

Comparing the Impact of Divergent and Convergent Tasks on Extrovert and Introvert EFL Learners' Writing Performance

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Abstract—The present study attempted to study the comparative effect of convergent and divergent tasks on introvert and extrovert English as a Foreign Language (EFL) learners' writing ability. 120 homogeneous EFL learners between 20 to 28 years old ($M_{age} = 24$), including 60 extroverts and 60 introverts, were selected as the participants of this study; they were assigned into 4 groups. In order to categorize the participants as introverts and extroverts, the Persian translation of Eysenck and Eysenck's (1985) Personality Inventory was employed. A number of PET tests by Quintana (2004) were piloted and employed for selecting homogenous individuals and testing participants' entry and exit writing performances. Running a two-way analysis of variance (ANOVA) revealed that there were not significant differences between the extrovert and introvert participants' means on the posttest of writing ($F(1, 116) = 3.67, p = .058, \eta^2 = .031$). It was also concluded that the divergent group had a significant but moderately higher mean on the posttest of writing than the convergent group ($F(1, 116) = 16.32, p = .000, \eta^2 = .12$). The significance of divergent tasks over convergent tasks among introvert and extrovert participants was also confirmed through running 3 independent samples *t*-tests.

Index Terms—convergent tasks, divergent tasks, extrovert learners, introvert learners, personality types, writing

I. INTRODUCTION

Writing is unanimously acknowledged as the means using which individuals communicate in time and space, transmitting and sharing their culture through generations. As stated by Chastain (1988), "Writing is a basic communication skill and a unique asset in the process of learning a second language" (p. 244). Writing, a major language skill, was once assumed to be the concern of educated individuals; however, it is now becoming a required communicative tool for everyone (Cushing Weigle, 2002), and compared to the past, the role of writing has become more remarkable by the vast usage of electronic and wireless communications in everyday life (Gulek & Demirtas, 2005).

There is little doubt that writing can be very challenging for English as a Foreign Language (EFL) learners (Kenworthy, 2004). Researchers have reported that for foreign language learners it can be demanding and challenging to write in the target language; they usually produce less fluent sentences and encounter difficulties in the revisions process (Hyland, 2003; McCoy, 2003). However, this difficulty is not just rooted in their linguistic knowledge and gaining mastery over different dimensions of performance (Chih, 2008).

There is now a growing awareness among EFL educators regarding the importance of individual differences, such as creativity, cognitive abilities, metacognitive abilities, personality types, and self-regulation in L2 learning (Dörnyei, 2005; Fahim & Zaker, 2014; Nosratinia & Zaker, 2013, 2014, 2015). As stated by Ellis (1994), "Individual differences produce variation in the rate of learning and the ultimate level of second language attainment" (p. 523). As a result, it seems that the language teaching profession has begun to change its focus towards learners and their peculiarities (Kumaravadivelu, 2008; Vygotsky, 1987; Zaker, 2015).

According to Ellis (1994) and Skehan (1989), personality is an important aspect of individuals' differences. Personality, as a complex and multifaceted phenomenon, has been defined as the stable individual differences in thoughts, feelings, as well as actions (Church & Lonner, 1998). As a result, attempts have been made in order to study different dimensions of personality factors (Dörnyei, 2005; Ellis, 1994; Nosratinia, Shakoobi Divani, & Zaker, 2013).

One of the major outcomes of these studies has been the introvert and extrovert categorization. According to Eysenck and Eysenck (1985), extroversion/introversion is a continuum which shows one's degree of outgoingness and sociability. Busch (1982) and Strong (1983) conclude that extrovert learners are sociable, lively, as well as active, but introvert learners are quiet.

Ackerman and Heggstad (1997) argued that personality dispositions are among the predictors of success in a particular task. Influenced by this premise, there have been many attempts to make a link between these two personality types (extroversion and introversion) and L2 skills. For example, Cumming (2006) believes that learners' different personality types play a significant role in their writing. On the other hand, Nejad, Bijami, and Ahmadi (2012) found that there is no significant relationship between extroversion and introversion and writing ability. This finding implies that there can be many other factors, affecting the process of L2 development. These variables can include both individual and instructional factors (Nosratinia, Zaker, & Saveiy, 2015; Richards & Rodgers, 2001).

Ellis (2003) argues that employing tasks, as an instructional technique, can play a significant role in L2 development among EFL learners. According to Richards and Rodgers (2001), tasks started to be used for academic purposes in the early 1970s, following the emphasis on the role of tasks as tools for teaching and training. In the field of L2 teaching, a task refers to "any proposal contained within the materials for action to be undertaken by the learners, which has the direct aim of bringing about the learning of the foreign language" (Breen, 1987, p. 128). In order to create a meaningful context, tasks generally present a gap in terms of information, reasoning, or opinion. Moreover, tasks in a language learning context can create a reason for learners to communicate with others through negotiating the meaning (Ellis, 2003; Richards & Rodgers, 2001).

Tasks can be categorized based on different criteria. According to Ellis (2003), one way in which tasks can be classified is to divide them into divergent and convergent. Divergent tasks are believed to engage cognitive processes (Duff, 1986). For performing these tasks, different cognitive strategies are required. In divergent tasks learners have independent goals to accomplish; by using such tasks teachers could help the students attend to both meaning and form (Duff, 1986). On the other hand, convergent tasks emphasize speed, accuracy, and logic; they focus on recognizing the familiar, reapplying techniques, and accumulating stored information (Cropley, 2006).

There is a great deal of controversy regarding the effect of convergent versus divergent tasks on L2 learning. For instance, while Duff (1986) believes that convergent tasks result in more success, Getzels and Jackson (1962) state that there is a close relationship between divergence (and divergent tasks) and higher achievement. Moreover, McCrae and Costa (1997) imply that there is a considerable association between personality traits and L2 productive skills, including writing. Influenced by the abovementioned controversy over the impact of divergent and convergent tasks and due to the fact that very few studies have investigated the role of tasks in L2 writing performance (Ishikawa, 2006; Kuiken & Vedder, 2007, 2008), the present study attempted to compare the impact of employing these two tasks, divergent or convergent, on writing performance of EFL learners with different personality types, being extrovert or introvert. In order to accomplish this objective, the following research questions were formulated:

Q₁: Do divergent tasks have any significant effect on extrovert and introvert EFL learners' writing performance?

Q₂: Do convergent tasks have any significant effect on extrovert and introvert EFL learners' writing performance?

Q₃: Is there any significant difference between the effect of divergent and convergent tasks on extrovert EFL learners' writing performance?

Q₄: Is there any significant difference between the effect of divergent and convergent tasks on introvert EFL learners' writing performance?

Q₅: Is there any significant difference between the effect of divergent and convergent tasks on EFL learners' writing performance?

II. METHOD

Participants

Though access to both school and university students was convenient, this research was carried out on the latter group based on the assumption that university students take the writing tasks more seriously as writing is one of their essential subjects to study. Accordingly, the participants of the present study were 120 Iranian EFL learners studying English Literature and English Translation at Payam-e-Nour University in different cities of Lorestan province (Khoramabad, Borojerd, Koozdasht, Dorood, Azna, and Aleshtar), Iran. They were all juniors, between 20 to 28 years old ($M_{age} = 24$). These participants were non-randomly selected and homogenized through employing a piloted PET test and the Eysenck's Personality Inventory (EPI; 1985) from 250 EFL learners. These EFL learners had completed the Advanced Writing Course and had started to study the Essay Writing Course. So, they were assumed to be somehow familiar with the principles of composition writing, including writing introduction, body, and conclusion paragraphs.

The 120 selected participants were divided into two groups: one extrovert (60 participants) and one introvert (60 participants). Each of these groups was divided into two groups with 30 participants (totally 4 groups). One extrovert and one introvert groups received divergent tasks and the other extrovert and introvert groups received convergent tasks. In addition to the abovementioned EFL learners, two English teachers (one of the researchers and one of her colleagues holding an MA degree in TEFL) participated in this study as the raters of the writing papers and the writing posttest based on the specific rating scales. In order to estimate the inter-rater reliability between the two raters, the scores provided by the two raters on the piloting of writing parts 2 and 3 as well as the scores on the piloting of the writing posttests, parts 2 and 3, were employed. Running Pearson correlations between these score sets indicated that there were significant agreements between the scores, given by the two raters (r values = .833, .802, .877, and .823, $p < .01$). As a

result, it was appropriate to employ the mean of the two scores provided by the two raters as the final score for each participant's writing performance.

Instrumentation

Preliminary English Test (PET)

The English language proficiency test employed in this study for homogenizing the participants, was a piloted sample of the Preliminary English Test (PET) adopted from *PET Practice Tests* by Quintana (2004). The PET test is an exam calibrated for those who can use every day written and spoken English at an Intermediate Level. This test includes 125 items, taking 125 minutes to take the whole test. In this study, however, the speaking section of the PET test was not employed due to the limitations imposed by the university officials.

Writing Scale of PET

The rating scale used to rate the writing section of the PET was the one provided by Cambridge under the name of General Mark Schemes for Writing. The rating process was carried out on the basis of the criteria presented in the rating scale, including the rating scale of 0-5.

Writing Pretest

In order to make sure that the participants in the two groups were homogeneous in terms of writing ability, the participants' scores for the writing section of the PET test were analyzed in isolation and used as the writing pretest. This section consisted of three parts followed by 7 questions. The test takers were asked to complete the tasks by using their lexical and syntactic abilities through writing letters, stories, and short messages.

Eysenck's Personality Inventory (EPI)

The Eysenck's Personality Inventory (EPI) is a questionnaire for assessing the personality traits of an individual. It was devised by Hans Jürgen Eysenck and his wife Sybil B. G. Eysenck (1985). This questionnaire initially conceptualized personality as two biologically-based categories of temperament which includes: "Extroversion/Introversion" and "Neuroticism/Stability". This questionnaire consists of 57 Yes/No items and is scored based on the EPI rating scale. Test takers receive three types of scores: the E score indicating how much extrovert/introvert a person is, the N score measuring the neuroticism/stability, and the Lie score estimating how socially desirable a person has wanted to prove to be. The E score is computed out of 24 since it consists of 24 items, the N score is out of 24, and the Lie score is out of 9. The Yes/No answers should be given based on the usual way of acting or thinking of an individual. The time allocated to answer the questionnaire was about 60 minutes.

The original version of this instrument is in English, but in order to avoid any confusion and misunderstanding, the translated Persian version of the questionnaire was employed in order to make sure of the participants' full comprehension. The answer key and the standard rating scales were also provided in the battery. The reliability indices of this questionnaire are reported to be robust, and confirmatory factor analyses has demonstrated a good factor structure, supporting the validity of the instrument (D'Apollonia, Galley, & Simpson, 2001).

The Practical Writer with Readings

All of the participants in this study, received instruction based on *The Practical Writer with Readings* (7th edition), by Bailey and Powell (2007), Published by Heinle and Heinle Publishers. This book provides a manageable and accessible step-by-step approach to writing, from the one-paragraph essay to the five-paragraph essay, and beyond it. This book is stated to present everything that students need to know in order to master college-level writing.

Divergent/Convergent Tasks

During the treatment, the teacher (one of the researchers) used different convergent and divergent tasks to improve writing skills of the groups. The tasks were based on Duff (1986), Smith (2003), and Park (2007).

Compositions

The participants were asked to write six compositions during the treatment sessions. Both divergent and convergent tasks had the same theme. The participants in all four experimental groups had to write a composition based on the same theme of these tasks. The compositions had to have three parts -introduction, body, and conclusion paragraphs. The participants had 40 minutes to write about the following topics:

- Advantages and disadvantages of studying abroad
- Advantages and disadvantages of being single
- Advantages and disadvantages of having strict rules in schools
- Advantages and disadvantages of using Internet by children
- Explain the characteristics of a good English teacher
- Explain the characteristics of a good friend

Jacobs, Zinkgraf, Wormuth, Hartfiel, and Hughey (1981) ESL Composition Profile

This instrument is an analytic scoring scale which consists of five subcategories of content, organization, vocabulary, language use, and mechanics. Each subcategory is in detail and the scoring system is clearly defined. The total score is calculated from 100, and the proportions of scoring are predetermined in the scale according to participants' performance in each part.

Writing Posttest

The posttest which was administered at the end of the study was the writing section of another version of the PET test. It was piloted in advance. This test was given to the participants for comparing the participants' writing ability in terms of the effect of both divergent tasks and convergent tasks.

Procedure

In the first step, a permission was gained from the principals and professors of Payame-Noor University who showed their willingness to collaborate in this study. Before beginning the study, the PET test and writing posttest were administered to 30 students who possessed almost the same characteristics of the main participants. The speaking section of the PET test was not administered due to not having the permission from university officials. The data collected from the pilot administration was used for calculating the three characteristics of individual items (Item Facility, Item Discrimination, and Choice Distribution) in order to exclude the malfunctioning items. Moreover, the Cronbach alpha formula was employed in order to calculate the reliability of the test scores.

The next step was to select the participants of the study. For this purpose, the piloted PET test was administered to 250 EFL students. Out of the 250 participants, 165 whose scores fell between one standard deviation above and below the mean were selected. The next step was to identify extrovert and introvert participants from among the 165 homogenous participants. To do so, the participants were asked to fill in the Persian translation of EPI (Eysenck & Eysenck, 1985). They were informed that the information they provide would be kept confidential and would be used only for research purposes. From among the 165 participants who attended the EPI, 120 were chosen based on the scores which were calculated by the test key. These 120 students included 60 individuals on the extrovert side and 60 ones on the introvert side.

The introvert participants were assigned into two experimental groups -one receiving divergent tasks and the other one receiving convergent tasks as their treatment. The same was done for extrovert participants. So, each group consisted of 30 EFL learners. To ensure that the all four groups were homogeneous in terms of their writing ability, the scores of the writing section of the PET test were analyzed in isolation and were used as the writing pretest scores of the participants.

Both groups received the same amount of instruction. The course consisted of 16 sessions of 90 minutes spanning over a period of four months. All students in the four experimental groups were instructed by the same teacher (one of the researchers) using the same material, *The Practical Writer with Readings*. In each session, the divergent and convergent tasks had the same theme. The participants in all four experimental groups had to write a composition based on the same theme of these tasks. After collecting the compositions, they were rated according to the Jacobs et al.'s ESL Composition Profile by the raters. The treatment procedures for both divergent and convergent tasks were adopted from Duff (1986) which is explained below:

The Divergent Task Group

In the divergent task group, tasks were designed in such a way that students were directed to create alternative ideas and implications. While performing the divergent tasks, the participants were asked to hold opposite ideas, so to raise controversial discussions. They were also asked to express as many opinions as possible, negotiate with others, and defend their positions (Duff, 1986). In order to administer the divergent tasks, participants were given some pictures. First, the teacher herself introduced the pictures to the group and talked about her own preferences in choosing, for example, urban or rural life and the advantages and disadvantages of living in such a context. Then, students were asked to describe and talk about the pictures. The students were encouraged to come up with as many possible answers as they could think of.

The Convergent Task Group

In the convergent task group, tasks encouraged participants to collaborate in order to reach a single best answer. They were also given some pictures, and the teacher herself introduced the pictures to the group. The participants had to describe them and come up with one single agreement about the topic of those pictures. In other words, participants were required to reach an agreement collectively. The participants in this group were encouraged to describe pictures by using sentences such as "the picture says that", "there is a picture here that shows ..." whilst those in the divergent group were asked to use initiators such as "I feel", "I personally believe".

Evaluating the Exit Behaviors

After administering the tasks, participants in the four experimental groups started writing a composition based on the theme of the divergent/convergent tasks. Their compositions were collected and scored by the raters, using Jacobs et al.'s ESL Composition Profile. At the end of the treatment period, in order to compare the effect of divergent/convergent tasks on the writing ability of the extrovert/introvert participants, the posttest was administered. This test was a piloted writing section of another version of the PET test. The performances of participants in this test were analyzed through statistical analyses, reported next.

III. RESULTS

This quasi-experimental study, attempted to compare the impact of convergent and divergent tasks on EFL learners' writing ability, while regarding extrovert and introvert personality types as the two moderator variables. To do so, a series of pertinent calculations and statistical routines were conducted. First, the PET test was piloted to make sure that it could be used confidently for this screening. All items went through an item analysis procedure, including item

discrimination, item facility, and choice distribution. The results showed that all the items enjoyed acceptable facility and discrimination indices. Accordingly, no item was discarded from the test. Moreover, using the Cronbach alpha formula reported a reliability index of .80.

After the administration of the PET test to the 250 initial participants, the descriptive statistics reported the mean of 55.83 and the standard deviation of 9.47. The reliability index of the PET test in this phase was .81. The PET writing scores were analyzed to make sure that the participants of the four groups bore no significant difference in terms of their writing ability before treatment. A two-way analysis of variance (ANOVA) was run to compare the divergent/convergent and introvert/extrovert EFL learners' means on the pretest of writing. Based on the results displayed in Table 1 ($F(1, 116) = .053$, $p = .819$, $\eta^2 = .000$ representing a weak effect size) it was concluded that there were not significant differences between the extrovert and introvert subjects' means on the pretest of writing. It was also concluded that there were not significant differences between the divergent and convergent groups' means on the pretest of writing ($F(1, 116) = .21$, $p = .646$, $\eta^2 = .002$ representing a weak effect size). Moreover, it was concluded that there was not any significant interaction between the two tasks (divergent and convergent) and the two personality traits (introvert and extrovert) ($F(1, 116) = 0$, $p = 1$, $\eta^2 = .000$ representing a weak effect size).

TABLE 1:
ESTS OF BETWEEN-SUBJECTS EFFECTS; PRETEST OF WRITING BY TYPES OF TASKS AND PERSONALITY TRAITS

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Introvert/Extrovert	.075	1	.075	.053	.819	.000
Divergent/Convergent	.300	1	.300	.211	.646	.002
Int/Ext * Div/Con	.000	1	.000	.000	1.000	.000
Error	164.550	116	1.419			
Total	28902.000	120				

Testing Assumptions

The present data were analyzed through running two-way ANOVA and independent samples *t*-tests which have four main assumptions: interval data, independence of subjects, normality, and homogeneity of variances. Considering the exercised procedure and employed instruments, the first two assumptions were met. The normality assumption -as tested through the ratios of skewness and kurtosis- was also met. The assumption of homogeneity of variances will be discussed when reporting the results of the two-way ANOVA although as noted by Pallant (2010) and Field (2013) when sample sizes are equal -as is the case in this study- there is no need to worry about the violation of this assumption.

The First and Second Research Questions

The first and second research questions were analyzed through a two-way analysis of variance (ANOVA). The reason that ANCOVA was not run in this study is that the ANCOVA has two more assumptions besides of normality and homogeneity of variances, i.e. homogeneity of regression slope and linear relationship between the dependent variable and covariate which were not met in this study. As a result, a two-way ANOVA was run to compare the divergent/convergent and introvert/extrovert EFL learners' means on the posttest of writing. Before discussing the results, it should be mentioned that the assumption of homogeneity of variances was met (Levene's $F(3, 116) = .057$, $p = .982$). Based on the results displayed in Table 2, it was concluded that there were not significant differences between the extrovert and introvert participants' means on the posttest of writing ($F(1, 116) = 3.67$, $p = .058$, $\eta^2 = .031$ representing a weak effect size).

TABLE 2:
TESTS OF BETWEEN-SUBJECTS EFFECTS; POSTTEST OF WRITING BY TYPES OF TASKS AND PERSONALITY TRAITS

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Int/Ext	4.602	1	4.602	3.678	.058	.031
Div/Con	20.419	1	20.419	16.321	.000	.123
Int/Ext * Div/Con	.252	1	.252	.201	.654	.002
Error	145.125	116	1.251			
Total	32232.750	120				

Based on the results of the descriptive statistics, it was observed that the divergent group ($M = 16.75$, $SE = .14$, 95% CI [16.47, 17.04]) had a higher mean than the convergent group ($M = 15.93$, $SE = .14$, 95% CI [15.64, 16.21]) on the posttest of writing. As reported in Table 2, ($F(1, 116) = 16.32$, $p = .000$, $\eta^2 = .12$ representing a moderate to large effect size) it was concluded that divergent group had a significant but moderately higher mean on the posttest of writing than the convergent group (the divergent group had higher means than the convergent group irrespective of the personality traits). Finally, Table 2 indicates that there was not any significant interaction between types of tasks and personality traits ($F(1, 116) = .20$, $p = .654$, $\eta^2 = .002$ representing a weak effect size). Table 3 reports the result of pairwise comparisons.

TABLE 3:
PAIRWISE COMPARISONS; POSTTEST OF WRITING BY TYPES OF TASKS AND PERSONALITY TRAITS

Types of Tasks	(I) P-Trait	(J) P-Trait	Mean Difference (I-J)	Std. Error	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
Divergent	Extrovert	Introvert	.483	.289	-.097	1.055
Convergent	Extrovert	Introvert	.300	.289	-.272	.872

The results of this pairwise comparison indicated that:

a. There was not any significant difference between divergent extrovert participants ($M = 17$) and divergent introvert participants ($M = 16.51$) groups' means on the posttest of writing ($MD = .48$, $p = .097$, 95 % CI $[-.089, 1.055]$). The negative lower bound 95 percent confidence interval (CI) of .089 indicated that the mean difference between the divergent extrovert and introvert groups might be zero. Thus, the above mentioned conclusion -as no significant difference between the two groups' means- was correctly made.

b. There was not any significant difference between convergent extrovert participants ($M = 16.08$) and convergent introvert participants ($M = 15.78$) groups' means on the posttest of writing ($MD = .30$, $p = .301$, 95 % CI $[-.272, .872]$). The negative lower bound 95 percent CI of -.272 indicated that the mean difference between the convergent extrovert and introvert groups might be zero. Thus, the above mentioned conclusion as no significant difference between the two groups' means- was correct.

The Third Research Question

This research question attempted to probe any significant difference between the effect of divergent and convergent tasks on extrovert EFL learners' writing. Descriptive statistics reported that the divergent group ($M = 17$, $SD = 1.04$) had a slightly higher mean on the posttest of writing than the convergent group ($M = 16.08$, $SD = 1.16$). Table 4 reports the results of the independent samples t -test ($t(58) = 3.21$, $p = .002$, $r = .38$ representing a moderate effect size), indicating that there was a significant but moderate difference between convergent and divergent tasks on extrovert subjects' performance on the posttest of writing. This finding should be interpreted cautiously due to the moderate effect size value of .38. Figure 1 also shows these results.

TABLE 4:
INDEPENDENT SAMPLES TEST, POSTTEST OF WRITING BY TYPES OF TASKS (EXTROVERT SUBJECTS)

	Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.142	.707	3.219	58	.002	.917	.285	.347	1.487
Equal variances not assumed			3.219	57.345	.002	.917	.285	.347	1.487

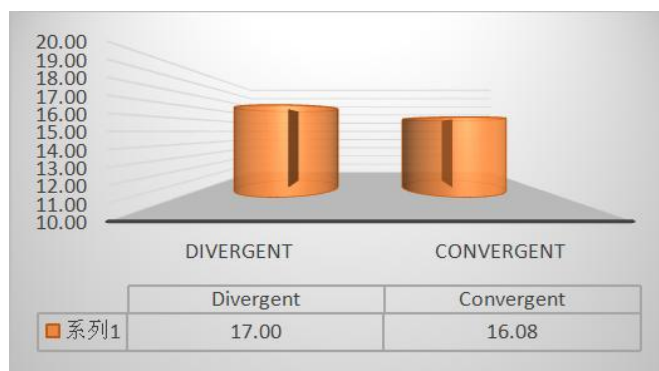


Figure 1: Posttest of writing by types of tasks (extrovert participants)

The Fourth Research Question

This research question attempted to probe any significant difference between the effect of divergent and convergent tasks on introvert EFL learners' writing. Based on the results of the descriptive statistics, it could be claimed that the divergent group ($M = 16.52$, $SD = 1.20$) had a slightly higher mean on the posttest of writing than the convergent group ($M = 15.78$, $SD = 1.06$). Table 5 shows the results of the independent samples t -test ($t(58) = 2.50$, $p = .015$, $r = .31$ representing a moderate effect size), indicating that there was a significant but moderate difference between convergent and divergent tasks on introvert participants' performance on the posttest of writing. However, this finding should be interpreted cautiously due to the moderate effect size value of .31. Figure 2 also shows these results.

TABLE 5:
INDEPENDENT SAMPLES TEST, POSTTEST OF WRITING BY TYPES OF TASKS (INTROVERT SUBJECTS)

	Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
								Lower Upper
Equal variances assumed	.019	.891	2.505	58	.015	.733	.293	.147 1.319
Equal variances not assumed			2.505	57.186	.015	.733	.293	.147 1.320

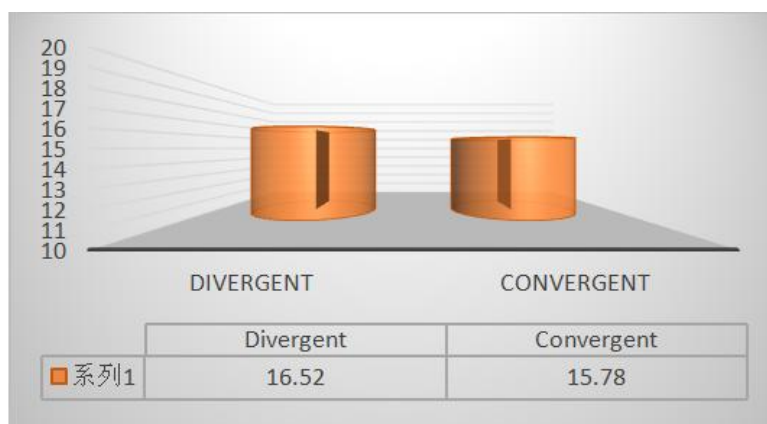


Figure 2: Posttest of writing by types of tasks (introvert participants)

The Fifth Research Question

This research question attempted to probe any significant difference between the effect of divergent and convergent tasks on EFL learners' writing performance. Descriptive statistics reported that the divergent group ($M = 16.76$, $SD = 1.14$) had a slightly higher mean on the posttest of writing than the convergent group ($M = 15.93$, $SD = 1.11$). Table 6 reports the results of the independent samples t -test ($t(118) = 4$, $p = .015$, $r = .34$ representing a moderate effect size), indicating that there was a significant but moderate difference between convergent and divergent tasks on participants' performance on the posttest of writing. However, the results should be interpreted cautiously due to the moderate effect size value of .34. Figure 3 also shows these results.

TABLE 6:
INDEPENDENT SAMPLES TEST, POSTTEST OF WRITING BY TYPES OF TASKS

	Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
								Lower Upper
Equal variances assumed	.051	.822	4.008	118	.000	.825	.206	.417 1.233
Equal variances not assumed			4.008	117.935	.000	.825	.206	.417 1.233

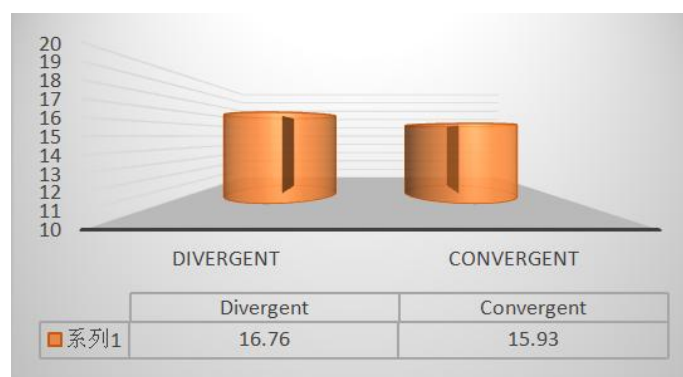


Figure 3: Posttest of writing by types of tasks

IV. DISCUSSION AND CONCLUSION

Developing the writing skill, as a significant means for communication, is believed to be an important, and simultaneously, challenging task for many EFL learners (Chastain, 1988; Cushing Weigle, 2002; Kenworthy, 2004; Tan, 2007). Accordingly, many attempts have been, and are being, made in order to gain a deeper understanding of writing

and factors affecting its development. These attempts are influenced by the significance of individual differences (Dörnyei, 2005; Ellis, 1994; Fahim & Zaker, 2014; Vygotsky, 1987) and, on the other hand, instructional techniques and tasks in facilitating and promoting language learning (Ellis, 2003).

Influenced by the abovementioned points, the present study attempted to study the interaction among EFL learners' personality types (introversion and extroversion), the type of instructional tasks (divergent and convergent), and writing ability. These concerns were considered through formulating 5 research questions in order to investigate the comparative effect of convergent and divergent tasks on introvert and extrovert EFL learners' writing ability (see introduction).

120 proficiency-wise homogeneous EFL learners, including 60 extroverts and 60 introverts, participated in this study. They were assigned into 4 groups: 2 groups (30 introvert learners and 30 extrovert learners) were treated with divergent tasks, whereas 2 groups (30 introvert learners and 30 extrovert learners) were treated with convergent tasks. In the divergent task groups, tasks were designed in such a way that students were directed to create alternative ideas and implications, whereas in the convergent task groups, tasks encouraged participants to collaborate in order to reach a single best answer. The obtained results reported that:

a. There were not significant differences between the extrovert and introvert participants' means on the posttest of writing ($F(1, 116) = 3.67, p = .058, \eta^2 = .031$ representing a weak effect size).

b. The divergent group had a significant but moderately higher mean on the posttest of writing than the convergent group ($F(1, 116) = 16.32, p = .000, \eta^2 = .12$ representing a moderate to large effect size).

c. There was not any significant interaction between types of tasks and personality traits ($F(1, 116) = .20, p = .654, \eta^2 = .002$ representing a weak effect size).

d. There was not any significant difference between divergent extrovert participants ($M = 17$) and divergent introvert participants ($M = 16.51$) group means on the posttest of writing ($MD = .48, p = .097, 95\% \text{ CI } [-.089, 1.055]$).

e. There was not any significant difference between convergent extrovert participants ($M = 16.08$) and convergent introvert participants ($M = 15.78$) groups' means on the posttest of writing ($MD = .30, p = .301, 95\% \text{ CI } [-.272, .872]$).

f. There was a significant but moderate difference between convergent and divergent tasks on extrovert subjects' performance on the posttest of writing ($t(58) = 3.21, p = .002, r = .38$ representing a moderate effect size). The divergent group ($M = 17, SD = 1.04$) had a slightly higher mean compared to the convergent group ($M = 16.08, SD = 1.16$).

g. There was a significant but moderate difference between the impact of convergent and divergent tasks on introvert participants' performance on the posttest of writing ($t(58) = 2.50, p = .015, r = .31$ representing a moderate effect size). The divergent group ($M = 16.52, SD = 1.20$) had a slightly higher mean compared to the convergent group ($M = 15.78, SD = 1.06$).

h. There was a significant but moderate difference between the impact of convergent and divergent tasks on participants' performance on the posttest of writing ($t(118) = 4, p = .015, r = .34$ representing a moderate effect size). The divergent group ($M = 16.76, SD = 1.14$) had a slightly higher mean compared to the convergent group ($M = 15.93, SD = 1.11$).

These results, firstly, indicate that there are no significant differences between the writing performances of extrovert and introvert learners who receive the same treatment; this implies that the introversion and extroversion of EFL learners' personality does not play any significant role in determining their writing ability. This finding seems to be in contrast with the common belief that personality type (e.g. introversion or extroversion) plays a determining role in language learning and task completion (Ahmadian & Yadegari, 2011; Dörnyei, 2005). However, this finding seems to support the findings of Hemmat Nezhad, Jahandar, and Khodabandehlou's study (2014) where extraversion vs. introversion did not show any different impact on EFL learners' writing ability.

Secondly, and more importantly, the obtained results indicated that divergent tasks had a significant and positive impact on both introvert and extrovert learners' writing development. Although, this finding seems to differ from Marashi and Tahan-Shizari's study (2014) where convergent tasks are reportedly more helpful in writing development, it seems to provide support for Getzels and Jackson's (1962) statement on the close relationship between divergent tasks and higher achievement. One justification for observing such an outcome can be the similarity between the nature of writing and divergent tasks. Writing requires development of different ideas and concepts during the process of writing (Ellis, 2003), and divergent tasks expect learners to follow different independent goals.

One of the major implications of the findings of this study is the significance of including divergent tasks in different parts of the instruction process. As reported above, divergent tasks have a positive impact on both introvert and extrovert learners' language production. Such a similar, positive impact seems to provide EFL teachers with a higher level of confidence in implementing divergent tasks for different learners with different individual/internal factors. Similarly, both introvert and extrovert EFL learners are suggested to engage in completing divergent tasks. Moreover, syllabus designers and material developers are recommended to pay more attention to employing divergent tasks which, based on the findings of the present study, have a significant impact on EFL learners' language production through writing.

One important point to make is that the findings of this study by no means question the importance of considering learners' individual factors in language teaching (Zaker, 2015). Therefore, when discussing the findings of this study it

should be stated that divergent tasks had a positive impact on both introvert and extrovert learners' writing based on the nature of these tasks rather than implying that introvert and extrovert learners are basically equal. As a result, EFL teachers should attempt to analyze the learners' needs and differences, create comfortable atmosphere for learning, and employ appropriate and context-pertinent tasks; moreover, they should not neglect the importance of establishing a positive rapport with the learners (Ehrman, 1993).

In this study, gender distribution of the groups was out of the control of the researchers. In order to remove the impact of gender on the results, other studies may replicate this study with equal number of males and females. In addition, as learners' individual factors can be studied from different perspectives and dimensions (Nosratinia & Zaker, 2014), it is suggested to inspect and compare the interaction of task types (divergent and convergent) and other personality and individual factors in other studies. Moreover, this research has dealt with EFL learners' general writing ability; therefore, other studies can study the impact of different tasks (i.e. divergent and convergent) on different aspect of EFL learners' writing ability (e.g. complexity, accuracy, and fluency). Finally, other studies may aspire to explore the impact of divergent and convergent tasks on other language skills (i.e. speaking, listening, and reading).

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