The Impact of Computerized Dynamic Assessment on Iranian EFL Learners' Interlanguage Pragmatic Development

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Abstract

The present study reports the results of a dissertation aimed at consolidating assessment and instruction of L2 pragmatics comprehension by drawing on an interventionist computerized dynamic assessment (C-DA) through which the test was embodied by providing graduated hints (from the most explicit to the most implicit) which were standardized for all test takers. To do so, a web-based software, called a Computerized Dynamic Assessment of Speech Acts, Routines, and Implicatures (CDASRI), accessible at *http://da-pragmatics.com*, was developed. Then, 137 upper-intermediate or advanced high school and university students ranging in age from 16 to 36 from two provinces of Khorasan Razavi and Golestan, Iran, were selected based on convenience sampling, who voluntarily took part in the study. Based on how many hints or mediations were used by each test-taker, the CDASRI provided three scores: actual score (traditional score), mediated score, and learning potential score (LPS). The results of the study indicated that the test could improve test takers' pragmatic comprehension competence. Moreover, the significant difference between the mediated (using hints) and actual (without hints) scores of learners accounted for the fact that because of test-takers' different Zone of Proximal Development (ZPD) levels, their level of responsiveness to mediation was significantly different from one another. Hence, it can be concluded that traditional non-dynamic test loses sight of a big part of learners' abilities through neglecting learners' potentialities and putting emphasis only on their preliminary performance. The study concludes with some pedagogical implications for language teachers and instructors who seek an effective perspective for their assessment and instruction.

Keywords: Computerized Dynamic Assessment, Interlanguage Pragmatics, Interventionist Approach, Pragmatics Assessment

1. Introduction

Derived from Vygotsky's Sociocultural Theory (SCT), Dynamic Assessment **(**DA) is an integrated process of teaching and assessment in an unpredictable, ever-changing, and dynamic manner (Davin, 2013). Accepting the inter-link between learning and testing, Lidz and Gindis (2003) cogently state that DA is an approach to understand individual differences and their implications for instruction that embeds intervention within the assessment procedure. Poehner (2008) pinpoints that instruction and assessment should not be demarcated as separate activities but should instead be fully consolidated through incorporating mediation into the assessment agenda to compare learners' actual performance with their potential ones leading them from inter- to intra-mental functioning or higher levels of functioning that can be called pragmatic assessment. Considering specific features of pragmatic assessment, Bardovi-Harlig (1996) accentuates the importance of supporting learners to expand their pragmatic awareness, rather than following the model of a teacher-fronted classroom where the teachers are exclusively the 'transmitters' of information and the learners are solely passive 'recipients' of information. As Baily (1996) states while assessment in traditional or static approach is a kind of information gathering activity, in DA, the purpose is to carry the students from their zone of proximal development or present knowledge situation to their zone of actual development or the specified wanted learning destination gradually and smoothly.

From a Vygotskian perspective, traditional (non-dynamic) (N-DA) tests cannot present a full account of the abilities that they are assessing in that they can just address fully internalized abilities losing sight of another important and rewarding part learners' abilities, that is, the abilities that are partially internalized (i.e., they exist in human beings' repertoire of abilities yet cannot be performed independently). Using the Vygotsky's terminology, the former is called ZAD (zone of actual development) and the latter is called ZPD (zone of potential development). DA has been claimed to address both of them while N-DA psychometric tests can also account for the former.

Several studies have been mostly done on the effectiveness of production-based pragmatic instruction in general and in EFL contexts in particular. As Rose (2005) argues, appropriate instruction is the foremost successful way of developing EFL learners' pragmatic competence which has been mostly investigated through production-oriented activities; however, as Kasper and Dahl (1991) state, one essential component of Interlanguage Pragmatics (ILP) in non-native speakers' acquisition of pragmatics is *comprehension*. According to Rose and Kasper (2001) *comprehension* is "the least well-represented, with only a handful of studies done to date" (p.118).

Casting a glance into the pragmatic literature signifies that there have been rare and insufficient endeavors in developing pragmatic tests especially on comprehension in EFL contexts. This problem arises from the fact that while capturing learners' linguistic knowledge or non-pragmatic aspects of language competence such as phonology, morphology, and syntax is fairly direct and straightforward, due to the dependability of speech events, implicatures, and routines as essential components of pragmatic knowledge to specific situations and contexts and also their fluidity, assessing pragmatic competence is a complicated and difficult process. Consequently, pragmatic comprehension items should be necessarily incorporated into language test batteries. Regarding the necessity of pragmatic assessment and having a promising approach by applying DA, and also by drawing the praxis advancement of digital literacy, the main purpose of the present study is to implement a multiple-choice discourse completion test (MDCT) of online pragmatic assessment for assessing Iranian EFL learners' pragmatic competence.

Following the dimensions of the study, on the part of pragmatic assessment, as Rose and Kasper (2001) assert, inclination in pragmatics has been to a large extent towards instruction and teaching than its assessment side. Liu (2006) maintains that not many comprehensive tests have been developed to assess learners' pragmatic knowledge in general and in EFL contexts in particular. Similarly, Birjandi and Rezaei (2010) assert that despite incorporating several skills and sub-skills in different types of language tests like IELTS, TOEFL, TOLIMO, and MSRT in Iranian EFL context, little attention has been paid to allocate a special section in each test to assessing learners' pragmatic knowledge as a significant body of language proficiency. Furthermore, McNamara and Roever (2006) come to realize that assessment of ILP is still in its fledgling period of development. Therefore, considering the paradigm shift from psychometric to a wider scope of language assessment tests, and to the researchers' best knowledge, the previous studies surprisingly have not undertaken dynamic assessment in their studies as one of the interventional tools to integrate assessment with instruction in their pragmatic developed tests.

The goal of the present study relates to the implementation of pragmatic tests of speech acts, routines, and implicatures using dynamic assessment of computer-mediated communication (CMC) in Iranian EFL contexts. It is obvious that technology has dominated almost all aspects of human lives (Mellati & Khademi, 2014), functioning as a provoking factor in re-conceptualization of assessment. Smith and Liang (2007) and Ortega (2009) consider CMC as a helpful and facilitative tool for foreign and second language acquisition. Although it is widely accepted that technology and computer have provided several opportunities in developing language

acquisition in general and pragmatic competence in particular, scant studies have examined pragmatic assessment using online computerized dynamic assessment (C-DA) of pragmatics in EFL contexts like Iran. Regarding this fact, it, therefore, makes sense to bridge the gap in the literature by conducting an investigation on *comprehension* of speech acts of apology, request, refusal, routines, and implicature as the major components of pragmatic competence drawing on *online dynamic assessment* as a pedagogical device to assess and enhance learners' ILP. Thus, this study intends to investigate the applicability of online synchronous dynamic assessment of speech acts (apology, request, and refusal), routines and implicatures on Iranian EFL learners.

2. Literature Review

2.1. Interlanguage Pragmatics

Interlanguage pragmatics as a contemporary interdisciplinary field of pragmatics based on the theories of pragmatics and second language acquisition has cultivated a growing body of literature in second/foreign language teaching and learning. This term is closely interconnected with pragmatic competence which in turn is one of the major components of communicative competence in different developed models like Canale and Swain (1980), Bachman and Palmer (1996, 2010), and Uso Juan and Martinez Flor (2008). Considering the social nature of a profound learning integrated with complex cultural elements, interlanguage pragmatic development will be cogitated arising difficult problems when L2 learners are taking the test or doing language tasks. This issue connotes to a need for providing different interventions for the novices by experts in the process of collaborative instruction and assessment. The application of DA in language learning and assessment is a growing body of interest, though the issue turn into a more challenging one in the field of pragmatic instruction and assessment so that Jianda (as cited in Pakzadian & Tajeddin, 2014) identifies the challenges of pragmatic instruction for L2 learners in two sides of (a) sensitivity of pragmatics into instruction due to containing high degree of face threatening and (b) the scarcity of appropriate instructions and assessment tools. Therefore, developing pedagogical interventions in a process-oriented phase providing sufficient feedback unified with an assessment system seems vital.

In the last two decades, pragmatic researchers and test developers have unceasingly strived to construct a system of diagnostic assessment based on a closer link between teaching and testing with respect to the valuable advantages of doing so. Based on Alderson, Brunfaut, and Harding's (2014) study, the available assessment systems are ineffective due

to ignoring the test takers' potentialities and merely focusing on their present performances or actualities mostly in high-stake tests with limited pedagogical presentation of their abilities. In a study, Kozulin and Garb (2002) investigated the practicality of the development and implementation of the dynamic EFL assessment procedure with at-risk students. The results of the study showed that DA was both practical and effective in getting information on students' learning potential. In addition, a noticeable difference between actual score and learning potential score was found which implied that learners with the same performance level exhibit different and even intensely dissimilar ability to learn and use new text comprehension strategies. Lantolf and Poehner (2004) in their seminal work aimed at the implementation of DA in the context of L2 classroom. They had an elaboration on the major concepts of DA namely ZPD and also discussion about Feuerstein's work of DA. Lastly, they had a comparison of DA to Formative Assessment (FA) in contrast with Summative Assessment (SA) on the basis of whether each one provides feedback (formative) or reports on the results of learning (summative). While they considered formative assessment as less systematic and not high-stakes like summative assessments, they finally concluded that FA is not necessarily low-stakes and that it can be performed completely systematically, yielding results that may be more systematic and revealing with regard to learner development than SA.

In another study, Pakzadian and Tajeddin (2014) using a WDCT investigated the effects of dynamic self-assessment-based instruction on the acquisition of speech acts of suggestion, complaint, and request. Selecting 30 university students as the participants and dividing them into two groups of dynamic self-assessment and comparison group, the findings of the study indicated that, in spite of the self-assessment group's better performance on most of the items in WDCT, their overall score did not significantly exceed that of the comparison group. To investigate the effects of DA on other aspects of linguistic and pragmatic competence, Talati-Baghsiahi and Khoshsima (2016) probed the effectiveness of dynamic assessment approach on developing the Iranian EFL learners' linguistic and pragmatic knowledge of modal auxiliaries as hedging strategies. The researchers suggested the employment of DA in EFL classes to improve pragmatic aspects of L2 language like the given hedges in writing tasks. Together, a great number of studies have been done to examine the effects of dynamic assessment on different aspects of language learning and almost have outlined and reported the relative effectiveness of this approach in several setting, though the issue has generally remained under-probed in the field of ILP. Consequently, in line with previous research in other areas of language learning and considering the Iranian EFL learners' problems regarding pragmatic development, it seems desirable to investigate the effectiveness of dynamic

assessment for the most prominent elements of ILP namely speech acts, routines, and implicatures.

2.2. Online (Computerized) Dynamic Assessment Studies

Indeed, there is limited amount of literature focusing on online dynamic assessment in general, and there is no study on online synchronous dynamic assessment of EFL learners' speech acts, routines, and implicatures in particular. However, some of the conducted studies relevant to this issue on will be discussed as follow. Having a monistic approach to DA, Pishghadam, Barabadi, and Kamrood (2011) constructed and validated a software computerized DA for test takers with prefabricated mediations to test the applicability of electronically delivering mediation on EFL learners' reading comprehension. Data analysis of validated software information and comparing the performance of two groups of dynamic and non-dynamic indicated the positive effects of step-wise mediations on enhancing the students' text comprehension especially for low proficiency students due to the probable establishment of confidence in their learning. In the same line, Poehner, Zhang, and Lu (2015) developed online multiple-choice tests of L2 reading and listening comprehension providing mediation as a diagnostic tool. Provided each item with pre-planned prompts in a gradual step wise fashion, the study confirmed the effectiveness of contingent and gradual mediation on improving comprehension of two skills of reading and listening in an EFL setting.

In addition to the previous studies, Ebadi and Saeedian (2015) with a sample of 32 advanced university students, using the DIALANG software and the Computerized Dynamic Reading Test (CDRT), examined two aspects of identifying learners'' proficiency level as well as effectiveness of the enrichment program (EP) in DA. In accordance with the principles and applying two approaches of interventionist and interactionist in several time-intervals, the prompts were presented to test takers in the form of graduated hints arranged from the most implicit to the most explicit. The result of the study indicated that Iranian EFL university students' development in L2 reading comprehension can benefited from DA while doing more problematic and different tasks (Transfer Tasks) or novel situations called transcendence tasks (TR). As Poehner (2007) convincingly theorizes that while TR tasks are more challenging and complex than the original dynamic test tasks, the mediation process between the mediator and the learners are alike. Poehner (2007) pinpoints that "Transcendence is fundamental to tracking development because it involves going beyond the test as learners endeavor to re-contextualize their abilities while engaging in new tasks" (p. 334).

Working on microgenesis development of learners, Birjandi and Rezaei (2010) provided a web-based qualitative research in the synchronous computer mediated communication (SCMC) using micro-genesis as a general analytical framework to study the changes in learners' progression focusing on SCT dialoguing cooperatively from other regulation to self-regulation through Web 2.0. The findings of the research demonstrated fostering learners' process of regulation from other to self in SCMC based DA in Web 2.0. In the same line of inquiry, Darhower (2014) applied DA to investigate the developmental processes of two Spanish EFL learners using a synchronous computer-mediated environment. Various scenes of a Spanish language film were used as the assessments tools. This study suggests synchronous computer-mediated communication as a medium for dynamic assessment to improve EFL learners' current level of independent functioning and their level of potentiality accompanied with mediation.

In an EFL writing setting, Zhang (2013) investigated the theoretical construction of a dynamic assessment mode in Chinese tertiary EFL writing class with online teaching and scoring systems. In this study, Zhang proposed three constructional principles for writing assessment in a process writing based on the theories of SCT and DA and using an online automated essay scoring system, and providing contingent prompts in each stage of writing. This study indicated that the achievement of this kind of assessment depends on some factors such as the construction of an English writing learning community. Moreover, Thouësny and Bradley (2014) examined the applicability of dynamic assessment principles to online peer revisions in written English for specific purposes. The researchers of the study probed the effectiveness of cooperative interactions and negotiations of participants as mediations on the revision of a written report from aspects of linguistic, structural, and content. The results showed that DA manifested as peer revision is an effective strategy in EFL writing in a web-based environment such as Google Drive. In addition, the study cast doubt on utilizing the principles of DA in peer review writing due to not offering CF in a step-wise fashion from implicit to explicit by peers. In the same line of inquiry, Derakhshan and Shakki (2016) conducted a research to find out whether dynamic assessment has any impact on the listening comprehension development. The participants of their study were thirty six elementary Iranian English major university students who divided into three groups of dynamic, non-dynamic, and a control group. The findings of their study through the analysis of one-way ANOVA and Tukey test indicated that the dynamic group outperformed both non-dynamic and control groups, but the non-dynamic group did not have a better performance than the control group. So, having a not simplistic view to DA principles in each setting is important.

Recently, to examine the applicability of interventionist and interactionist approaches to DA, Barabadi, Khajavy, and Kamrood (2018) examined computerized dynamic assessment (C-DA) for all 91 high school students in Iran with providing fixed and standardized prompts as interventionist and more flexible mediation through dialoguing as interactionist. The results of the study documented the effectiveness of C-DA on EFL learners listening comprehension ability. Besides, the test provided valuable information for test takers' potentiality in their current and more challenging listening tasks. At long last, Kamrood, Davoudi, Amirian, and Ghaniabadi (2018) conducted a study over the effectiveness of an interventionist DA approach on Iranian EFL listening and reading performance on the TR tasks that are more challenging and difficult than the original DA tasks via developing an online computerized dynamic test of English listening skill. The data analysis of 43 Iranian English majors in two state universities in the study using graphical representations, correlations, and t-tests via the overall comparison of the mediated (DA) and TR scores indicated the uncovered significant instances of regression, sustenance, and progress in different constructs and individuals. The study also suggest that using prefabricated prompts for EFL learners in terms of DA implementation can be useful and recommend language teachers to include DA into their assessment system with the purpose of attaining a more representative picture of learners' abilities and their potentialities.

In short, existing literature suggests that online computerized dynamic assessment is still in its embryonic stages as the number of conducted studies is really meager in language education in general and no study in ILP in particular. On the other hand, Educational institutions are always in search of developing the most suitable plans, materials, and assessment tools for their learners. In order to achieve this goal, they have to be provided with detailed information about their learners as much as possible. So, running online interventionist dynamic tests such as the one in the present study is the right tool for coming into a full grasp of learners' abilities, weaknesses and points of strength. The most important use of online C-DA for learners is that they can make use of it as an informative source for self-evaluation. Online C-DA tests are easily accessible through the net. The rich scoring profiles have been designed in a way that, they can analyze their performance on individual items, on different sub-constructs included in the test and finally on the test as a whole. Over and above, Lantolf and Poehner (2008) recapitulate that one of the most favorable contemporary lines of inquiry in L2 DA is designing, validating, and implementing C-DA projects suggested as a path to terminate the practicality worries brought up the ordinary DA systems.

Therefore, to fill this gap, the researchers contemplating on the applicability of an interventionist DA approach through providing pre-

planned hints in an interactionist process, aims to develop and validate an online pragmatic test to assess Iranian EFL learners' pragmatic knowledge and provide effective instruction to develop their ILP competence synchronously.

2.3. Research Questions

Based on the aforementioned review of the germane literature, the following research questions guided the present study:

1. Does online pragmatic dynamic assessment lead to significant changes in Iranian EFL learners' aggregate performance on English routines, implicatures, and speech acts of the C-DA Project?

2. Do online pragmatic dynamic assessment potential scores discriminate among Iranian EFL learners with the same aggregate actual scores of English routine, implicature, and speech act knowledge?

3. Method

3.1. Participants

The setting of the present study is Khorasan Razavi and Golestan, Iran; three universities of Hakim Sabzevari, University of Gonabad, and Golestan University, two institutes of Hezare Sevom (two branches) in Mashhad and Radmehr in Gonabad, and finally eight high schools in Gonabad participated in this study. They were at different levels of language proficiency. The underlying reason for selecting this wide range of participants was having a rich data from miscellaneous groups based on pragmatic features like including socioeconomic status, power, levels of language proficiency, and so on. The participants were chosen based on convenience or opportunistic sampling. All participants' mother tongue was Persian.

The initial sample comprised of 483 EFL learners who voluntarily took part in the first phase of the data collection process in the winter of 2018 as the first aim of a Ph.D. dissertation. For the sake of missing information, out of 483, only 269 data were selected for further consideration. From 269 participants in this phase, the participants were 153 males and 116 females. They were aged between 16 to 36 years. The sample in this phase included 269 university and high school students participated in the study to locate the participants' levels, response patterns, have item analysis, and discover the probable relationships among variables of language proficiency, self-regulated learning in listening, willingness to communicate in speaking, and pragmatic listening comprehension of Iranian EFL learners, as well as, the best fit model for them. The first phase was not thoroughly related to this study but, as mentioned before, it provided the process of item analysis and

response patterns for the instruments of the second phase (this study). Moreover, it made appropriate participants available for performing the second phase of the study. In the second phase, 137 participants were selected for taking online dynamic assessment. In this phase, the participants were 73 males and 64 females, represented 53% and 47% of the participants, respectively. The chosen sample included those participants whose International English Language Testing System (IELTS) proficiency test band scores were from one standard deviation below and above the mean. They were all upper-intermediate or advanced learners of English whose mother language was Persian. The researchers performed one version of free IELTS academic and general sample test available in different database for choosing appropriate participant group in the study. All test takers took the same listening, speaking, reading and writing tests. Then, their performance were scored by three experienced expert raters on each test module. The interrater reliability of the three scorers were relatively consistent in their complete ratings (the correlation was .82 at the significance level of .05).

3.2. Materials and Instruments

3.2.1. Multiple-choice Pragmatic Discourse Completion Test (MPDCT)

Roever (2006) asserts that three components of routines, implicatures, and speech acts are essential ever-developing aspects of pragmatics in ILP research. Therefore, the researchers chose these three elements to tap and assess the comprehension of EFL learners in the Iranian context. Although other elements such as presupposition, deixis, and conversational structures could be included in the present study, the present study took into account routines, implicatures, and speech acts to reflect a rich manifestation of ILP competence.

The three assessment instruments were adapted and validated to measure the participants' ILP comprehension of English thoroughly. For the sake of the potential objectivity that MDCT as a division of DCT holds, it was chosen as the test battery for the present study. DCT is a questionnaire covering a set of briefly described situations premeditated to bring about a certain pragmatic aspect like speech act. Each test-taker reads the DCT and answer to the question in writing mode to a prompt. Dissimilar to written discourse completion test (WDCT), in MDCT, the test-takers should select the best alternative among three, four or five alternatives. Actually, in a MDCT, there is a key which is the best appropriate pragmatically response and there are two, three or four other distracters which are inappropriate. Ahn (as cited in Birjandi & Rezaei, 2010, p. 4) mentions that MDCT has the advantage of easy and time-saving to administer and evaluate the test-takers' performance without an interrater reliability issue. However, this fact exists that developing good distracters for each item is hard and concurring on the

best alternative is not usually seen among native-speakers as the benchmark, as well.

Fitted with the research aims, the MDCTs had been carefully adapted and validated, taking into account the pragmatic comprehension of test-takers' knowledge. MDCT selected for this study includes a standard multiple-choice format of one answer and four (one distracter was added to the distracters to meet the research aims) which covers 16 reading questions and 40 listening questions for assessing EFL learners' comprehension of routines, implicatures, and speech acts (apology, request, and refusal). The test-takers were asked to evaluate each situation and choose one answer that they thought to be the most appropriate of the five possible choices. The MDCT applied in the present study is an integrated set of two MDCTs developed by Xu (2015) for routines and Derakhshan (2014) for implicatures and speech acts. The logic behind using two separated MDCTs was incorporating enough aspects of pragmatic knowledge and several moods to have better interpretations/implications on the extrapolations of the results.

In spite of the fact that the MDCT used in this study was a merged two reliable tests of Xu's (2015) reading routines in his study with the reliability of 0.86 and Derakhshan's (2014) listening implicatures and speech acts (apology, request, and refusal) with the reliability of 0.78, the researchers performed KR-21 formula for the computation of the internal consistency of the test as an examination of its post-test reliability to make certain that the merged MDCTs in the test battery is correspondingly reliable. The reliability index for the MDCT in this study was found to be 0.81, which, according to Ursachi, Horodnic, and Zait (2015) indicates a very good acceptable level of reliability. Each of the single MDCT used as the instrument in the study is explained briefly:

3.2.1.1. Multiple-choice Pragmatic Discourse Completion Test (MPDCT) for Routines

In the developed software for the first phase of study, named Srepc.ir, the test-takers were presented 16 routine questions in a reading mode as the first part of pragmatic comprehension test. The alternatives of each item were increased from four to five based on the pragmatic experts' elicited data and comments on each one. This process was done to have item analysis, finding item response patterns, and locating participants with appropriate levels of proficiency for the next stage of the research namely constructing and validating a computerized dynamic assessment of pragmatic comprehension. The following is an adjusted item of routines derived from (Xu, 2015, p. 199) with five choices by the researchers:

1. At a bus stop
Man: "Excuse me, do you know which bus to catch for London Road, please?"
Woman: "Sorry, I've no idea."
The man would probably say: "_____"
a) Oh!
b) Really?
c) Why not?
d) Thank you.
e) Forget it.

3.2.1.2. Multiple-choice Pragmatic Discourse Completion Test (MPDCT) for Implicatures and Speech acts (Apology, Request, and Refusal)

This section includes 16 listening conversations for implicatures and 24 listening conversations for speech acts (8 refusals, 8 requests, and 8 apologies) followed by a multiple choice question which were adapted from Derakhshan (2014). To meet the Poehner's principles of interventionist dynamic assessment, the number of choices were increased to five with the aim of avoiding blind guess answers. The process of developing items for implicatures and speech acts from four to five options was exactly similar to the part of routines. A sample of conversation for implicatures and speech act derived from Derakhshan (2014) is as follows respectively:

In this section of the test, you will hear short conversations and one question about them. For each conversation, first read the situation and the question. Then listen to the conversation and answer the question after you hear the conversation. Respond to the questions by marking the correct answer (a, b, c, d or e).

IMP1. Linda and Mike usually play golf on Saturdays. This Saturday, however, Mike went alone. When he returns, Linda wants to find out how well he did.

What does Mike mean?
a) He didn't play golf well today.
b) He didn't go out to play golf, either.
c) He felt bored because Linda didn't play with him.
d) He was tired to play golf in a cold weather
e) He was just complaining about the bad weather (p. 61).
Apology Speech Act:
In this section of the test, you will hear short conversations and one question about them. For each conversation, first read the situation and the question. Then listen to the conversation and answer the question after you

hear the conversation. Respond to the questions by marking the correct answer (a, b, c, d or e).

1. How does Stephanie apologize?
a) She requests for forgiveness
b) She avoids taking responsibility for it.
c) She makes up for it by buying lasagna.
d) She admits making a mistake.
e) She shifts the blame to someone else (p. 100).

3.2.1.3. Interview

Data for adding options for each item and also providing were collected using semi-structured interviews with six participants who were theoretically sampled from a range of professional backgrounds, with varied experiences of involvement in the process of teaching pragmatics and the number of their publications on different national and international journals. Some of aspects of pragmatic competence comprising the semi structured interview (adopted from Ishihara, as cited in Derakhshan, 2014, pp. 155-156) are linguistic aspects, pragmalinguistic ability, cultural aspects, sociopragmatic ability, analytic aspects, and metapragmatic ability.

3.3. Procedure

For the first phase of data collection for providing appropriate added distracter to each item of MPDCT, the researchers carried out semi structured interviews with an interview guide to elicit the appropriate and most related responses from the respondents, which accompanied by some control by the researchers at the same time as assisting the development of unexpected perceptions from pragmatic experts. Next, the distractors and hints were designed based on six pragmatic experts' comments which have had the most grateful cooperation with the researchers. The researchers then developed the software including 5-choice items with their appropriate hints through the process of getting comments on each item with their corresponding hints from six pragmatic experts and having feedback from twenty participants in an interactionist approach. In more elaborated terms, the researchers developed a set of hypothetical hints for each item based on the Aljaafreh and Lantolf's (1994) Regulatory Scale. The mediation for each item included four hints which were arranged in a process of moving from the most implicit to the most explicit one. The hints were developed in a way that the first hint usually was a recognition of the error that the test taker made. It was only for signaling the test taker to locate his/her erroneous and having opportunity to give back to the item and try another option. The subsequent ones were included the hints with those aspects of pragmalinguistics and sociopragmatics which make test taker more aware of using language appropriately in each situation. And finally, the original items with their

corresponding TR ones, were utilized to 30 test takers as a pilot phase of the project to detect the probable difficulties that might arise for the participants. The following is an example of the hypothetical hints for the apology speech act, mentioned in 3.2.1.2.

Hints
a) Your answer is wrong. Try again please.
b) Your answer is still wrong.……*.”* focus on the right strategy for apology.
c) Your answer is still wrong.………… Listen carefully to this part of conversation when Stephanie says: "*Oh, I'm sorry! I didn't realize that. I'll make sure to keep the volume down*.
d) Your answer is still wrong. The correct answer is "d". In the first part of Stephanie's apology we hear that he says: "*Oh, I'm sorry!*" .In this situation, it is used as an expression of regret and a substantive apology in which the speaker wants to remedy the damage or harm caused by the offense by a promise to turn the music down which subsequently accompanied by a suggestion to eat out in a restaurant. In other words, the apologizer, Stephanie, admits making her mistake.

3.3.1. Test Preparation

For test preparation of the present study, the researchers used two modes of reading and listening items which included 16 reading routine items from Xu (2015), 16 listening implicature items, and 24 listening speech acts from Derakhshan (2014). All items were in a 4-choice multiple question format, which as mentioned before in order to both reduce the chance of blind guessing and prepare items to lend themselves to the mediations provided for each of them, the number of choices increased to 5 choices by adding an extra choice based on pragmatic experts' comments and consulting on each item in different sessions. Then, the test was piloted electronically to 269 high school and university students to locate the difficulty level of each item and also for finding appropriate participants with sufficient ability to answer the questions especially the listening parts (implicatures and speech acts) for later stages.

It should be noted that the out of 16 items of routine section, 16 items of implicatures, and 24 items of speech acts, 12 items for routines, 12 for implicatures, and 20 for speech acts were selected as the original items in the test and 4, 4, and 6 of them were chosen respectively as the transfer questions or TR items for each of the subparts of refusal, request, and apology. They are more challenging and difficult than the original DA tasks. The criteria for selecting this proportion of the original and TR items were based on items analysis of the performance of 269 participants and also pragmatics experts'

comments on each item in the first phase of developing an online computerized pragmatic test of English named Srepc.ir.

3.3.2. Software Preparation

3.3.2.1. Test Piloting

In the next phase, the researchers administered the test to 20 learners without any intervention (i.e., non-dynamic administration). As a result of analysing learners' response patterns, the number of questions was reduced to 56. The researchers had a tentative arrangement of hints negotiated with experts in the field at hand yet he was ready to give individualistic and negotiated hints in case the pre-planned mediation process did not work for the special learner. The mediation sessions were then transcribed and analyzed in order to find the most suitable hints and prompts as well as the best arrangement for presenting them in final C-DA format of the test.

3.3.2.2. The Scoring Procedure

Based on Alderson et al. (2014), an optimal diagnostic test has to be user-friendly, targeted, discrete, and efficient. Having these standards in mind, the researchers decided to design a special website for the software. The software package (i.e., CDASRI) is now accessible *at http://da-pragmatics.com/.* On the opening page of the software, test takers need to fill out their personal specifications such as name, age, gender, etc. Following Poehner et al. (2015) and Kamrood et al. (2018), when all questions are tried, a scoring file is generated on the screen comprising the following information:

1. *The actual score* that is calculated according to learners' first try of each item. In fact, this score is exactly the same as that obtained in traditional tests.

2. *The mediated score* which is calculated according to learners' use of hints. Upon using each single hint by the learner one fourth of the maximum score allocated for that item will be subtracted.

3. *The number of hints used for each test item*. The software also takes into account those items missed by test takers by marking the letter "M" in front of them. This mark shows that learners could not answer items within the time limit allocated for each question.

4. *The LPS score* which presents learners' learning potential based on the formula devised by Kozulin and Garb (2002):

    LPS = (2 * Mediated Score − Actual Score) / Maximum Score

5. *The transfer score* which is the counterpart of mediated score yet, it reports learners' performance on transfer items that are more challenging than original DA items.

6. *The total time* spent on the test.

As mentioned before, learners' scoring profiles not only report their scores but also show their performance on different individual test items in terms of the number of hints used for each item.

3.4. Data Analysis

Data collection procedure was conducted through the following procedure. First, learners were briefed about CDASRI. Then, they were required to take the online test in two weeks from the day they were briefed. As mentioned above, data collection process took place in different locations so it took more than three months (from March to June 2019) to collect all data. The scoring profiles of 137 learners were generated as they finished answering the online test. Afterwards, the data files were created in SPSS version 22; however, before embarking on the statistical analysis of the data, different sets of scores in each of the tests were checked for normality. Descriptive statistics were calculated using SPSS. Then, a paired sample t-test was run to answer the research questions.

4. Results and Discussion

4.1. Results

The present study made an endeavour to find answers to the two aforementioned research questions.

4.1.1. Result of Research Question One

Q1: Does online pragmatic dynamic assessment lead to significant changes in Iranian EFL learners' aggregate performance on English routines, implicatures, and speech acts of the C-DA Project?

To answer the research question, paired-sample t-test was used. Table 1 shows descriptive statistics of actual and mediated score of sub-constructs of PC.

Table 1

Descriptive Statistics of Actual and Mediated Score of Sub-constructs of PC

		N	Mean	Std. Deviation	Std. Error Mean
Pair 1	Actual routines	137	12.34	2.06	.17
	Mediated routines	137	15.00	2.47	.20
Pair 2	Actual implicatures	137	17.12	2.93	.24
	Mediated implicatures	137	21.42	3.51	.29
Pair 3	Actual speech acts	137	33.89	3.35	.28
	Mediated speech acts	137	41.19	4.37	.36
Pair 4	Actual PC	137	63.41	5.68	.48
	Mediated PC	137	77.65	6.76	.57

As the table shows, the mean score of mediated scores are higher than actual scores in all sub-constructs of PC. The comparison between the actual and mediated mean scores indicates that test takers could increase their scores by 14.24 points in overall PC.

To find that these differences are significant or not, paired sample t-test was run. Results of the paired-samples t-test is presented in Table 2. As indicated in Table 2, there are significant differences between actual and mediated score of sub-constructs of PC: Routines (t= -49.74, p= .000, Cohen's d =3.86), Implicatures (t= -50.31, p= .00, Cohen's d =3.99), Speech act (t= -44.33, p= .000, Cohen's d =3.66), and total PC (t= -74.90, p= .000, Cohen's d =3.86). That is, test takers could substantially increase their scores after they received mediation. Figure 1 shows the differences between actual and mediated score of sub-constructs of PC. In the next part, we will substantially discuss if the significant increase of learners' overall and sub-construct scores are indicative of learning or not.

Table 2

Results of the Paired-samples t-test

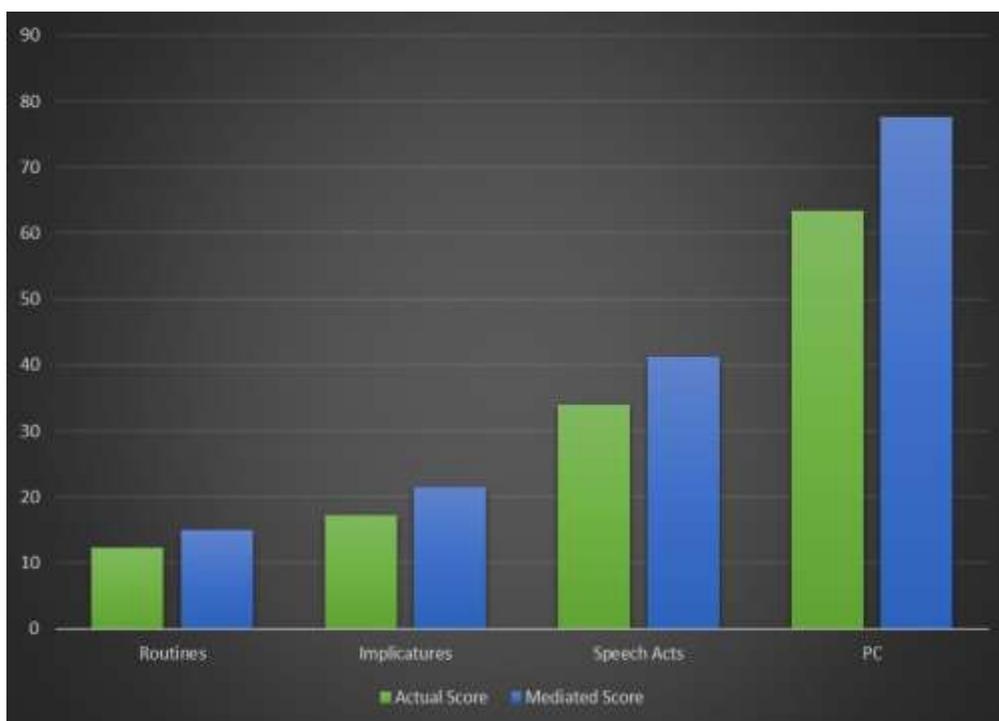|		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	R1 - R2	-2.65	.63	.05	-2.76	-2.54	-49.74	139	.000
Pair 2	I1 - I2	-4.30	1.01	.08	-4.47	-4.13	-50.31	139	.000
Pair 3	S1 - S2	-7.29	1.94	.16	-7.62	-6.96	-44.33	139	.000
Pair 4	Sum1 Sum2	--14.24	2.24	.19	-14.61	-13.86	-74.90	139	.000

Figure 1. The Differences between Actual and Mediated Score of Sub-constructs of PC

4.1.2. Result of Research Question Two

2. Do online pragmatic dynamic assessment potential scores discriminate among Iranian EFL learners with the same aggregate actual scores of English routine, implicature, and speech act knowledge?

In this study, the LPS score of learners was in the ranged from 0.72 to 1.09. Figure 2 shows learners' LPSs across low (0-33.33), mid (33.34-66.67), and high (66.68-100) actual-score sub-groups. The low actual group consisted of only one learner with a low LPS. In the mid actual score group, one can see learners with different low, mid and high LPSs. Moreover, high actual score achievers had either mid or high LPSs.
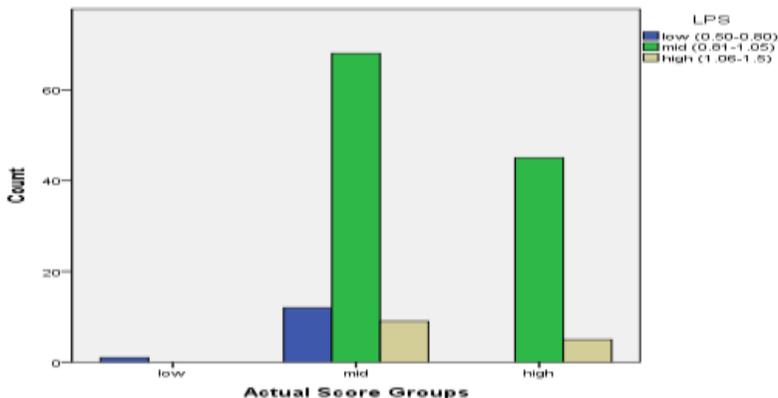
Figure 2. Learners' LPSs across Different Actual Score Sub-groups.

In order to answer this question, the researchers searched for learners with the most frequent actual score (mode) in the data file and then compared their learning potential score. The mode of actual scores was 66.75. In other words, 10 learners had the actual score of 66.75. Figure 3 shows the disparity of these learners in terms of their LPSs. It is clear that while these students are considered to be of the same level of PC, their varied LPS reveals that they might not be equal in terms of their abilities if their ZPDs are taken into consideration. That is, while two learners have LPSs as high as 1.03, there is another learner whose LPS is 0.72 which is considered as a low learning potential score.
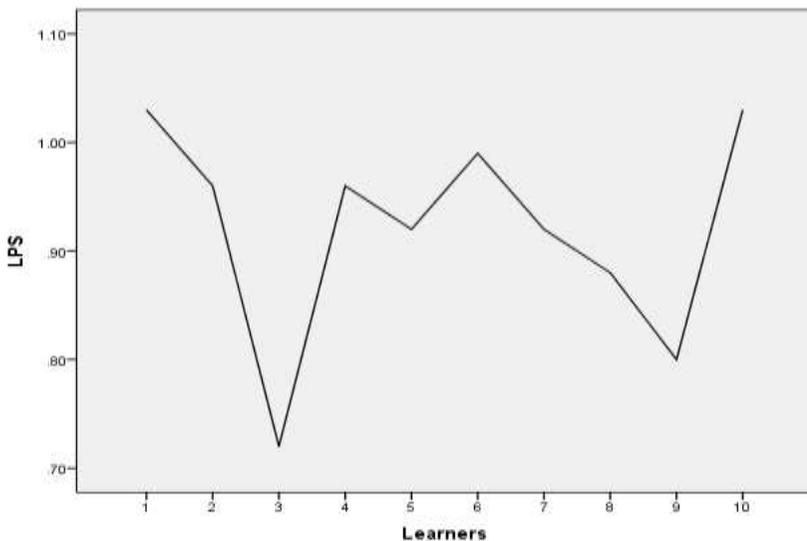

Figure 3. Different LPS Scores for Learners with the Same Actual Score of 66.75.

4.2. Discussion

Dynamic assessment is nothing but the dialectical integration of instruction and assessment that requires sensitivity to learners' Zone of proximal development. Hence, unlike the traditional psychometric tests that just emphasize on the assessment of learners abilities, both assessment and development of learners' abilities are at the heart of DA procedures in general and C-DA procedures in particular. Many studies in the beginning years of 21st century proved the usefulness and the rewarding role of DA in L2 contexts (e.g., Kozulin & Garb 2002; Lantolf & Poehner, 2004, Poehner & Lantolf, 2005). Nonetheless, apart from its ontological and epistemological differences from the mainstream testing in L2 contexts, in order for DA to be formally accepted in L2 testing it had to overcome its inherent problem, that is, the practicality of ordinary DA procedures. In other words, DA in its ordinary form could not address a large number of participants as well as a wide range of constructs in a single DA procedure. Computerized dynamic assessment (C-DA) was proposed as a solution to the problem (Poehner, 2008). C-DA provides mediations through software having the capacity to embrace an infinite number of participants as well as larger ranges of constructs in a single procedure. Poehner and Lantolf (2005), Poehner et al. (2015) and Kamrood et al. (2018) have conducted online C-DA procedure so far. The mentioned investigations mentioned have substantiated the effectiveness of C-DA on some language constructs such as vocabulary learning, however, none of them capitalized upon the impact of C-DA on the construct of pragmatic comprehension. Though, the results of the present study are consistent with the aforementioned studies corroborating that pragmatic comprehension as an essential component of communicative competence is amenable to instruction and assessment in a C-DA project.

This study aimed at designing and implementing an online computerized dynamic test of pragmatic knowledge of Iranian EFL learners in order to investigate how a DA procedure could shed more light on the unaccounted areas of EFL learners' PC abilities. This study is different from those of the other scholars in the field (e.g., Barabadi et al., 2018; Kamrood et al., 2019; Poehner & Lantolf, 2013; Poehner et al., 2015;) in that it addressed the pragmatic knowledge of the learners for the first time. In the following sections, the findings for each of the research questions will be discussed.

4.2.1. Independent vs. Mediated Performance: Accounting for Responsiveness to Mediation

The first research question sought to investigate if there is a significant difference between learners' independent (actual scores) and

assisted performances (mediated scores). The results revealed that there was a significant difference between learners' aggregate performance on English routines, implicatures, and speech acts in terms of actual and mediated scores. Moreover, the same significant differences were found between actual and mediated scores when they were broken down into different sub-constructs. The results of the present study are in line with all of the previous studies (Barabadi, 2010; Mehri Kamrood, 2011; Mehri Kamrood et al., 2018, 2019; Poehner & Lantolf, 2013; Poehner et al., 2015; Teo, 2012; Yang & Qian, 2017). In other words, providing learners with ZPD-based mediations in terms of graduated hints and prompts lets assessor address both ZAD and ZPD which in turn provide a more fin-grained and comprehensive picture of their abilities.

Nonetheless, as Poehner and Lantolf (2013) posit the evident outperforming of learners in the mediated scores is not indicative of learning or development of abilities under investigation, it could only reveal how learners' responsiveness to mediation resulted in a substantial difference in their performance. The question if leaners have developed their abilities as a result of taking part in a DA procedure is answered through analyzing their performance in the transfer (TR) section of such tests (Ebadi & Saeedian, 2015; Mehri Kamrood et al., 2018; Poehner & Lantolf, 2013).

4.2.2. The Learning Potential Score as a Diagnostic Tool

Learning potential score (LPS) was first put forward by Kozulin and Garb (2002). They believed that this score could help teachers develop more individualized and specific learning plans and remedial courses. Before answering the second research question, the researchers tried to how learners' LPSs could differentiate among learners in each of the actual score groups. This was more evident in mid and high actual score sub-groups. More particularly, the results of question two revealed that through conducting C-DA procedures and with the help of LPS one can distinguish among the learners who fall into the same category of ability in the so-called non-dynamic traditional tests. As mentioned before, the actual score in CDASRI represents learners' scores in traditional non-dynamic assessment in that this score accounts for the first try of learners on each item, i.e., before using any mediations. In other words, while they were categorized into the same level of PC ability based on their similar actual scores in NDA test, their varied LPSs indicated that, in fact, they were not the same in terms of their abilities if their ZPDs (i.e., their emerging abilities) were taken into account. The results of the present study are consistent with those of (Barabadi, 2010; Mehri Kamrood, 2011; Mehri Kamrood et al., 2019; Poehner & Lantolf, 2013; Poehner et al. 2015; Yang & Qian, 2017).

More importantly, the findings of the present study are in line with what Vygotsky raised as a major criticism towards non-dynamic

psychometric tests, that is, their inability to account for learners' zone of proximal development. In his observations as an educational psychologist, he reports about two children with the same mental age of 8 based on the results of traditional IQ tests. When he asked these children to answer questions above their mental age, both of them were unable to solve the problems independently yet when they were guided with a little help on the part of a mediator they showed different performances, that is, one of them could answer the problems designed for children with mental age of 12, while, the other could only solve problems managed for children with mental age of 9. Therefore, he claimed that although they were similar in terms of their ZADs, they were totally different from each other when their ZPDs were taken into consideration. Thus, learners' ZPD level, the realization of which is the learning potential score (LPS), could be of immense supplementary help for teachers and course developers in order to come up with a more comprehensive diagnosis of individual learners' abilities that, in turn, would help them in developing more targeted remedial courses and materials in general and in high demanding aspects of language learning and assessment namely pragmatic comprehension.

5. Conclusion and Implications

The present study was an attempt to design and implement an online dynamic test of pragmatic comprehension (Routines, Implicatures, and Speech acts). The present study confirms previous findings and contributes additional evidence suggesting that sensitivity towards Learners ZPD provided us with a more fine-grained picture of learners' abilities. The significant difference between the mediated and actual scores of learners accounted for the fact that because of their different ZPD levels their level of responsiveness to mediation was significantly different from one another. Hence, it can be concluded that tradition non-dynamic test lose sight of a big part of learners abilities through neglecting learners' ZPD and emphasizing only on their ZAD.

In another side of the present study, learning potential score (LPS) proved a very useful means for diagnostic purposes. In other words, learners with different LPS levels required different planning and materials for their remedial courses. Moreover, LPS could again prove the inability of non-dynamic tests in depicting a comprehensive picture of learners. LPS lets us know how near the assisted performance of the learners is to their independent performance. For example, the abilities of a learner who has a high LPS level are very near to the point of becoming fully internalized (independent) while it is the other way around in the case of a learner with a low LPS. Hence, LPS could be a useful supplementary tool for teachers in their classrooms.

Based on the results of the present study we can suggest a number of pedagogical implications for different parties such as teachers, learners, course developers and policy makers in the realm of educational assessment where instruction and assessment consolidate with each other. Language teachers can make use of online C-DA procedures both inside and outside the classroom contexts as a means for fulfilling two major goals. First, they can make use of the results of such procedures for diagnostic purposes. That is, before the introduction of C-DA into the field of diagnostic assessment, teachers could only make use of learners' level of independent performance or ZAD (i.e., actual scores) yet DA equips teachers with more diagnostic tools such as mediated, LPS, and TR scores as well as the learners' scoring profiles generated right after they finished the test. Teachers could use these diagnostic tools for the whole class or for individual learners.

Considering both the findings and limitations of the present study, the suggestions for further research are as follows: As this is the first study conducting online dynamic assessment of pragmatic comprehension of EFL learners, first, we suggest the replication of this study in other contexts and with different participants. Second, the researchers are recommended to design and implement online interventionist C-DA procedures of PC using formats other than the multiple choice items. Third, as it has been an unachieved goal in the realm of DA, it is suggested that researchers address productive skills (i.e., speaking and writing) in their online interventionist C-DA projects.

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