

The Impact of Differentiated Task-Based Instruction via Heeding Learning Styles on EFL Learners' Feasible Proficiency Gains

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ABSTRACT

Around 3 decades of scrupulous work, theorizing and experimentation in the realm of differentiated instruction (DI) has provided it with an unprecedented and ever-increasing splendor. Yet, the fuzziness, in terms of methodological and practical concerns, with which the theory was once characterised, has not yet completely been tackled. The present study is, hence, an attempt to partly diminish this aura of blurredness and imprecision surrounding DI, particularly for novice practitioners by implementing and running a differentially instructed class. The study sets out to investigate the impact of DI on EFL learners' proficiency. A small sample size of academic freshmen (totaling 60, out of which only 47 remained to the end of the study), was selected through convenience sampling and rearranged under distinct groups based on learning styles using Chislett and Chapman's (2005) learning style inventory. The results reveal, contrary to the study postulations, no significant proficiency differences resulting from differentiated task-based instruction between the experimental and control groups.

Keywords: Differentiated task-based instruction; differentiation; learning styles; proficiency gains

INTRODUCTION

The impact of exercising differentiation (based on learners' individual differences, preferences and needs) on the educational/academic achievement of learners has long been established as a ubiquitously espoused pedagogical axiom. In the eyes of some of its advocates, differentiated instruction (DI), nowadays, is an indispensable verity without which many instructional attempts might be doomed to failure. A fervent proponent of DI, Lawrence-Brown (2004), for instance, maintains, "given the availability of strategies such as differentiated instruction, responsible pedagogy no longer allows us to teach as if students all learned in one way, and at the same pace" (p. 36). That DI offers a more individualistic and hence learner-sensitive outlook toward educational practices seems to be a well-substantiated argument, to which most learner-oriented methodologies and pedagogues unanimously subscribe. Yet, rather than being preoccupied with once-prevalent question of whether or not to differentiate instruction, educationalists today are more concerned with how to implement differentiation. Thus, while holding on to the view that for maximising "achievement of general curriculum standards, we must increase our efforts to differentiate instruction" (Lawrence-Brown 2004, p. 36), educational stakeholders need to also beware of the fact that differentiation is thought to have "as many faces as it has practitioners and as many outcomes as there are learners" (Pettig 2000, p. 14).

Though what DI is after addressing the individual traits of learners, due to disparity and diversity with which learners' individual differences are characterized, the manner in which these unique learning orientations, preferences and attitudes are liable to be dealt with differs from one learning context to another. Casting a fleeting look through the literature on individualistic aspects of instruction, one may find that very scant attention has been paid to the now-paramount field of DI (Ellis, Gable, Greg, & Rock 2008; Tomlinson 2009). Though a lot seems to have been done to address the individual differences of learners and their would-be implications for learning, little has been accomplished concerning how to implement such differences and apply them in the real context of learning. In view of this scarcity of work coping with the role of learners' differences in educational attempts and outcomes, the current study strives to devise a new methodology for dealing with such neglected individualistic facets in pedagogy.

One of the commonest ways in which differentiation is viable to be implemented is via individuals' unique learning styles. Highlighting the role detection of learning styles can play in running DI-based curricula, D'Amico and Gallaway (2010) hold that identifying "the learning styles of your students is important when you are planning differentiated teaching strategies" (p. 18). As Reid (1995, cited in Abu-Asba, Azman, & Mustaffa 2012, p. 572) states, learning styles are concerned with the preferences of individuals "to perceive and process information through one or more of the sensory modalities: visual, auditory, kinesthetic, and tactile." According to Keefe (1979, cited in Shirani Bidabadi & Yamat, 2012, p. 1041) learning styles refer to "cognitive, affective, and physiological traits that are relatively stable indicators of how learners perceive, interact with, and respond to the learning environment." Furthermore, in line with Arnold and Brown (1999 p. 17), "what is suitable for a learner who functions well in the visual mode, for example, may not address the needs of someone else who learns best with auditory or kinesthetic activities." Thus, what the current study is mainly after is launching a novel approach to address individuals' leaning styles via the utilization of differentiated task-based instruction. In so doing, the following research question is formulated to serve the objectives pursued in this research.

RQ: Is there a significant difference between the effect of Differentiated Instruction (DI) and Task-based Instruction (TBI) on learners' general language achievement?

LITERATURE REVIEW

To provide an adequate account of each of the fundamental axioms (differentiated instruction and learning styles) on which the current research is founded, the researchers present the theoretical and practical concerns germane to each of these components under separate headings. In so doing, first, the theoretical foundations are discussed and then a laconic synopsis of recent studies in each domain is given.

DIFFERENTIATED INSTRUCTION

Individuals' varied "cognitive characteristics, aside from L2-specific knowledge, contribute to variation in language performance" (Parina 2011, p. 32). Thus, to successfully fulfill its objectives, any pedagogical program needs to take careful account of learners' individual differences. Though the long history of education and teaching abounds with myriad attempts targeted toward individualisation of instruction with the aim of catering for unique learner needs and preferences (quintessential examples of which might be best depicted in Gardner (1983, 1993), multiple intelligences theory as well as learning styles theories offered by

several renowned scholars, including Kolb, 1976), remarkably close links are thought to exist between the now-prevalent concept of DI and its alleged precursor, that is, adaptive teaching. As Wang (1980, cited in Brühwiler & Blatchford 2011, p. 97) puts it, adaptive teaching refers to "the use of alternative instructional strategies and resources to meet the learning needs of individual students." Substantiating the inextricable ties between DI and adaptive teaching, Smit and Humpert (2012) define the latter as "an approach that enables teachers to plan strategically to meet the needs of every student" (p. 1153).

Amid their endeavors aimed at providing an adequate coverage of literature on DI which, in simple terms, refers to all the attempts made for "matching instruction to meet the different needs of learners" (Kosanovich, 2012, p. 5)—the current researchers came up with an astonishing dearth of experimentation on the issue at hand, which is thought to be partly due to the fuzzy nature with which DI is commonly characterized. Johnson's (2003, cited in Subban 2006) probe, an oft-cited pioneering attempt, might serve as a good starting point for dealing with empirical research on DI. In this study, the effect of differentiation on learning outcomes was investigated through asking student teachers to exercise differentiation with varied reading materials and strategies. The practice of teaching through DI, as the researcher claimed, brought about augmented levels of involvement and interest among the learners as well as a heightened sense of gratification with the teaching process for the undergraduate teachers engaged in the study.

Among the studies dealing with the efficacious role of DI in teaching learners with partial disabilities, reference can be made to Mastropieri, et al.'s (2006) work, in which 213 male and female science class learners were involved. Throughout the treatment, the alternative effects of DI versus traditional teaching of science were compared. In tandem with the gained upshots, it was revealed that not only did participants enjoy the implementation of DI tasks, but the analysis of the learners' scores on both posttest and high-stake tests pointed to significant differences in favor of the group taught via the application of collaborative hands-on DI strategies.

In another probe carried out with the aim of familiarising the community of preservice teachers with the benefits of utilising differentiation in instruction, Tulbure (2011) chose a sample of 94 Romanian teachers involved in the fields of foreign languages and mathematics studies. Running a DI-based agenda, which drew mainly on the unique learning styles, the researcher applied the treatment through resorting to Kolb's taxonomy. In tandem with the obtained results, it was concluded that the utilisation of DI-based methods through focus on preservice teachers' unique learning styles had produced significant differences between the performances of experimental and control groups in terms of academic achievement.

Other examples of probes into achievement-oriented gains resulting from the application of DI include Tieso's (2005) study which reports on learners' heightened mathematical achievement successive to the utilisation of curricular differentiation based on learners' diverse abilities, and Grimes and Stevens' (2009) investigation which underscores the outstanding impact of teaching through differentiation on both high- and low-achievers' test performance (both studies are cited in Smit & Humpert 2012)

Gauging learners and teachers' attitudes toward DI strategies has constituted another domain of concern during the recent years. Karadag and Yasar (2010), for instance, strived to find the potential effect of implementing DI on Turkish learners' attitudes. 30 fifth-graders in Turkey represented the chosen sample for this action research. To measure the possible attitudinal changes occurring because of implementing DI, the researchers ran an attitude survey via a questionnaire and interview analysis both prior and successive to experimentation. The researchers' investigation culminated in pinpointing the influential role

of teaching through DI in motivating the learners and modifying their attitudes toward learning.

In another attempt targeted toward exploring the instructors' attitudes toward the use of DI, Logan (2011) launched a survey with 141 Georgian teachers. Based on the outcomes gained through this study, which was conducted via administering a 16-item Likert-type questionnaire, it was found that most teachers agreed upon the fruitfulness of the basic tenets of DI, including the need for on-going reappraisal and modification of content, processes, assessment and materials, as well as the importance of evaluating the readiness and interest levels of students on a regular basis.

In a more recent scrutiny striving to implement differentiation in small rural educational contexts, Smit and Humpert (2012) launched a survey with 162 instructors and 1,180 pupils from 22 Swiss schools to come up with a synoptic view of the status of DI-based teaching. To gather the data, a purpose-made questionnaire containing 104 Likert-type items, along with some other item types, was administered to teacher participants. At the culmination of the research, though it was found that teachers in small schools are not yet well accustomed to the implementation of DI, team collaboration over pedagogical issues was reported to prove beneficial in improving the teachers' implementation of DI principles.

Finally, in a quite recent study, Alavinia and Farhady (2012) explored the potential effect of DI on learners' vocabulary acquisition process. To perform the study, 60 female EFL institute learners were grouped based on their unique learning styles and multiple intelligences. As the results of their experimentation disclosed, the group in which the learners' differences had been attended to via the implementation of DI had significantly outperformed the control group in terms of performance on the vocabulary achievement test.

Subsequent to the provision of a laconic account of research on DI, it might prove helpful to embark on exploring the second focal building block of the current study, that is, learning styles. To lay the foundation for the ensuing discussion, which is mainly concerned with the significance of learning styles as the main component of endeavors targeted toward differentiation in instruction, it might suffice to endorse D'Amico and Gallaway's (2010) invaluable statement regarding the key role learning styles play in the implementation of DI principles. As they put it, recognizing "the learning styles of your students is important when you are planning differentiated teaching strategies" (p. 18).

LEARNING STYLES

Defined as "a profile of the individual's approach to learning, a blueprint of the habitual or preferred way the individual perceives, interacts with, and responds to the learning environment" (Dörnyei 2005, p. 121), learning styles are among the major determiners of an individual's success/failure in the course of learning. Khmakhien (2012, p. 61), for instance, is of the view that, "language learning styles are considered one of the affective factors contributing to learners' learning outcome." Thus, being aware of the dominant or preferred learning style of individuals and trying to tailor instructional attempts to these unique differences among the learners is thought to function as the panacea underlying the productive and profitable practice of instruction within most DI-oriented pedagogies.

Though a plethora of varied definitions, theories and models has been offered throughout the long history of research on learning styles (such as Kolb's 1984, theory, Felder-Silverman's, 1988 model, and Ehrman & Leaver's 2003, construct), all learning styles theories and models unanimously seek to materialise is espousing the view that a methodology which tries to do away with attending to individual differences among learners in terms of styles and preferences is most probably doomed to failure. As Arnold and Brown (1999, p. 17) hold, "learning styles research has made a significant contribution to language

teaching by increasing our awareness of the need to take individual learner variations into consideration and to diversify classroom activities in order to reach a wider variety of learners." As research on learning styles has overwhelmingly dominated varied facets of educational endeavors in the last couple of decades, the provision of an exhaustive coverage of the literature on the issue is neither possible nor sought for in the current research. Thus, in what follows merely some prominent recent investigations in the realm of learning styles are listed.

ACHIEVEMENT-ORIENTED LEARNING STYLES PROBES

The overriding orientations opted for amid the vast body of research on learning styles appear to be of either achievement or preference type. Among the recent instances of achievement-related studies reference can be made to Yamazaki's (2010) work in which the researcher was interested in probing the would-be impact of learning styles on academic students' skills development and attitudes. The study was conducted with the assistance of 288 participants whose learning styles were studied using Kolb's theory. Claiming the significance of learning styles for the academic achievement and skill development of learners, based on the gained upshots, then the researcher concluded that "university students should learn by specializing in learning abilities to develop their concomitant learning skills" (p. 1).

The analysis of the possible bonds between learning styles and academic achievement of learners, carried out by Haider, Sinha and Chaudhary (2010) might serve as another instance of achievement-oriented studies in the light of learning styles. The participants of this study were some 805 students who were tested via online quizzes in three different subject areas. Though the researchers came across few instances of relationship between learning styles differences and learners' performance, altogether the research findings didn't point to the significant impact of differences in learning styles on the learners' academic achievement.

In like manner, Tao (2011) utilised the Productivity Environmental Preference Survey, with the purpose of probing the potential influence of learning styles on language learning achievement. To this end, 300 academic non-English Chinese learners were selected as the participants of the study. The researcher's criterion for evaluating the learners' performance based on learning styles preferences was the grades obtained by the participants on their English language course. In line with the gained results through regression analysis, it was revealed that only a few style preferences (i.e., kinesthetic, responsibility, seating design, authority orientation and mobility) acted as potential predictors for the learners' language learning achievement.

Finally, in her probe into the impact of teaching via learning styles on learners' achievement, retention and attitudes, Boström (2011) implemented Dunn and Dunn's (1993) model with 323 adult and adolescent Swedish learners. Based on the obtained findings, the researcher pointed to the significant difference between the performance of the two groups in terms of facets like attitudes, achievement, and retention. The results of the study, as she claimed, also "indicated that learning-styles methodology provided a practical, positive means of individualizing instruction and simultaneously improving learners' attitudes toward learning grammar" (p. 1).

TYPOLOGICAL STUDIES ADDRESSING DIFFERENT LEARNING STYLES TYPES AND PREFERENCES

As stated earlier, another prominent category of learning styles research is the one concerned with diverse learning styles typologies and preferences. As a case in point, running a

comparative cross-country analysis of the learning style preferences of 166 EFL and ESL college learners (from Russia, China, Korea and Japan), Wintergerst, DeCapua and Verna (2003) made use of their own devised learning styles inventory to gather the data. Among the three major orientations detected to be at work with regard to various groups of learners, that is, individual activity, group activity and project orientation, it was demonstrated, through the analysis of results, that all three distinct communities of the learners were characterized by more inclination toward project and group, rather than individual, orientation.

Akplotsyi and Mahdjoubi (2011), on the other hand, sought to probe the viable impact of learning styles preferences on the amount of engagement of primary school pupils. To perform the study, a user-friendly, modified version of VAK (Visual-Auditory-Kinesthetic) questionnaire was given to 151 six-to-eleven-year-old kids (81 boys and 70 girls). Drawing on the obtained results, it was claimed "that preferences for engagement methods differed significantly between the three learning style modalities. The findings confirmed that understanding children's learning style preferences is an important consideration when deciding engagement methods for school projects" (p. 331).

Furthermore, in a probe into the learning styles and strategies employed by successful and unsuccessful learners, Wong and Nunan (2011) launched a well-organized project with 110 academic learners from Hong Kong who were then divided into two categories of 'more effective' and 'less effective' students based on the results obtained via the administration of a standardized test. The desired data regarding learning style and strategy preferences of participants were tapped via on-line dissemination of questionnaires. The findings of this study disclosed some eye-catching differences with respect to varied preferences learners had voiced for disparate learning styles, strategies and language use patterns.

In another investigation aimed at exploring the favored learning styles of learners, Nuzhat, Salem, Quadri and Al-Hamdan (2011) set about a study with 146 male and female undergraduate students of medicine in Saudi Arabia. The final analysis of the data gained through the administration of VARK questionnaire revealed a prevalent propensity among the majority of participants (72.6 % of the entire sample) toward multiple, rather than single, learning style use.

Eventually, in an attempt organized by Abu-Asba, Azman and Mustaffa (2012) to probe the learning styles preferences of non-English students, the researchers applied Reid's (1995) taxonomy to 179 sophomore and senior learners (51 males and 128 females) majoring in biology at a Yemeni university. To gather the data, a triangulated method was applied, through making use of questionnaires, interviews, observation checklists and field notes. Drawing on the findings of the research, they claimed that tactile and kinesthetic styles were more favored by the learners compared to the auditory style of learning.

METHOD

PARTICIPANTS

The current study selected 60 male and female undergraduate EFL freshmen studying at Urmia University using convenience sampling. As all the participants were passing through the second semester of their studies, their average ages ranged between 18 and 20. The original number of the learners identified went through a considerable amount of attrition and shrinkage, as 13 of the initially recruited participants chose not to participate for several reasons, including their outlying grades on the homogeneity test, nonparticipation in all the treatment sessions and failure to sit for the posttest. Thus, the study carried on with the remaining participants for the whole spring semester in 2012. It is also worth noting that out

of the entire eligible population of learners ($N = 47$) on whose gathered data the final statistical analyses were run, 24 had been randomly assigned to the experimental group and 23 had been dubbed the control group participants. Furthermore, in compliance with the prevalent norm in today's domestic academic contexts, a higher proportion of the participants in the experimental group (58.3 %) was found to be female learners, with the males constituting only 41.7 % of the experimental group participants. Similar ratios (with a bit wider gap, though) also held for the control group learners (60.9 % for the females and 39.1 % for the males). Nonetheless, to cater for uniform groupings, due care was given to assigning an equal number of learners (in terms of both gender and dominant learning styles) to both study groups. Tables 1 and 2 provide a more lucid illustration of the way the males and females were distributed among the two groups.

TABLE 1. Gender Distribution in Experimental Group

Exp. Group	Frequency	Percent
Female	14	58.3 %
Male	10	41.7 %
Total	24	100 %

TABLE 2. Gender Distribution in Control Group

Cont. Group	Frequency	Percent
Female	14	60.9 %
Male	9	39.1 %
Total	23	100 %

INSTRUMENTATION

To perform the study, the researchers made use of a couple of instruments and materials. At the outset of the research, a recent version of TOEFL test (2006) was administered to the participants to cater for the homogeneity of the groups in advance of investigation. Thus, all the 60 participants took this initial test, which served the double function of pretesting and homogenizing. Like all its paper-based counterparts, this version of TOEFL test encompassed 140 multiple-choice questions, arranged in three separate sections of listening comprehension (50 questions), structure (40 items) and reading comprehension (50 questions), along with TWE (Test of Written English). Yet, in an attempt to make the test more manageable, this latter part of the test was excluded from test administration procedure. It is also worth noting that as the test was held in laboratory conditions (by means of headsets) and through careful supervision of the researchers acting as the proctors, the process of test administration was overly analogous to its standard settings.

The other major instrument utilised in the current scrutiny was VAK Learning Styles Self-Assessment Questionnaire (Chislett & Chapman 2005) which consisted of 30 items each with three options. In each question, the first alternative was relevant to the visual learners, the second to the auditory and the third to the kinesthetic individuals, though this was not communicated to the learners prior to test administration. Following the guidelines of test developers, to determine the dominant kind of learning style in each individual the sum of responses to each of the three alternatives (a, b, or c) was calculated. Then, the highest total score among the three options was regarded as the dominant learning style for an individual.

The reliability of the questionnaire was also checked in another study conducted by one of the current researchers (Alavinia & Ebrahimpour 2012), in which Cronbach's alpha was reported to equal .81.

Furthermore, to apply the treatment through the implementation of differentiated task-based instruction, use was made of the third book of *Touchstone series (Video Resource Book 3, Fisk Ong 2008)*. The whole book comprised of four episodes arranged in 12 acts (with each unit or episode containing three acts). Out of the entire content in this book, only eight acts were covered for the treatment applied in the experimental and control groups (acts 1 & 2 from episode 1, act 1 from episode 2, acts 1, 2 & 3 from episode 3, and acts 1 & 3 from episode four). To eradicate the possible effect of practice, which was thought to possibly occur on the part of the learners who were liable to cast a look, ahead of teaching, at the content of units and episodes, the acts selected for each treatment session were chosen on a random basis and not in the order provided in the book.

DATA COLLECTION AND ANALYSIS PROCEDURE

As stated earlier, successive to the selection of two intact groups (60 male and female undergraduate EFL freshmen studying at Urmia University), the TOEFL test was initially administered to the learners for both homogenisation and pretesting. Care was taken to provide the natural settings for the standardised administration of the test. Nonetheless, as the laboratory had limited space for the 60 participants, test administration on both pretest and posttest was done on two successive sessions. The time required for the entire test was something around 2 hours, notwithstanding the TWE (Test of Written English) section.

After running the TOEFL and checking for the homogeneity of the groups, VAK Learning Styles Self-Assessment Questionnaire (Chislett & Chapman 2005) was given to the participants of two groups on a separate session. The learners were briefed on the test rubrics and purposes and were then asked to complete the questionnaire in a matter of 20-30 minutes. It was also explained to the learners that participation in the experiment should be voluntary and the results gained would be kept confidential and announced to the learners only upon their request. Upon the completion of the questionnaires, the learners were then reshuffled and randomly assigned to experimental and control groups. In so doing, an attempt was also made to assign an equal number of each learning style and gender type to each of the two groups.

Though the same material, *Touchstone (Video Resource Book 3)* was used as the principal basis for instruction in both groups, the tasks and activities assigned to the learners within the experimental group were totally different. While the treatment given in the experimental group was based on differentiated instruction through tailoring the input presentation mode to the learning styles of the learners, the control group received task-based instruction through employing the traditional approach and without exerting any differentiation based on the students' varied learning styles. In an attempt to give each category of the learners the kind of treatment that suited its unique learning style type, three different kinds of treatment were designed and implemented within the experimental group, following the guidelines given for possible activities in *Touchstone series*.

Thus, the visual learners were just exposed to visual input through removing the sound features from the episodes, and were then asked to individually write what they had grasped about the scenes in the form of a narration. The auditory learners were, however, given treatment merely through aural channel, via hearing the conversations going on between and among the characters in each scene without being allowed to watch. The task

assigned to the auditory learners was similar to the one for the visual learners, in that they were also required to write a summary of what they had heard to make sure they had been actively involved with the task. The kinesthetic learners, on the other hand, were provided with the soundless scenes in a manner partially akin to what was applied for the visual group. Yet, unlike the visual learners, who were asked to write a story, in isolation, on what they had watched, this latter group were required to work in pairs and groups, develop role-plays based on what they had watched and then act them out. Nevertheless, in the control group, no differentiation was applied based on the learners' varied learning styles and the entire group was treated through the normal and traditional practice of task-based instruction through the ready-made tasks included in *Touchstone*, though the same episodes were covered.

The treatment went on for the entire spring semester in 2012, and successive to it the same proficiency test, TOEFL (2006), was applied to the participants this time as the posttest. Yet, due to the reasons referred to earlier (outlying results on the pretest, nonregular participation in treatment sessions and failure to sit the posttest), the original number of the learners (60 at the outset of the study) went through considerable shrinkage, and what remained for the posttest and hence for final data analysis was solely 47 learners (24 from the experimental group and 23 from the control group). Furthermore, as roughly a three-month interval existed between the first and second administrations of the TOEFL test, the practice effect is thought to have been diminished to a great extent. As the last step, the results gained through two test administrations were fed to SPSS and analysed through running several paired and independent samples *t*-tests.

RESULTS

In order to be able to find the potential effect of the researchers' employed treatment through differentiated task-based instruction on the learners' proficiency gains, subsequent to establishing the normality of initial data through running Kolomogorov Smirnov test, use was primarily made of paired *t*-test to see the possible improvement within both groups from the pretest to the posttest. Afterwards, independent samples *t*-test was run to compare the performances of the two groups.

PROBING THE POSSIBLE EFFECT OF TREATMENT

In line with the descriptive statistics (Tables 3 & 5) and the results of paired *t*-test analyses (Tables 4 & 6), even though some degree of improvement has occurred for the experimental groups from the pretest to the posttest, the enhancement in the mean scores of this group is not statistically significant. Furthermore, the mean score of the control group on the posttest is lower compared to that of the pretest:

TABLE 3. Descriptive Statistics for the Performance of Experimental Group on Pretest and Posttest

Variable		<i>N</i>	Mean	Std. Deviation
Experimental Group	Pretest	24	69.62	17.60
	Posttest	24	70.33	19.70

TABLE 4. Paired *t* Test between Pretest and Posttest in Experimental Group

	Mean	Std. Deviation	Correlation	<i>Sig.</i>	Paired <i>t</i> -test		
					<i>t</i>	<i>df</i>	<i>Sig.</i>
Experimental Pretest & Posttest	-.71	11.59	.81	.00	-.30	23	.77

TABLE 5. Descriptive Statistics for the Performance of Control Group on Pretest and Posttest

Variable		N	Mean	Std. Deviation
Control	Pretest	23	75.17	14.37
Group	Posttest	23	69.39	18.99

Table 6 Paired *t* Test between Pretest and Posttest in Control Group

	Mean	Std. Deviation	Correlation	Sig.	Paired <i>t</i> -test		
					<i>t</i>	<i>df</i>	Sig.
Control Pretest & Posttest	5.78	14.05	.68	.00	1.97	22	.06

Thus, drawing on the findings listed in the tables above, it can be concluded that no significant difference is found between the performances of differentiated and task-based instruction groups. Next, to probe the possible significant difference between the performances of two groups on the posttest, we need to turn to the results reported in Table 7. As the table reveals, the *p* value obtained (.86) is again higher than .05 and hence the null hypothesis of the research claiming no significant difference between the effect of Differentiated Instruction (DI) and Task-based Instruction (TBI) on learners’ general language achievement is subject to approval:

TABLE 7. Independent Samples *t* Test for the Comparison of Experimental and Control Groups Means on the Posttest

Variable		N	Mean	Std. Deviation	Levene's Test for Equality of Variances		<i>t</i> -test for Equality of Means		
					<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig.</i>
Posttest	Control	23	69.39	18.99	.00	.93	-.17	45	.86
	Experimental	24	70.33	19.70					

Figure 1 helps provide a better illustration of the mean scores of the experimental and control groups on the pretest and posttest. As stated earlier, while there is a slight increase in the mean score of the experimental group (from 69.62 to 70.33) from the pretest to the posttest (which is of course insignificant), the control group mean scores have gone through a steep decline (from 75.17 to 69.39):

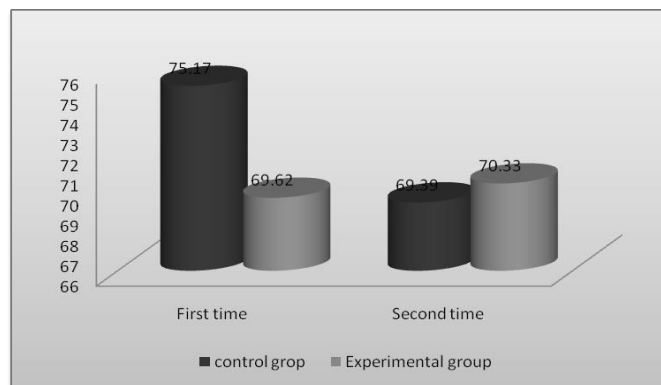


FIGURE 1. Experimental and Control Groups Mean Scores on Pretest and Posttest

Next, to reappraise the possible improvements among each of the three different learning style groups (i.e. visual, auditory and kinesthetic), several other paired and independent samples *t*-tests were run, the results of which appear in what follows:

VISUAL LEARNERS' PERFORMANCE

To see whether DI and the traditional practice of task-based instruction had proven useful in bringing about proficiency gains within the visual learners, two other paired *t*-tests and an independent samples *t*-test were run on the obtained data. A brief glance through the findings briefed in Tables 9, 11 and 12 reveals that neither within group nor cross-group comparisons pointed to a significant difference between the visual learners' performances.

TABLE 8. Experimental Group Visual Learners' Performance on Pretest and Posttest

Variable		<i>N</i>	Mean	Std. Deviation
Experimental	Pretest	10	65.60	19.65
Group Visual	Posttest	10	69.90	24.08

TABLE 9. Paired *t* Test between Visual Learners' Pretest and Posttest Mean Scores in Experimental Group

	Mean	Std. Deviation	Correlation	Sig.	Paired <i>t</i> -test		
					<i>t</i>	<i>df</i>	Sig.
Experimental Visual Pretest & Posttest	-4.30	10.68	.90	.00	-1.27	9	.23

TABLE 10. Control Group Visual Learners' Performance on Pretest and Posttest

Variable		<i>N</i>	Mean	Std. Deviation
Control	Pretest	10	74.90	12.73
Group Visual	Posttest	10	69.40	19.91

TABLE 11. Paired *t* Test between Visual Learners' Pretest and Posttest Mean Scores in Control Group

	Mean	Std. Deviation	Correlation	Sig.	Paired <i>t</i> -test		
					<i>t</i>	<i>df</i>	Sig.
Control Visual Pretest & Posttest	5.50	10.68	.88	.00	1.63	9	.14

Though some minor degree of enhancement had occurred within the experimental group (65.60 to 69.90), the control group mean score had once more gone into a dip (from 74.90 to 69.40). Furthermore, the mean score of the experimental group (69.90) was found to be only minimally higher than that of the control group (69.40) on the posttest (see Table 12):

TABLE 12. Independent Samples *t* Test for the Comparison of Means of Visual Learners' Scores in Experimental and Control Groups on the Posttest

variable	<i>N</i>	Mean	Std. Deviation	Levene's Test for Equality of Variances		<i>t</i> -test for Equality of Means			
				<i>F</i>	Sig.	<i>t</i>	<i>df</i>	Sig.	
Posttest (Visual)	Control	10	69.40	19.91	1.73	.20	-.05	18	.96
	Experimental	10	69.90	24.08					

The information representing the performances of the visual group on both pretest and posttest in both experimental and control groups has been depicted in a more lucid manner in

Figure 2 below:

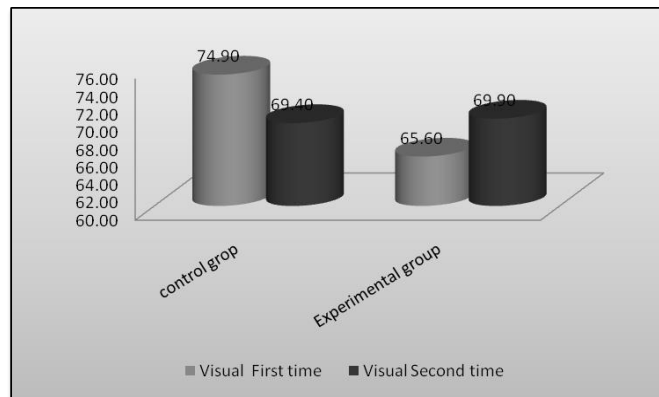


FIGURE 2. The Mean Scores of Visual Learners in Experimental and Control Groups on Pretest and Posttest

AUDITORY LEARNERS' PERFORMANCE

The exploration of the possible proficiency gains in the learners, then, proceeded by running two other paired *t*-tests as well as another independent samples *t*-test on the results obtained by auditory learners on the pretest and the posttest. The initial analysis through paired *t*-test revealed a decrease this time in the mean scores of both groups (experimental: 68.67 to 63.17; control: 73.17 to 71.17) and consequently none of the differences between performances of the groups from the pretest to the posttest were found to be significant (see Tables 13, 14, 15 & 16):

TABLE 13. Experimental Group Auditory Learners' Performance on Pretest and Posttest

Variable	<i>N</i>	Mean	Std. Deviation
Experimental Pretest	6	68.67	16.27
Group Auditory Posttest	6	63.17	10.38

Table 14 Paired *t* Test between Auditory Learners' Pretest and Posttest Mean Scores in Experimental Group

	Mean	Std. Deviation	Correlation	<i>Sig.</i>	Paired <i>t</i> -test		
					<i>t</i>	<i>df</i>	<i>Sig.</i>
Experimental Auditory Pretest & Posttest	5.50	12.50	.64	.17	1.08	5	.33

TABLE 15. Control Group Auditory Learners' Performance on Pretest and Posttest

Variable	<i>N</i>	Mean	Std. Deviation
Control Pretest	6	73.17	12.84
Group Auditory Posttest	6	71.17	13.47

TABLE 16. Paired *t* Test between Auditory Learners' Pretest and Posttest Mean Scores in Control Group

	Mean	Std. Deviation	Correlation	Sig.	Paired <i>t</i> -test		
					<i>t</i>	<i>df</i>	Sig.
Control Auditory Pretest & Posttest	2.00	4.56	.94	.00	1.07	5	.33

Moreover, the results of independent samples *t*-test run for comparing the group mean scores on the posttest (Table 17) did not reveal any significant difference between the performances of the auditory learners in the experimental and control group ($F = 1.08$, $p > .05$).

TABLE 17. Independent Samples *t* Test for the Comparison of Means of Auditory Learners' Scores in Experimental and Control Groups on the Posttest

	Variable	<i>N</i>	Mean	Std. Deviation	Levene's Test for Equality of Variances		<i>t</i> -test for Equality of Means		
					<i>F</i>	Sig.	<i>t</i>	<i>df</i>	Sig.
Posttest (Auditory)	Control	6	71.17	13.47	1.08	.32	1.15	10	.27
	Experimental	6	63.17	10.38					

To get a fuller view of how the auditory learners' mean scores on the pretest and the posttest varied in the two groups, take a brief glance at Figure 3:

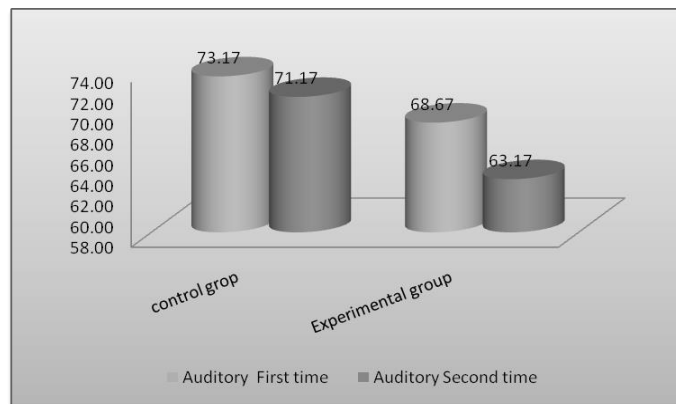


FIGURE 3. The Mean Scores of Auditory Learners in Experimental and Control Groups on Pretest and Posttest

KINESTHETIC LEARNERS' PERFORMANCE

The researchers' probe into the possible proficiency gains of the learners as a result of the applied treatments then went on by analyzing the kinesthetic group scores via paired and independent samples *t*-tests. While the slight improvement within the experimental group (75.37 to 76.25) can be witnessed in Table 18, based on the results of paired *t*-test (Table 19), this enhancement was not found to be significant ($t = -0.22$, $df = 7$, $p > .05$):

TABLE 18. Experimental Group Kinesthetic Learners' Performance on Pretest and Posttest

Variable		N	Mean	Std. Deviation
Experimental Group Kinesthetic	Pretest	8	75.37	16.45
	Posttest	8	76.25	19.18

TABLE 19. Paired *t* Test between Kinesthetic Learners' Pretest and Posttest Mean Scores in Experimental Group

	Mean	Std. Deviation	Correlation	Sig.	Paired <i>t</i> -test		
					<i>t</i>	<i>df</i>	Sig.
Experimental Kinesthetic Pretest & Posttest	-0.87	11.47	.80	.01	-.22	7	.83

Also, as Tables 20 and 21 demonstrate another case of decline in the mean scores was at work with regard to the control group results (this time, for the kinesthetic group and from 77.28 to 67.86), and hence the performance difference between the pretest and the posttest was not found to be significant for these learners, as well:

TABLE 20. Control Group Kinesthetic Learners' Performance on Pretest and Posttest

Variable		N	Mean	Std. Deviation
Control Group Kinesthetic	Pretest	7	77.28	19.17
	Posttest	7	67.86	23.90

TABLE 21. Paired *t* Test between Kinesthetic Learners' Pretest and Posttest Mean Scores in Control Group

	Mean	Std. Deviation	Correlation	Sig.	Paired <i>t</i> -test		
					<i>t</i>	<i>df</i>	Sig.
Control Kinesthetic Pretest & Posttest	9.43	22.48	.47	.28	1.11	6	.31

Finally, the last independent samples *t*-test run for the comparison of the posttest mean scores for the kinesthetic learners (Table 22) also pointed to an insignificant result ($t = -.75$, $df = 13$, $p > .05$):

TABLE 22. Independent Samples *t* Test for the Comparison of Means of Kinesthetic Learners' Scores in Experimental and Control Groups on the Posttest

	Variable	N	Mean	Std. Deviation	Levene's Test for Equality of Variances		<i>t</i> -test for Equality of Means		
					<i>F</i>	Sig.	<i>t</i>	<i>df</i>	Sig.
Posttest (Kinesthetic)	Control	7	67.86	23.89	.13	.72	-.75	13	.46
	Experimental	8	76.25	19.18					

Figure 4 might help provide a better illumination of the pretest and posttest mean scores of the kinesthetic learners within the two study groups:

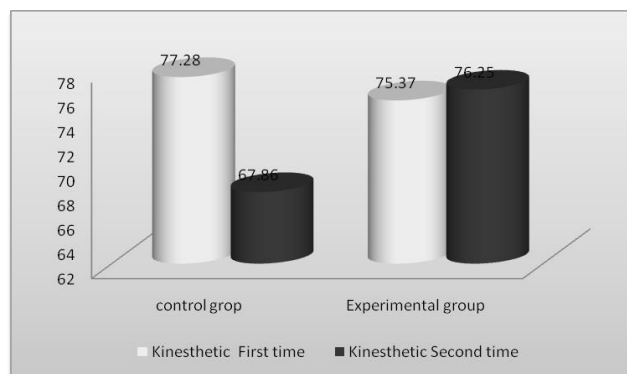


FIGURE 4. The Mean Scores of Kinesthetic Learners in Experimental and Control Groups on Pretest and Posttest

DISCUSSION AND CONCLUSION

The current study strived to probe the potential effect of differentiated task-based instruction on the learners' proficiency gains. The findings obtained revealed that no significant difference, attributable to the application of treatment, existed between the performance of the experimental and control groups on the posttest. Furthermore, no such significant difference was found to be at work between the two performances of the same group from the pretest to the posttest. Thus, the findings of the current research were found to run contrary to the results of previous body of research, including Tieso's (2005) study which came up with achievement-related gains among learners successive to the utilization of curricular differentiation, Tulbure's (2011) work in which DI-based teaching through heeding learning styles differences was reported to bring about enhanced academic achievement among the preservice teacher community, and Alavinia and Farhady's (2012) probe which culminated in claiming the significant effect of teaching through DI on the learners' vocabulary achievement.

Lack of consensus between the findings of the current study and those of previous body of relevant research can be expounded in terms of several perspectives. The initial justification for the purported mismatch between these findings might be set forth drawing on the different contexts at which the studies were performed. For instance, while Alavinia and Farhady's (2012) research was carried out with language school learners, the present study was conducted in academic arena. Also, the characteristics of the participants involved in each of the cited studies might have brought about differences in findings. As a case in point, while Tulbure's (2011) subjects were preservice teachers, the participants in the current study were academic EFL freshmen, and while Alavinia and Farhady's (2012) participants were all females, the current study subjects were from both genders.

Other demarcations are liable to be drawn between this study and its counterparts. For instance, while both this study and the one performed by Alavinia and Farhady (2012) implemented differentiation through attention toward learning styles, the latter also drew on the learners' multiple intelligences as a basis for in-class groupings. Moreover, while most previous studies were engaged with finding the effect of differentiation on learners' achievement, the present scrutiny strived to tap the possible effects of DI on the learners' proficiency gains. Apart from the impact of such methodological differences, which are

thought to be at work in any investigation, it is postulated that other factors such as the coincidence of the posttest with the learners' final exam schedule and the learners' partial reluctance to sit the test a second time might have somehow tampered with the gained upshots.

After all, as Arnold and Brown (1999, p. 18) beautifully put it, "learning styles research is especially useful in small group situations in which there is more opportunity to give individual attention to each learner, but in any case it can sensitize educational facilitators to the importance of learner differences." Intended, in the first place, as an attempt targeted toward further elucidation of the blurred field of DI, the current study sought to pinpoint the potential impact of differentiated task-based instruction—through tailoring input presentation modes to learning style differences of learners—on the possible proficiency gains among academic EFL learners. Though the researchers' postulations regarding the possible effect of the applied treatment on the learners' proficiency enhancement did not come true, the current study is thought to help push the frontiers of research on DI toward reaching a brighter horizon for aspiring future investigators.

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