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Intervention Analysis in Teaching Reading Comprehension through Dynamic Assessment: Heron's Perspective

Amir Rakhshan [1*], Massood Yazdani Moghaddam[2]
[1] Department of Foreign Languages and Literature, Science and Research Branch, Islamic Azad University, Tehran, Iran
[2] Faculty of Foreign Languages and Literature, South Tehran Branch, Islamic Azad University, Tehran, Iran

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Abstract
Teachers' verbal behavior is a key contributor to provision of appropriate indirect intervention in language learning contexts; however, it is surprising that professionals in ELT, to date, have not proposed a structured oral/verbal framework to deliver intervention and assistance in language learning contexts. To help redress this gap, Heron's Six-Category Intervention Analysis was adapted to put forward a new method to regulate the verbal behavior and actual sentences used by the instructors to intervene in the language learning contexts. 175 Iranian EFL learners taking general English courses with teaching reading comprehension skills and strategies in focus participated in four experimental groups and one control group. Five 35-member groups included control, written mediation only, authoritative intervention, facilitative intervention, and synergetic authoritative-facilitative interventions. Preliminary English Test was employed to evaluate the performance of language learners on their reading comprehension. Results indicated that firstly application of Six-Category Intervention Analysis while providing dynamic assessment induced significant changes in the performance of the groups. Secondly, facilitative intervention, and synergetic authoritative-facilitative interventions groups, generally outperformed other groups with the former ranking first in three, and the latter in two of the six reading comprehension tests.

Keywords: Authoritative; Dynamic Assessment (DA); Facilitative; Intervention; Strategies; Synergetic

INTRODUCTION

Language learning and teaching contexts tend to be brimming with intervention and mediation. Ellis (as quoted in Lengeling, 2011) believes that language teaching is comprised of direct intervention referring to 'attempts to actually teach learners specific linguistic properties', and indirect in tervention referring to the conditions built to facilitate language learning.

Additionally, research has shown that being exposed to linguistic input is not, per se, sufficient to develop language proficiency (Lantolf & Throne, 2006; Swain 2000). Hence, provision of valid pedagogical and non-pedagogical intervention is a pressing need for nurturing the process of learning (Lai, 2012; Negueruela &Lantolf, 2006;

*Corresponding Author's Email: amirrakhshan@gmail.com

van Compernolle, 2012). Furthermore, classroom climate is believed to be markedly determined by the dynamics of the learning group and its development over time (Dornyei &Murphey, 2003; Hadfield, 1992, as quoted in Galadja, 2012). In line with this, Widdowson (1990, p. 182) states:

The classroom provides the context for the enactment of these roles: but the classroom should not just be perceived as physical surroundings but also conceived as social space. The difference is important and can be marked by a terminological distinction: setting for the physical context, scene for socio-psychological one.

Besides, effective communication is essential to the purposes of schooling (Barnes, 1976). Farrell (2002) notes that communication in the classroom influences students' perception and willingness to take part in classroom activities. To consolidate this, and within the scope of classroom interaction, Edwards and Westgate (1987, p. 6) propose:

All normal human beings are expert in the practical interpretation of talk. Most of our everyday life depends on skills in talking and making sense of the talk of others, as we work or trade or simply pass the time of day.

To cater for successful interaction between clients and practitioners, supervisors and supervisees, as well as provision of valid interventions, Six-Category Intervention Analysis (SCIA) has been put forward by Heron (1976). This conceptual framework, being originally based on counseling and clinical supervision studies, has been employed to educate and train professionals in health-related arenas. Recently, however, it has been used in various fields including management, medical education and counselling to promote interpersonal skills. (Chambers &Long, 1995; Cutcliffe &Epling, 1997; Fowler, 1996; Johns &Butcher, 1993).

Intervention

Intervention is 'an identifiable piece of verbal and/or non-verbal behavior that is a part of the practitioner's service to the client' (Heron, 2001, p. 3). Despite the significance of non-verbal aspects of intervention, Heron (1976) notes by intervention he mainly refers to practitioner's verbal behavior. SCIA is proposed as a conceptual framework to understand interpersonal relationships and to analyse interactions between a client and a helper.

Whereas there exist a number of intervention models (Sloan & Watson, 2002), SCIA has been frequently used in fields that need to promote interpersonal skills (Ashmore, 1999; Chambers & Long 1995; Cutcliffe & Epling, 1997; Fowler, 1996; Johns & Butcher, 1993; Sloan & Watson, 2001). For practitioners, it can be used to improve the effectiveness of their communication skills in mentoring relationships. The two main categories of SCIA include authoritative and facilitative interventions which are briefly introduced here.

Authoritative Interventions

In this category, the practitioner suggests what should be done, provides information, or confronts the other person. This category includes three types: 1) *Prescriptive*: '…seeks to direct the behavior of the patient/colleague, client' (Heron, 2001, p. 5). For example, *I would like you to discuss this issue with your classmates*. In this intervention, the teacher or practitioner directly advises, proposes, recommends, or suggests to the client what to do due to a gap in their knowledge or skill when they are badly needed (Maggioli, 2012), 2) *Informative*:'… seeks to impart knowledge, information and meaning to the other person' (Heron, 2001, 5). For example, *'It would be useful for you to know that….'* Maggioli (2012, p. 112) notes that 'these interventions present relevant information, provide personal interpretations, feedback or self-disclosure with the aim of helping the aspiring teacher cope with a specific situation, and 3) *Confronting*: '…to raise the awareness of the patient/colleague/person about some limiting attitude or behavior of which he/she is relatively unaware' (Heron, 2001, p. 5). For example – *I notice this is the third time we have talked about this – and you have still not been able to act – I*

wonder what is going on. These are employed in cases where the clients 'need to be pushed to reassess their actions, beliefs or attitudes because they are acting against the benefits of themselves, or the learners, and they are unable to see it' (Maggioli 2012, p.112).

Facilitative Interventions

In these, the mediator or the helper draws out ideas, solutions, self-confidence, and so on, from the other person, helping him or her to reach his or her own solutions or decisions (Heron, 2001). They include: 1) *Cathartic*: '… to enable the other person to discharge and express painful emotion, usually grief, anger or fear'. For example – *I notice that whenever you speak about your research, you look rather anxious, why don't you tell us your problem?* 2) Catalytic: '…to elicit self-discovery, self-directed learning, and problem solving'. For example, *'What would you do in this situation?'* 3) *Supportive*: '…to affirm the worth and value of the other person, their qualities, attitudes and actions'. For example – '*It sounds like you handled that in a very mature and confident way, well done!'* (Heron, 2001, 6).

Regarding intervention efficiency, Heron (2001) suggests that a *valid* intervention is 'one that is appropriate to the client's current state and stage of development, and to the developing practitioner-client interaction' (Heron, 2001, 10). Heron further continues that

…to say that it is appropriate, is to say that: (a) it is in the right category; (b) it is the right sort of intervention within that category; (c) its content and use of language is fitting; (d) it is delivered in the right manner; and (e) it is delivered with good timing.

A *degenerate intervention* is one that 'fails in one, and usually several, of these respects, because the practitioner lacks personal development, or training, or experience, or awareness or some combination of these' (Heron, 2001, 10). On the other hand, 'a *perverted* intervention is one that deliberately malicious, that intentionally seeks to do harm to another person (ibid).

Dynamic Assessment

Derived from the Vygotsky's work in the realm of Socio Cultural Theory (SCT) of mind, DA attempts to integrate instruction and assessment into a unified activity (Vygotsky, 1978, 1986). SCT is a system of ideas on the development of human's mind (Vygotsky 1978). Learning, within SCT, is a social phenomenon embedded in the cultural context. In fact, DA provides the grounds for the learners to surpass their boundaries of current abilities and level of functioning (Poehner & Lantolf, 2013).

The contrast of *static* and *dynamic* approaches to assessment was put forward by Luria (1961), as one of Vygotsky's colleagues. In the static or NDA, the assessment spotlight is directed on the actual level rather than potential level of development. Put differently, whereas NDA caters for the past-to-present development and model of assessment, DA is based on present-to-future model of assessment (Valsiner, 2001). Poehner (2008) states, 'assessment and instruction are dialectically integrated as the means to move towards an always emergent (i.e., dynamic) future, rather than a fixed and stable steady state' (p. 13).

What invites Vygotskian theory to formal educational process is Feuerstein's theory of Mediated Learning Experiences (MLE). In such formal educational processes, the learning is guided by teachers, and parents who concentrate on the child's acquired symbolic tools via ways that successfully reorganize autonomous learning (Feuerstein, Rand & Hoffman, 1979).

Therefore, mediation is regarded as a pivot in DA, something that prepares the grounds for the development of individual's potential. Put differently, any human activity is mediated and intervened by some factors including objects (e.g., computers), psychological tools (e.g., texts), or other human beings (Kozulin, 2003; Wertsch, 2007). Mediation is capable of creating

opportunities for development that can occur even over the course of a single session, a process entitled microgenesis (Wertsch,2007).

Language Learning Strategies and Skills

Oxford (1990, p. 8) definition of learning strategies is 'specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations.' Learning strategies are problem-oriented, often conscious, teachable, and flexible. O'Malley and Chamot (1990, p.7) describe learning strategies as 'highly useful deliberate approaches to learning a second language.' More specifically, in the SLA or FLA context, strategies are conscious moves made by second-language users intended to be useful in either *learning* or *using* the second language (Cohen, 1998; 1996; Ellis, 1994;). Language *learning* strategies consequently differ from language *use* strategies. While language learning strategies are intended to facilitate learning or improve learners' knowledge of a certain language (Chamot et al.1996; Dadour & Robbins, 1996; Leaver & Oxford, 1996; Oxford, 1996), language use strategies' spotlight is chiefly on serving language users to use the language they have already learned (Cohen, 1998). These strategies can fulfill two responsibilities. First, they assist learners in supporting their own attainment in language proficiency (Bremner, 1998; Green & Oxford, 1995; Oxford, 1990; Politzer, 1983). Second, they are capable of nurturing and promoting learners' autonomy (Holec, 1981) and self-regulation in language learning (Hsiao &Oxford, 2002).

The Problem and Purpose

Despite the significance of teachers' verbal behavior, i.e., the actual words they use while intervening in the class dynamics and providing feedback, along with the intention of these words and verbal behavior, there is a distinct lack of a structured oral/verbal framework to deliver intervention, particularly indirect intervention in Ellis's term (as cited in Lengeling, 2011). In other words, while provision of direct intervention has been profoundly probed in ELT research, little attention has been paid to indirect intervention, i.e., conditions prepared to facilitate language learning. Additionally, reading comprehension is an essential component of lifelong learning. According to Grabe (1991), reading is an essential skill and probably the most important skill for second language learners to masterin academic contexts. Therefore, to address this issue, this study tries to adapt Heron's SCIA into EFL classes in which teaching reading comprehension strategies are taught within the DA framework. It meant to put forward a new method to regulate the verbal behavior and actual sentences used by the instructors to intervene in the language learning contexts. To this end, the present research strives to investigate the effect of teachers' awareness of SCIA and effects of two main categories of intervention, authoritative and facilitative as presented by Heron (1976) as well as a synergistic fusion of these two.

Hence, the problem and purposes of this study are realized, jointly, in the form of the specific questions as follows:

Research Questions

1. Does teachers' awareness of SCIA while applying DA on reading comprehension (RC) strategies have any significant effect on the performance of their students on RC tests?
2. Does the provision of DAon reading strategies along with authoritative intervention significantly affect EFL learners' performance on RC tests?
3. Does the provision of DA on reading strategies along with facilitative intervention significantly affect EFL learners' performance on RC tests?
4. Does the provision of DA on reading strategies along synergetic facilitative and authoritative interventionshave any effect on the performance of language learners on RC tests?

Method

Participants

The participants of this study included a homogenous sample of 175 (90 male and 85 female) intermediate level Iranian EFL learners with an age range of 15 to 26. These participants were selected from two language schools, in Tehran Iran. One was Danesh Eram Language School (previously called Shokouh-e-Andisheh), and Imam Sadiq High School, in which extracurricular classes for general English is run in addition to the curricular requirements of the school on English language.(Table1).

Table 1.
Schematic View of the Participants of the Study

No	Title of Group	Group Abbreviation	Gender	Treatment Provided	Number of Participants
1	Control Group	CG	F & M	Regular Non-Dynamic RC instruction	35
2	Written Mediation	DAWMO	F & M	DA on RC (Silent, and only through written mediation pages)	35
3	Authoritative Intervention	AIDA	F & M	DA (written and oral mediation) on RC with Authoritative Intervention	35
4	Facilitative Intervention	FIDA	F & M	DA (written and oral mediation) on RC with Facilitative Intervention	35
5	Synergetic Facilitative & Authoritative	SFADA	F & M	DA (written and oral mediation) on RC through Synergetic-additive Facilitative and Authoritative Intervention	35

Instruments

1. Preliminary English Test (PET)

There were four versions of PET used in this study. One was used as a homogeneity test to screen the participants based on their language proficiency. A second version of PET test was used to act as the pretest and posttest of the study. The other two versions' reading sections were used in the course of the study.

2. Mediation sheets

Strategy mediation sheets were 6 pages, each of which included one of the strategies or micro-skills necessary for successful completion of RC test items. These mediation pages were distributed among language learners during the six RC tests. The mediation pages provided systematically coordinated assistance to language learners. These pages included a brief introduction to the strategy, an example how to employ the strategy and an explanation why the strategy may be useful.

Procedure

Teacher recruitment and briefing. Three qualified teachers,anMA holder, (Male, 40, 17 years of experience) anMA student (female, 32, 10 years of experience), and aBA (Male, 35, 14 years of experience) (in TEFL), all with advanced proficiency levels, were invited to cooperate in the study. Two of the groups were taught by the primary researcher himself, i.e., FIDA and SFADA. The teachers participating in the study attended a workshop run by the primary researcher aiming at clarifying categories of Heron's SCIA. Teachers were briefed about intervention, its categories, and their intentions. In addition, verbal examples which could bring about the intended impact of the intervention, along with other related issues to how to run the classes based on the intervention frameworks presented.

Screening and grouping the participants. The participants of the study were screened based on the

results of their proficiency test. The proficiency test was a genuine version of PET. Language learners who scored one standard deviation below and above the mean were included in the study (Table 2).

Table 2.
Descriptive Statistics of the PET Homogeneity Test

	N	Range	Minimum	Maximum	Mean	Std. Deviation		Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
ProficiencytestPET	220	67.00	10.00	77.00	38.6909	.74316	11.02280	121.502
Valid N (listwise)	220							

The homogeneous 175 participants were grouped into five major groups (Table 1). The proficiency level of the participants was intermediate.

Selecting six RC strategies

At this stage, a comprehensive review of the related literature (Brown 2007; Ellis 2008) was done to select six of the highly needed strategies for RC. Hence, the following reading strategies were selected to be taught within experimental groups of the study. Strategies included 1) Activating and using background knowledge, 2) Generating and asking questions, 3) Making inferences, 4) Predicting, 5) Summarizing, and 6) Visualizing. These strategies were selected to be taught in six RC classes according to the order mentioned order.

Pretest

A genuine version of PET (Cambridge, 2010) was administered and the results were tabulated and collected to serve as the pretest of the study.

Treatment

The whole treatment course took eightcomplete sessions, each ninety minutes. The instructors, including the primary researcher himself, went through RC sessions subsequently.

In a typical RC session in the four experimental groups, the language learners started working on a part of a RC test (PET). After about ten minutes, a mediation page highlighting one of the six selected strategies was provided to the students. This mediation page included a simplified explanation of the related strategy. After a few minutes, the students continued answering the RC test items. They were allowed to make changes to their answers. It should be noted that during the 1st session, only one single strategy was practiced and taught. The other strategies were worked on in the subsequent sessions.

In spite of the similar scaffolding and treatment these experimental groups received, the types of intervention provided in these four groups were different. In the control group (CG), the students received the regular, non-dynamic instruction on RC. The number of sessions was identical with those of the experimental groups. The control group of the study received the regular RC instruction based on conventional non-dynamic methodologies.

In the first experimental group, entitled DAWritten Mediation Only (DAWMO), the language learners received DA and the meditational strategies intended to address the problematic areas language learners faced while taking the RC tests. The difference between this group and the other three experimental groups was that the instructor of this group did not provide any oral intervention during the mediation time. In other words, he merely provided the students with the written mediational pages. This was meant to create a distinguishing feature between this group and the other three experimental groups.

In the second experimental group, entitled Authoritative Intervention DA or (AIDA), the language learners received similar treatments through provision of DA on their RC strategies. However, in this group, the teacher mainly presented the interventions through an authoritative

framework. In other words, the intervention was provided through verbal language examples which could well fit into the three categories of prescriptive, informative and confronting interventions. The following examples are presented here:

Prescriptive:

• I suppose we (you) need to make more sentences with this structure to completely master it.

• I want you to review this part one more time

Informative:

• 'Which' is not used to refer to humans. 'Who' is the right choice.

• I think she should have used simple present tense for talking about plane schedules.

Confronting:

• Did you notice you talked about this matter three times?

• How many times have I told you not to forget the 3rd person's'?!

In the third experimental group, entitled Facilitative Intervention DA (FIDA), the situation was similar to that of AI-DA group; however, the dominant type of verbal intervention was facilitative, including cathartic, catalytic, and supportive interventions. Some examples include:

Cathartic:

• You don't look Ok today. What is the problem?

• Don't worry. Many other students have this problem. This is quite normal.

Catalytic:

• What would you do to solve the problem?

• Let's see how you try to solve this problem.

Supportive:

• Well done! I am really proud of you.

• Wow! That was a perfect sentence. Thanks!

In the fourth and final experimental group of the study entitled the Synergetic Authoritative-Facilitative Intervention DA (SFADA), the instructor, the primary researcher, adopted a synergetic approach towards using intervention categories. He strived to attain and preserve an optimum balance regarding the types and categories of interventions provided to language learners. This was determined based on the dynamics of the class, session, and the language learners.

Post-test

Besides the main posttest run and administered in the end of the experiment, in each session of the experiment, the performance of the language learners on RC tests were recorded as posttests 1, 2, 3, 4, 5, and 6. This was done to investigate the effect of single strategies presented through various types of interventions. The final posttest, however, was a version of PET reading paper the language learners took in an unassisted manner. This test was the same version used in the pretest.

Results and Data Analysis

Two separate one-way ANOVAs were run to compare the five groups on the pretests of reading. In addition, two separate MANOVAs were run to investigate the effect of five types of intervention and different strategies on the posttests of RC. MANOVAs were followed by post-hoc tests each of which compares the five groups within each posttest.

Regarding the normality assumption testing, the data in the study enjoyed normal distribution. As is displayed in Table 3, the values of skewness and kurtosis were below +/- 2.

Table 3.

Testing Normality Assumption for RC Tests

	N	Skewness	Kurtosis
	Statistic	**Statistic**	**Statistic**
Pretest	140	.087	-.562
RC1	140	.291	-.787
RC2	140	.198	-.763
RC3	140	-.273	-.323
RC4	140	-.221	-.511
RC5	140	-.303	-.433
RC6	140	-.142	-.638
Posttest	140	.308	.272

The multivariate ANOVA (MANOVA) was run to compare the four groups' means on the six RC tests each of which was measured after introducing a separate strategy. The assumption of homogeneity of variances was met. The results of Levene's tests were all non-significant, i.e. $p > .05$.

Table 4.
Levene's Test of Equality of Error Variances

	F	df1	df2	Sig.
RC1	.896	3	136	.445
RC2	2.230	3	136	.088
RC3	.473	3	136	.702
RC4	1.260	3	136	.291
RC5	.819	3	136	.485
RC6	1.875	3	136	.137

In addition, the assumption of homogeneity of covariance matrices as probed through the Box's M test was met (Box's M = 80.90, p = .153).

Table 5.
Box's Test of Equality of Covariance Matrices

Box's M	80.909
F	1.182
df1	63
df2	43338.129
Sig.	.153

The Box's M test should be tested at $\alpha = .001$.

The results of MANOVA ($F (18, 399) = 2.92$, $p = .000$, partial $\eta^2 = .11$ representing a moderate to large effect size) indicated that there were significant differences between the means of the four groups on the overall reading tests. Hence, regarding the first research question, the teachers' awareness of intervention categories while applying DA induced significant changes in the performance of their students on RC tests.

Table 6.
Multivariate RC Tests

	Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	**Pillai's Trace**	.990	2200.308[b]	6	131	.000	.990
	Wilks' Lambda	.010	2200.308[b]	6	131	.000	.990
	Hotelling's Trace	100.777	2200.308[b]	6	131	.000	.990
	Roy's Largest Root	100.777	2200.308[b]	6	131	.000	.990
Group	**Pillai's Trace**	.350	2.924	18	399	.000	.117
	Wilks' Lambda	.680	3.007	18	371	.000	.120
	Hotelling's Trace	.426	3.071	18	389	.000	.124
	Roy's Largest Root	.275	6.090[c]	6	133	.000	.216

Table 7 indicates the means of the four groups on the six RC tests.

Table 7.
Descriptive Statistics: Reading Tests by Groups

Dependent Variable	Group	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
RC1	WM	19.086	.909	17.288	20.883
	AI	19.229	.909	17.431	21.026
	FI	21.600	.909	19.803	23.397
	SFADA	22.971	.909	21.174	24.769
RC2	WM	20.686	.923	18.861	22.510
	AI	19.886	.923	18.061	21.710
	FI	22.286	.923	20.461	24.110
	SFADA	21.657	.923	19.833	23.482
RC3	WM	19.286	.788	17.727	20.844
	AI	21.086	.788	19.527	22.644
	FI	22.114	.788	20.556	23.673
	SFADA	19.457	.788	17.899	21.016
RC4	WM	20.314	.738	18.855	21.773
	AI	21.514	.738	20.055	22.973
	FI	23.371	.738	21.912	24.830
	SFADA	21.857	.738	20.398	23.316
RC5	WM	22.257	.660	20.952	23.563
	AIDA	24.429	.660	23.123	25.734
	FIDA	23.914	.660	22.609	25.220
	SFADA	20.914	.660	19.609	22.220
RC6	WM	21.429	.733	19.980	22.877
	AIDA	20.743	.733	19.294	22.192
	FIDA	21.171	.733	19.723	22.620
	SFADA	21.514	.733	20.065	22.963

Note: DAWMO = Dynamic Assessment Written Mediation Only, AIDA = Authoritative Intervention Dynamic Assessment, FIDA = Facilitative Intervention Dynamic Assessment and SFADA = Synergic Authoritative Facilitative.

In the following section, the results of the data analyses related to the six RC strategies taught in six treatment sessions are discussed consecutively.

Analysis 1: (Performance of groups on the 1st RC test following instruction of "activatingand using background knowledge")

Based on the results displayed in Table 8 ($F(3, 136) = 4.33$, $p = .006$, partial $\eta^2 = .087$ representing a moderate to large effect size), it can be concluded that there were significant differences between the four groups' means on the first RC test (RC1). As is displayed in Table 8, the SFADA group (M = 22.97) had the highest mean on RC1. This was followed by FIDA (M = 21.60), AIDA (M = 19.22) and DAWMO (M = 19.08).

Table 8.
Tests of Between-Subjects Effects-RC

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group	RC1	375.850	3	125.283	4.333	.006	.087
	RC2	117.571	3	39.190	1.315	.272	.028
	RC3	192.857	3	64.286	2.958	.035	.061
	RC4	166.479	3	55.493	2.913	.037	.060
	RC5	270.193	3	90.064	5.904	.001	.115
	RC6	12.600	3	4.200	.224	.880	.005
Error	RC1	3932.286	136	28.914			
	RC2	4052.114	136	29.795			
	RC3	2956.114	136	21.736			
	RC4	2590.743	136	19.050			
	RC5	2074.743	136	15.255			
	RC6	2554.971	136	18.787			
Total	RC1	64421.000	140				
	RC2	66668.000	140				
	RC3	61902.000	140				
	RC4	69073.000	140				
	RC5	75625.000	140				
	RC6	65574.000	140				

The results of post-hoc Scheffe's tests (Table 9) indicated that firstly, the SFADA group (M = 22.97) significantly outperformed the DAWMO group (M = 19.08) on RC1 (MD = 3.89, p = .031). Secondly, the SFADA group (M = 22.97) significantly outperformed the AIDA group (M = 19.22) on RC1 (MD = 3.74, p = .041). No other significant differences were observed between any other pairs of means.

Table 9.
Post-Hoc Scheffe's Test: First RC by Groups

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lowe Bound	UpperBound
RC1	SFADA	WM	3.89*	1.285	.031	.25	7.52
		AI	3.74*	1.285	.041	.10	7.38
		FI	1.37	1.285	.768	-2.27	5.01
	AIDA	WM	.14	1.285	1.000	-3.50	3.78
	FIDA	WM	2.51	1.285	.285	-1.12	6.15
		AI	2.37	1.285	.337	-1.27	6.01

***. The mean difference is significant at the .05 level.**

Figure 1 indicates the performance of four experimental groups on the first RC test.

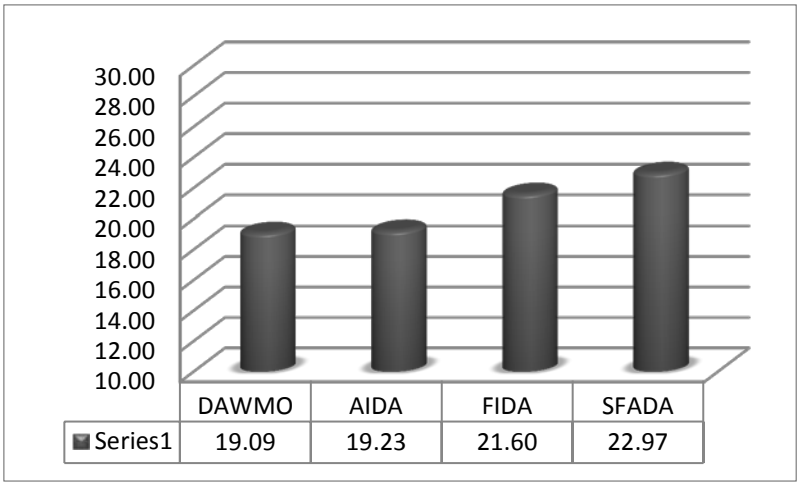

Figure 1.First RCTest by Groups.

Analysis 2: (Performance of groups on the 2nd RC test following instruction of "generating and asking questions")

Based on the results displayed in Table 8 (F (3, 136) = 1.31, p = .272, partial η^2 = .028 representing a weak effect size) it can be concluded that there were not any significant differences between the four groups' means on the second RC test (RC2). As is displayed in Table 7, the FIDA group (M = 22.28) had the highest mean on RC2. This was followed by SFADA (M = 21.65), DAWMO (M = 20.68) and AIDA (M = 19.88).

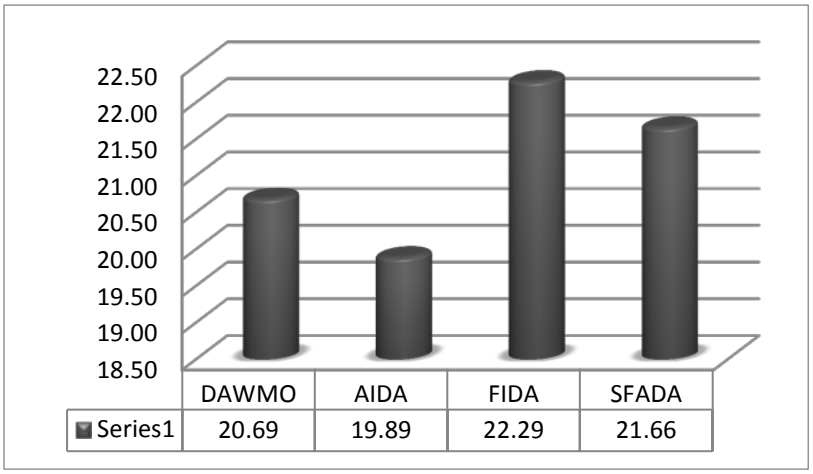

Figure 2. Second RCTest by Groups.

Analysis 3: (Performance of groups on the 3rd RC test following instruction of "making inferences")

Based on the results illustrated in Table 10, (F (3, 136) = 2.95, p = .035, partial η^2 = .061 representing a moderate effect size) it can be concluded that there were significant differences between the four groups' means on the third RC test (RC3). As is displayed in Table 7, the FIDA group (M = 22.11) had the highest mean on RC3. This was followed by AIDA (M = 21.08), SFADA (M = 19.45) and DAWMO (M = 19.28).

As is displayed in Table 10, the results of post-hoc Scheffe's tests did not show any significant differences between any two means. This was due to the moderate effect size value of .061.

Table 10.
Multiple Comparisons: Third Reading Comprehension Test by Groups

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
RC3	DAWMO	AIDA	-1.80	1.114	.459	-4.95	1.35
		FIDA	-2.83	1.114	.097	-5.98	.33
		SFADA	-.17	1.114	.999	-3.33	2.98
	AIDA	WM	1.80	1.114	.459	-1.35	4.95
		FIDA	-1.03	1.114	.837	-4.18	2.13
		SFADA	1.63	1.114	.547	-1.53	4.78
	FIDA	WM	2.83	1.114	.097	-.33	5.98
		AIDA	1.03	1.114	.837	-2.13	4.18
		SFADA	2.66	1.114	.133	-.50	5.81
	SFADA	WM	.17	1.114	.999	-2.98	3.33
		AIDA	-1.63	1.114	.547	-4.78	1.53
		FIDA	-2.66	1.114	.133	-5.81	.50

Figure 3 demonstrates the performance of four experimental groups on the third RC test.

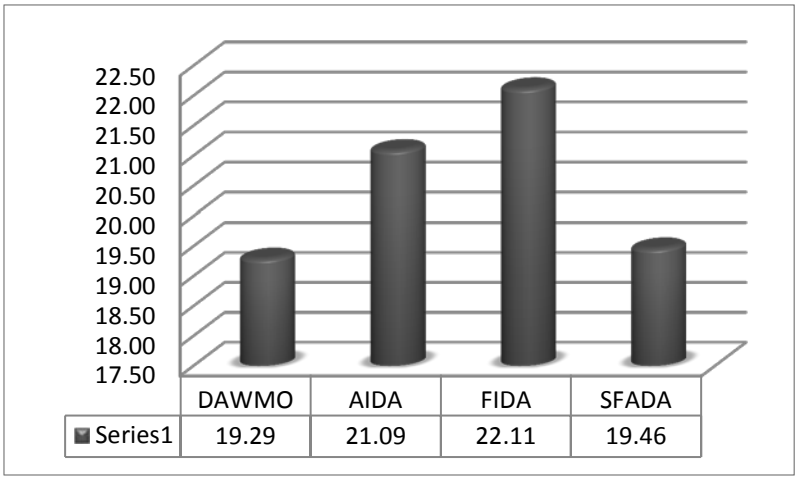

Figure 3.Third RC Test by Groups

Analysis 4: (Performance of groups on the 4th RC test following instruction of "predicting")
Based on the results displayed in Table 11, (F (3, 136) = 2.91, p = .037, partial η^2 = .060 representing a moderate effect size), it can be concluded that there were significant differences between the four groups' means on the fourth RC test (RC4). As is displayed in Table 7, the FIDA group (M = 23.37) had the highest mean on RC4. This was followed by SFADA (M = 21.85), AIDA (M = 21.51) and DAWMO (M = 20.31). In addition, and as is displayed in Table 11, the results of post-hoc Scheffe's tests indicated that there was a significant difference between FIDA (M = 23.37) and DAWMO (M = 20.31) on the fourth reading test (MD = 3.06, p = .039). There were not any significant differences between other pairs of means, though.

Table 11.
Multiple Comparisons: Fourth RC Test by Groups

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
RC4	DAWMO	AIDA	-1.20	1.043	.724	-4.15	1.75
		FIDA	-3.06*	1.043	.039	-6.01	-.10
		SFADA	-1.54	1.043	.536	-4.50	1.41
	AIDA	DAWMO	1.20	1.043	.724	-1.75	4.15
		FIDA	-1.86	1.043	.370	-4.81	1.10
		SFADA	-.34	1.043	.991	-3.30	2.61
	FIDA	DAWMO	3.06*	1.043	.039	.10	6.01
		AIDA	1.86	1.043	.370	-1.10	4.81
		SFADA	1.51	1.043	.552	-1.44	4.47
	SFADA	DAWMO	1.54	1.043	.536	-1.41	4.50
		AIDA	.34	1.043	.991	-2.61	3.30
		FIDA	-1.51	1.043	.552	-4.47	1.44

Figure 4 graphic representation of the performance of four experimental groups on the fourth RC test.

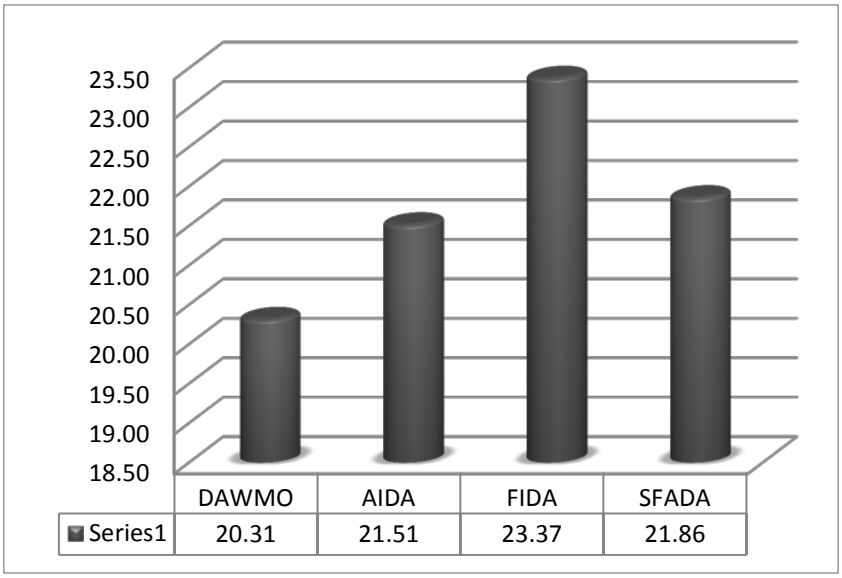

Figure 4. Fourth RCTest by Groups.

Analysis 5: (Performance of groups on the 5th RC test following instruction of "summarizing")
Based on the results displayed in Table 12 (F (3, 136) = 5.90, p = .001, partial η^2 = .115 representing a moderate to large effect size), it can be concluded that there were significant differences between the four groups' means on the fifth RC test (RC5).

As is displayed in Table 12, the AIDA group (M = 24.42) had the highest mean on RC5. This was followed by FIDA (M = 23.91), DAWMO (M = 22.25) and SFADA (M = 20.91).

The results of post-hoc Scheffe's tests (Table 12) indicated that firstly, the AIDA group (M = 24.42) significantly outperformed the SFADA group (M = 20.91) on RC5 (MD = 3.51, p = .004. In addition, the FIDA group (M = 23.91) significantly outperformed the SF AIDA group (M = 20.91) on RC5 (MD = 3, p = .019. However, there were not any significant differences between any other pairs of means.

Table 12.
Post-Hoc Scheffe's Test: Fifth RC by Groups

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
RC5	WM	AIDA	-2.17	.934	.150	-4.81	.47
		FIDA	-1.66	.934	.373	-4.30	.99
		SFADA	1.34	.934	.560	-1.30	3.99
	AIDA	WM	2.17	.934	.150	-.47	4.81
		FIDA	.51	.934	.959	-2.13	3.16
		SFADA	3.51*	.934	.004	.87	6.16
	FIDA	WM	1.66	.934	.373	-.99	4.30
		AIDA	-.51	.934	.959	-3.16	2.13
		SFADA	3.00*	.934	.019	.36	5.64
	SFADA	WM	-1.34	.934	.560	-3.99	1.30
		AIDA	-3.51*	.934	.004	-6.16	-.87
		FIDA	-3.00*	.934	.019	-5.64	-.36

Figure 5 graphically demonstrates the performance of four experimental groups of the study on the fifth RC test.

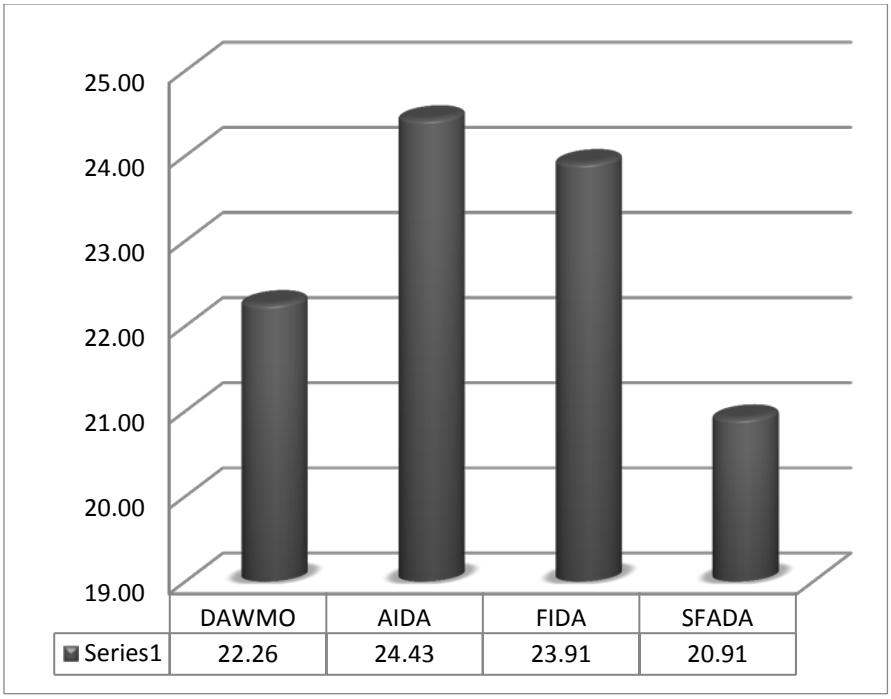

Figure5.Fifth RCTest by Groups.

Analysis 6: (Performance of groups on the 6th RC test following instruction of "visualizing")

Based on the results displayed in 8 ($F(3, 136) = .22$, $p = .880$, partial $\eta^2 = .005$ representing a weak effect size) it can be concluded that there were not any significant differences between the four groups' means on the sixth RC test (RC6). As is displayed in Table 7, the DAWMO group (M = 21.42) had the highest mean on RC6. This was followed by FIDA (M = 21.17), SFADA (M = 21.01) and AIDA (M = 20.74).

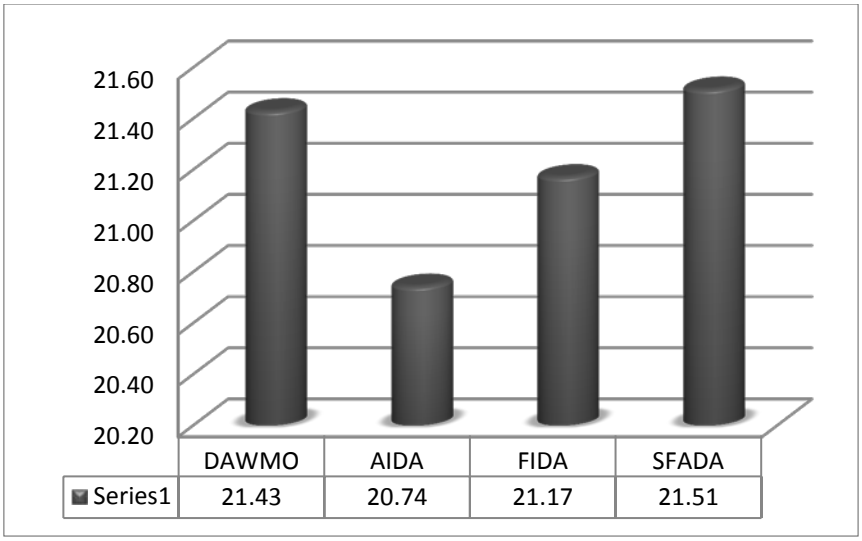

Figure 6. Sixth RC Test by Groups.

Discussion and Conclusions

Lidz (1991) remarks that mere description of learners' performance does not provide us with the chance to draw conclusions and derive recommendations. Assessment needs to enable us to reveal reasons for unsatisfactory performance and functioning, and to put forward appropriate remediation. In line with this, the results of the first section of the analysis indicated that provision of mediation and DA within RC tests significantly contributed to the success of language learners in their RC performance. Through use of DA in the learning process, language learners generally were more successful in overcoming their RC impediments. This result is in line with a number of studies in the ELT field which have shown that DA can be considered an efficient teaching instrument while working on the RC (Birjandi et al. 2013; Gutterman, 2002; Naeini & Duvall, 2012; Zoghi & Malmeer, 2013)

Birjandi, Estaji, and Deyhim (2013) explored the feasibility of development and implementation of DA procedures in RC instruction as well as metacognitive awareness of reading strategy. They compared the effectiveness of DA compared with NDA of RC abilities of EFL learners. They found statistically significant diferences between their DA and NDA groups with regard to their RC ability.

Also, Naeini and Duvall (2012) looked into the effects of mediation on the RC of 10 ELT students. In their mixed methods design, the participants took part in a pretest-mediation-posttest design study. With a mediation phase comprising of three intervention sessions, each of which focused on a special RC subskill, the researchers found dramatic, measurable progress in the participants' RC performance. In particular, six out of ten students in the study demonstrated considerable progress; however, four students either did not change with regard to their RC performance, or regressed considerably (in one case).

In another study, Zoghi and Malmeer (2013) probed the effects of DA on reading motivation. Working on 100 EFL learners' within a pretest, posttest model, and providing hints, prompts, questions and explanations in their intervention sessions, they found out that their DA group significantly outperformed their NDA one.

On the other hand, many investigations on SCIA are related withclinical supervision. For example, Chambers and Long (1995) highlight the facilitative category, supportive interventions, in particular. Despite concurring with Heron about lack of superiority of any intervention type, they mostly cater for facilitative types

and do not mention the authoritative ones. In our study, however, attempts were made to pay equal attention to both major categories of intervention, and come up with a synergetic model to provide both types of intervention in a well-balanced manner. Results indicated that this synergy induced statistically significant changes in the performance of language learners on reading comprehension tests.Except for one, i.e., RC5, in other five reading comprehension tests, language learners who received authoritative interventions were outperformed by language learners who received facilitative interventions. This indicates that proper provision of facilitative interventions proved more effective in preparing the grounds for more successful performance delivered by language learners on the RC tests.

Sloan (2006) employed the SCIA framework to conduct an analysis of supervisor-supervisee interactions. He found out that the most often observed types were catalytic, informative, and supportive whereas cathartic and confronting interventions were scarcely observed during supervision sessions. Burnard and Morrison (2005) evaluated nurses' perceptions of their interpersonal skills via SCIA. They concluded that many nurses considered themselves inclined to have more authoritative than facilitative interventions in their interpersonal style. This is in line with a majority of traditional methodologies in educational fields. As Heron (2001, p. 6) notes, 'traditional education and training have rather overdone authoritative sorts of intervention, and have omitted altogether the facilitative sorts'. The exclusion of facilitative sorts of intervention, Heron (2001) believes, can cause pure authoritative types to degenerate, and hence not valid interventions. However, relying too much on the facilitative interventions, according to Heron (2001, 7)) as followed by some innovative approaches to education and therapy, and exclusion of authoritative types has led to 'throwing the positive power of authentic hierarchy away with rejecting the negative power of oppressive hierarchy'.

In today's educational settings, Heron (2001) notes, that the catalytic category has a pivotal role as it causes learners to move towards autonomous learners. He further continues that catalytic category 'is the linchpin of any practitioner service that sees itself as fundamentally educational in the widest sense of encouraging the client's personal power in living, learning and growing' (Heron, 2001, 8).

Few studies have used SCIA in language teaching-related arenas. Hamid and Azman (1992) attempted to adapt the SCIA to promote facilitative type supervisory feedback in teaching practice. Yurekli's (2013), employs Heron's SCIA to discuss the importance of the post-observation session in teacher development, mostly concerned with intervention types that observers employ compared with the types that the observed teachers prefer.

To conclude, the present research strived to shed some light on the issue of verbal behavior of the teachers used when practicing DA. Being aware of the subtleties of SCIA, teachers are enabled to respond appropriately to a given situation by providing the proper sort of intervention via appropriate diction, grammar, timing, and manner of speech.

It was observed that teachers' awareness of the SCIA, its details, and procedures for presenting valid interventions considerably contributed to the success of language learners in their reading comprehension performance.

The relative success of the two groups in which facilitative, and synergetic facilitative-authoritative interventions were used indicated that the language learners in our context preferred their teacher to play supportive, cathartic and catalytic role in their learning by providing interventions and verbal behaviors which were mostly supportive, cathartic, and catalytic.

The success of language learners in the synergetic facilitative-authoritative group indicated that whereas students were unwilling to receive authoritative interventions in the rigid sense, they were more willing to accept those interventions when presented in a synergetic manner with facilitative ones, particularly if offered with good timing, manner, and presentation.

Finally, via learning to use the SCIA, teachers can obtain a set of analytic and behavioral tools to shape their own method of practice and pave the way for their learners' more successful performance on reading comprehension tasks and tests.

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Amir Rakhshan is a PhD candidate in TEFL at Science and Research Branch, Islamic Azad University, Tehran, Iran. He has authored few journal papers and presented in TESOL Arabia conference. His main fields of interest include classroom discourse, ESP, intervention, feedback, translation and interpretation. Email: amirrakhshan@gmail.com

Massood Yazdani Moghaddam is a PhD in Teaching English as a Foreign Language (TEFL), and an Assistant Professor at South Tehran Branch, Islamic Azad University, Tehran, Iran. His main fields of interest include dynamic assessment, classroom discourse, and English language literature. Email: mym1300@gmail.com