Dynamic Assessment in English Pronunciation Teaching: From the Perspective of Intellectual Factors

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Abstract—This study is to empirically investigate the effect of dynamic assessment on Chinese learners' development of English pronunciation proficiency and their non-intellectual factors by adopting a teaching model of dynamic assessment in English pronunciation class. This experiment was carried out among 36 English majors from a newly-upgraded local Chinese university within one semester, and the findings indicated that the participants showed a great improvement in their mastery of segmental features and supersegmental features. As for the non-intellectual factors, the participants presented a stronger interest and lower anxiety level in practicing English pronunciation after the experiment, though there was only little change in their motivation.

Index Terms—English pronunciation, dynamic assessment, non-intellectual factors

I. INTRODUCTION

The introduction of summative assessment and formative assessment into language testing has shifted people's attention away from only emphasizing the testing results to valuing the interaction between teaching and testing, which is one of the revolutionary changes in language testing. Because in teaching, language teachers do not just need a static report of examinees' linguistic proficiency, but they also need to organically connect the teaching process with the testing feedback and know what their students could achieve with the scaffolding from teachers or peers instead of taking the test as an end of learning process.

Dynamic assessment (DA), which originated from Vygotsky's Social-cultural Theory, or more precisely, from his theory of the Zone of Proximal Development (Vygotsky, 1978), has further enriched the theory of formative assessment. It tries to combine teaching with testing to advance and promote teaching by testing, for it is such kind of assessment in which teachers' intervention and interaction work as the essential components targeting at delving more into learners' potentials. Since its birth, it has attracted researchers' interest from different aspects of foreign language teaching and learning (Kozulin& Grab, 2002; Poehner, 2005).

This study, based on the previous studies, is an empirical one to reveal the effect of DA in Chinese learners' learning process of English pronunciation. More specifically, it intends to certify the validity of DA in EFL by dynamically evaluating the changes of learners' pronunciation proficiency and the levels of their non-intellectual factors.

II. LITERATURE REVIEW

A. The Theoretical Foundation of Dynamic Assessment

Dynamic assessment was based on Vygotsky's theory of the Zone of the Proximal Development, in which he wanted to point out there existed differences between the examinee's actual developmental level and their potential developmental level. The former is determined by their current ability while the latter can be achieved with the help from teachers or other more competent peers (Vygotsky, 1978). DA is a kind of interactive assessment of language teaching and learning. Different from other assessments, DA puts more emphasis on the process of scaffolding learners to promote the development of their potential to its extreme. In the process, examiners and examinees interact with each other about the learning difficulties so that examinees' potential can be inspired individually. As said by Kirschenbaum (1998), the examiner shoulders the responsibilities of both the teacher and the assessor. He also gives guidance to learners to tackle the learning problems while promoting the development of their ability to solve similar problems.

B. The Application Models of Dynamic Assessment in Foreign Language Teaching

DA makes clear the active roles of interaction between teachers and learners and the individual differences of learners, which have always been ignored in the traditional assessment. After its introduction, there have been a variety of models and procedures of its application in education. Among them, two models are identified and discussed most frequently, that is the interventionist and the interactionist approach by Poehner and Lantolf (2005). The interventionist model puts emphasis on the intervention from the teacher by use of reminders, hints, inspiring questions or even demonstrations. It is also called *sandwich* format, because it is composed of three parts, a pre-test, a mediation phase

and a post test. The mediation part is just like something 'sandwiched' between the two tests, which makes it more psychometrics-orientated. The interactionist model, also called *cake* format, advocates the embeddedness of instruction in assessment so as to combine the two together organically. This model, unlike the former, puts little focus on the qualitative assessment of learners' ability. Examiners are not to measure learners, but to interpret them, through the interaction with them. The difficulties in learning are solved by dynamic dialogues or cooperative interaction. The difference between the interventionist and the interactionist models mainly lies in their different ways of mediation.

Although there are arguments about the strengths and shortcomings of the two models, a review of the researches in foreign language teaching and testing can show that the more widely adopted approach is the interventionist model (Haywood & Lidz, 2007). Erben, Ban and Summers (2008) proved the feasibility of applying the interventionist type of DA in computerized teaching of reading in French as a second language. The findings by Aleeva (2008) also supported the effects of DA on L2 learners' listening comprehension in French. In his research, learners' listening proficiency was promoted significantly with mediated guidance compared with those performed in an unmediated situation. Anton (2009) indicated that there was a clear difference between learners' actual and potential abilities in a research of a group of third-year Spanish language majors who were given necessary mediation in writing and speaking learning. The investigation by Shabani (2012) revealed the significant progress in learners' reading comprehension ability by exposing them to a DA approach of mediations in teaching process.

C. Research Statement and Questions

Since language learning is a gradual process, in which we want to know what is happening and what will happen instead of just looking back on what happened in the past, it is enlightening to dynamically involve both the examiner and the examinee, or both the teacher and the student, in the process. However, little research has focused on the role of DA in teaching EFL pronunciation while most of them have concentrated on the study of DA in English reading, listening and writing process. Based on the previous studies, in order to present a full picture of its validity in foreign language teaching and testing, this research is to investigate the role of DA in the situation of Chinese learners' learning of English pronunciation, mainly from the perspective of its influence on learners' pronunciation proficiency and non-intellectual factors. Non-intellectual factors include interest, motivation, needs, anxiety, and attitude and so on, which may play a negative role in learning if not developed well. However, because of the limited time and energy, for our investigation, we only chose three factors: interest, motivation and anxiety. Therefore, this study is to figure out the answers to the following two questions:

1. What are the effects of DA on Chinese learners' development of English pronunciation proficiency?

2. What are the differences made by DA in Chinese learners' interest, motivation and anxiety in learning English pronunciation?

III. METHODOLOGY

A. Participants

This research involved 36 participants who were first-grade English majors all from the same class in a normal university in Southwest China. They were chosen because English pronunciation weighed a lot in their major and nevertheless they had not accepted any specific instructions of English pronunciation before. All of them were told that they would be in an experimental class of English pronunciation for one semester which aimed to help them with the difficulties in learning English pronunciation, and they had the right to decide to stay in or leave the class anytime before the class was completed.

B. Materials and Instruments

For the one semester's English pronunciation class, we designed eight tasks covering all the basic parts of English pronunciation, including the segmental features as vowels and consonants, and the supersegmental features as stress, elision, linking and intonation.

In order to compare the differences of the participants' English pronunciation proficiency, we designed an oral test about their pronunciation proficiency and skills based on the teaching design for the experimental class. The oral test was composed of two parts: the test of segmental and supersegmental features. In this first part, the participants needed to read the phonemes listed and pairs of words which were minimal pairs. In the second part, they needed to finish reading some phrases, sentences and a paragraph in which their mastery of the supersegmental features were tested.

Besides, two questionnaires were designed to evaluate the changes of the participants' learning interest, motivation and anxiety before and after the experimental class. In the pre-experiment questionnaire, Questions 1-3 were about their learning interest in practicing English pronunciation, for example, "1. I would like to spend more time practicing English pronunciation than other aspects like writing and grammar; 3. It is interesting to practice imitating English pronunciation." Questions 4-5 were about their motivation, for instance, "4. I practice pronunciation because I like English and English culture; 5. I learn English pronunciation because I have to fulfill the requirements of the course." And Questions 6-9 were about their anxiety in learning English pronunciation, such as "7. I am worried that I might make pronunciation mistakes when speaking English in class; 8. It is Ok if others evaluate my pronunciation when I speak English." In the post-experiment questionnaire, the questions were arranged almost in the same way only with

one exception that three extra questions were added to find out the participants' evaluation of the experimental class, for example, "9. The teacher's guidance and my competent peers' demonstration helped me a lot in learning pronunciation."

C.   Procedure

Before the implementation of the experimental class, a survey was made to look into the participants' mastery of English pronunciation and their interest, motivation and anxiety in learning English pronunciation. All the participants were required to take an oral test about their pronunciation proficiency and fill in a questionnaire about their interest, motivation and anxiety.

The whole experimental class was composed of eight tasks, and each task was a comparatively independent assessing stage, which could be further divided into three parts: The pretest, the intervention and the posttest. As for the participants, they were supposed to have acquired some basic knowledge and skills of English pronunciation before entering the university. However, because of various factors, such as their learning motivation, learning environment, learning attitude in high schools, many of them failed to meet the basic requirements of English pronunciation as a high-school graduate. Therefore, it is necessary for us to have their English pronunciation diagnosed at the beginning of each learning task so as to locate the actual pronunciation level of each participant, which could help to expose the real problems.

At the beginning of each task, the teacher would give a pretest according to the content arranged in that task. In the second stage, the teacher's intervention would be provided in terms of what had been indicated in the pre-test. The intervention was mainly carried out in the way of verbal mediation, which could be some hints, suggestions, explanations or demonstrations, varying in the specific degrees of difficulties and the individuals' competence. In the third stage, a post-test was fulfilled to reveal their improvement or their existing problems if there were any until those problems were solved with the help of the teacher's or peers' specific guidance.

In the end, all of the 36 participants remained in the class until it was finished. After that, the participants were required to take part in an English pronunciation test orally and to fill in a questionnaire which was to investigate their non-intellectual factors like learning interest, learning motivation, and anxiety in English pronunciation learning after the experiment. Three native speakers of English were invited to score each student's performance on the spot. Their final scores were the average of the scores given by the three teachers.

D.   Data Analysis

Statistical Packages for Social Science (SPSS) version 18.0 was employed to analyze the quantitative data collected in this research so as to present the descriptive statistics of the participants' scores in English pronunciation tests before and after the experiment. Besides, Excel 2007 was adopted to present the results in graphs to compare the changes found in the two questionnaires before and after the experiment.

IV.   RESULTS

A.   The Participants' English Pronunciation Proficiency

The descriptive statistics are adopted to present a general picture of the research results. As is shown in Table 1, the changes in the participants' English pronunciation proficiency before and after the experimental class are quite clearly listed, including the minimum score, the maximum score, the mean score and the standard deviation. Before the experiment, the participants' mean scores of segmental and supersegmental scores are 65.6 and 64.8 respectively. After that, the mean scores of the two are 79.6 and 68.2 respectively. There are clear differences between the two groups of mean scores. In addition, the minimum scores show a greater improvement than the maximum scores. The minimum score and the maximum score of segmental features before the experiment are 55 and 70, while those after the experiment are 80 and 88. The minimum score and the maximum score of supersegmental features before the experiment are 52 and 68, while those after the experiment are 70 and 78.

TABLE 1
DESCRIPTIVE STATISTICS OF SOURCES OF SELF-EFFICACY AND ENGLISH PRONUNCIATION PERFORMANCE

	N	Minimum	Maximum	Mean	Std. Deviation
pre-experiment(segmental features)	36	55	80	65.6	6.95
post-experiment(segmental features)	36	70	88	79.6	4.82
pre-experiment(supersegmental features)	36	52	70	64.8	6.21
post-experiment(supersegmental features)	36	68	78	75.2	5.23

B.   The Participants' Interest in English Pronunciation Learning

The degrees of the participants' interest in English pronunciation learning before and after the experiment are shown respectively in Figure 1 and Figure 2. For Question 1, only 31.3% of the participants claimed they liked practicing pronunciation more than other aspects like writing and grammar, while there are 96.7% of them choosing to practice pronunciation more. In Question 2, 41.9% thought that acquiring a native-like pronunciaiton was very attractive, while

after the experiment, 73.3% thought so. In Question 3, 44.4% would like to practice imitating English pronunciation in English movies or TV series, while that number rised to 69.0% after the experiment.
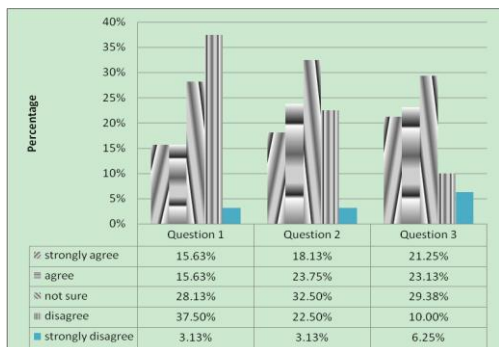
	Question 1	Question 2	Question 3
strongly agree	15.63%	18.13%	21.25%
agree	15.63%	23.75%	23.13%
not sure	28.13%	32.50%	29.38%
disagree	37.50%	22.50%	10.00%
strongly disagree	3.13%	3.13%	6.25%

Figure 1

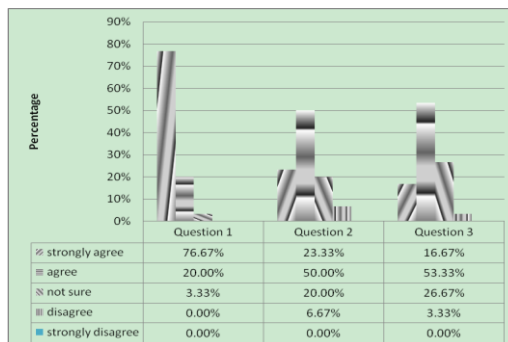|	Question 1	Question 2	Question 3
strongly agree	76.67%	23.33%	16.67%
agree	20.00%	50.00%	53.33%
not sure	3.33%	20.00%	26.67%
disagree	0.00%	6.67%	3.33%
strongly disagree	0.00%	0.00%	0.00%

Figure 2

C.   The Participants' Motivation in English Pronunciation Learning

Motivation is one of the most focused non-intellectual factors in foreign language teaching and testing. Figure 3 and Figure 4 presents the distribution of motivation before and after the experiment respectively. In Figure 3, as for Question 4, 71.9% of the participants thought that a good English pronunciation could improve their communicative proficiency. As for the same question in Figure 4, 100% of the participants thought that a good English pronunciation could improve their communicative proficiency, and among them more than half strongly thought so. As for Question 5, before the experiment, 78.1% of them chose to learn pronunciation because they were attracted by English language and its culture. The number for the same question shows a little change after the experiment, that is 80%.
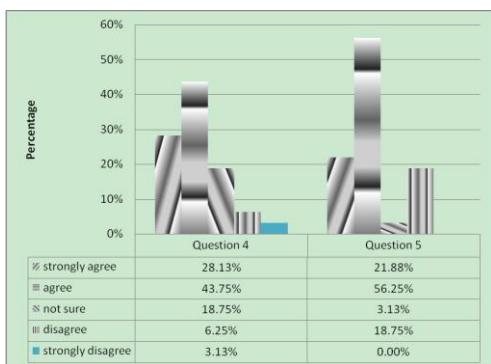
	Question 4	Question 5
strongly agree	28.13%	21.88%
agree	43.75%	56.25%
not sure	18.75%	3.13%
disagree	6.25%	18.75%
strongly disagree	3.13%	0.00%

Figure 3

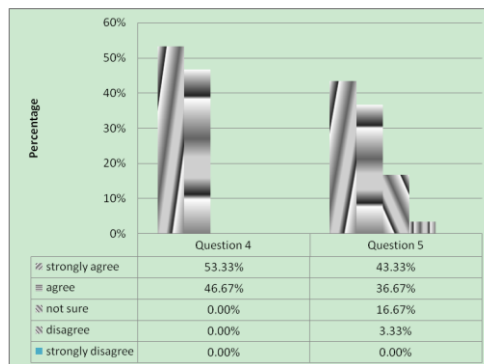|	Question 4	Question 5
strongly agree	53.33%	43.33%
agree	46.67%	36.67%
not sure	0.00%	16.67%
disagree	0.00%	3.33%
strongly disagree	0.00%	0.00%

Figure 4

D.   The Participants' Anxiety in English Pronunciation Learning

As is shown in Figure 5, the result of Question 6 indicates that 25.0% of them said that they were not scared to communicate with natives, but still 53.1% were not sure before the experiment. But after the experiment, there were 72.3% of them claiming that they did not fear to communicate with foreigners. From Question 7, we could see that 28.7% of them claimed that they were not afraid of communicating with teachers in class while the number for that question was raised to 73.3% after the experiment. For Question 8, 26.3% were not uneasy when facing others' judgments of their pronunciation before the experiment and that number increased to 63.3% after the experiment. In Figure 3, Question 9 indicates that 25% of the participants thought they were not afraid of making pronunciation mistakes, while in Figure 6, 86.7% said that they were not afraid after the experiment.
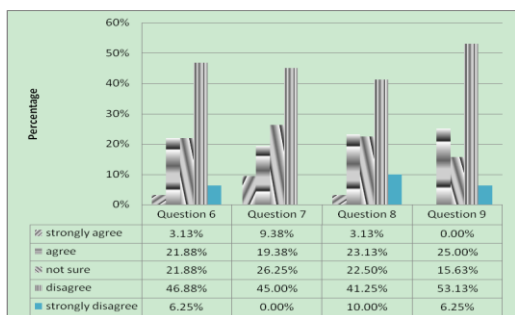
	Question 6	Question 7	Question 8	Question 9
strongly agree	3.13%	9.38%	3.13%	0.00%
agree	21.88%	19.38%	23.13%	25.00%
not sure	21.88%	26.25%	22.50%	15.63%
disagree	46.88%	45.00%	41.25%	53.13%
strongly disagree	6.25%	0.00%	10.00%	6.25%

Figure 5

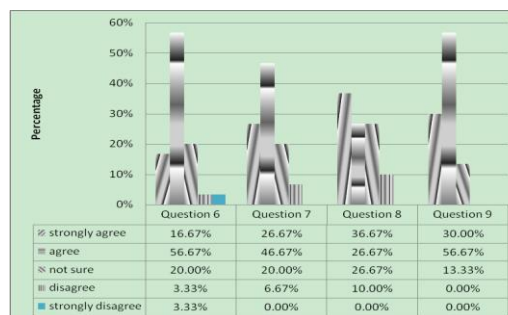|	Question 6	Question 7	Question 8	Question 9
strongly agree	16.67%	26.67%	36.67%	30.00%
agree	56.67%	46.67%	26.67%	56.67%
not sure	20.00%	20.00%	26.67%	13.33%
disagree	3.33%	6.67%	10.00%	0.00%
strongly disagree	3.33%	0.00%	0.00%	0.00%

Figure 6

E. The Participants' Evaluation of the Experimental Class

As is shown in Figure 7, we can find that 50.0% of the participants strongly believed and 40.0% of them believed that the teachers' guidance and their competent peers' demonstration helped a lot in learning pronunciation; 100% of them claimed their willingness to participate in the process of teaching and learning; 80% claimed DA was more meaningful and helpful for their improvement while 16.7% were not sure.
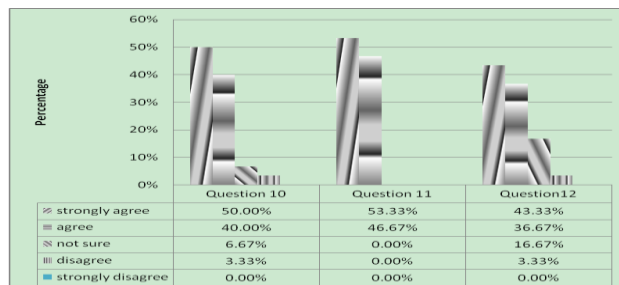

	Question 10	Question 11	Question 12
strongly agree	50.00%	53.33%	43.33%
agree	40.00%	46.67%	36.67%
not sure	6.67%	0.00%	16.67%
disagree	3.33%	0.00%	3.33%
strongly disagree	0.00%	0.00%	0.00%

Figure 7

V. DISCUSSIONS

From the results, we can conclude that the intervention type of DA plays an active role in helping learners improve their pronunciation proficiency and promoting the positive effects of non-intellectual factors in the learning process, for 100% of the participants claimed that they were willing to participate in such kind of teaching process and 90% of them thought that the help from either their teacher or their peers got them through the difficulties in learning, which positively supports the previous studies. From the results of the two oral tests, it is clear that the participants' mastery of segmental and supersegmental features were greatly improved. However, it also needs to be pointed out that the improvement of supersegmental mastery was slower than that of segmental elements.

Before the experiment, what they had experienced in English pronunciation learning was some repeated mechanic practice, and all they could get from their teachers after learning were static scores as a report of what they had acquired. However, numbers cannot talk, so they hardly knew what the specific problem was or how the problem could be solved. DA centered on learners' proximal development zone focuses on promoting individuals' advancement by delving and maximizing their potential by inputting knowledge and skills based on their existing level. In the teaching process, the assessment puts more weights on the progress than on the final score. Teachers play the roles of instructors, examiners, and also assistants to provide learners with scaffoldings through inspiring them or demonstrating them how to do according to the specific difficulties different individuals face.

The findings also show that DA did make a difference in the participants' non-intellectual factors, like interest, motivation and anxiety. The participants' interest was greatly stimulated: After the experiment, 96.7% of them claimed their willingness to practice English pronunciation, and 73.3% said they were in love with the Standard English pronunciation. After the experiment, they had a stronger motivation in learning pronunciation for improving communicative competence: 100% of them had understood the important role of pronunciation in learning English. The change is more significant in the case of anxiety. Before the class, only 28.7% said they were not afraid to communication with natives and 25% not afraid to communicate with teachers in English class. After the class, we found that 72.3% declared that they were not afraid to speak English and communicate with teachers in class, and 73.3% believed they were not scared to communicate with English natives. It seems that DA functions to improve their confidence in learning English pronunciation and lower their anxiety level. In the intervention model of DA, there are always direct interaction between the teacher and learners. After the pretest, the mediation can function as scaffoldings for learners to conquer the difficulties. Meanwhile, the interactive assessment can help teachers respond promptly according to learners' affective and psychological status, and adopt proper strategies to guide learners. As a result, the learners can lower their affective filter levels and be more active in learning, which just works in a virtuous circle to stimulate learners' interest and confidence in learning pronunciation.

VI. IMPLICATIONS AND LIMITATION

Dynamic assessment is an evaluation system which organically combines teaching and assessment, and makes the two coordinate with each other. In DA application process, the biggest challenge is for teachers. While applying DA in English pronunciation teaching, the teacher plays the role of a designer, a monitor and a guide. As a designer, he needs to make an overall plan of the teaching content, to design the pretest and the posttest, and to choose the intervention strategies in terms of the pretest results and learners' difficulties. As a monitor, the teacher needs to supervise the whole teaching process to know learners' progress and their difficulties in real time. As a guide, the teacher needs to find a proper way to help learners to construct their knowledge and skills and develop their cognitive ability gradually. Therefore, teachers should fully understand their role in teaching. Especially in the intervention stage, teachers should

consider the influence of social culture and affective factors, to adopt an active intervention strategy in teaching. In addition, the intervention model of DA usually does not give students instruction in advance, but provides learners with proper strategies and skills to help them with learning difficulties. The guidance in this stage may range from a simple right-or-wrong feedback to an explanation or even to a demonstration. As for those who have difficulties understanding the verbal explanation, teachers could adopt a more direct way to show them how to solve the pronunciation problem. Meanwhile, it is advisable to adopt a model of multiple dynamic assessments, which means to take into consideration the combination of teacher-evaluation, peer-evaluation, and self-evaluation to promote learners' progress in learning.

This research, just like any other one of this kind, may suffer from some limitations. Firstly, the non-intellectual factors chosen were limited to learners' interest, motivation and anxiety. More information is needed to indicate the DA influence on other non-intellectual factors, such as belief, learning style, and attitude. Secondly, it might be worthwhile to investigate whether DA works differently between high-level and low-level learners to further certify the role of DA in teaching and learning process. Thirdly, the sample of this study is also quite limited and other factors like age, gender, and cultures may also be useful variables in the study of DA in learners' development of pronunciation proficiency.

REFERENCES

[1]   Ableeva, R. (2008). The effects of dynamic assessment on L2 listening comprehension. In J. P. Lantolf & M. E. Poehner (Eds.), *Sociocultural Theory and the Teaching of Second Languages*. London: Equinox, 57-86.
[2]   Antón, M. (2009). Dynamic assessment of advanced second language learners. *Foreign Language Annals*, 42 (3), 576-598.
[3]   Erben, T., Ban, R, & R. Summer. (2008). Changing examination structures within a college of education: The application of dynamic assessment in pre-service ESOL endorsement courses in Florida. In J.P. Lantolf & M. E. Poehner (Eds.), *Sociocultural Theory and the Teaching of Second Languages* London, UK: Equinox, 87-114.
[4]   Haywood, H. C., & C. S. Lidz. (2007). Dynamic assessment in practice: Clinical and educational application. Cambridge: Cambridge University Press.
[5]   Kirschenbaum, R.J. (1998). Dynamic assessment and its use with underserved gifted and talented populations. *Gifted Child Quarterly,* 42(3), 140-147.
[6]   Kozulin, A., & E. Grab. (2002). Dynamic assessment of EFL text comprehension. *School Psychology International,* 23(1), 112–127.
[7]   Naeini, J. & E. Duvali. (2012). Dynamic assessment and the impact on English language learners' reading comprehension performance. *Language Testing in Asia,* 2(2), 22-41.
[8]   Peng, N. H. (2011). Affctive factors and affective strategies in English pronunciation learning. *Foreign Language and Literature*, 3, 137-140.
[9]   Poehner, M. E. (2005). Dynamic assessment of oral proficiency among advanced L2 learners of French. Ph.D. dissertation, the Pennsylvania State University.
[10] Poehner, M.E. & J.P. Lantolf. (2005). Dynamic assessment in the language classroom. *Language Teaching Research,* 9 (3): 1-33.
[11] Vygotsky, L.S. (1978). Mind in society: The development of higher mental process. Cambridge, MA: Harvard University Press.
[12] Shabani, K. (2012). Dynamic assessment of L2 learners' reading comprehension processes: A Vygotskian perspective. *Procedia-Social and Behavioral Sciences*, 32:321-328.

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