (1998), for example, found in a study of TE with French texts that participants in her study believed that TE did make them attend to the targeted forms. If there is evidence that learners are paying more attention to the targeted forms as a result of TE then it can be argued that this is likely to lead to more noticing and durable learning.

Conclusion

The results of this study demonstrate that TE and AE did, to some extent, produce a more positive effect upon durable learning than explicit teaching alone. When the groups were compared, this was significant in the short term in the gains of productive knowledge for the experimental group and for both measures, gains were larger for the treatment group. Within group tests demonstrated that instruction had a positive and significant impact on both receptive and productive knowledge for both groups, when we compare gains made from the pre-post and pre-delayed test. Given that both groups were beginners, we would of course hope and expect that this would happen. However, the results do indicate that the use of enhanced input, particularly for beginners, could be extremely beneficial. Koprowski (2005) makes the salient point that materials often present learners with possible language without any signal of which language may be more useful. For example, the chunk 'play football' is more likely to be useful than 'do judo'. The issue is that at the outset of learning a language all words and phrases presented are potential input and the learner does not necessarily know which words or patterns are more worthy of attention. Enhanced input, directed to high-frequency/highly useful lexis would seem to provide a potential way of signalling to learners that certain pieces of language are noteworthy, as well as guiding teachers to provide particular emphasis on these.

As mentioned in the literature review, TE and AE also have the potential to be utilised not only by teachers to guide explicit vocabulary learning in class, but as a possible strategy for independent study for language learners. This could be done informally, with learners simply highlighting post-reading lexis that they feel is useful to them. It could also be carried out in conjunction with the use of word lists such as Coxhead's Academic Wordlist (2000) or the lists provided by English Profile (2014). There are a number of tools available to learners (and teachers) which can profile vocabulary using a range of input word lists such as the Compleat Lexical Tutor (Cobb, 2017) site. AE could be carried out by learners recording (on a smartphone or similar device) texts and pausing before the key lexis they wish to remember, or by repeating those words a number of times.

There are, however, certain limitations of the study which may have impacted upon the results. Firstly, as discussed above, a more explicit form of TE and AE may have produced superior long term results. This could have been realised with more listening for the AE aspect, such as playing the experimental group dialogues with the target items repeated a number of times and asking learners to pay attention to the items they hear most often. For TE, their attention could also have been drawn to the bolded words by simply asking them to try and remember those words. Although this may seem unnecessarily mechanical, it may be the case that beginners learning a second language focus their attention on all aspects of the input they receive and implicit input enhancement may not be processed. Secondly, although we were able to assess both receptive and productive knowledge, it can be argued (e.g., Schmitt, 2010) that a test battery is the most effective measure of vocabulary learning. This could involve the type of tests used plus a constrained constructed response test (such as a gap-fill) and a freer productive test (such an elicited role play). If vocabulary learning is measured in these ways, it can allow for a more robust analysis and tell us under what conditions learners really know a set of target items.

It is clear that the results of this study offer some evidence that TE and AE can have a positive impact upon learning. If this is indeed the case, and was followed with other studies which demonstrate similar results, it would be a simple and easy change for second language teachers to make to classroom practice. Teachers could simply use TE to enhance target language within written texts and AE to enhance listening texts. Clearly though, more research is needed, particularly in regard to the effects of AE. Future studies could focus on a greater use of AE realised through measures such as teacher repetition and increased volume and stress on target items in listening texts when combined with explicit teaching. It would also be useful to replicate studies such as this at different levels, as we would suspect that AE and TE are likely to be more effective beyond elementary levels, when learners can begin to focus on different aspects in the input they receive.

References

Alanen, R. (1995). Input enhancement and rule presentation in second language acquisition. In R. W. Schmidt (Ed.), *Attention and awareness in foreign language learning* (pp. 259–302). Hawai'i: University of Hawai'i Press.

Alsadhan, R.O. (2011). Effect of textual enhancement and explicit rule presentation on the noticing and acquisition of L2 grammatical structures: A meta-analysis. Unpublished Master's dissertation, Colorado State University, USA.

Baltova, I. (1999).The effect of subtitled and staged video input on the learning and retention of content and vocabulary in a second language. Unpublished Doctoral dissertation, University of Toronto, Canada.

Barkaoui, K. (2011). Think-aloud protocols in research on essay rating: An empirical study of their veridicality and reactivity. *Language Testing*, *28*(1), 51–75.

Batstone, R., & Ellis, R. (2009). Principled Grammar Teaching. *System, 37*, 194 – 204.

Bishop, H. (2004). The effect of typographical salience on the look up and comprehension of formulaic sequences. In N.Schmitt (ed.).*Formulaic sequences: Acquisition, processing and use* (pp 227 –244). Amsterdam: John Benjamens.

Cambridge English Language Assessment; Cambridge University Press; The British Council; The University of Cambridge; The University of Bedfordshire; English UK. (2014) *English Vocabulary Profile.* Retrieved from www.englishprofile.org.

Cobb, T. (2017). *Compleat Lexical Tutor*. Retrieved from www.lextutor.ca.

Cho, S. (2016). Processing and learning of English collocations: An eye movement study. *Language Teaching Research*. Advanced Online Access.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. New York: Lawrence Erlbaum Associates.

Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (Seventh Edition). New York: Routledge.

Coxhead, A. (2000). A new academic word list. *TESOL Quarterly*, *34*(2), 213–238.

Dornyei, Z. (2007). *Research methods in applied linguistics.* Oxford: Oxford University Press.

Doughty, C. (1991). Second language instruction: does make a difference? *Studies in Second Language Acquisition, 13,* 431–469.

Folse, K. (2004). *Vocabulary myths: Applying second language research to classroom teaching.* Ann Arbour: University of Michigan Press.

Gasgoine, G. (2006). Explicit input enhancement: Effects on target and non-target aspects of second language acquisition. *Foreign Language Annals, 39*(4), 551–564.

Grgurović. M., & Hegelheimer, V. (2007). Help options and multimedia listening: Students' use of subtitles and the transcript. *Language Learning and Technology*, *11*(1), 45–66.

Halenko, N., & Jones, C. (2011). Teaching Pragmatic awareness of spoken requests to Chinese EAP learners in the UK. Is explicit instruction effective? *System*, *39*(1), 240–250.

Hernandez, S.S. (2004). The effects of video and captioned text and the influence of verbal and spatial abilities on second language listening comprehension in a multimeedia environment. Unpublished Doctoral dissertation, New York University, USA.

Izumi, S. (2002). Output, input enhancement and the noticing hypothesis: An experimental study on ESL relativization. *Studies in Second Language Acquisition,19*(2), 541–577.

Jensen, E.D., & Vinther, T. (2003). Exact repetition as input enhancement in second language acquisition. *Language Learning, 53*(3), 373–428.

Jourdenais, R. O.M, Stauffer, S, Boyson, B., & Doughty, C. (1995). Does textual enhancement promote noticing? A think-aloud protocol analysis. In R. Schmidt (Ed.), *Attention and awareness in second language learning.* (pp. 183–216). Hawaii: University of Hawai'i Press.

Kim, H.Y. (1995). Intake from the speech stream: Speech elements that L2 learners attend to. In R. W. Schmidt (Ed.), *Attention and Awareness in Foreign Language Learning* (pp. 65–84). Hawai'i: University of Hawai'i Press.

Kim, Y. (2003). Effects of input elaboration and enhancement on second language vocabulary aquisition through reading by Korean learners of English. Unpublished Doctoral dissertation, University of Hawai'i, USA.

Koprowski, M. (2006). Investigating the usefulness of lexical phrases in contemporary coursebooks. *ELT Journal*, *59*(4), 322–332.

Lee, S. (2007).Effects of textual enhancement and topic familiarity on Korean EFL students' reading comprehension and learning of passive form. *Language Learning, 57*(1), 87 –118.

Leow, R. P. (2001). Do learners notice enhanced forms while interacting with the L2? *Hispania*, *84*(3), 496–509.

Leow, R, Egi, T, Nuevo, A .,& Tsai, Y. (2003). The roles of textual enhancement and type of linguistic item in adult L2 learners' comprehension and intake. *Applied Language Learning, 13*(2), 1–16.

McCarthy, M. (1999). What constitutes a basic vocabulary for spoken communication? *Studies in English Language and Literature 1,* 233–249.

McCarthy, M. (2004). *Touchstone: From corpus to coursebook.* Cambridge: Cambridge University Press.

Nation, I.S.P. (1999). *Learning Vocabulary in Another Language*. Wellington: Victoria University of Wellington.

Nation, I.S.P. (2006). Language education – vocabulary. In K. Brown (ed.) *Encyclopaedia of Language and Linguistics*, 2nd Ed. Oxford: Elsevier. Vol 6: 494-499.

Norris, J. M., & Ortega, L. (2000). Effectiveness of L2 instruction: A research synthesis and quantitative meta-analysis. *Language Learning*, *50*(3), 417–528.

Norris, J. M., & Ortega, L. (2001). Does type of instruction make a difference? Substantive findings from a meta-analytic review. In R. Ellis (Ed.), *Form-Focused Instruction and Second Language Learning* (pp. 157–213). Oxford: Blackwell.

O'Keeffe, A., McCarthy, M., & Carter, R. (2007). *From Corpus to Classroom.* Cambridge: Cambridge University Press.

Petchko, K. (2011). Input enhancement, noticing and incidental vocabulary acquisition. *The Asian EFL Journal Quarterly, 3*(4), 228–255.

Perez, M. M., & Desmet, P. (2012). The effect of input enhancement in L2 listening on incidental vocabulary learning: A review. *Procedia –Social and Behavioural Sciences, 34,* 153–157.

Reinders, M., & Cho, M. (2010). Extensive listening and input enhancement using mobile phones: Encouraging out-of-class learning with mobile phones. *TESL E-Journal 14*(2).Available from http://www.tesl-ej.org/wordpress/issues/volume14/ej54/ej54m2/

Reinders, M., & Cho, M. (2011). Encouraging informal language learning with mobile technology: Does it work? *Journal of Second Language Teaching and Research, 1*(1), 3–29. Available from www.uclan.ac.uk/jsltr

Richards, J. C., & Schmidt, R. W. (2002). *Longman dictionary of language teaching and applied linguistics (Third Edition).* Harlow: Pearson Education Limited.

Rosa, E., & O'Neill, M. (1999). Explicitness, intake and the issue of awareness: Another piece to the puzzle. *Studies in Second Language Acquisition*, *21*(4), 511–566.

Schmidt, R. W. (1990). The role of consciousness in second language learning. *Applied Linguistics*, *11*(2), 129–158.

Schmidt, R. W. (1993). Awareness and second language acquisition. *Annual Review of Applied Linguistics*, *13*, 206–226.

Schmidt, R. W. (1995). Consciousness and foreign language learning: A tutorial on the role of attention and awareness in learning. In R. W. Schmidt, (Ed.), *Attention and Awareness in Foreign Language Learning* (pp. 1–63). Hawai'i: University of Hawai'i Press.

Schmidt, R. W. (2001). Attention. In P. Robinson (Ed.), *Cognition and Second Language Instruction* (pp. 3–32). Cambridge: Cambridge University Press.

Schmidt, R. W. (2010). Attention, Awareness and Individual Differences in Language Learning. In W. M. Chan, S. Chi, K. N. Cin, J. Istanto, M. Nagami, J. W. Sew, T.Suthiwan., & I. Walker (Eds.), *Proceedings of CLaSIC 2010, Singapore, December 2–4* (pp. 721–737). Singapore: University of Singapore Centre for Language Studies.

Schmitt, N. (2000). *Vocabulary in language teaching.* Cambridge: Cambridge University Press.

Schmitt, N. (2010). *Researching Vocabulary: A Vocabulary research manual.* London: Palgrave Macmillan.

Sharwood Smith, M. (1981). Consciousness-Raising and the second language learner. *Applied Linguistics*, *2*(2), 159–168.

Sharwood Smith, M. (1991).Speaking to many different minds: On the relevance of different types of language information for the L2 learner. *Second Language Research ,72*, 118-32.

Sharwood Smith, M. (1993). Input enhancement in instructed SLA. *Studies in Second Language Acquisition, 15, 165-179.*

Shin, D., & Nation, P. (2007). Beyond single words: the most frequent collocations in spoken English. *English Language teaching Journal, 62* (4), 339 –348.

Shook, D. (1994). FL/L2 reading , grammatical information and input-intake phenomenon. *Applied Language Learning, 52,* 57–93.

Spada, N., &Tomita, Y. (2010). Interactions between type of instruction and type of language feature: A meta-analysis. *Language Learning, 60*(2), 263–308.

Stratman, J.F., & Hamp-Lyons, L. (1994). Reactivity in concurrent think-aloud protocols: Issues for research. In P. Smagorinsky (Ed.), *Speaking about writing: Reflections on research methodology* (pp. 89–111). Thousand Oaks, CA: Sage Publications.

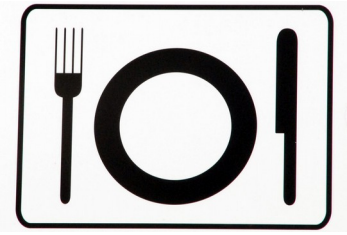
VanPatten, B. (1990). Attending to form and content in the input: An experiment in consciousness. *Studies in Second Language Acquisition*, 12, 287-301.

White, J. (1998). Getting the learners' attention: A typographical input enhancement study. In C. Doughty, & J. Williams(Eds.), *Focus on form in classroom second language acquisition* (pp. 85-1 13). Cambridge: Cambridge University Press.

Wong, W. (2003).The effects of textual enhancement and simplified input on L2 comprehension and acquisition of non-meaningful grammatical form. *Applied Language Learning, 14,* 109–32.

Appendix A

Sample Enhanced menu (target items in bold, translations not given to learners)



Tavuk şiş [chicken kebab]

İskembe çorbası[tripe soup]

Balık[fish]

Peynır salatası [cheese salad]

Patlıcan salatası[aubergine salad]

Karpuz [watermelon]

Cips [chips]

<u>İçecekler</u> [drinks]

Sıcak İçecekler [hot drinks]

Çay [tea]

Kahve [coffee]

Soğuk İçecekler [cold drinks]

Kola[cola]

Fanta [fanta]

Maden suyu [mineral water]

Ayran [salty yoghurt drink]

Alkollu İçecekler [alcoholic drinks]

Bira [beer]

Beyaz şarap [white wine]

Kırmızı şarap [red wine]

Vodka [vodka]

Rakı [raki]

Appendix B

Sample tests

Productive test: Write what you think is the English equivalent of each word.

Bira ……..
Fanta ……..
Çay ……..
İçecekler ……..
Soğuk içecekler ……..
Sıcak içecekler ……..
Kola ……..
Maden suyu ……..
Ayran ……..
Beyaz şarap ……..
Kırmızı şarap ……..
Vodka ……..
Alkollu içecekler ……..
Kahve ……..
Rakı ……..
Tavuk şiş ……..
Iskembe çorbası ……..
Balık ……..
Peynır salatası ……..
Patlıcan salatası ……..

Receptive test: Tick the appropriate box next to each word.

	I think I know what this word means.	I don't know what this word means.
bira		
navra		
fanta		
aşir		
linon		
içecekler		
soğuk içecekler		
ayran		
tomurcen		
mantıl		
	I think I know what this word means.	I don't know what this word means.
maden suyu		
artı polat		
beyaz şarap		
peynır salatası		
kıffa		
höçeri		
sıcak içecekler		
çay		
cele		
örumce tan		

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