

## Dynamic Assessment in ESL Writing Classroom

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**Abstract**—Based on the Socio-cultural Theory and its key notion of Zone of Proximal Development, this study constructs a Dynamic Assessment writing Framework, which integrates three stages of writing process into the pre-writing – mediation – post-writing dynamic assessment model. The thesis conducts a detailed description of the implementation of the writing process framework into the dialogue-centered ESL writing classroom instruction in a hope of providing ESL teachers with a practical and easily and effectively manipulated approach to the ESL classroom teaching. This thesis also reports a comparative study which is designed to examine the differences between the experimental class and the control class in terms of writing scores and writing products with regard to accuracy, complexity, fluency and local and global coherence. The statistics resulting from both writing scores and writing products indicate that the dynamic assessment benefits the growth of ESL writing ability.

**Keywords**- *dynamic assessment; writing instruction; mediation*

### I. INTRODUCTION

The English teaching reforms have been carried out in universities and colleges for recent decades, which aim to shift college English teaching paradigm from the traditional “teacher-centered” pattern to the “student-centered” pattern. The new teaching outlook and approaches for the EFL teachers to apply to their classroom teaching based on the students’ individual cognition and willingness have become increasingly important. The current trends in learner-centered language teaching approaches and a growing interest in “authenticity and interactivness” (Bachman, 2006) have led to a greater interest in expanding the use of dynamic assessment (DA) in ESL classroom teaching.

Dynamic Assessment, developed more than 80 years ago by the renowned Russian psychologist, L. S. Vygotsky, originates from an ontological perspective on human abilities. Vygotsky’s researches into the development of cognitive functions indicated that this process, is the disclosure of new ways of acting, thinking, and being that attribute to an individual’s engagement in activities in which one is supported by cultural artifacts and by interactions with others, rather than a matter of innate abilities growing into a mature state.

Presently, ESL writing instruction has been developed from its birth to its prosperity, from teaching practice to theoretical researches, and from merely pedagogical research to a cross-disciplinary study (Lu, 2009), which has a

complete range of teaching approaches and its own theories (Zhan, 2007). Therefore dynamic assessment in language learning, which applies Vygotsky’s sociocultural theory into assessment, might offer new insights to assessment in the language classroom.

### II. RELATED RESEARCHES

ESL writing instruction in China has changed its focus from the end product to the writing process in the past several years. Deng et al (2003) suggest that process writing instruction suits better than traditional methods to satisfy the needs of the modern information society. These researchers contribute their efforts to improve ESL writing instruction, and try to apply the procedures of writing instruction process into their writing curriculums to hope for a better promoting students’ independent writing ability than traditional approach.

Lantolf and Poehner (2004) describe the perspective of DA by suggesting that dynamic procedures view the future as a bet in favor of everyone. In DA, as called for in Vygotsky’s ZPD, assessment and instruction are dialectically integrated as the means to move toward an always emergent or dynamic future.

Lantolf & Poehner (2008) point out that in DA, assessment and instruction are a single activity that seeks to simultaneously diagnose and promote learner’s development by offering mediation, a qualitatively different form of support from feedback. Mediation is provided during the assessment procedure and is intended to bring to light the underlying problems and help learners overcome them.

Zhao, Xu & Gao (2009) carried out a comparative study on the application of DA in the foreign language testing by using the pretest--midtest--posttest process. Their study found out that there is no difference in learning potential abilities between the top students and poor students based on the analysis of the scoring data. However, their assessment is more like a summary of three tests than a dynamic assessment process.

Zhang (2010) constructed a dynamic assessment mode in college English writing class for English-majors. The Assessment mode proposed that DA should provide graduated and contingent scaffolding instructional mediation according to the developmental needs of students in the process of writing, thus reflecting the dialectical integration of assessment and instruction, and making it possible to enhance both teaching and the development of students’ writing ability.

Most of the studies of Dynamic Assessment in Chinese ESL classroom fail to utilize the important concept -- dialogic cooperation between mediator and learner, which also distinguish it from the other forms of assessment. Some of the practitioners mentions the DA procedure's use of dialogue cooperation but failed to provide detailed description which is essential to DA.

### III. RESEARCH METHOD

#### A. Research Question

The report of the writing product is supposed to make clear the differences between the DA experimental class and the non-DA class from the aspect of accuracy, complexity, fluency and coherence at the end of the experimental semester and answer the following questions: Does the Implementation of Dynamic Assessment lead to substantial and comprehensive improvement in students' writing proficiency?

#### B. Research Design

Based on the principle of Classroom-based L2 DA, a Dynamic assessment framework (Table 1) is designed not merely to get feedback for the students' products, but to promote improvement of the students' writing ability. Instead of focusing on writing assessment, the framework proposed here means to contribute to the writing instruction.

The proposed dynamic assessment framework mainly focuses on the three most easily-neglected, however essential, writing stages: 1) choosing topics; (2) generating ideas & structuring; and 3) revising drafts. The three stages are integrated into the three steps of dynamic mediation process: 1) pre-writing; 2) mediation and 3) post-writing.

Amidst the three stages, the first one -- pre-writing stage -- aims aim at creating the ZPD of the students as to the abilities needed through students' internal thinking, choosing topic and brainstorming, which is expected to stimulate students' sensitivity to assistance and willingness to acquire assistance. The second stage -- mediation stage -- aims at awakening the students' internal developmental processes through the teacher's mediation in form dialogic interaction such as dialogues and mediational tools (requirement and criteria training, resource providing, peer discussion). The third stage -- post-writing stage -- is supposed to recognize the obvious improvement in the students' writing products through the application and internalization of the externally acquired writing techniques or knowledge..

TABLE 1. DA FRAMEWORK IN WRITING PROCESS

steps stages	choosing topic	generate idea & structuring	Revise drafts
pre-task	T	assigning; strategies	
	S	brainstorm	idea & structure first
mediation	T	dialogues & mediational tools; criteria training; resources & stimuli;	
	S	discussion correction	peer review second
post-task	T	dialogues and mediation; summarizing; collecting responses or advice;	
	S	modifying topic	improving structuring final

The writing task focuses on different topics. Students are required to write three drafts on the topic of same style in the three different stages respectively, which means three assessments and a peer assessment of each student will be taken.

#### C. Participants and Setting

The present study was conducted in Beijing Technology and Business University (BTBU) in Beijing from September to December in 2009. This research involves a 16-week College English Course (for non-English major students) aiming to motivate Chinese ESL students in overall English proficiency, with writing merely as part of the teaching content.

Specifically, approximately 66 students majoring in accounting from two intact classes (class091 and class092) of the first-year university students are the participants of study.

#### D. Data Collection

In the present study, two kinds of data were collected and analyzed in a hope that an authentic progress and improvement would be made. One is the testing score in the three drafts writing, the other being the data on linguistic features through the analyzing the students' writing products.

##### 1) Collecting drafts testing scores

The time-limit drafts were used to acquire information about each student's writing ability. The students were asked to write an argumentation essay to argue for or against a point of view on topics familiar to them without limitation of length. According to Zhang's research (2010), the best essays were produced by Chinese non-English majors in about 51 minutes and the ideal time for EFL writing test was 45 minutes. So each of the three drafts was completed within 45 minutes during the class time.

As for the scoring of the writing tasks of each student, the researcher assessed the writing drafts through use of the College English Test (CET) band4 writing scoring criteria, the total score of each draft was 20 points. Throughout the experiment, assessment data of each student included three drafts scoring of the writing task. At the end of the semester, all the testing scores are saved in an Excel file for data analysis later.

##### 2) Collecting Data on linguistic features in students' drafts

The texts of all the students' drafts were used as data to evaluate writing ability from the aspects of accuracy, complexity, fluency and coherence in an objective way. All the measurements concerning accuracy, complexity and fluency are aimed at assessing writing ability at the level of sentence. In order to measure the writing at the discourse level, an important indicator is taken into account: coherence. Developed by Graesser et al. (2004), Coh-Metrics is a computational cohesion and coherence metrics. Coh-Metrics provides three forms of co-reference measures between sentences: adjacent argument overlap, adjacent stem overlap and argument & stem overlap. Coh-Metrics

also provides two types of coherence: local and global coherence. Based on Liang's research(2006), as far as Chinese EFL students writing coherence are concerned, out of as many as 62 indices, three indices (adjacent argument overlap, adjacent stem overlap and LSA (Latent semantic analysis) sentence adjacent) contribute much to the local coherence, while other four indices (argument overlap, stem overlap, LSA sentence all, LSA paragraph) contribute much to the global coherence.

In the light of authentic data analysis, the researcher of this study typed into the computer all the students' first drafts and third drafts with the original features including misspelling, misuse of punctuation and lack of topic titles and stored in form of Text File Format. Then all the 132 drafts were input (copied and pasted) into Coh-Metrics one by one. The output data was saved in 132 corresponding Excel files respectively. The values from the Coh-Metrics were merged and computed for data analysis based on the formula:

a) *Accuracy*: Number of words minus number of errors divided by the Number of words;

b) *Complexity*: Average words per sentence;

c) *Fluency*: Average syllables per word times No. of words and divided by 45 (minutes);

d) *Local Coherence*: The sum of adjacent argument overlap plus adjacent stem overlap and LSA sentence adjacent;

e) *Global Coherence*: The sum of argument overlap, stem overlap, LSA sentence all and LSA paragraph.

#### IV. RESULTS AND DISCUSSIONS

In order to validate the effects of DA application on students' writing products and testing scores, the researcher analyzed the data in two categories: score-oriented and product-oriented.

##### A. Data Analysis on writing testing scores (score-oriented)

With all the original statistics from both Microsoft Excel and Coh-Matrix software processing in hand, the researcher utilized the SPSS statistic tools to investigate the implications based on the students' writing scores. In order to clearly deliver the results of the data analysis, two categories were divided: inter-group/class and inner-group/class.

With the help of SPSS tools, Independent Sample t Test was used to analyze the similarities and differences between the two groups/classes.

Prior to any data investigation, the independent samples t-test was conducted showing that the t significance value ( $p=0.931>0.05$ ) for the t-test is fairly higher than 0.05, which also suggests that there is no significant differences between the two groups in writing ability before the DA process

Another Independent Sample t Test on the second and third writing scores shows that the average pre- and post-writing scores of Class A is 15.33 and 17.67, higher than that of Class B. More important of all, Table 2 provides the information that there are two significant differences between the two kinds of second writing scores, and between the two kinds of third writing scores. This suggests that the students have made more significant progress and improvement in their writing abilities than those from Class B, the non-DA control class.

More important of all, Table 2 provides the information that the values of significance (P) in both of the writing scores are less than 0.05 ( $p<0.05$ ), which clearly implies that there are two significant differences between the two kinds of second writing scores, and between the two kinds of third writing scores.

##### B. Data Analysis on linguistic features in students' drafts (product-oriented)

For the purpose of the comparison of the pre-writing and the Post-writing products between the two groups, another Independent t-Test is conducted.

TABLE 2. INDEPENDENT SAMPLE T TEST ON THE 2ND AND 3RD WRITING SCORES OF TWO GROUPS

	t-test for Equality of Means						
	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
<b>DraftA2</b>	6.325	64	.000	2.909	.460	1.990	3.828
<b>DraftA3</b>	11.457	64	.000	4.303	.376	3.553	5.053

The above table shows that, except the P value of complexity ( $P=0.334$ ) more than 0.05, there is a significant difference of the other four factors between the two groups with P values of accuracy, fluency, local coherence and global coherence being 0, 0, .043, .031, which suggests that there is much improvement in the students' writing abilities through the application of DA procedure.

TABLE 3. INNER-CLASS A PAIRED SAMPLES T TEST STATISTICS ON THE PRODUCTS OF TWO WRITING TASKS

	Linguistic Features	Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error	Lower	Upper			
<b>Pair 1</b>	AccA1 – accA2	12.94	3.27	.561	11.803	14.089	23.04	33	.000
<b>Pair 2</b>	ComA1 – comA2	-1.09	6.70	1.149	-3.436	1.241	-.955	33	.347
<b>Pair 3</b>	FluA1 – flu A2	-.845	1.408	.240	-1.334	-.355	-3.511	33	.001
<b>Pair 4</b>	LocA1 – locA2	-.178	.416	.0713	-.323	-.0333	-2.502	33	.017
<b>Pair 5</b>	GloA1 – gloA2	-.258	.505	.0867	-.435	-.0824	-2.985	33	.005

The Independent Sample t-Tests focus on the comparison between two groups. The following Paired Samples t Tests aim to see whether the students of both classes have made any significant progress in their writing abilities.

In term of the accuracy, fluency and both local and global coherence, the students of Class A, the experimental group, have made significant progress ( $p>0.05$ ) in their writing products. This validate the conclusion, which has been discussed in the previous section, that the students have made more significant progress and improvement in writing abilities than those of the control group, Class B.

### C. Discussions

The conventional approach to measure the changes in the students' progress is to analyze their products in one form or another. In order to make the experiment more authentic and to have a deep insight into the students' changes in their writing products, first, the researcher use three writing scores of each student of both experimental and control group. both of the inter-group Independent Sample t Test and the inner-group Paired Sample t Test show that the experiment group/class have made much progress in the development of their writing abilities. Second, the investigation into the detained linguistic features of the students' writing products in term of accuracy, complexity, local and global coherence also suggests that students in the experimental group/class have made significant progress in their writing abilities through the application the DA.

Interestingly, the two types of measurement (score-oriented, product-oriented) provide some new findings.

Firstly, based on the score-oriented measurement, the students in both groups make progresses whether or not the DA is applied. This suggests that both the teachers and students are making their efforts in ESL classroom. Nevertheless, the further investigation into the extent or degree to the progress reveals that there is a gap between the degrees of the two progresses.

Secondly, the gap between the two groups' writing scores appears to be larger in the third stage (post-writing stage) than that of second stage (mediation), which may indicate that teachers' mediation makes much contribution to the improvement of the writing ability. The inner-group/class assessment also shows a slower improvement in the third stage (post-writing stage) control group than that in the second stage (mediation).

Lastly, both the inter- and inner- group/class t-Tests into the linguistic feature offer an insight into the students' development in their writing abilities. It is easy to understand that the peer-view and revision activities contribute much to the higher increase in the students' accuracy in the experimental group. In other words, the assistance from the other groupers and teachers makes it very likely to avoid making errors in spellings, phrases, structures and tenses.

Li (2010) conducted a study on the English-major students' writing products. Students were allowed 50 minutes on given topics. Their writing products were also

assessed in term of accuracy, complexity, fluency, local and global coherence. The mean values of the complexity of two groups in his finding are 12.39 and 12.15. Surprisingly the mean values of the complexity of the present study (14.96, 13.83) are higher than that of Li's finding, because his study is conducted on the English-major students in the similar setting. This may be due to the different use of criteria. This study uses the Average words per sentence to measure writing complexity, while Li uses the average words per T-unit, but he did not give a specific definition of T-unit.

### V. CONCLUSION

This study is a new attempt on how students learn in DA setting and how and how much learning and performance can be improved. Two statistic assessment tools are used to identify the degrees of improvement and the primary obstacles to a more optimal level of competence in students' writing abilities. The findings of this study conclude that teacher's mediation and intervention; peer collaboration and students' active involvement in the process of development can reduce and overcome the obstacles to learning. The findings have provided the instructors with an outlook of the students' learning potential--the future development, which offers an effective and practical pedagogical implication for ESL classroom instruction activities.

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