Teachablity of Interaction to Iranian EFL Learners: Mobile-Learning in Focus

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Abstract: *The current study is an attempt to highlight the levels of English vocabulary proficiency reached by 110 Iranian engineering students. Thus, the students' language proficiency, the manners of learning content delivery, as well as the students' attitudes towards these manners to learn new English vocabulary items were explored. The participants were divided into a 'social' (G1) and an 'individual' (G2) group randomly. The first group members received the materials (i.e., new English vocabulary items) through their cell-phones, made a new sentence with it and collaborated with other members to make a short story, whereas the second group members received the learning content from the same channel, made a new sentence with it, and delivered it to their teacher. A Likert type engagement questionnaire was distributed among participants of both groups and the results of matched t-test revealed that although the learners in two groups had the same attitude towards vocabulary learning through the medium of social webs and story writing, they differed significantly in vocabulary learning proficiency. Also, the results of the study point to the minimal relevance of learners' gender to L2 vocabulary learning through the medium of wireless technology. Thus, wireless technology must be recognized for its contribution to new manners of improving the educational program offered to students.*

Keywords: *content delivery; individual group; social group; wireless technology;*

1. Introduction

In 2011, the number of cell-phone subscribers surpassed 6 billion (United Nations, 2011). Over the last few years, cell-phone has had a profound effect on the private and educational lives of citizens around the world, offering them an increasing number and range of opportunities for accessing information (Redecker, Ala-Mutka, & Punie, 2010) and opening a new era for families to access technology-based learning and teaching. Using this medium is among the most common activities of today's citizens. These high usage rates indicate a surprisingly rapid take up among large parts of the world population in a way that it could be imagined to replace the chalkboard as the greatest allies of teacher, as Brown (2001) described, with these wireless mobile technologies. With the existence of such facilities, access to education should no longer mean merely access to content (which is readily available without formal enrollment with an educational provider) rather, it

should mean access to a rich learning environment that provides opportunity for interaction and connectedness (Brindley, Walti, & Blaschke, 2009).

The employment of mobile devices for supporting continuous learning is a very powerful ways of helping non-English countries citizens address their need to learn English. In fact, mobile-learning (m-learning) can bridge formal and informal learning experiences (Wanger, & Wilson, 2005) and also can work best when used as part of the blended method of teaching, as a supplementary tool that is used in combination with traditional methods, such as paper-based materials (Brown, 2005; Stead, Sharp, Anderson, & Philpott, 2006). It further paves the way for cultivation of collaborative cultures among learners. In other words, application of such social media, which encourage a more active and interactive usage of them. Cell-phone with such a great facility as Short Message Service (SMS) offers the opportunity to create a highly social learning environment, characterized by participation and interactivity for L2 learners. Pressick-Kilborn, Sainsbury, and Walker (2005) state that sociocultural theory, which posits that individual learning and motivation emerge from participation in social activity, suggests that collaboration can be effective in promoting the emergence of both learning and motivation.

Although engaging various forms of media such as computer, laptop, cell-phone, … in the realm of education is a matter that research has shown to benefit children and adolescents by enhancing communication, social connection (Schurgin O'Keeffe, & Clarke-Pearson, 2011), In this vein, more recently Firth, and Wanger (1997), and Tarone (2000) suggest that new studies should leave behind the mechanistic model of 'Input-Interaction-Output', as Block (2003) termed, into which most technology-based educations have hitherto been grounded. As a result, a growing number of researchers have tried to expand the boundaries of second language acquisition (SLA) through recognizing 'just as surely as language is social, so is its acquisition' (Atkinson, 2002, p. 527). In fact, different settings might afford very different opportunities for language learning, (for example in terms of the typical types of input and interaction they give rise to) (Ellis, 2008).

In reality, getting feedback from other members of the society speaks to the learning purpose (Brown, 2001). These consecutive feedbacks on each other performance encourage retention of information. As a result, feedback can promote learners autonomy as they confirm areas of strength and parts need further work. In this respect Mueller (1984) believed that students can be actively involved and interested participants when their task is not restricted to providing the one and only correct answer.

The important part is how this medium should be used to enhance informal learning, due to the fact that parallel with taking hold of globalization and creation of new communicative functions in response to movement of people and capital around the globe, people are increasingly inclined to learn and adopt the language or language variety that will enable them to partake of new economic order (Garcia, 2002). Swan (2005) identifies course design as a critical factor in determining the quantity, quality, and type of interactivity (learner interaction with content, instructors, or peers) in a course. Furthermore, in this respect, it seems inevitable that families become aware of the nature of this type of medium, given that not all the time is the healthy environments for children and adolescents (Schurgin O'Keeffe, & Clarke-Pearson, 2011).

As an important consideration, gender distinction has also been associated with social relationships. And lots of investigations have tried to elucidate the role of learner's gender in the realm of learning. To demonstrate this key point Ehrlich discusses although the results are divergent, some general pattern of gender differences in this respect can be found. He contends that gender is something that people 'do' rather than something that they 'are'.

Since cooperative production of materials engender a good deal of intrinsic involvement in the course of reviewing and selecting word items to fulfill the final form of the collection of sentences as mini-stories, the present study thus attempts to put the issues of mobile learning, web mode of content delivery, to bring about the conditions which allow the learners make use of social webs and see if these webs make a difference in promoting second language vocabulary learning outcomes in the case of Iranian students of engineering. In other words, this study investigates the ways in which social webs are, and can be, used in informal setting of

learning English using cell-phone. To this end, the design of the study was built in congruent with Brown's belief (2001) that tasks themselves needs to be task in a form that learners practice and feel comfortable with, thus in the frame of writing short stories learners were requested to make new sentences regarding to the new vocabulary items. In this manner, learners have chance to get feedback on from their counterparts and seek clarification of any fuzzy issues, that is, learners' learning refined through the process of interaction with friends.

2. Research questions

Referring to the explanations made above, we are going to discover how cell-phone could be programmed to provide a means to fulfill social and learning purposes. Thus, the following questions can be raised:
1. Do Iranian EFL learners learn English language vocabulary differently through different delivery models of content (social model vs. individual model)?
2. Is there any relationship between learners' attitudes (i.e., attitudes towards learning English in groups and vocabulary learning through making new stories) and their performance?
As in the context of a college classroom, social status can include the gender, race, age, and social class of the students and the instructor (Hirschy, 2002) the following research question was proposed, too:
3. Is there any relationship between learners' gender and vocabulary learning for the first group of learners (social group)?

3. Method

3.1. Participants

The sample of the study consisted of 110 Iranian students of engineering. They were selected from four classes at the same level of proficiency (i.e., intermediate level). Their age range was 19-23. Then, they were randomly divided to two groups. They are as follows:

   Social group (G1): The members of the social group were divided into groups of threes. The learners of this group cooperated on making the sentences with new word items, changed them to mini-stories, and then sent them to the teachers. In this way, they were able to exchange and share their newly self-made sentences and discuss whether they agreed with what other members made. As all members of the groups were permitted to read their partners' sentences and give feedback on those sentences some words were crossed out, some were added on, and there was a lot of negotiation going on.

   Individual group (G2): Each member of the second group received the new word items, formulated new sentences, and then sent it to the teacher without sharing them with other classmates. In these modes, learners were tried out to see if they do better at English vocabulary learning. Table 1 displays gender frequency of social and individual groups.

Table 1: Gender Frequency of the Groups

Gender	Frequency		Total
	Social (G1)	Individual (G2)	
Male	26	20	46
Female	29	35	64
Total	55	55	110

3.2. Materials

The materials used in this study included:

Nelson English language tests- To ensure that students enter the study with similar level of language proficiency (in this study students with intermediate level of language proficiency), Nelson English language test, test, 200 A, was conducted.

Vocabulary level test- Although all the vocabulary items of the English book for students of engineering (Zarei, 2009) were taught traditionally in a semester vocabulary level test was administered to assess the students' initial knowledge of words with a view on excluding the words with which learners were already familiar in the learning phase of the study. Since making frequency counts of large relevant corpora (in this study, word items of Iranian general English books for university students), paves the way coming up with lists of words that are useful for teaching English to the students at elementary level of education (Schmitt, 2002), the word items for the vocabulary level test were selected from the vocabulary items lists of two books of 'general English for university students' (Birjandi, 2002) and 'English for students of engineering' (Haghani, 2008). The vocabulary level test consists of 50 word items, starting from 'field' to 'appreciate'. The students have to write the Persian meaning of the words in front of it or mark (×) in the loco citato if they did not know the meaning. The reliability of this test was also calculated 0.81. Its validity was also confirmed by three Iranian experts in the realm of TEFL.

Close-ended questionnaire- the questionnaire has an extremely important role in the success of a research (Reja, Manfreda, Hlebec, & Vehovar, 2003) and close-ended questionnaire let the researchers to compare the participants' answers, and justify their responses. Moreover, as the attitudes that learners hold towards learning via cell-phone and those about target language through the medium of new modern wireless technology, and in order to examine the effects of learners' characteristic on social relations and learning, hence, a questionnaire consisted of close ended questions was adapted from Likert scale (See the appendix).

New vocabulary items- 30 new vocabulary items for conducting the main phase of the study in five sessions of a semester, were selected from the 'English book for students of engineering' (Zarei, 2009) taught at an Iranian university of technology (i.e., Isfahan University of Technology).

Cloze test- For each group of the topics (e.g., vegetables, hobbies, …) cloze test was designed in two formats, that is, recognition cloze passage in multiple-choice format and cued recall one (some hints were given) (Richards, & Schmidt, 2002). As a result 30 questions were prepared (i.e., 15 multiples choice questions and 15 cued recall questions). The responses of two formats were fixed and predetermined.

3.3. Procedure

Pilot study and introduction phase- In order to try out the study wholly, all phases of it were tried out before actually administering them. Since this study was not limited to the daily classroom teaching, using slides the details were mentioned and clarified. In this manner, each set of directions was gone through and timing for conducting every different sections was done, too (i.e., necessary adjustment were made). As this study involved using cell-phone, in the beginning all the phones were checked for making sure that they are in working order.

Vocabulary learning phase- for every informal session of vocabulary learning, the first group of learners had 12 minutes to write a mini-paragraph with every triple group of vocabulary items which had been delivered to them via their cell-phones in the form of SMSs and send it back to the data center (i.e., it was an intense 12 minutes after that each group should send the formulated mini-stories to the server). With such a control students were able to pay special attention to those points that they were weak on. As thematic organization of items and the prevention of the thought that items are just a string of unrelated language samples (Brown, 2001) all vocabulary items were from the same category. Also, using software package all the mini-stories were collected, condensed into session lists, and put as available resources for other members of the groups. Conducting vocabulary learning in the case of this group of learners was on the basis of a social model. This model was displayed in figure 1.
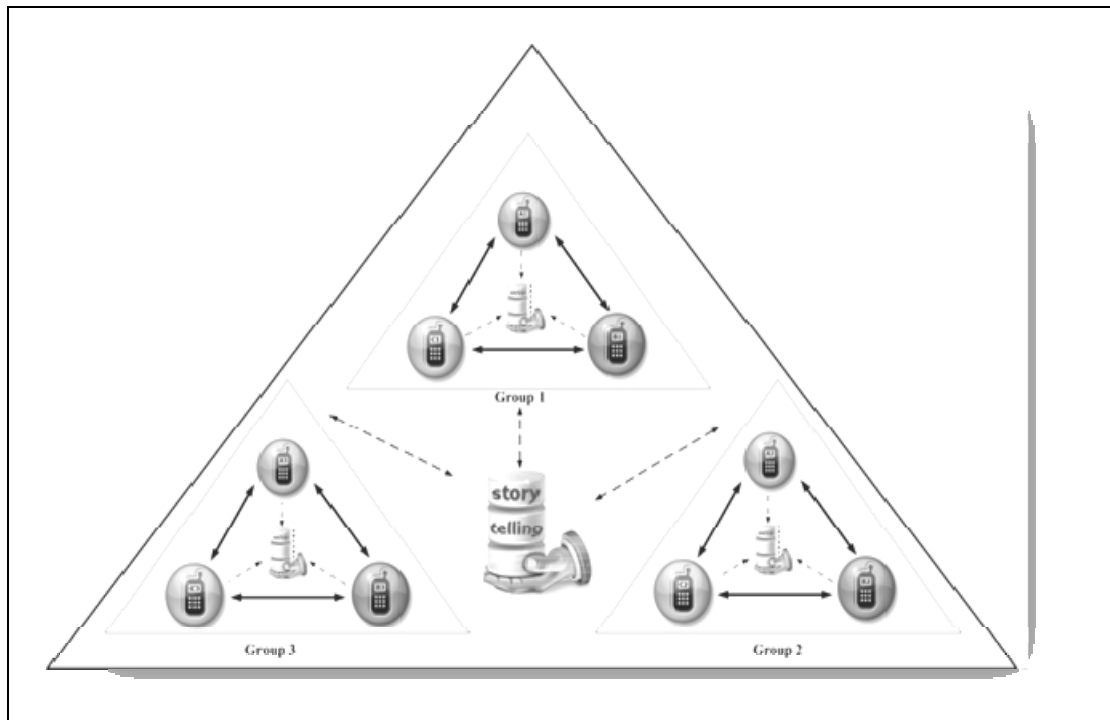
Figure 1. Triangular model of study

This model was designed for converting what might be of ordinary and traditional way of teaching vocabulary into authentic and interactively motivating learning opportunities employed for learners' suitable performance and for optimal feedback. In fact, teaching in this manner set up the social ground and opportunities for learners to receive, think, take risk, and process feedback from their counterparts. In addition, triangular interplay among students as a member of small groups brings flexibility and openness to change. Furthermore, this way of learning stimulates them to combine reading and writing. Figure 2 shows a mini-story which was written by a group of learners.

Figure 2. A sample of mini-story written by a group of learners

Teaching new vocabulary items to second group of learners involved a one-on-one teacher-learner relationship, that is, new vocabulary items with their Persian meanings were delivered to learners' cell-phone in the form of SMS. Then, students made a new sentence and sent it to the teacher's cell-phone. The individual model of content delivery was displayed in figure 3.
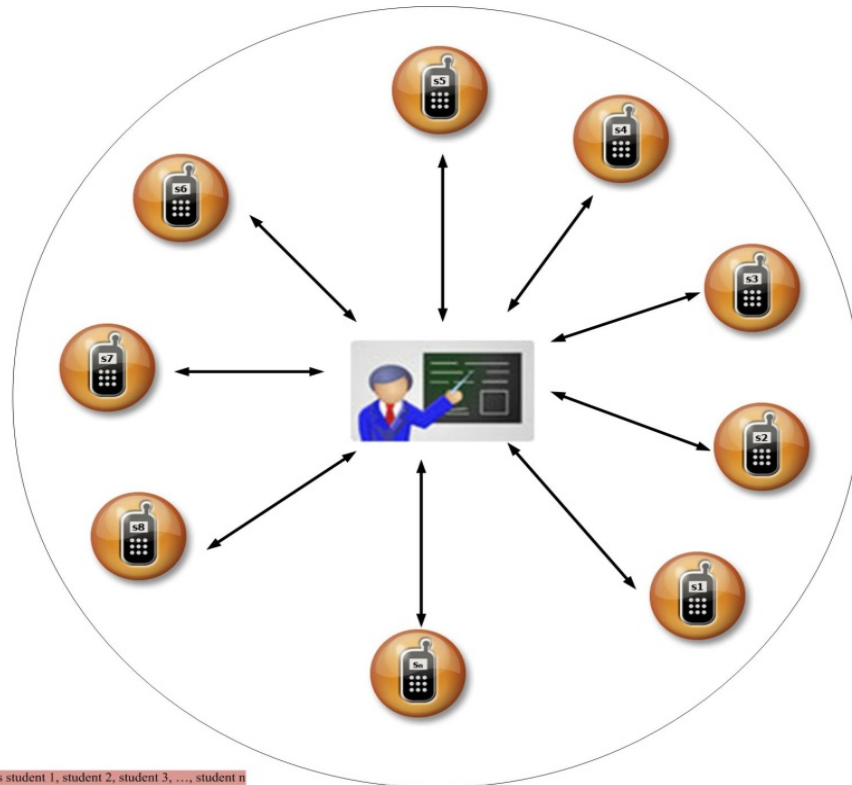

Note. S1, S2, S3, …, Sn means student 1, student 2, student 3, …, student n

Figure 3. Individual model of learning

Testing phase- After the learning phase learners took part in cloze tests. The test was administered to 110 audiences. First, they took part in recognition test which consisted of 15 multiple-choice questions and then they participated in the cued recall test which consisted of 15 questions, too. It must be borne in mind that each test comprised 15 items, with 15 for each newly introduced word (See section 3-2 materials). Also, results were quickly disseminated to the test-takers.

4. Results

The first question of the study addressed the level of possible outcomes as a result of differences in manner of content delivery. As shown in Table 2, the first group did their task faster, with more success, and reported greater pleasure in doing so than the second group. The cloze test scores of this group of learners (G1) who participated in co-creation and sharing of learning contents (M= 12.26, & s.d= 1.52) were higher than the scores of members of the second group who learn the new vocabulary items in individual manner (M= 9.00, & s.d. = 1.82). Also, they reported both more opportunities for using the new L2 vocabulary items and greater interest to doing so than learners of second group who learned English individually through their cell-phones.

Table 2: Descriptive Statistics for the Two Groups

Group		Recognition score	Cued recall score	Total score
Social group (G1)	Mean	13.25	11.27	12.26
	No.	55	55	55
	Standard deviation	1.51	2.39	1.52
Individual group (G2)	Mean	10.92	7.07	9.00
	No.	55	55	55
	Standard Deviation	2.30	2.93	1.82
Total	Mean	12.09	9.17	10.63
	No.	110	110	110
	Standard deviation	2.26	3.40	2.341

Note. No. = number of learners in each group.

As displayed in Table 3 and regarding descriptive analysis, it could be claimed that collaboration of members of the first group in the way of learning new vocabularies contribute positively to the effectiveness of their learning process, that is, they performed more accurately and fluently in cued recall and recognition parts of the test. In other words, the former outperformed the latter in the end-of-semester examination.

Table 3: Inferential Statistics: T-test for the Performance Two Groups

	t-test for Equality of means		
Test type	t-value	df	Sig.
Recognition score	6.26	108	0.000
Cued recall score	8.21	108	0.000
Total	10.18	108	0.000

Note. $p < 0.05$

The second question sought the relationship between the learners' attitude and levels of English vocabulary learning. As in the close-ended questionnaire mean of three indicates the average level of positive attitude to different types of teaching methods (See section 3.2. materials), members of the two group had a similar attitude towards collective learning (i.e., less than average) (M= 2.7), however, they had positive average attitude towards learning new English vocabulary items through making short story using their cell-phones (M= 4.05). Learners' attitudes towards collective learning and vocabulary learning through the medium of making story are displayed in Table 4.

Table 4: Learners' Attitudes towards Collective Learning and Story Writing

Group		age	Attitude towards collective learning	Attitude towards making story
Social (G1)	Mean	19.41	2.8	4.03
	No.	55	55	55
	Standard deviation	0.71	0.42	0.79
Individual (G2)	Mean	19.3	2.74	4.07
	No.	55	55	55
	Standard deviation	0.57	0.43	0.87
Total	Mean	19.36	2.7	4.05
	No.	110	110	110
	Standard deviation	0.64	0.43	0.83

Note. No. = number of learners in each group.

As can be seen in Table 5 although individuals within both groups were primarily showed similar attitudes toward social learning (in this study collective learning) particularly for learning new types of materials in examinations (i.e., they didn't hold great interest to this mode of learning), they manifested different performances in relation to the tests in which they took part (See Table 2, & 3).

Table 5: Inferential Statistics: Attitudes of Two Groups of Learners

	t-test for Equality of means		
Attitude	t-value	df	Sig.
Collective learning	1.00	108	0.31
Story writing	0.11	108	0.91

Note. p< 0.05

To cast more light on the findings, it was attempted to see if, in case of first group of learners or social group, the learners' attitudes towards story writing can affect the results. The results revealed that there was no significant relationship between learners' attitude and their performance in vocabulary learning (Table 6).

Table 6: Inferential Statistics: Relationship between Learners' attitude and Their Performance

	Value	df	Sig.
Recognition score	14.33	15	0.50
Cued recall score	17.28	27	0.92
Total	23.67	30	0.78

Note. p< 0.05

To answer the third question (i.e., the relationship between learners' gender and L2 vocabulary learning) the results as summarized in Table 7. According to this table and reported results about the performance of learners, their gender did not prove significantly related to the outcomes of the study, namely, gender of the learners didn't the affect the interaction among members of the first group and thereby didn't constrain the learning opportunities in favor of each gender. As a result, there was no significant difference in students' learning the new English vocabulary items due to gender.

Table 7: Inferential Statistics: Relationship between Learners' Gender and Their Performance

	t-test for Equality of means		
Test type	t-value	df	Sig.
Recognition score	0.95	53	0.34
Cued recall score	1.70	53	0.94
Total	1.83	53	0.72

Note. p< 0.05

5. Discussion and conclusions

As the results of the present study indicate, learners' interaction, collaboration and active learning has been positively related to the quality of the learning experience. This finding is in line with the results reported by Chen, Gonyea, and Kuh (2008). Overall, the results thus obtained seem to bear testimony to the claims that creating learning environments include opportunities for students to engage in interactive and collaborative activities with their partners; such environments have been shown to contribute to better learning outcomes,

including development of higher order thinking skills (Brindley, et al., 2009). In fact, it is the useful and instant feedback that comes from the formation of social webs which is considered the payoff for vocabulary learning through this channel. Thus, the learner is not threatened, so it is easy for the learners to adjust to the social settings (Ellis, 2008). Absence of evaluation from the part of teacher could reduce the stress which is ensued from social pressures of the peer.

Also, the result obtained suggests that that there was no difference between male and female learners in two testing formats and in the case of first group of learners who were taught in the social framework of learning (i.e., the same social setting). This implies communicative settings and the specific tasks in which learners are engaged in explaining why men and women behave linguistically in the same manner (Ehrlich, 2004).

The cloze tests score in the part of the first group of learners could be ascribed to the fact that learners in social group learn with and from others constantly. In other words, they were able to solve their problems continuously and this continuous solution of their problem made it possible for them to perform as accurate as possible. The result of this study could be suitable for creating milieu of language learning via application of cell-phone in collaborative learning groups.

Another important finding in the present study is that the all proficiency levels can benefit from m-learning that provides the ground for review and practices, or access to trained tutors that can diagnose needs and suggest avenues for further works. Learners at higher levels and lower levels of proficiency can thereby be challenged to meet their needs as this way of effective interaction with other members of the society paves the way for achieving high level of learning. Hence, the notion of interactivity is an important one as it suggests that the development of social activities among learners confers not only high L2 proficiency but also facilitates the process of learning. Undoubtedly another reason for this has to do with the fact that m-learning in the frame of social webs ensure a plentiful supply of input for the L2 learners which is therefore comprehensible one.

On the whole, the results of this study imply that social relationships and learners' attitudes to it are crucial in motivating L2 learners to make efforts in their learning attempts, though one needs to bear in mind the scale and scope and specificity of the research method, instruments, and conditions in order not to push the limits too far.

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Appendix (Persian Questionnaire)

پرسش‌نامه

سن: .... جنسیت: ....

تحصیلات پدر: .... تحصیلات مادر: ....

فرزند چندم خانواده هستید؟ ....

تعداد فرزندان خانواده: ....

۱- تا چه حد دوست دارید که اوقات خود را در جمع بگذرانید؟

خیلی کم□ کم□ متوسط□ زیاد□

خیلی زیاد□

۲- وقتی که در جمع دوستانتان چیزی را یاد می‌گیرید تا چه حد فکر می کنید یادگیری‌تان بهتر می‌شود؟

خیلی کم□ کم□ متوسط□ زیاد□

خیلی زیاد□

۳- به نظر شما جمع تا چه حد می تواند باعث یادگیری بهتر شود؟

خیلی کم□ کم□ متوسط□ زیاد□

خیلی زیاد□

۴- وقتی می‌خواهید برای امتحان بخوانید، تا چه اندازه تمایل دارید که در جمع همکلاس‌هایتان درس بخوانید؟

خیلی کم□ کم□ متوسط□ زیاد□

خیلی زیاد□

۵- به نظر شما داستان سازی می‌تواند باعث یادگیری بهتر شود؟

خیلی کم□ کم□ متوسط□ زیاد□

خیلی زیاد□

☚ **پس از آزمون از افراد پرسیده شود:**

- آیا افراد جمع به شما در مورد جملاتی که ساخته‌اید، نظر اصلاحی دادند؟

بله□ خیر□

- تا چه حد، نظرات آنها باعث شد بهتر واژه‌ها را یاد بگیرید؟

خیلی کم□ کم□ متوسط□ زیاد□

خیلی زیاد□

- آیا داستان سازی باعث یادگیری بهتر شما شد؟

خیلی کم□ کم□ متوسط□ زیاد□

خیلی زیاد□