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Learning-oriented assessment and its effects on the perceptions and argumentative writing performance of impulsive vs. reflective learners

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Abstract

Learning-oriented assessment (LOA) is becoming increasingly popular in language education. The rationale for this popularity is the belief that LOA not only provides teachers with the necessary information for regular and ongoing evaluation but also it effectively assists learners in their learning process. This study attempted to examine the effectiveness of LOA in the argumentative writing skills of reflective and impulsive EFL learners. To this end, the study explored the learners' perceptions of LOA through a survey questionnaire. To collect data, 116 English learners at an intermediate level of proficiency participated in the study and responded to Barrat's BIS 11 learning style questionnaire (Journal of Clinical Psychology 51:768–774, 1995). Based on their responses, the participants were divided into two groups of impulsive ($N = 59$) and reflective ($N = 57$) learners, with four missing participants. Each group was further divided into two sub-groups, in one of which pseudo-integrative argumentative writing was taught and in the other the learners were involved in learning refutation argumentative writing. Other than the type of writing, both groups were provided with regular feedback on their diagnosed writing problems and performance within 16 sessions. They were also involved in self- and peer assessment. Analysis of the results revealed that LOA significantly improved the students' writing performance. Moreover, while the type of the writing task did not have any significant effect, the reflective learners outperformed the impulsive ones in their writing performance at the end of the treatment. The results also revealed that the learners generally had positive perceptions about the use of the LOA approach. In particular, they acknowledged the contributions of the teacher's feedback, peer assessment, and classroom discussion to their writing development throughout the course. However, the reflective learners showed more appreciation of the tasks when it came to developing competence and demanding critical thinking. Hence, the conclusion is that LOA can be effectively used as a learning approach to promote Iranian EFL learners' writing performance and landscape.

Keywords: Learning-oriented assessment (LOA), Learning style, Learner perception, Writing performance

Introduction

English plays an unprecedented role in written communication of people today. A substantial portion of scientific publications, books, documents, pamphlets, and the like is written in English. On the one hand, writing is considered an important venue for sharing and transmitting knowledge and research findings in the academic, personal, or social domains (Chen & Wang, 2022). On the other hand, English is considered as a *Lingua Franca* linking people around the globe who have different native languages through communicating with a common language (Seidlhofer, 2017). These issues have triggered the employment of English in various forms of writing in today's era and signifies the importance of English writing development for many foreign language learners around the globe. In this respect, Coulmas (2012) asserts that more than 85% of webpages are solely written and maintained in English. In addition, over two billion people regularly use English for personal, commercial, academic, and cultural purposes through various platforms for written communication such as social networks, emails, and forums, among others. Thus, the significance of writing in English is worldwide, and determining ESL/EFL learners' writing development is an important area of research and pedagogical interest in ELT studies.

In the present study, argumentative writing was selected as the writing genre to be investigated for a number of reasons. First, it should be noted that among the various genres of writing, argumentative writing has been frequently cited as being the most challenging one for L2 learners (Graham et al., 2012). In this regard, the study of Pessoa et al. (2017) found empirical evidence in support of the argument that there are many challenges that L2 writers need to struggle with in the process of writing argumentative texts. Second, despite the difficulties that exist, argumentative writing has been one of the most frequently used genres by many people in many settings. This is because, as Graham and Perrin (2007) contended, for many individuals, argumentative writing is an approach to professionalism as it assists them in learning, investigating, and communicating their ideas. Moreover, in academic centers, argumentative writing is most often used by scholars and researchers to write scientific reports and argue over research findings. In the same vein, university students from various fields of study are required to compose argumentative texts (Pessoa et al., 2017), and it is stated that the students' academic success is highly dependent on their argumentative writing ability (Alexander, 2008). The fourth reason for bringing argumentative writing into focus in this study is that it is still an under-developed domain within L2 writing research (Pessoa et al., 2017), which needs more attention from L2 researchers around the globe.

Regarding the instruction and learning of argumentative writing, it needs to be mentioned that the intricacies in its various aspects make it difficult to select an approach that can best suit its instruction and learning objectives. Moreover, many instructors may not be sufficiently equipped with the knowledge of useful approaches to scaffold argumentative writing (Pessoa et al., 2017). Thus, it is important to do research investigations to find effective approaches toward argumentative writing instruction and learning. To this aim, different studies have been conducted to date to examine the potential development of learners' argumentative writing perceptions and ability through such approaches as teacher vs. peer scaffolding (Taheri & Nazmi, 2021), teacher, peer, and

self-assessment (Jafarigohar, 2020), and dynamic assessment (Kushki et al., 2022), among others. The two types of argumentative writing strategies in focus in the present study are pseudo-integration and refutation. Pseudo-integration is used when the writer includes both arguments for and against the main topic, but forms a position in favor of one side of the argument (Nussbaum et al., 2007). The conclusion, however, does not entail the counterarguments and only the supporting arguments are used in the conclusion. To amplify the conclusion, some examples and supporting arguments may be added (Nussbaum, 2008). However, refutation strategy is when the arguer should attempt to find counter arguments and then try to refute them. Henkemans (2000) explains that “by refuting an argument for the opposite standpoint,” the writer “can only make his opponent withdraw this standpoint, which is of course, not sufficient to relieve him of the obligation to defend his own standpoint” (p.132).

In addition, the outcomes of some previous teaching or learning methods of writing have not always been successful. For example, in the Iranian EFL context, which is the research context of this study, it was found that the communicative language teaching method, as one of the most dominant methods, has failed to increase EFL learners’ writing skill (Koosha & Yakhabi, 2012). This is mainly due to the fact that writing is basically a cognitive process. Thus, a cognitive approach toward writing is potentially required to tackle with the problems associated with argumentative writing. One of the approaches found to be effective for potentially taking into account the cognitive process of writing as well as integrating assessment and learning in classes is learning oriented assessment (LOA). According to previous researchers, this approach can be used to boost quality of foreign language classrooms in general (Turner & Purpura, 2016) and writing ability of learners in particular (Hamzelou et al., 2022; Ma et al., 2021). It is hypothesized that LOA can be an appropriate approach to enhance learners’ argumentative writing skills because such an approach emphasizes the students’ involvement in learning and provides them with systematic feedback (Malecka et al., 2022) and opportunities for self-assessment (Carless, 2015; Yan & Carless, 2022). It stimulates students’ cognitive resources and sets standards of learning over time through ongoing assessment of learners’ skills (Storch, 2005).

According to what was mentioned regarding the usefulness of LOA, the present study attempted to examine whether this approach is effective for improving the argumentative writing skills of Iranian EFL learners. However, it should be also mentioned that since some scholars have speculated that learners with different learning styles would tackle differently with their writing tasks (e.g., van Waes et al., 2014) and due to the dearth of research investigations on the interrelation of learning styles, LOA, and argumentative writing tasks in previous studies, the present study attempted to study if learners’ learning styles make a difference in their practice of argumentative writing strategies and their perceptions of LOA. It is assumed that reflective learners would show a different performance from their impulsive counterparts in their writing development. Hence, the present study also focused on two groups of EFL learners (i.e., reflective vs. impulsive learners) in order to examine whether or not the students’ learning styles would influence their writing development through LOA.

Literature review

Learning-oriented assessment

Learning-oriented assessment (LOA) is a relatively new approach toward learning and assessment proposed by Purpura and Turner (2013) to potentially integrate assessment, language, and SLA. Jones and Saville (2016) discussed that LOA can be considered a reaction against the traditional models of assessment. The overall belief among many educators was that traditional testing could play a distorting role in education, as learners were obliged to study for tests and regurgitate the information presented through books (Purpura & Turner, 2014); thus, it can be stated that practicality of knowledge was ignored in traditional testing (Carless, 2007). As a result, the concept of assessment was revisited through LOA. Assessment in LOA is not norm-based in which learners are assessed against each other, neither is it criterion-referenced in which learners are assessed by using fixed criteria. In LOA, assessment is more in the form of feedback and marking loads (Derakhshan & Ghiasvand, 2022). In LOA, both the learners and teachers receive the assessment results a few sessions after a module begins; thus, they can realize what is required or expected of them (Hughes et al., 2002). Teachers determine the needs of the course based on these assessments, and learners can prepare themselves for learning what they do not know (Keppell et al., 2006).

As Carless (2012, 2017) and Yan and Carless (2022) discuss, LOA entails three main components. The first component includes productive assessment tasks that require higher-order learning outcomes. The second component includes different activities that help students understand and improve the quality of their performance. The final component includes dialectic feedback which are used when the students are engaged in dialogues about their progress and performance (Pitt & Carless, 2022). These components collectively form an overall framework for teachers to assess and support their students' learning outcomes. In other words, teachers utilize information from these components in order to gain better understanding of the learners' learning processes (Ghiasvand & Banitalebi, 2023).

Recently, several attempts have been made to integrate LOA into general education and language instruction. Carless (2015) also analyzed classes from multiple disciplines to gain insights into how LOA influences the interactions between learners and teachers and reported the positive effects of LOA on both the quantity and quality of such interactions. The driving force behind these attempts has been to both contribute to learners' language development and empower teachers with a pedagogical tool for making judgments about the learners' achievement in the class (Plakans & Gebril, 2015). The core idea has been "to bridge the gap between formative and summative assessments and ensure more favorable learning outcomes" (Viengsang & Wasanasomsithi, 2022, p. 711). As a result of these initiatives, a few strands of inquiries have attempted to evaluate the efficiency of this approach for developing the learners' proficiency language. According to findings in previous research, LOA has been successfully implemented in various educational settings and has ended up in acceptable results (Viengsang & Wasanasomsithi, 2022).

Some studies have reported the effectiveness of LOA for enhancing oral proficiency (e.g., Mazloomi & Khabiri, 2016). For instance, Keppell et al. (2006) provided evidence in support of implementing LOA in technology-enhanced contexts for improving EFL

learners' overall proficiency. Recently, Navaie (2018) has reported that in a language learning classroom, where LOA is implemented, learners are enabled to effectively improve their pronunciation. In addition, Hamp-Lyons (2014, 2017) particularly focused on exploring the extent to which the learners and instructors mutually engage in the learning processes. He investigated the effects of LOA on speaking assessment and found that LOA opportunities might be quite useful in terms of improving speaking for teacher trainers. Some other studies in other EFL instructional settings have found the effectiveness of LOA for boosting students' speaking skills (e.g., Hamp-Lyons, 2017; May et al., 2020; Wu & Miller, 2020),

More particularly related to the focus of the present study, some other studies have examined the usefulness of LOA for writing development of learners. For example, Saygili (2021) carried out some experiments to examine the pedagogical impact of LOA tasks on the students' academic writing skills in the Turkish context. Her study was mainly designed as a pre-post experimental design, which also explored the attitudes of the participants after implementing LOA in their class. After several weeks of the experiment, the findings revealed that the participants' writing proficiency developed, and they obtained better scores on their writing tasks. Although at the beginning, the participants found the process demanding, at the final phase of the study, they admitted that they had great opportunities to monitor and control their learning process. In a seminal study, Jalilzadeh and Yeganehpour (2021) explored the Iranian EFL teachers' beliefs regarding LOA during the COVID-19 pandemic and reported that Iranian teachers preferred LOA to assess their students. The majority of the participants confirmed that LOA is very effective and plausible for assessing the students' writing skill. Similar reports were made by researchers in other contexts where LOA could result in improvements in EFL students' writing skills (e.g., Kim & Kim, 2017; Ma et al., 2021; Mak & Lee, 2014; Nemati et al., 2021). Overall, it can be mentioned that among many innovative features of LOA, providing regular feedback, as long as it improves learning, seems to be the most salient one (Farhady, 2021).

A critical look at the literature shows that many of the previous studies have been experimental in nature, having interventions to check the effectiveness of LOA for influencing learners' perceptions or actual development of language proficiency or different language skills (e.g., Hamzelou et al., 2022; Saygili, 2021). Moreover, there were many studies exploring instructors' perceptions of LOA (e.g., Beikmohammadi et al., 2020; Derakhshan & Ghiasvand, 2022; Ghiasvand & Banitalebi, 2023; Jalilzadeh & Coombe, 2023). An important research caveat, however, is that no study to date has explored the effectiveness of LOA for enhancing EFL learners' argumentative writing performance. To this end, the present research attempted to bridge this gap by taking the Iranian EFL learners' conceptions of LOA on board and present first-hand data on how it could improve their argumentative writing performance.

Learning styles

Among the learner factors which can potentially influence language learners' educational outcomes is learning style which encompasses a wide range of different types of learning styles (Banaruee et al., 2022). Two types of learning styles found by previous studies to be influential in language learning gains were impulsive vs. reflective

learning styles (Habibpour & Dobakhti, 2022). Based on Folse (2004), learning styles such as impulsivity vs. reflectivity can be defined by looking into the vertical line of the model. Reflective learners are characterized with being calm, even-tempered, controllable, and reliable. In language learning, reflectivity refers to the language learners' ability to reflect on questions and think deeply about them prior to responding to them (Brown, 2007). Ehrman and Leaver (2003) argued that reflective learners prefer to first think and then make decisions and answer questions, and they generally tend to be more accurate individuals. Considering their slowness, reflective learners often experience difficulties in completing a timed task; nevertheless, their performance is rather found to be accurate (Davoudi & Heydarnejad, 2020).

However, impulsive learners show the learners' characteristics with high neuroticism. In particular, impulsivity refers to the extent to which learners are able to make quick decisions and guess the answer to questions without correctly reflecting on the topic (Salehi & Nosratinia, 2022). Impulsive learners normally tend to make a quick or gambling guess in response to a question or problem (Brown, 2007). These learners are more anxious, excitable, and restless. They generally make quick decisions and answer questions faster than reflective learners. They also tend to finish a task or a test rapidly but often with less accuracy. Ellis (2005) believes that learning styles are solely a suggestion and not as effective as they seem to be. Besides, there is inconsistency in the findings of empirical studies that measured the effect of learning styles on learner outcomes in language classes. This indicates the need for more research in this area.

Although the literature on learning styles proposes no pedagogical method directly based on the learners' learning styles, the relationship between impulsivity/reflectivity as cognitive styles and various language skills in L1 and L2 has attracted the attention of many researchers of the field. In this respect, some studies have examined the association of impulsivity and reflectivity with learners' vocabulary achievement (e.g., Shafiee & Khavaran, 2017). Moreover, Rastegar and Safari (2017) found that impulsivity and reflectivity would influence Iranian learners' vocabulary learning. Some others have examined them in association with oral proficiency (e.g., Chen, 2021), listening comprehension (e.g., Beiranvand and Mall-Amiri Mall-Amiri, 2018), reading comprehension (Ghapanchi & Dashti, 2011; Shaban et al., 2017), and language proficiency (Razmjoo & Mirzaei, 2009).

More particularly related to the purpose of this study, some other studies investigated these two learning styles in relation to writing performance and development (e.g., Mahdavinia & Molavizade, 2013). Additionally, Hajimohammadi and Mukundan (2011) investigated the effect of learning styles on students' writing. They measured the effect of self-correction on the writing skill of pre-intermediate Iranian English students and reported that reflective students are more likely to self-correct their writing tasks. Furthermore, Talebi (2012) explored the use of formulaic sequences in news summary writing by Iranian university students. The participants in his study were orally prompted to listen to audio news episodes and then were asked to write a summary of each piece of news. The findings showed no significant difference between the reflective and impulsive learners in the use of formulaic sequences. In a similar vein, Mahdavinia and Molavizade (2013) analyzed the use of

idioms in composition writing among Iranian impulsive and reflective learners. In contrast to the findings reported by Talebi (2012), they found that reflective learners were more likely to employ idiomatic expressions in their writings.

The above review indicated that there is a mounting body of research that focused on the relationship between impulsive and reflective learning styles and various language skills. Moreover, there is a study by Imani (2021) which investigated the association of peer and self-assessment with speaking skill of reflective and impulsive Iranian EFL learners. However, to the best of the present study researchers' knowledge, no empirical study has been conducted to investigate the potential influence of impulsivity-reflectivity on the learners' development of argumentative writing performance through LOA. To address these research gaps, the following research questions were raised in the present study.

1. To what extent, if any, does the practice of argumentative writing strategies, i.e., pseudo-integration vs. refutation through learning-oriented assessment make a difference in the argumentative writing performance of Iranian impulsive vs. reflective intermediate EFL learners?
2. To what extent, if any, do the perceptions of Iranian impulsive vs. reflective intermediate EFL learners about learning-oriented assessment differ?

Methodology

Participants

The participants of the present study were selected from an initial population of over 200 adult Iranian EFL learners, studying at an intermediate level of proficiency in language institutes. To ensure the homogeneity of the participants, they were initially asked to sit for Oxford Placement Test (OPT). The screening procedure meant to exclude all the learners whose scores were below or above the A3 or A4 band score of OPT. This ended up in a total of 123 EFL learners with an age range of 18 to 35 years old. In terms of educational background, the participants were heterogeneous, holding different academic degrees, ranging from high school diploma to graduate students. To identify the learners' learning styles, i.e., impulsive and reflective, all the participants were asked to answer the Barrat's BIS 11 Questionnaire. Then, based on their responses, they were divided into two groups of impulsive vs. reflective learners.

The results of the analysis to Barrat's BIS 11 Questionnaire showed that there were 64 learners with the impulsive learning style, and 59 reflective learners. In the early stages of the study, however, eight participants (i.e., five impulsive and two reflective) stated their unwillingness to be involved in the study, and thus, they were excluded from the sample, leaving the final sample with 59 impulsive and 57 reflective ones. Subsequently, the participants in each group of impulsive and reflective were randomly assigned to two different classes where they received the writing instruction based on LOA, but through different types of argumentative writing tasks, namely pseudo-integration and refutation.

Instruments

In order to identify the learning styles of the participants, BIS 11 Impulsiveness Questionnaire was used (see the [Appendix](#)). It contains 30 statements, which assess impulsiveness (Patton et al., 1995) through questions related to potential ways through which students act and think. Scores are assigned on a 4-point Likert scale, ranging from “rarely/never” and “occasionally” to “often” and “almost always/always”. Participants’ learning styles are determined through their responses to the questions on a dichotomous fashion. The internal consistency report for the BIS-11 total score, as reported for separate populations, (e.g., under-graduates, general psychiatric patients, and post-graduates), ranged from 0.79 to 0.83. This scale has been also validated by several researchers including Patton et al. (1995), Fossati et al. (2001) and Miller (2003) in various instructional contexts.

To examine the participants’ perceptions of LOA, a questionnaire developed by Konstantinidis (2012) was also used. This questionnaire consists of three components (i.e., assessment tasks, student involvement, and feedback) with 9 items on a 6-point Likert type scale ranging from “strongly disagree” to “strongly agree”. As each section of this questionnaire addresses a subscale of LOA, it is found to be in accordance with the purpose of the present study. As for the scoring of the questionnaire, the maximum score that a person can get is 45, and the lowest score is 9. Using Cronbach’s Alpha formula, the researcher calculated the reliability coefficient of the instrument. It was shown that the overall reliability of the instrument was .81, which is satisfactory.

Finally, two separate argumentative writing tests were administered to the participants as pretest and posttest. The topics of the argumentative tests were selected from the IELTS academic writing module, for which the participants were required to write an argumentative essay. The participants were allocated 40 min to finish each essay, and they were asked to write around 250 words for accomplishing each task. The participants were expected to develop three to five paragraphs for each argumentative essay. The performance of the students over each argumentative writing task was assessed through using four assessment criteria: (1) task achievement; (2) coherence and cohesion; (3) grammatical range and accuracy; and (4) lexical resource. Each of the writing criteria is worth 25% of the total marks for that task and received a band score of 1 to 9. In order to ensure the reliability of scoring procedure, in addition to the researcher, an assistant was asked to rate the essays using the same IELTS scoring rubric.

Procedure

Having selected the subjects for the study, in line with the recommendations suggested by Jones and Saville (2016), the participants had a debriefing session prior to the course to become familiar with their needs, wants, and expectations of the present study researchers. In the debriefing session, they were asked about their objectives so that the writing lessons selected for them could match their needs. Then, within the same session, the pre-test, which was an IELTS academic writing argumentative writing test, was given to the participants. Students’ performance on the test served as a benchmark for assessing their performance at the end of the course.

Then, both reflective and impulsive participants received the same LOA instruction. At the beginning of every session, the participants were given an argumentative writing task to write. This enabled the researcher to diagnose the participants' writing ability. The topics were all selected from the book entitled Cambridge IELTS Series (Books 1–14). Throughout the course, as the participants were involved in self-assessment and peer assessment, they were in charge of assessing their writing and their essays. In each session, the course instructor intervened by providing the necessary feedback (e.g., implicit, delayed, oral, written feedback). It should be mentioned that instructions were provided based on what were diagnosed as writing problems of the students in each class (e.g., unclarity of the rubric to students, students' use of writing genres other than argumentative writing). The whole intervention lasted for an educational semester. This included 15 sessions of instruction over 8 weeks, plus two sessions of introduction and final examination, where pre-test and post-test were taken, respectively. On the last session, the participants also received the LOA questionnaire and were asked to express their perceptions through answering the questionnaire items.

Results

Preliminary analyses were initially conducted to determine the homogeneity of the participants in two groups of impulsive and reflective learners in terms of their English language proficiency. As Table 1 shows, the mean scores of the participants on OPT in both groups were similar. However, to ensure whether there was any statistically significant difference between the two groups, an independent samples *t*-test was conducted. The results revealed no significant difference between the two groups of impulsive and reflective learners ($t(128) = -0.643, p > 0.05$).

Having ensured that the level of English proficiency for all the participants was similar, attempts were, next, made to test the research hypotheses of the study. It must be mentioned that in scoring the participants' writing tests, a research assistant, in addition to the researcher, re-rated the writing samples. Inter-rater reliability was then calculated and found to be .89. Cases of disagreement were then double-checked and resolved through discussion. Thus, the scores reported below are the final marks that students received after being rated twice by two raters. Table 2 shows the relevant descriptive statistics.

As reported in Table 2, the mean scores of the participants increased from the pre-test to post-test in both writing tasks. Moreover, the skewness ratios for all distributions of the data fell within the range of ± 1.96 (i.e., the legitimate range for normality of distributions). It should be noted that there were 4 missing data in the post-test.

First, to make sure that the participants were homogenous at the outset in terms of writing ability, their pre-test scores were compared using a two-way analysis of variance

Table 1 Descriptive statistics of the participants' scores on OPT

	Number	Mean score	SD
Impulsive participants	59	28.7	6.14
Reflective participants	57	27.3	5.71

Table 2 Descriptive statistics for pre-test and post-test argumentative writing tasks across the groups

	<i>N</i>	Mean	SD	Skewness ratio
Pretest				
Impulsive				
Pseudo-integration	30	5.148	1.042	.932
Refutation	29	4.801	.802	.930
Reflective				
Pseudo-integration	29	5.017	.801	–.057
Refutation	28	4.705	.720	.548
Posttest				
Impulsive				
Pseudo-integration	29	5.319	1.300	1.152
Refutation	28	6.339	1.016	–.405
Reflective				
Pseudo-integration	28	6.821	1.303	–.219
Refutation	27	5.814	.850	–.464

Table 3 Two-way ANOVA: tests of between-subjects effects

Source	Type III sum of squares	df	Mean square	F	Sig.	Partial Eta squared
Corrected model	35.956 ^a	3	11.985	9.249	.000	.204
Intercept	4128.921	1	4128.921	3186.418	.000	.967
Personality	6.691	1	6.691	5.164	.025	.046
Treatment	.001	1	.001	.001	.975	.000
Personality * Treatment	28.741	1	28.741	22.180	.000	.170
Error	139.945	108	1.296			
Total	4301.438	112				
Corrected total	175.901	111				

^a *R*-squared = .204 (adjusted *R* squared = .182)

* indicates a statistically significant interaction effect between Personality and Treatment ($p < .05$)

(ANOVA). The inspection of the data for outliers was done through Mahalanobis maximum distance value, and no outlier was found. Levene's test ($F(3,112) = 1.291$, $p = 0.281$) also suggested homogeneity of variances. The results of the two-way analysis showed no significant difference in test scores of the two personality groups ($F(1,112) = 0.515$, $p = 0.475 > 0.05$) and the two treatment groups ($F(1, 112) = 1.166$, $p = 0.282 > 0.05$).

Having ensured the initial homogeneity of the four groups in terms of writing ability, the researchers compared their posttest scores using another two-way ANOVA. Before running the test, the data were probed for outliers using Mahalanobis maximum distance, and no outlier was found. Finally, Levene's tests of equality of variances were probed and the results ($F(3,108) = 1.839$, $p = 0.144$) suggested homogeneity of variances. Having all the assumptions in place, running the two-way ANOVA test was legitimized. Table 3 shows the results of between-subjects effect tests.

As reported in Table 3, while the posttest scores of the two groups with different types of writing tasks (treatment) was not significantly different ($F(1, 108) = 0.001$,

$p = 0.975 > 0.05$), the personality of the participants significantly moderated their scores ($F(1, 108) = 5.164$, $p = 0.025 < 0.05$, partial $\eta^2 = 0.046$, signifying a nearly medium effect size). The pairwise comparison showed that reflective learners outperformed the impulsive counterparts ($MD = 0.489$, $SE = 0.215$, 95% CI [0.062, 0.916]). In other words, irrespective of the type of writing tasks (i.e., pseudo-integrative or refutation) that they received, reflective learners had significantly higher scores in the argumentative writing post-tests.

In a follow-up analysis, the two groups' posttest scores were also compared against their pre-test scores, using two sets of paired samples test. As shown in Table 4, the impulsive groups' scores significantly improved from pre-test to post-test ($t(56) = 4.112$, $p = 0.000 < 0.05$, Cohen's $d = 1.09$, signifying a large effect size), as so did the scores of the reflective group ($t(54) = 9.122$, $p = 0.000 < 0.05$, Cohen's $d = 2.48$, representing a very large effect size). Therefore, it can be concluded that while the treatment was effective in improving argumentative writing of both groups of impulsive and reflective learners, it worked significantly better in improving the reflective learners' performances on argumentative writing tasks compared to those of the impulsive learners. The type of treatment (i.e., the writing tasks that they received during the treatment) did not play a significant role in this regard.

In order to answer the second research question of the study, the participants' responses to the LOA questionnaire items were analyzed in terms of a weight score for each item. Weight scores were calculated by giving a score of 1 to "not applicable/I don't know," 2 to "strongly disagree," 3 to "disagree," 4 to "neither agree nor disagree," 5 to "agree," and 6 to "strongly agree." Thus, the range of weight scores was between 1 and 6. For each item, the mean scores were calculated to derive the participants' overall perceptions toward the LOA course. The descriptive statistics are provided in Table 5.

As Table 5 shows, the analysis of participants' responses to the questionnaire items revealed that they had a very positive attitude toward the course. This is supported by the positive weight scores given to all the items. Although the magnitude of the responses for each item was different, and there were discrepancies across the scores, overall, the participants' perceptions were positive. Moreover, except for the three items highlighted in the table, the answers of the two groups had close mean scores to each other. Comparing the scores of the two groups with regard to these three items showed that the reflective group had significantly higher mean scores in only one case, i.e., Q6 ($t(110) = 2.506$, $p = 0.014$). Therefore, it can be concluded that both groups of reflective and impulsive learners positively acknowledged the contribution of teacher's feedback, peer assessment, and classroom discussion to their writing development throughout the course. The potentials of LOA tasks in asking for critical thinking and developing self-assessment confidence were more appreciated by the reflective learners.

Table 4 The paired samples test results

	<i>t</i>	<i>df</i>	Cohen's <i>d</i>	Sig. (2-Tailed)
Impulsive group Pretest–Posttest	4.112	56	1.09	.000
Reflective group Pretest–Posttest	9.122	54	2.48	.000

Table 5 The mean scores of the participants' answers to the questionnaire

Questionnaire Items	Impulsive		Reflective		Total	
	Mean	SD	Mean	SD	Mean	SD
Q1: The tutor's comments (in discussions and personal interactions) were constructive	4.35	1.09	4.36	1.1	4.36	1.09
Q2: The tutor's comments on my first submitted assignment helped me complete the second assignment	4.29	1.12	4.40	0.87	4.35	1.01
Q3: The discussions helped me develop self-evaluation competence	4.19	1.11	4.46	0.94	4.32	1.03
Q4: The assignments raised my interest in studying the course material	4.28	1.13	4.28	1.13	4.26	1.11
Q5: The discussions helped me understand when an educational activity might be successful	4.27	1.08	4.22	1.05	4.25	1.06
Q6: Completion of the assignments demanded deep, critical thinking rather than mere memorization	3.97	1.21	4.49	1	4.22	1.14
Q7: Other participants' comments on my suggestions facilitated my efforts to improve them	4.07	1.33	4.02	1.35	4.05	1.34
Q8: The assignments helped me better understand the subject matter of the course	3.89	1.23	3.91	1.22	3.9	1.22
Q9: The second assignment (evaluation of two peer assignments) helped me develop self-evaluation competence (e.g., I can now more easily estimate whether the activity I plan will be successful or not)	3.56	1.43	4.06	1.25	3.8	1.36

Discussion

To provide further empirical evidence to the growing body of research findings on the linkage of reflective vs. impulsive learning styles and development of different language skills (e.g., Beiranvand and Mall-Amiri Mall-Amiri, 2018; Chen, 2021; Imani, 2021; Rastegar & Safari, 2017; Shafiee & Khavaran, 2017), the present study was carried out to address whether the effect of LOA differed on the argumentative writing performance of Iranian impulsive vs. reflective EFL learners at the intermediate level. Likewise, it examined the perceptions of Iranian impulsive vs. reflective learners toward LOA.

To start with, the results of the two-way ANOVA revealed no significant difference between the two groups of impulsive and reflective learners. Similar findings were found by Talebi (2012) who reported no significant difference between the reflective and impulsive learners in the use of formulaic sequences in their writing samples. Furthermore, the divergence of the present study findings which showed the insignificant difference of the two groups on their post scores with those previous findings (Hajimohammadi & Mukundan, 2011; Mahdavinia & Molavizade, 2013) is perhaps due to the methodological differences between the present study and the previous studies. One such difference is that Mahdavinia and Molavizade (2013) did not assess students' overall writing proficiency, and instead, they focused on the frequency of the use of idiomatic expressions. Similarly, Hajimohammadi and Mukundan (2011) only assessed the students' self-correction, but not their overall writing.

Furthermore, in the present study, the two groups' post-test scores were compared against their pre-test scores, using two-way ANOVA. The reflective groups' scores

significantly improved from the pre-test to the post-test in both pseudo-integration and refutation tasks. The results also indicated improvement in impulsive students' scores from the pre-test to the post-test in both pseudo-integration and refutation tasks. Therefore, it can be concluded that while the treatment was effective in improving the argumentative writing of both impulsive and reflective learners, it worked significantly better for improving reflective learners' performances on refutation writing tasks compared to those of the impulsive learners. In line with these findings, Mahdavinia and Molavizade (2013), who examined the use of idioms in composition writing among Iranian impulsive and reflective learners, reported that reflective learners were more likely to employ idiomatic expressions in their writings. Hajimohammadi and Mukundan (2011) also found that reflective students were more likely to self-correct their writing tasks. Moreover, similar outcomes have been found by a study conducted by Imani (2021) which revealed that students with different cognitive styles differed in terms of their performance, with the reflective learners displaying a better performance than their impulsive counterparts. Similarly, Cavilla (2017) asserted that reflection would enable students to gain deeper insights into concepts and topics, improving their performance in tasks and contexts.

Moreover, these results of the present study, namely, the significant effect of LOA on both reflective and impulsive learners' writing, are in line with those of a study carried out by Mazloomi and Khabiri (2016) who indicated that self-assessment, being a facet of LOA, had a similar effect on impulsive and reflective learners' speaking skill. This can be attributed to the contribution that cognitive style makes to the enhancement of accountability and responsibility adoption. In the same vein, Hughes et al. (2002) asserted that this type of assessment motivated learners to take on more responsibility regarding setting goals and opting for their learning.

As a further contribution, in this study, the potential of LOA was explored through the examination of learners' perceptions of these courses. First, the findings revealed that the course was very effective and that the pedagogical activities including assignments, assessments, and feedback in the course were significant for the learners' argumentative writing development. Such an examination provided some important implications for the implementation of this approach in the educational context. Similar findings were reported by previous studies which have revealed the effectiveness of LOA interventions for the development of such language skills as oral proficiency (e.g., Hamp-Lyons, 2014, 2017; May et al., 2020; Mazloomi & Khabiri, 2016; Navaie, 2018; Wu & Miller, 2020) and writing (Jalilzadeh and Yeganehpour, 2021; Hamzelou et al., 2022; Kim & Kim, 2017; Ma et al., 2021; Mak & Lee, 2014; Nemati et al., 2021; Saygili, 2021).

Additionally, these results of the present study which uncovered learners' perceptions about LOA interventions is important as Schachter (1974) argued that exploring the learners' perceptions could help us to uncover some of the unrevealed obstacles in the process of writing and additionally provided language instructors with meaningful and relevant instructions that addressed L2 students' particular difficulties and needs. The exploration of Iranian EFL learners' perceptions in this research adds to the previous findings which have reported Iranian EFL teachers' perceptions of LOA (e.g., Beikmohammadi et al., 2020; Derakhshan & Ghasvand, 2022; Ghasvand & Banitalebi, 2023;

Jalilzadeh & Coombe, 2023); thus, providing a more comprehensive view of different stakeholders involved in the Iranian EFL instructional context.

Despite the advantages, there exist significant challenges to the success of LOA courses. For instance, it seems necessary to design a balanced program for all educational activities in an LOA class so that students do not feel overwhelmed by great loads of assignments. Thus, attempts must be made to avoid the potential counter-effective consequences of heavy workloads for the students. As Viengsang and Wasanasomsithi (2022) argued, traditionally, summative assessments were used where students were solely given scores and final grades as assessment results. However, LOA may impose a further burden on the students' shoulders. This is perhaps one of the main challenges that students are likely to experience in other similar LOA courses.

Conclusion and implications

Although this study was admittedly limited in its context, the findings nonetheless suggest that LOA is a promising educational approach that has the potential to provide an appropriate framework TO BE used in different language programs both in public and private sectors in Iran. Furthermore, the present study adds to the limited body of empirical investigations on the development of argumentative writing.

Implementation of LOA can bridge the wide gap between language teaching and language assessment. This is significantly important because traditional models of assessment often have negative consequences for students' learning outcome. For example, the substantial washback effects of many traditional tests (both standardized and teacher-developed tests) may negatively influence learners' educational outcomes. That is, instead of making efforts to develop their real proficiency, learners may opt to focus on testing techniques so as to pass the exams.

Through implementing LOA, teachers can assist learners to do self-assessment and monitor their own learning performance. Through alternative assessments including self-assessment and peer assessment as used in the present study, the participants are given opportunities to show better performance over real-life tasks as they were provided with multiple chances to cast feedback about their peers' language production and review their performances. Thus, unlike traditional assessment models where students are excluded from the whole process, LOA encourages them to provide constructive feedback to their peers. Through this activity, EFL learners can develop an understanding of the relationship between the rubric and how they are assessed, and in turn, they become more likely to understand the expected outcomes (Janisch et al., 2007).

Additionally, it seems that LOA can offer an extra educational benefit for learners. Through systematic rounds of production and feedback, they can discover their own weaknesses and then look for remedies to effectively tackle with them. Therefore, in such programs, they experience a shift from assessment of language learning to assessment as language learning (Rea-Dickins, 2008). In this regard, Jones and Saville (2016) emphasized that through various dialogues that learners have with their classmate and their tutors, a genuine learning environment is created. Put it differently, the main components of LOA, namely, assessment tasks, student involvement, and feedback, can develop learners' language proficiency and assessment skills. This conclusion is in accordance with the assertion proposed by Christison (2018) who mentioned that

assessment can function as a reminder for learners to keep monitoring and controlling their own performance. Such a reminder in the long term can lead to the development of self-regulation on the part of learners. Language learners are then encouraged to set and regularly revise their learning objectives and decide whether to try harder or not.

Appendix

Barratt Impulsiveness Scale (BIS-11) Patton et al. (1995)

Please read each statement carefully and tick the box which you feel most applies to you.

Items	Rarely/never	Occasionally	Often	Almost always
1. I plan tasks carefully				
2. I do things without thinking				
3. I make up my mind quickly				
4. I am happy-go-lucky				
5. I don't pay attention				
6. I have racing thoughts				
7. I plan trips well ahead of time				
8. I am self-controlled				
9. I concentrate easily				
10. I save regularly				
11. I squirm at plays or lectures				
12. I am a careful thinker				
13. I plan for job security				
14. I say things without thinking				
15. I like to think about complex problems				
16. I change jobs				
17. I act on impulse				
18. I get easily bored when solving thought problems				
19. I act on the spur of the moment				
20. I am a steady thinker				
21. I change where I live [I change residences]				
22. I buy things on impulse				
23. I can only think about one problem at a time				
24. I change hobbies				
25. I spend more than I earn [I spend or charge more than I earn]				
26. I have outside thoughts when thinking [I often have extraneous thoughts when thinking]				
27. I am more interested in the present than the future				
28. I am restless at lectures or talks				
29. I like puzzles				
30. I plan for the future [I am future oriented]				

Abbreviations

BIS	Barratt Impulsiveness Scale
CLT	Communicative Language Teaching
EFL	English as a Foreign Language
ELT	English Language Teaching
ESL	English as a Second Language

IELTS International English Language Testing System
 LOA Learning-Oriented Assessment
 OPT Oxford Placement Test

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Authors' contributions

All authors have materially participated in the research and article preparation. Additionally, all authors have approved the final article. Masoomeh Estaji: conceptualization, formal analysis, methodology, supervision, writing—original draft, writing—review and editing. Fatemeh Safari: conceptualization, data collection, methodology, resources, writing—original draft, writing—review and editing.

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Competing interests

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