

On the Immediate and Delayed Effects of Interactionist Dynamic Assessment on Grammar Development: A Case Analysis of an Iranian EFL Learner

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Abstract

The purpose of this study was to investigate the effect of dynamic assessment (DA) on grammar development of a beginner foreign language learner whose L1 was Persian. For this purpose, two versions of *Oxford Placement Test of Grammar* were used: One as the pre and posttests and the other for teaching grammar through interactionist DA. At first, the participant was pretested to assess her knowledge of grammar before the treatment. During the study, interactionist DA was used to provide mediation to the learner depending on her needs. A posttest was conducted two days after the last session to observe the immediate effect of DA. Four weeks later the same test was also administered to observe the delayed effect of the treatment. Item-by-item analysis of the questions showed that DA was effective both in terms of its immediate and delayed effect. The microgenetic analysis revealed useful information about the potential of the learner which was not achievable in nondynamic assessment.

Keywords: Dynamic Assessment, Zone of Proximal Development, Mediation, Grammar

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1. Introduction

Obviously, one essential part of each curriculum is assessment. Traditionally, assessment was described as an information-gathering work (e.g., Bailey, 1996) in which students were assessed at the end or middle of the course of instruction. This kind of assessment was called summative assessment.

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Overall, traditional assessment is distinct from goals of teaching and suffers from some weaknesses (Lynch, 2001; McNamara, 2001; Spolsky, 1997). In fact, there is no intervention and no learning in static assessments, as it only focuses on solo performance of the test takers. For example, W. Evans, Hartshorn, and Strong-Krause (2011) showed that traditional process writing instruction caused some decline in students' accuracy.

Dynamic assessment (DA) challenges traditional views and argues that teaching and assessment should be integrated. So, DA has been proposed as an effective method to develop students' abilities (Poehner, 2008). DA is based on Vygotsky's proposal of zone of proximal development (ZPD).

Roothoof (2014) states that teachers know that providing feedback is important, but they are not aware of the amount of providing it. But DA is a kind of assessment that provides teachers and students with insights into learning progress and areas in need of further attention. One of the distinctive features of DA is that it integrates teaching and assessment as a single activity (Lantolf & Poehner, 2014). This view has been applied in both general education and applied linguistics. While teachers in general believe that all of the students' errors should not be corrected (Jeong (Esther) Lee, 2013) in DA, the assessor who is also the mediator offers his/her support to the learner whenever a problem arises. This kind of support or mediation includes hints, prompts, and feedback that starts from the most implicit to the most explicit. Poehner (2011) suggests that DA is more than a set of technical procedures or methods. In fact, it is a different way of thinking about teaching and assessment (Poehner, 2008).

A few studies have been conducted in relation to second language acquisition with detailed presentation of methodology. In fact, DA in the context of second language studies still is new and developing. To the best of the researchers' knowledge, no study has considered the immediate and

delayed effect of DA on EFL grammar development through interactionist approach to DA and more specifically through case analysis. This kind of interaction is important because it can diagnose each learner's potential and problems, so the development of learners is more achievable.

The study sought to fill this gap by using the interactionist approach and investigating its immediate as well as delayed effect on the grammar development of an Iranian EFL learner. Thus, the following research questions were put forward.

1. How is development depicted in dynamic vs nondynamic assessment?
2. What is the immediate effect of using interactionist DA on the grammar development of a beginner EFL learner?
3. What is the delayed effect of using interactionist DA on the grammar development of a beginner EFL learner?

2. Literature Review

2.1 Theoretical Background

2.1.1 Dynamic Assessment vs. Nondynamic Assessment

Lunt (1993) suggests that static assessment measures the actual development of learners. Actually, static procedure cannot measure developing abilities and the potentials of each student. In nondynamic assessment (NDA), students are not provided with feedback and decisions are made on static scores alone (Wiedl, Guthke, & Wingenfeld, 1995). According to Poehner (2008), DA is in sharp contrast with static assessment, because static assessment is product oriented.

Advocates of Marxist philosophy believe that human beings in their activity not only shape their environment but also are shaped by it. This process is mediated by physical tools. Vygotsky (1986) accepts this idea and believes that the human cognition is mediated socially through interaction with others. When less competent learners are in a dialogic interaction with

experts, they develop to the stage which Vygotsky (1978) calls higher forms of consciousness. Dynamic assessment is based on sociocultural theory and focuses on what students can do with the assistance provided by an expert.

The theoretical premise for DA is based on Vygotsky's (1978) conceptualization of ZPD. The ZPD is defined as the difference between an individual's independent performance and the level of performance s/he may reach with the help of a more competent mediator (Vygotsky, 1978).

According to Poehner and Lantolf (2013), one of the basic tenets of DA is that, to fully understand abilities of the students, the teacher should intervene in the process of development. Therefore, in order to carry out tasks, both teachers and students should work together. In other words, when students face a problem, the teacher provides support to solve it. Lidz (1987, p. 4) defines DA as "an interaction between an examiner-as-intervener and a learner-as-active participant, which seeks to estimate the degree of modifiability of the learner and the means by which positive changes in cognitive functioning can be induced and maintained". Murphy (2011) defines DA as "an approach to understanding and conceiving an individual in the assessment process" (p. 1).

To summarize, in DA, the examiner is a participant and the examinees receive mediation, but in static assessment the examiner is an observer and the examinees receive no mediation. In DA the focus is on the process but in static assessment it is on the product.

DA studies have been conducted on different language skills, for example, reading comprehension (e.g., Dorfler, Golke, & Artelt, 2009; Gellert, 2012; Guterman, 2002), online multiple-choice tests of L2 reading and listening comprehension (Poehner, Zhang, & Lu, 2014), speaking (e.g., Hill & Sabet, 2009; Nguyen, 2013), writing (e.g., Rahimi, Kushki, & Nassaji, 2015; Shrestha & Coffin, 2012) and grammar (e.g., Compernelle &

Zhang, 2014) the results of which have indicated that DA is effective in developing learners' L2. But most of the studies conducted so far have been interventionist rather than interactionist.

For example, in a study by Hill and Sabet (2009), the effect of DA on speaking was investigated. They provided mediated assessment in the form of questions and prompts. The results of the study showed that students internalized the information better than before.

Poehner's (2005) study investigated the effect of DA on verbal aspects. The participants of this study were advanced L2 French university students. The researcher employed interactionist approach in seven sessions to mediate six students. The study consisted of the following stages: 1) a nondynamic and dynamic pretest, 2) an L2 enrichment program, 3) a nondynamic and dynamic posttest, and 4) two transfer assessment sessions. At the beginning of the study, the students were asked to watch a video clip and narrate a story about it. They did it first independently and after that in an interaction between the mediator and the student, the mediator diagnosed their problems and offered mediation. Based on the students' needs and problems, an enrichment program was offered. To see whether DA was effective or not, the students were asked to watch the same clip and narrate it again both independently and in an interaction with the mediator. Analysis of the results showed that DA helped the students develop. The authors also claimed that static assessments sometimes underestimated and sometimes overestimated the abilities of the students which could not show the true abilities of the students.

Erlam, Ellis, and Batstone (2013) investigated the effect of two types of feedback on learners' errors. One type of feedback was based on learners' ZPD and the other one in accordance with cognitive-interactionist theory. The analysis of the results showed that the feedback based on the learners'

ZPD helped them reach self-correction but there was no evidence of systematic reduction in assistance needed during interaction.

Compernelle and Zhang (2014), studied the effect of dynamically administered elicited imitation on the learning of English morphology of an advanced student. Elicited imitation was used to elicit utterances from him by asking him to repeat sentences and to assess his implicit knowledge. Three scores were used in this study: 1) an actual score, which showed the independent performance and was based on the student's first answer and worth four points; 2) a mediated score, that included points awarded for items correctly answered on the second, third, or fourth attempt, in addition to the actual score; and finally 3) a learning potential score (LPS) that measured the learner's readiness to benefit from instruction, because it was based on his responsiveness to mediation during the test. The researchers used an interventionist model in the design of this study and chose three word-final morphological features that represented, in theory, three different acquisitional stages: plural *-s* (early); past tense *-ed* (intermediate); and third-person singular *-s* (late). The student had to repeat 36 sentences with 72 target words. One of the sentences was grammatically right and the other was wrong. After the analysis of the items that developed a detailed diagnostic profile of the student and his needs, and the analysis of his performance, it was concluded that there was a significant difference in his knowledge of English morphology.

To sum up, most of the studies reviewed above have discovered that DA has contributed to the development of learners and helped them overcome their problems. But few DA studies on grammar have offered a systematic way of offering feedback in DA. Nevertheless, to the best of the researchers' knowledge, no study has worked on the immediate and delayed effect of DA on grammar learning of EFL students while using one-to-one interactions as well. Moreover, most of the studies reviewed above did not include their exact methodology in their reports; one of the few studies clearly presenting its methodology was conducted by Compernelle and Zhang (2014).

Therefore, the present study investigated the effect of DA on grammar learning of an individual using one-to-one interactions.

3. Method

3.1 Participants

An Iranian female EFL learner voluntarily took part in this study. Her native language was Persian. She was an adult high school student (age = 17). She had a 4-year experience of studying English in school. However, her level of grammar turned out to be low based on the score she got on the *Oxford Placement Test of Grammar*.

3.2 Instruments

For the purpose of the study two versions of the *Oxford Placement Tests of Grammar* were used: One as the pre and posttests and the other for teaching grammar through interactionist DA. Both tests contained 100 multiple choice items. Because the overall development was of interest, two parallel tests were used, not exactly the same tests. Furthermore, this was to reduce the practice effect of the tests. They covered many grammatical points and seemed suitable for the purpose of the study, therefore, recognizing her needs and problems and offering mediation to help develop her knowledge.

3.3 Data Collection

At first, the participant was pretested nondynamically using one version of the Oxford Placement Test of grammar to assess her knowledge of grammar before the treatment. Then another Oxford Placement Test was used during the study. To help her reach independent functioning, interactionist DA was used to provide mediation to the learner depending on her needs. The hints and feedbacks were in both Persian, her native language, and English, the target language depending on the context and her ability to understand the mediation. A posttest which was the same as the pretest was conducted nondynamically two days after the last session to observe the immediate effect of DA. Four weeks later the same test was administered to study the delayed effect of DA.

3.4 Data Analysis

For the analysis of the results, the scores in the pre and posttest were compared to see the overall development. The number of correct answers was counted. Actually two scores were used in this study. One was her actual score, which was nondynamic and showed her current knowledge. The other score was the mediated score, which was dynamic and was based on the number of hints.

To obtain the quantitative results, Lantolf and Poehner's framework (2006) was used (see Table 1). Her actual and mediated scores were estimated and compared. Her actual scores based on her independent performance, reflected correct responses on the first attempt only (each correct response was worth 8 points), while mediated scores took into account the correct responses on the second to seventh attempts. The score decreased by 1 point for each successive attempt (i.e., the second attempt was worth 7 points, the third attempt 6 points, etc.). After comparing her actual and mediated scores, investigation could be made of the degree to which the student was able to respond positively to the graduated mediating prompts provided during the test.

Table 1

Mediated Scores based on the Number of Hints (Adapted from Lantolf & Poehner, 2006)

Step	Score
Correct answer	8
Pause	7
Repeat the whole phrase questioningly	6
Repeat just the part of the sentence with the error	5
Teacher asks, what is wrong with that sentence	4
Teacher points out the incorrect word	3
Teacher asks either/or question	2
Teacher identifies the correct answer	1
Teacher explains why	0

The qualitative analysis was based on investigating the number and kind of hints used during the mediation. The interactions in the mediation phase were recorded and transcribed for further analysis. Detailed analyses of the

results were given based on the transcriptions. The interactions between the mediator and the student and her responsiveness to mediation were analyzed and reported. The data analysis was done item-by-item to find microgenetic instances of development.

4. Results

4.1 Nondynamic versus Dynamic Assessment

To see how development is depicted through dynamic and nondynamic assessment, analysis was made of actual and mediated scores obtained in each session. Table 2 reveals the results in this regard.

Table 2

Actual and Mediated Scores

Session Gain	Actual Score	Mediated Score
1	24 (3/10)	28
4		
2	48 (6/10)	51
3		
3	32 (4/10)	47
15		
4	48 (6/10)	55
7		
5	16 (2/10)	35
19		
6	40 (5/10)	52
12		
7	40 (5/10)	40
0		
8	40 (5/10)	54
14		
9	32 (4/10)	51
9		
10	16 (2/10)	35
19		
Total	336	448
112		
Mean Score	33.6	44.8
11.2		

Note. The fraction in parentheses in the 'Actual score' column shows the number of items answered correctly out of the total number of items.

As can be seen in Table 2, analysis of the actual scores can only illustrate the fact that the learner has obtained different scores on different sessions with no specific pattern. The scores range from 16 to 48. Lower scores are interpreted as lower levels of knowledge and higher scores can mean higher

levels of knowledge. However, analysis of the mediated scores and their comparison with the actual scores depict the pattern of development in a much better and clear way. As an instance, while the learner has obtained the same actual score of 40 in sessions 6, 7, and 8, her mediated scores are 52, 40, and 54 respectively. In other words, while the actual scores indicate the same performance for this learner in these sessions which is interpreted as the same level of knowledge in traditional assessment, the mediated scores by focusing on the learners' ZPD can indicate that the learner's partial knowledge is not the same in these sessions. This is depicted by the number of hints or mediations required to help the learner digest the grammatical points.

Furthermore, based on the results, DA was found to be effective in enhancing the learner's grammar. It could be said that her needs and problems were uncovered in the interaction between the mediator and the learner, so the mediator could help her cope with them and develop her knowledge. Qualitative analysis of the interactions confirmed this development which will be explained in section 4.4.

4.2 The Immediate Effect of Interactionist Dynamic Assessment

To see what the immediate effect of using interactionist DA was on the grammar development, the participant's scores in the pre and posttests were compared.

Figure 1 shows that DA influenced her performance significantly and there was a marked improvement in her scores. Her score was 37 at the beginning of the study but reached 68 in the immediate posttest. The main cause of this development might be the provision of mediation throughout the study. So based on the OPT band scale, it can be claimed that a beginner learner has become an upper intermediate one by the help of DA.

As the tests used in the posttest and mediation phase were two similar, but not the same versions of a placement test, they were not exactly the same. As such, she could not answer some of the questions in the posttest. Had exactly the same points appearing in the pretest been worked on, the development would have been much more noticeable.

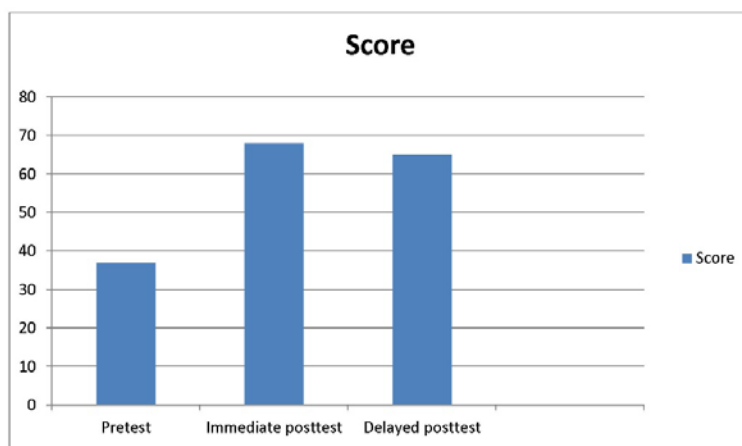


Figure 1. The participant's NDA scores on pre and posttests

The presented results can lend support to Lantolf's (2000) claim that mediation in second language learning happens through social interaction by the help of an expert or by the learner him/herself internally through private speech.

Lidz and Gindis (2003) believe that considering abilities as stable is against Vygotsky's idea which considers abilities as dynamic. So, to understand these abilities completely, interaction between students and teachers is needed to diagnose them.

Overall, the findings of this part also confirmed the findings of previous studies which showed that DA had an immediate effect on the L2 learning

(e.g., Compernelle& Zhang, 2014; Dorfler, Golke, & Artelt, 2009; Gellert, 2012; Guterman, 2002, Hill & Sabet, 2009).

4.3 The Delayed Effect of Interactionist Dynamic Assessment

To find the delayed effect of DA, the participant's scores in the pre and delayed posttests were compared. As shown in Figure 1, the participant had maintained her knowledge of grammar as measured by her performance on the delayed posttest. There exists a negligible decrease in her individual performance score ($68 - 65 = 3$) from the immediate to the delayed posttest. But as a whole, it can be said that the student could retain most of what she had learned. The results are in line with previous studies like Poehner (2005) which showed that DA had a delayed effect.

4.4 Item-by-Item analysis

Item-by-item analysis of pre and posttests was conducted to see on which items DA had an effect. Five groups of items were extracted based on the learner's response:

1. Questions that she answered correctly in pretest, posttest and delayed posttest which showed the questions were in her actual ability domain.
2. Questions that she did not answer in the pretest but could answer correctly in the posttests. Such questions could be indicative of the effect of DA in improving her ZPD.
3. Questions that she did not answer in the pretest and posttests even though she received mediation. This may indicate problems with mediation, or that the questions are beyond a learner's ZPD. Carelessness may also be a reason in this regard. However, detailed analysis of such questions indicated that the problem was because of lexical items not grammar.
4. Questions that she did not answer in the posttests because they were not worked on in the mediation phase. Therefore, they indicate lack of mediation.

5. Questions that she answered correctly in the immediate posttest but not in the delayed posttest. Such questions are related to retention issues. The content of the questions and the quality of mediation provided may have a role in this regard.

In what follows, one example is provided for group 2 along with the necessary explanation.

Group 2: Questions that she did not answer in the pretest but could answer correctly in the posttests. Such questions could be indicative of the effect of DA in improving her ZPD.

These questions were not answered correctly by her, but by mediation provided to her in the mediation sessions, she could answer them correctly.

3 examples are given:

Example 1: In cold countries people wear thick clothes **for keeping /to keep/for to keep** warm.

In the pretest her answer was for keeping. The reason for choosing this might be that in her native language she uses 'for' for this verb. But after providing mediation in the mediation session, she could answer this question correctly in posttests.

Example 1.1: In hot countries people wear light clothes **for keeping /to keep /for to keep** cool.

14. M: What was your answer?

15. S: Option 1.

16. M: Why?

17. S: I choose this because of its meaning.

18. M: The mediator pauses.

19. M: In hot countries people wear light clothes for keeping cool? (He repeats the whole phrase questioningly)

20. S: To keep cool?

21. M: Why?

22. S: Because option 3 is wrong.

23. M: Why?

On the Immediate and Delayed ...

24. S: Because two articles cannot come together.

25. M: that's right. So which option is correct?

26. S: option 2.

27. M: Why do you think this option is right?

28. S: I don't know.

29. M: Look at the verb wear. We use to after some verbs like listen and wear. So the correct answer is to keep.

Microgenetic analysis of the items in the mediation phase, uncovered useful information about the knowledge development of the learner. It showed the advantage of interactionist DA over NDA and even interventionist DA approaches. For example, in NDA or interventionist DA when a question is answered either correctly or incorrectly by a test taker, it indicates knowledge or lack of it respectively. But it is obvious that in reality such an assumption is problematic as there could be other explanations behind the correct or incorrect answers provided by a test taker: Not every correct answer indicates mastery of the relevant knowledge area. Similarly, a wrong answer may still mean mastery or at least partial mastery of the relevant content area with the wrong answer being more a performance problem than a competence one. Actually two possible cases were found in this study:

A: Those questions that were answered correctly with full, partial and no mastery over the content area and

B: Questions which were answered incorrectly but showed partial or nonmastery. Examples are provided to clarify these points:

Case 1:

Questions that she answered correctly and could elaborate on her answer. These questions show that she had full mastery over the content.

Example 1.1: In the future **we'll need /we are needing /we can need** to get a lot of power from the sun and the wind.

133. M: What was your answer?

134. S: Option 1.

135. M: Why?

136. S: Because this sentences is about future, so we use will.

137. M: Why didn't you choose option 2?

138. S: Because it is مضارع استمراری

(Present progressive)

It was clear from her explanations that she knew the grammatical point about future tense. To see whether she had answered by chance or not, the mediator asked her to elaborate on her answer and to tell why other options were wrong. Her explanation was flawless so it was concluded that her ZPD had reached that level before conducting the study

Questions that she answered correctly, but she had partial knowledge of.

Example 1.2: Most Mediterranean countries are **more warm/the more warm/ warmer** in October than in April.

50. M: What was your answer?

51. S: Option 3.

52. M: Why?

53. S: Because of its meaning.

54. و توی این جمله به مقایسه صورت گرفته

(There is a comparison in this sentence)

55. M: You mean this sentence is comparing two things?

56. S: Yes.

57. M: Why can't we say more warm?

58. S: Because we are comparing two things and we cannot say more warm.

59. M: But in more warm we are still comparing two things.

60. S: I don't know.

61. M: Because warm is one syllable. With these words we use -er, like warm and cold. But with words which are more than one syllable we use more before them. For example: More beautiful.

62. So why do we use warmer?

63. S: Because it has one syllable.

64. M: Nice or nicer?

65. S: Nicer.

Her explanation in line 58 suggested that she knew something about comparative adjectives but her knowledge suffered somehow. She knew that

for comparative adjectives –er is used but she had no idea about when and how to use more. So here the mediator intervened to explain the grammatical point to her to help her reach a full understanding of how to use comparative adjectives.

Questions that she answered correctly but after asking her to give a reason, it was understood that she had answered it by chance.

Example 1.3: The world cup finals were in 1958 and Pele was looking forward **to play/to playing /to be playing.**

212. M: What was your answer?

213. S: Option 2.

214. M: Why?

215. S: I don't know.

216. M: Do you want to change your answer?

217. S: No.

218. M: After look forward we use verb plus ing. Did you understand?

219. S: Yes.

220. M: Good.

Although she answered this question correctly, her comment in line 215 suggested that she had answered it by chance. The mediator provided the explanations and told her that after look forward verb plus ing is used.

Case 2: Questions that she answered incorrectly, but showed partial knowledge or total non-mastery.

Questions that she answered incorrectly because of lack of knowledge, but after mediation provided by the researcher she could find the correct answer.

Such questions are the main focus of DA as they indicate that the student could not answer independently but after mediation, her ZPD reached that level and she could answer them correctly.

Example 2.1: If he **hadn't been /weren't / wouldn't be** so important to the team, he would have been left behind.

229. M: Which item?

230. S: I didn't choose any option because I didn't understand it.

231. M: Do you have any problem with the meaning?

232. S: No. I don't understand If structure.

233. M: Do you know anything about if conditionals?

234. S: No.

235. M: The mediator explains all if conditionals to her with 3 examples for each.

After the explanation he asks some questions to see if she has learned it or not. One of the questions was the previous question.

236. Can you find the answer?

237. S: Yes, option 1.

238. M: Why?

239. S: Because we are talking about something that didn't happen in the past.

Her answer in line 230 suggested that she did not know anything about if conditionals. So the mediator explained to her different kinds of if conditionals and how to use them. Her answer in line 237 showed that she learned these structures after the mediation. So she answered this question incorrectly because of lack of knowledge, but after mediation provided by the researcher she could find the correct answer. In NDA, the examiner erroneously concludes this to be indicative of lack of knowledge but by the help of DA the source of problem was found.

Questions that she did not answer because she did not understand its meaning but after explaining its meaning she could answer it correctly.

Example 2, 2: Micro technology is moving so fast that hardly **anybody** / **nobody**/ **no one** can keep up with it all

504. S: Nobody?

505. M: Micro technology is moving so fast that hardly nobody can keep up with it all? (He repeats the whole sentence questioningly)

506. S: No one?

507. M: Micro technology is moving so fast that hardly no one can keep up with it all? (He repeats the whole sentence questioningly)

508. S: She is silent

509. M: That hardly no one can keep up with it all? (He repeats just part of the sentence with the error)

510. S: We don't use any because we use it with negative sentences.

511. M: Yes but pay attention to the word hardly

512. Do you know its meaning?

513. S: به سختی

(Difficultly)

514. M: No. It means seldom. It makes sentences negative.

515. So the correct answer is?

516. S: Anybody.

It is evident from excerpts that she knew how to use anybody and nobody and had some control over them. In line 510, she said "we don't use any because we use it with negative sentences". The mediator questioned her 3 times but she did not change her answer. The mediator intervened once again and asked her whether she knew the meaning of hardly or not. Her answer in line 513 suggested that she did not know its meaning and thought hardly meant *difficultly*. So the source of error was found and the mediator explained its meaning to her. His intervention resulted in a successful change and she found the correct answer. So it can be claimed that if NDA was applied her knowledge and performance was underestimated, but by dialogic interaction between the mediator and the student, her source of problem was discovered and also her knowledge was improved.

Questions that she knew nothing about.

Example 2, 3: Steve's off to China, **has he / hasn't he / isn't he?**

671. S: I don't know

672. M: Do you know what this sentence is called?

673. S: No

674. M: Tag question. Tag questions turn a statement into a question. They are often used for checking information that we think we know is true. To make a tag, use the first auxiliary. If there is no auxiliary, use do, does or did. If the main clause is **positive**, the question tag is **negative**, and if the main clause is **negative**, it is **positive**. For example: It's cold (positive), isn't it (negative)? And: It isn't cold (negative), is it (positive)?

675. M: Did you understand?

676. S: Yes

677. M: So the correct answer is?

678. S: Isn't he

Unlike the earlier DA interactions considered above, here the student did not have any understanding of what tag questions were? So the mediator provided her with full explanation of tag questions and after the explanation, asked her to answer the question. Because the student could answer it successfully, it can be concluded that her ZPD reached that level by the help of the mediator. It means that at the beginning of the study she could not answer this question independently, but after the mediation she could do it.

Although there are no studies regarding dynamic assessment of grammar using interactionist DA, the results of this study are in line with a study on dynamic assessment of morphology using interventionist DA. Compernelle and Zhang (2014) investigated the effect of DA on English morphology of a Korean student. After the analysis of the items that developed a detailed diagnostic profile of the student and his needs, and the analysis of his performance, it was concluded that there was a significant difference in his knowledge of English morphology.

This study overall indicated the effect of DA, so it is in line with the findings of other studies on DA, for example, reading comprehension (e.g., Dorfler, Golke, & Artelt 2009; Gellert, 2012; Guterman, 2002), speaking (e.g., Hill & Sabet, 2009), writing (e.g., Shrestha & Coffin, 2012) and grammar (e.g., Compernelle & Zhang, 2014) which showed DA was effective in developing learners' L2.

5. Conclusions and Implications

The study investigated the immediate and delayed effect of interactionist DA on grammar development of an EFL learner. The results indicated that DA was effective in developing the grammatical knowledge of the learner. The findings provided evidence of DA's applicability to L2 grammar. The aim of this study was not to measure the participant's grammatical knowledge but to interpret her knowledge through her responses (Vygotsky, 1998). By

interpreting her knowledge, the sources of her problems were found and attempts were made to solve the problems.

DA was found effective in developing the grammatical knowledge of the learner as comparison of her actual and mediated scores showed that she improved dramatically compared to her performance in the pretest. If traditional assessment had been used, her true ability would not have been discovered.

Also DA had an immediate effect on grammar development of the learner because she could answer 31 more questions correctly in the posttest after the mediation. This dramatic shift showed the strength of DA in helping the learner perform beyond her level of independent functioning.

Furthermore, although the participant could not answer 3 questions in the delayed posttest correctly, she could retain what she had learned before. She could answer 65 questions correctly in the delayed posttest which can lend support to the delayed effects of DA.

Finally, DA could provide diagnostic information about learners' weaknesses and strengths. In traditional or nondynamic assessment this information comes from only two types of questions: those answered correctly interpreted as mastery or knowledge and those answered incorrectly meaning lack of mastery or knowledge. However, this study indicated that this can be misleading as a correct answer does not necessarily mean mastery or knowledge and accordingly a wrong answer may be interpreted differently. In other words, DA can reveal partial knowledge of a learner by being sensitive to ZPD; this is usually untapped in nondynamic assessment.

Based on the results of the study, a number of pedagogical implications can be drawn. Findings of the study provided evidence in support of DA to diagnose the potential of learners and their problems. Therefore, the source and the extent of their problems can be explored using DA.

As this study showed that interactionist DA is effective in uncovering the learner's ZPD, teachers can use this method to adjust their teaching to their students' capability. They can create conditions for the enhancement of the students' potential.

Finally, the results of the study will have implications for those who are interested in learning about the application of DA to language development because this study successfully implemented this procedure and provided detailed steps. Actually, all the dialogic interactions between the learner and the mediator are thoroughly discussed and can be replicated without any difficulty.

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