Exploring L2 Product/Process-Based Writing Instruction, Self-Efficacy, Writing Autonomy, Language Proficiency, and Strategy Use: A SEM Analysis

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Abstract: Due to time constraints and large classes, teachers typically prefer to have product-based writing classes. Going through the existing literature, almost no study has examined the interrelationships among four variables of strategy use, self-efficacy, language proficiency, and writing autonomy in product and process writing classes. To this end, 381 Iranian male and female EFL students of English majors were chosen from the Universities of Qom and Kermanshah. OPT and the questionnaires were distributed in person, via email, and an already-made Google-Doc link of the instruments. The data were analyzed using multiple correlation and SEM. Multiple correlations pointed to two-way correlations among the included variables in the process-oriented group in comparison to the product-oriented groups. In other words, learners in the process-based group appeared to be more autonomous, more self-efficacious, and more proficient language learners and could make more appropriate use of L2 strategies. The findings obtained from SEM also revealed the fact that the model of relationships among self-efficacy, autonomy, language proficiency, and strategy use enjoyed a good fit. Teachers will be able to make more informed and proper decisions regarding the adoption of either process-based or product-based instructional approaches to teaching writing in their own classes in general, and the way students' levels of self-efficacy, autonomy, language proficiency, and strategy use can be boosted in particular.

Keywords: Learner Autonomy, Process-oriented Writing Instruction, Product-oriented Writing Instruction, Self-efficacy, Strategy Use, Writing.

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Introduction

In this modern age, communication in the target language is an obligatory need required to be developed. When it comes to communication, the initial thought that pops into our mind is speaking, ignoring the significance of writing expertise to communicate ideas, attitudes, and thoughts (Faraj, 2015; Gholami Pasand & Bazaramaj Haghi, 2013; Onozawa, 2010; Vanderpyl, 2012). Writing is used both in English for Academic Purposes (EAP) and English for Occupational Purposes (EOP) settings, in EAP settings, writing skill is needed for taking notes and writing proposals, essays, and articles. Having a good writing skill is necessary for those students who want to publish their papers in the best foreign journals. In EOP settings, it is required for writing reports, sending and receiving emails, and writing formal letters (Wengelin, et al., 2010).

Writing expertise involves two approaches: The first is product-oriented and the second one is process-oriented writing. The former focuses on usage while the latter on use. According to Badger and White (2000), the product-oriented approach to writing is a kind of writing in which students are led to write only one single draft that the teacher gives his feedback on, while the process-oriented approach to writing deals with non-linear stages of writing that writers go through while getting continuous feedback from teacher. There are many factors influencing writing skills, such as strategy use, self-efficacy, and autonomy. Writing strategies can be defined as ordering, planning, and revising written materials (Torrance et al., 2000; Penuelaz, 2012). By getting aid from writing strategies, differentiation between amateur writers and professional ones becomes easier (Raimes, 1985; Sasaki, 2000, 2002, Victori, 1999). Self-efficacy deals with one's ability to do a task (Bandura, 1997). By resorting to the bilateral connection that exists between learning strategy and self-efficacy this conclusion can be drawn that the participants who possess greater self-efficacy can employ the best strategies in writing (Brophy, 1998). In the writing process, those who can stand on their own feet, write independently, and have writing autonomy are more privileged because they can make the best use of strategies. Putting more emphasis on process-based instruction is mandatory if you want to communicate your ideas through writing (Faraj, 2015: Gholami Pasand & Bazaramaj Haghi, 2013; Onozawa, 2010; Vanderpyl, 2012).

Writing like speaking is considered a means of communication. In writing classes, more attention should be paid to writing communicative characteristics such as information flows, and arrangement, rather than correcting grammatical errors (Badger &White, 2000). Syntax in writing is also important but should not be prioritized over communication (O'Brien, 2004). Due to time constraints and large classes, teachers prefer to have product-

based writing classes all over the world (Sarala et al., 2014). Going through the existing literature, almost no study has examined the interrelationships among three variables of strategy use, self-efficacy, and writing autonomy in product and process writing classes. The significance of this research project lies in the fact that if the interrelationship among these variables is confirmed, teachers will be able to make more informed and proper decisions regarding the adoption of either process-based or product-based instructional approaches to teaching writing in their own classes in general, and the way students' levels of self-efficacy, autonomy, and strategy use can be boosted in particular.

Review of the Literature

Writing

In this new era, learning how to write properly is a must. Many technologies like Facebook posts, emails, blog comments, tweets, Wikipedia, WhatsApp, and a number of other high-tech written social network messengers depend directly on writing expertise (Graham et al., 2018). In educational settings, for mid-term and final term exams, writing skills are important to convey what you have learned during the term to the test paper (Harmer, 2004). In occupational settings, writing has a significant role in taking notes and writing e-mails, reports, and formal letters (Graham et al., 2018). As a result, having poor writing skills will lead to numerous obstacles both in EAP and EOP settings (Harris et al., 2009; Harris et al., 2013). Due to the above-mentioned reasons, a demanding expertise that must be paid adequate attention to is writing expertise (Richards & Renandya, 2002). Owing to the writing expertise significance in writing development, writing instruction is of great value (Kellogg, 2008).

Writing expertise training can be operational either according to the rules governing the traditional product classes or modern process classes. The concentration in the product classes is on the *usage*, that is, the accuracy of vocabulary, grammatical points, and punctuation (Silva, 1990). In other words, product-oriented writing is error-free (Nunan, 1999). According to Hyland (2003), writing should be practiced in a way that writing accurately by focusing on syntax becomes habitual. By resorting to habit formation, students can get mastery of sentence structures and produce more accurate structures (Raimes, 1983). After a while, the way writing was instructed in the product classes lost its fame and another new methodology for writing instruction came into existence. Even though the product-oriented approach has many disadvantages, teachers are still in favor of this method and

apply it to boost writing skills in many educational places (Grabe & Kaplan, 2014; Hyland, 2003). Process-oriented approach, as its name suggests, consists of processes or stages (Camps, 2005). Instructors, in the traditional product writing classes, overemphasized the grammatical principles while idea flow, opinion arrangement, and thinking before writing were central focus in the modern process writing classes (O'Brien, 2004). One of the disadvantages of process-based writing is that thinking is needed before writing and since thinking requires a lot of time, teachers might encounter a shortage of time if they want to help each student one by one with writing skills in a class with many students (Sarala et al., 2014).

Process-Oriented Approach to Writing Instruction

A definition of the process-based writing approach proposed by Kroll (1990) is that at present time, the "process approach" can be defined in many ways. One of them is that a process-based approach to writing is considered to be a "recurrent approach" not a single-shot approach. The learners do not just write a complete written text, rather there are many stages that learners are obliged to go through before they reach the ultimate final written text. Through this journey, they get advice from their teacher's different feedback and revise and edit their works numerous times until they are satisfied with the final revision of the written text. A process approach to writing can boost creativity and innovation in writing (Durga & Rao, 2018). Something that can directly differentiate the product approach of writing from the process approach would be planning, revising, editing, evaluating, and finalizing the finished works using the activating of minds which is considered as cognitivism that only exists in the process approach to writing (Al-Jarrah et al., 2019). Nunan (1999) stated that in the process-based approach, the emphasis is on the writing and editing of a written text. Process-based writing instruction would be effective provided that learners receive feedback for their written drafts. By receiving feedback, students have the opportunity to think and change their design, opinions, and language (Myles, 2002).

Product-Oriented Approach to Writing Instruction

Hyland (2003) pointed out that the product-based writing approach considers writing a product of the "connection and link" between structures and vocabularies of every language. A great writing sample enjoys the correct application of these structures and vocabularies in the written text. Accurateness and correctness are essential factors that product-oriented teachers put high emphasis on (Silva, 1990). In the product-oriented approach which is the

traditional approach to writing, learners write and correct their writing. The focus of this approach is on boosting learners' knowledge about grammatical points (Tangpermpoon, 2008). Due to the high focus of the product-oriented writing approach on its structure and model-based nature, it came under criticism over time. Critics claim that it is right that grammatical points and vocabulary sequences are cornerstones of EFL/ ESL writing classes but writing skill is not just confined to these things. Many students have mastered the grammatical points but are not able to write a well-organized text (Hyland, 2003). Moreover, the product-based writing approach only focuses on the ultimate product. It does not mention how to write it, that is the process and stages of writing remain covered (Flower & Hayes, 1977).

Self-Efficacy

Albert Bandura (1997), for the first time, coined the word *self-efficacy* and gave it this definition; trusting one's abilities and relying on them to do the task by oneself. Self-efficacy has a direct association with the writing. Since writing is a process that is accomplished alone, self-regulation strategies are needed to achieve this goal (Zimmerman & Risemberg, 1997). The capability to manage, organize, and regulate the learning stages as well as take responsibility for learning is referred to as a self-regulatory strategy (Schunk & Zimmerman, 2012). The secret of learners' success is implied in self-efficacy beliefs. Cultivating a positive belief in self-efficacy will directly influence academic achievement (Multon et al., 1991). As Bandura (1997) put it, self-efficacy is defined as one's belief and trust in his/ her capabilities to operationalize some tasks well. Writing self-efficacy refers to a robust feeling of self-assurance in one's competence to write properly. According to Lavelle (2006), there are three classifications regarding self-efficacy and they include high, mid, and low. Those with high self-efficacy attempt to do their best to deliver the best task.

Autonomy

The word autonomy was first proposed by Holec (1981). Taking charge of your own learning is a superb definition of *autonomy*. Autonomous learners are those who stand on their own feet, regarding decision-making, planning for the future, selecting educational materials, and evaluating. Autonomy can be defined as the capability of making decisions and choosing independently (Little, 1996, p. 97). As Holec (1981) put it, being independent of others, standing on one's own feet, and taking responsibility for your task are defined as autonomy. An autonomous writer is a person who discovers the goals, takes the essence and

advancement of the task into account, chooses the method and procedures, controls the stages of acquisition, and assesses the result of learning.

Strategy Use

Those techniques and strategies employed by learners to promote writing skills are defined as writing strategies (Cohen, 1998; Oxford, 1989, 1990). Strategies for writing applied by outsiders can be divided into 5 groups: Cognitive, Social, Metacognitive, Effort Regulation, and Affective. Many researchers have declared that Strategies used for writing skills are significant because they can differentiate inexperienced writers from experienced ones (Bagheri Nevisi & Safiloo, 2023; Raimes, 1985; Sasaki, 2000, 2002, Victori, 1999). Regarding writing strategies, writers with higher knowledge allocate more hours to boosting their writing expertise than those with less writing knowledge. It takes more time for highly knowledgeable writers to plan and revise than less knowledgeable ones. Styles, procedures, and processes that learners apply to accomplish a superb written text are defined as writing strategy use (Cohen, 1998; Oxford, 1989, 1990). Writing strategy use is classified into five groups: Metacognitive, Cognitive, Effort Regulation, Social, and Affective.

Empirical Studies

Only a few studies dealt with features of product writing classes and process writing classes (e.g., Arici & Kaldirim, 2015; Bagheri Nevisi & Arab, 2023; Graham & Sandmel, 2011; Shahrokhi Mehr, 2017; Samsudin, 2016; Sarhady, 2015). Because of their several shortcomings, the combination of both approaches is suggested (Hasan & Akhand, 2010; Sarala et al., 2014). Collins' (1982) research findings revealed that self-efficacy has a direct association with mathematical performance among students of each level. Put it in another way, if self-efficacy is promoted in the learners, they will have a better performance. Bassi et al. (2007) concluded that self-efficacy and motivation are reciprocally connected. Put in other words, those with strong self-efficacy frequently have high motivation toward learning and spend more time on learning and as a result, would achieve more accomplishment.

In Taiwan, Chien (2012) conducted an investigation concerning writing tactics that students utilize and accomplishments that they obtained in writing expertise. Throughout the writing stages, a cognitive writing approach was applied to explore the writing phases. Forty participants (20 low-experienced and 20 experienced writers) were under investigation in this study. Compared to less experienced writers, more experienced writers assign more time to

design, edit, and revise their written drafts. They also put more emphasis on the structural and lexical correction of the written text while they are reviewing their writing.

Alnufaie and Grenfell (2012) conducted a study in Saudi Arabia. EFL and ESP first-year or second-year university students cooperated fully with the investigation. Writing tactics utilization comparison and contrast in the product writing classes and process writing classes was the ultimate goal under exploration. A writing tactics questionnaire was disseminated among the learners. Nearly 95% of the participants in the product classes and process classes integrated the writing tactics but the top five writing tactics were applied more by process writing class participants.

Sarhady (2015) scrutinized the university students writing performance in the process and product classes. Half of the university students formed the treatment class and the other half the control class. In conclusion, the process-writing university students surpassed those instructed based on the ground rules and principles of product classes.

Lam (2015) administered a survey in Hong Kong concerning how to understand the learning progress of independent EFL students in process-oriented writing courses. The article vividly clarified that to boost writing self-regulating procedure and metacognitive awareness, writing tactics instruction would be obligatory. The researcher chose the study sampling from those who experienced a process-oriented writing course in which employing writing strategies was the focus of the instruction. The finding revealed that strategy instruction in writing is a must because it increases the participants' self-regulating skills. Another extracted conclusion dealt with the participants' gradual attainment processes.

Arici and Kaldirim (2015) accomplished an inquiry regarding the process-related writing instruction effects on amateur instructors' apprehension and writing skill progression. The exploration outcome achieved the process-related writing class participants instructed by a novice Turkish instructor surpassed the product-related writing class participants.

Critical thinking skills, writing autonomy, and writing achievement in the process-related writing class were examined by Bashiri and Shahrokhi (2016) with the active presence of 60 Iranian participants. Firstly, by administering a proficiency test, the investigators were able to divide the sampling into equal control and treatment classes. Secondly, two classes filled out the questionnaire related to writing autonomy. Thirdly, for the participants' evaluation regarding critical thinking expertise as well as their writing expertise, the two classes took part before the treatment examination. Traditional instruction on writing skills was applied to the control class while the treatment class experienced process-related writing instruction. The duration of this inquiry was about 12 weeks. The

exploration overemphasized the process-related writing characteristics. The writing autonomy questionnaire was re-administered in the treatment class and after treatment tests for gauging critical thinking expertise as well as writing adroitness were also given to all participants in the last session. Thorough and absolute effectiveness of the process-related writing training on the participants' superiority in writing autonomy writing achievement, and critical thinking expertise was concluded from the inquiry outcome eventually.

Samsudin (2016) investigated which writing approaches (product or process) have more positive effects on first-year undergraduates to write a better academic text. The finding revealed that group B which received process-oriented written instruction progressed more in both writing proficiency and their capability to write academic texts than their counterparts in the product-based writing classes.

Providing corrective comments for foreign language participants expanding writing capabilities in the product/process writing classes was under processing by Osanloo and Kolahi (2016). They selected 110 women learning a foreign language. Four treatment classes with diverse types of intervention including explicit comment utilization in the product-related writing classroom, implicit comment utilization in the product-related writing classroom, explicit comment utilization in the process-related writing classroom, and implicit comment utilization in the process-related writing classroom. The duration of the intervention was about 10 sessions. Findings revealed that explicit comments strongly affected the participants' writing in the process-related writing classroom and product-related writing classroom but implicit comments did not have any significant impact on the participants' writing expertise neither for participants educated based on the process-related writing intervention nor for the members instructed following product-related writing intervention.

Abas and Abd Aziz (2016) set up a current inquiry to determine the writing stages categorization and the second language writing tactics categorization. Writing stages categorization as well as writing tactics models are under-emphasis in the present query. Process-related writing training would be under consideration. It was according to the model of writing process categorization developed by Williams (2003), Leki's (1995), Sasaki's (2000), and Mu's (2005). The result revealed that the process of writing that was applied in this inquiry consisted of various stages. In each stage, writers in the process-based writing classes utilized different writing strategies. In other words, writing tactics and writing process phases were different from person to person, one strategy that is helpful for a writer may be helpless for another writer.

Shahrokhi Mehr (2017) examined the product-aided and process-aided writing training weight on Iranian pupils. Writing ability and the learners' attitudes about writing expertise were scrutinized absolutely. This inquiry enjoyed the experimental design. The control classes were not exposed to the actual treatment while the two experiment classes experienced both feedback on their writing performance. Because the means of the three groups were to compare against each other, one-way ANOVA was utilized as the statistical analysis. Process-aided writing dramatically influenced the pupils' written text. Therefore, supremacy was discovered more in the process-aided writing training than in the product-aided writing. The current study investigators' ultimate recommendation for future book designers is the insertion of process-aided writing instruction advantages in future educational books.

Process-aided writing approach effectiveness on the young participants' achievement came under exploration by Sánchez and Pinzón (2019). Twelve third-grader students who took part in the different workshops where they were taught how to write different texts through different writing process stages and different writing tactics utilization were the current exploration participants. Investigators concluded that the young students' writing expertise would be boosted dramatically through process-aided writing training. Furthermore, strategies used during the process of writing instruction were useful too. The ultimate data revealed the fact that a process-based approach and different writing strategies utilization would enhance the participants' written tasks self-assurance and self-efficacy.

In Morocco, a quantitative inquiry in which product-related writing with process-related writing was compared and contrasted by Kadmiry (2021). His inquiry was conducted in a preparatory school. The inquiry enjoyed the experimental design. The 64 participants' division took place through accidental sampling. Product-aided writing training and process-aided writing training are applied in those classes during a semester. Two tests (tests administered before and after the treatment) were applied during the current inquiry. Based on the statistical investigation, process-related writing training participants had superior performance than other participants.

Rahimi and Fathi (2022) resorted to the multi-methodology explanatory design for research administration. The idea of this study was based on Vygotskian social-constructivist theory. The investigators' main goal was to scrutinize the general effectiveness of writing self-efficacy, Web-aided synergetic writing on the participants' writing, and self-regulated writing on the participants' writing expertise. First of all, two intact classes were chosen. Thirty-five participants were assigned to the experimental group and 32 to the control group.

The study lasted about an education semester. In these classes, the students aimed to boost their writing presentation, self-regulated writing, and writing self-efficacy by resorting to synergetic writing tasks. EFL students in the treatment class had Web-based synergetic writing teaching as treatment although EFL students in the control class had personal synergetic writing intervention. At the end of the education semester, both numerical and categorical information were analyzed. Those participants who received a Web-based synergetic writing class performed much better than those who received a non-web-based synergetic writing class.

Abdulrahman and Kara (2022) conducted a quantitative study regarding the product-aided writing training influence on the preliminary learners' writing scores in the university writing program. The academic writing course has such importance that attracted many researchers' attention. The duration of the current experimental investigation lasted about 16 weeks. The students' progress was evaluated by applying pretest and posttest. Altogether 50 attended the study. The pupils' division process into instructional classrooms required the researchers' systematic selection. About eight topics were given to each student to write about during this period. Finally, the results revealed the fact that the pupils in the experimental class who were exposed to product-aided writing training outperformed their counterparts in the process-aided writing training that received process-aided writing training.

Truong and Nguyen (2023) investigated the instructors' opinions about boosting autonomy in language learners to upgrade the participants' writing expertise. These researchers made inferences that high school students are only consumers of their teachers ' knowledge so they are passive learners and to make them more active and independent, increasing their autonomy would be the best choice. The prominent importance would be probing the six high school foreign language instructors' opinions about boosting the learners' autonomy in the writing domain in Vietnam. Statistical analysis yielded the following conclusion almost half of the teachers agreed on increasing language learners' autonomy in writing training classrooms and the other half were doubtful about its feasibility. Going through the existing literature, it can be discerned that the effect of only one variable has been investigated on the writing classes, for example; self-regulation, learning self-assurance, autonomous learning, motivation, learners' attitudes, and facilitating and debilitating anxiety have been investigated on either product or process-related writing classrooms. To date, almost no study has examined the interrelationships among self-efficacy, autonomy, and strategy use in both product/process-based writing classes. To this end, the researchers formulated the following two research questions:

RQ1: Is there any significant relationship among self-efficacy, autonomy, language proficiency, and EFL learners' strategy use in product/process-based writing instruction?

RQ2: Is there any significant difference between the product and process-based groups' two-way correlation among autonomy, self-efficacy, language proficiency, and strategy use?

Methodology

Participants

A total number of 381 Iranian university students took part in the current inquiry. Among these participants, 105 of them were men and 276 were women. The participants were about 18 to 24 years old. Their major was English translation, English teaching, and English literature. These students had two things in common: one was the very writing course that they had taken that semester and the other was that they were all students of English majors so the proficiency level of almost all of the students was the same. However, to make sure about the participants' proficiency level, the researchers administered OPT and the results were indicative of the fact that the participants were mostly intermediate and upper intermediate.

Table 1. Demographic Information of the Participants

Participants	Data
Total number	381
Men	105
Women	276
Age range	18-24
Proficiency level	Intermediate &Upper-intermediate
Fields of study	English Translation
	English Literature
	English Teaching
Process-oriented writing Participants	296
Product-oriented writing Participants	85

Instrumentations

Three questionnaires utilized in this study were self-efficacy, learner autonomy, and writing strategy questionnaires.

Writing Self-Efficacy Questionnaire

Khojasteh et al. (2016) writing self-efficacy questionnaire was utilized to understand which group of students performed a writing task more efficaciously. The questionnaire consisted of 25 items on a five-point Likert scale in which the participants selected the most suitable choices among the options between 5(1=Strongly Disagree, 2=Disagree, 3=No idea, 4=Agree, and 5=Strongly Agree).

Learner Autonomy Questionnaire

Yeung's (2019) autonomy questionnaire was employed in this research project. The participants' writing expertise autonomy analysis and data collection process were carried out both through questionnaires and self-assessment forms, exploratory questions, and the participants' diaries. The questionnaire involved two parts and one self-assessment section. The first section was composed of 3 different sections and each section involved 4 questions. The second section was composed of 7 open-ended questions. In the self-assessment part, the candidates evaluated their own writing.

Writing Strategy Scale

The adopted questionnaire in this study, developed by Raoofi, et al., (2017), was the result of the revision of the four following questionnaires: Oxford's (1990) Strategy Inventory for Language Learning (SILL), Petrić and Czàrl's (2003) Writing Tactics Questionnaire, He's (2005) Writing Tactics Questionnaire, and Pintrich et al.'s (1993) Motivated Strategies for Learning Questionnaire (MSLQ). The revision was developed to put more emphasis on ESL writing strategies. The questionnaire consisted of 30 items built on a 5-point Likert scale. The university students selected the most appropriate options from 1 to 5. This 30-item questionnaire of the writing strategy scale was classified under five big categorizations: metacognitive, cognitive, effort regulation, social, and affective.

Oxford Placement Test

This placement test is employed to determine whether students enjoy similar levels of language proficiency. It is also schemed for non-native English speakers and presents a dependable way to classify learners in terms of their overall language proficiency. It is suitable for students aged 16 and more, and also it can be given online, so students can take it at home or school.

Data Collection Procedure

AREL

The autonomy, self-efficacy, and strategy use questionnaires were prepared and distributed among the students of the process/product-based writing instruction classes at the same time. Prior to the administration of the questionnaires, the researchers determined their language proficiency via administering OPT. The participants completed the questionnaires and OPT either online via various social media platforms or in-person. Confidentiality of the participants was maintained and assured.

Data Analysis

To answer the first question, the researchers employed multiple correlations. To probe the interrelationships among autonomy, strategy use, language proficiency, and self-efficacy, the researchers ran Structural Equation Modeling (SEM). Coefficient alpha (Cronbach) was utilized to determine the reliability indices of the instruments.

Results

Reliability Indices

The researchers used coefficient alpha (Cronbach) to determine the reliability indices of the instruments. The reliability indices for language proficiency, self-efficacy, strategy use, and autonomy were .79, .88, .89, and .80 respectively.

Table 2. Reliability Indices for the Instruments

	N	Mean	Std. Deviation	Variance	Cronbach
Language Proficiency	381	29.69	7.50	56.64	.79
Self-Efficacy	381	84.23	21.05	443.29	.88
Writing Strategy	381	97.49	24.41	595.99	.89
Autonomy	381	29.73	7.52	56.65	.80

Testing Normality Assumption

The Kurtosis and Skewness basis for strategy use, autonomy, language proficiency, and self-efficacy are shown in Table 3. Since all values were within the ranges of ±2, it can be inferred that there was no significant deviation from a normal distribution.

Table 3. Testing Normality Assumption

Group	Normality	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error

	Proficiency	296	.096	.142	.342	.282
Process Oriented	Self-Efficacy	296	.080	.142	.238	.282
	Writing Strategy	296	-.320	.142	.395	.282
	Autonomy	296	-.074	.142	-.155	.282
	Proficiency	85	.036	.261	.164	.517
Product Oriented	Self-Efficacy	85	.021	.261	.175	.517
	Writing Strategy	85	.144	.261	-.007	.517
	Autonomy	85	.175	.261	-.686	.517

The First Research Question

Table 4 shows the results of the Multiple Correlations (MC) among self-efficacy, strategy use, language proficiency, and autonomy for the process and product-based groups.

Table 4. Multiple Correlations between Self-Efficacy, Autonomy, Language Proficiency, and Strategy Use by Groups

Correlations	Process-Oriented	Product-Oriented	Z-Value	P
Self-Efficacy & Autonomy	.606	.284	3.28	.001
Self-Efficacy & Strategy Use	.585	.389	2.07	.019
Proficiency & Strategy use	.665	.268	3.23	.001
Proficiency & Autonomy	.676	.254	3.25	.001
Proficiency & Self-Efficacy	.682	.386	3.22	.001
Autonomy & Strategy Use	.677	.393	3.26	.001

The results revealed that the correlations for self-efficacy and autonomy for the process-based group was .606 (representing a large effect size, p < .05) while the MC for the product-based group was (MC = .284, representing a weak effect size, p < .05). Moreover, the correlations for self-efficacy and strategy use for the process-based group was .585 (representing a large effect size, p < .05) whereas the MC for the product-based group was (MC = .389, representing a moderate effect size, p < .05). In the same vein, the findings demonstrated that the correlations for proficiency and strategy use for the process-based group was .665 (representing a large effect size, p < .05) while the MC for the product-based group was (MC = .268, representing a weak effect size, p < .05). Furthermore, the correlations for proficiency and autonomy for the process-based group was .676 (representing a large effect size, p < .05) whereas the MC for the product-based group was (MC = .254, representing a weak effect size, p < .05). Likewise, the correlations for proficiency and self-efficacy for the process-based group was .682 (representing a large effect size, p < .05)

whereas the MC for the product-based group was (MC = .386 representing a moderate effect size, p < .05). Finally, the correlations for autonomy and strategy use for the process-based group was .677 (representing a large effect size, p < .05) whereas the MC for the product-based group was (MC = .393 representing a moderate effect size, p < .05). Overall, the findings demonstrated that the learners in the process-based group were more autonomous, more self-efficacious, more proficient language learners, and could make proper use of L2 strategies compared to their counterparts in the process-based group.

Investigating the Second Question

A Structural Equation Modeling (SEM) was run to probe interrelationships among autonomy, writing strategy, language proficiency and self-efficacy (Figure 1). Technically speaking, the present SEM is named Structural Regression Model (SRM) since all variables are inter-connected through two-headed arrows ([Khine, 2013](#)).
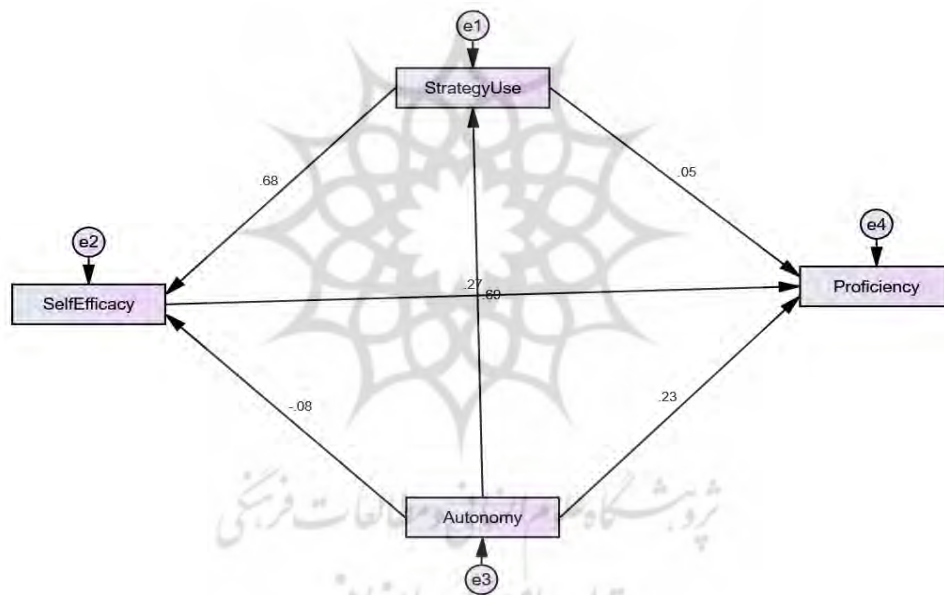
Figure 1. Path Analysis of Interrelationships between Autonomy, Writing Strategy, Language Proficiency, and Self-Efficacy

Before discussing the results, the assumptions of univariate and multivariate normality should be checked. Table 5 shows the skewness and Kurtosis indices of univariate normality, and Mardia's index of multivariate normality. The skewness and kurtosis indices were within the ranges of ±2; hence univariate normality of the present data was ensured. The Mardia index of multivariate normality; i.e. 2.46 was lower than 3. Thus, it was concluded that the assumption of multivariate normality was also retained.

Table 5. Univariate and Multivariate Normality Indices

Variable	skew	kurtosis
Autonomy	.027	.317
Writing Strategy	-.178	.228
Language Proficiency	.066	.402
Self-Efficacy	.056	.222
Mardia		2.461

Based on the results shown in Table 6, it can be concluded that the model of relationships among self-efficacy, writing strategy, language proficiency, and autonomy enjoyed a good fit. Two sets of fit indices will be discussed: absolute fit indices which test the fit of the model, and incremental fit indices which show the improvement of the model being tested over the null model which has no relationships between the variables. It should be noted that the third set of fit indices; i.e. parsimony fit indices, will not be reported due to the fact these indices compare several models to choose the simplest – most parsimonious – one. This study included a single model. The fit indices are discussed as follows: The non-significant chi-square index of badness of fit supported the fit of the model (χ^2 (2) = 1.06, p = .588). The ratio of chi-square over the degree of freedom; i.e. .531 was lower than 3. The SRMR index of .027 was lower than .10. The RMSEA of .025, and its confidence intervals [.021, .033] were lower than .05. The Probability of Close Fit (PCLOSE = .718) was higher than .05. Finally, the Goodness of Fit Index (GFI = .954) was higher than .90. All these results supported the fit of the model.

Table 6. Fit Indices for Six Measurement Models

	Indices	Index	Criteria	Fit
	X^2	1.063	---	---
	Df	2	---	---
	P	.588	> .05	Good Fit
	X^2 Ratio	.531	< 3	Good Fit
Absolute	SRMR	.027	<.10	Good Fit
	RMSEA	.025	<.05	Good Fit
	CI	[.021,.033]	<=.10	Good Fit
	PCLOSE	.718	>.05	Good Fit
	GFI	.954	>=.90	Good Fit
Incremental	RFI	.947	>=.90	Good Fit

TLI	1		>=.90	Good Fit
CFI	1		>=.90	Good Fit
NFI	.968		>=.90	Good Fit
IFI	1		>=.90	Good Fit
Hoelter (Sampling Adequacy)	291		>200	Adequate

All incremental fit indices were higher than .90; Relative Fit Index (RFI = .947), Tucker-Lewis Index (TLI = 1), Comparative Fit Index (CFI = 1), Incremental Fit Index (IFI = 1), and Normed Fit Index (.968) were all higher than .90. All these indices supported the fit of the model. And finally, the Hoelter index of sampling adequacy was 291. Since this index was higher than 200, it was concluded that the present sample size was adequate for running the SEM model.

Table 7 shows the direct relationships between self-efficacy, writing strategy, language proficiency, and autonomy for process-based on product-based groups. The results indicated that; a) the strategy use of process-based group (b = .997, beta = .690) had a significantly higher direct effect (z = 2.41, p = .015) on self-efficacy than the product-based group (b = .721, beta = .541), b) the autonomy of process-based group (b = 1.11, beta = .740) had a significantly higher direct effect (z = 3.11, p = .001) on self-efficacy than the product-based group (b = .630, beta = .479), c) the autonomy of process-based group (b = -.284, beta = -.131) had a significantly higher direct effect (z = 3.17, p = .001) on strategy use than the product-based group (b = -.124, beta = -.092), d) the autonomy of process-based group (b = .329, beta = .229) had a significantly higher direct effect (z = 3.25, p = .001) on proficiency than the product-based group (b = .112, beta = .091), e) the strategy use of process-based group (b = .049, beta = .046) did not have any significantly higher direct effect (z = 1.26, p = .372) on proficiency than the product-based group (b = .037, beta = .031); and finally, f) the self-efficacy of process-based group (b = .186, beta = .281) had a significantly higher direct effect (z = 2.35, p = .012) on proficiency than the product-based group (b = .124, beta = .117).

Table 7. Comparing Two-Way Relationships across Groups

	B	S.E.	C.R.	P	Beta	Z-Value	Sig.
Strategy Use → Self-Efficacy Process-based	.997	.074	13.448	.001	.690	2.41	.015

		B	S.E.	C.R.	P	Beta	Z-Value	Sig.
	Product-Based	.721	.064	11.31	.001	.541		
Autonomy → Self-Efficacy	Process-based	1.115	.111	10.024	.001	.740	3.11	.001
	Product-Based	.630	.092	6.84	.001	.479		
Autonomy → Strategy Use	Process-based	.284	.161	-1.771	.077	-.131	3.17	.001
	Product-Based	.124	.147	-.843	.153	-.092		
Self-Efficacy → Proficiency	Process-based	.186	.055	3.375	.001	.281	2.35	.012
	Product-Based	.124	.063	1.968	.001	.117		
Strategy Use → Proficiency	Process-based	.049	.106	.463	.644	.046	1.26	.372
	Product-Based	.037	.924	.040	.511	.031		
Autonomy → Proficiency	Process-based	.329	.126	2.624	.009	.229	3.25	.001
	Product-Based	.112	.121	.925	.134	.091		

Discussion

This inquiry was run to probe any main association among strategy use, autonomy, language proficiency, and self-efficacy in product/process-based writing programs. The two research questions had one thing in common, and that was the superiority of the students' writing in the process-oriented writing classes considering four variables under investigation: Self-efficacy, strategy use, language proficiency, and autonomy over the product-oriented writing classes. Therefore, the justification and explanation regarding the priority of process-oriented writing instruction over product-oriented writing instruction have been investigated.

At first, the study intended to delve into the obvious association between learners' strategy use and self-efficacy in product/process-based writing classrooms. The Pearson Correlation Coefficient between strategy use and self-efficacy had the highest value in the process-based group. One possible argument for higher self-efficacy in the process-based writing classes can be because of the higher level of self-efficacy of these students which might have been strengthened during the process-oriented classes. Self-efficacy has a critical function in the participants' achievement concerning acquiring a new language. The partial uniformity of the current exploration outcomes with the other inquiry results conducted by Cotterall (1999) could be easily deducted. Another explanation for higher self-efficacy in process-oriented writing classes may be due to higher motivation because motivation and self-efficacy directly influence each other. In this regard, Bassi et al. (2007) conducted a study that the participants with stronger and weaker self-efficacy. That exploration conclusion overemphasized the straight influence of self-efficacy on motivation. The

participants who possessed stronger self-efficacy endeavored more and allocated more time to achieve their intentions in comparison with the participants who had lower levels of self-efficacy. Yet another probable justification for the participants' superiority in the process-based writing expertise classes over the product-based writing expertise classes may stem from the fact that in process-based writing classes, more writing strategies may be utilized by more proficient participants. Many investigators administered similar inquiries with the obtained consequences that differentiate between more experienced and less experienced writers about the writing techniques' utilization (Baker & Boonkit, 2004; Chien, 2012; Roca de Larios et al., 2008; Roca de Larios et al., 2001; Sasaki, 2000). The findings of this inquiry are consistent with the research performed by Chien (2012) in Taiwan. The inquiry was concerned with the writing technique utilized by the research participants and their consequence achievement in the English writing techniques. The research participants were educated to apply the instructed written techniques during the writing process. Forty participants (20 less experienced and 20 experienced writers) were under investigation. The findings indicated that the experienced writers in the process-based writing classes applied more time for designing, revising, and editing their texts compared to less experienced writers.

Exploring the connection between self-efficacy and autonomy in product/process-based writing instruction was the second step in this research. The statistical analysis outcomes explained a close association between autonomy and self-efficacy. The Pearson Correlation Coefficient between autonomy and self-efficacy was significantly higher for the process-related writing classes. One possible explanation for the outperformance of students in process-oriented writing classes over product-oriented writing classes may be that autonomy would be better strengthened in the process-oriented writing classes. The current investigation outcomes are partially in agreement with Nunan's (1995) inquiry about the learning autonomy effects on the learners' learning process. During the learning process, the learners participated in various language programs including public workshops, collaborative learning, teamwork or group, outside-the-classroom learning, and personalized learning. Many modifications were noticed in the participants' behavioral attributes at the end of the inquiry. For instance, their communication skills had been promoted dramatically since the beginning of the study and their preferences were more on process-oriented approach than product-oriented approach. Another probable justification for better performance of students in process-oriented writing classes can be because of self-efficacy which has a direct impact on the learners 'autonomy. A similar study was conducted by Cotterall and Crabbe (1999).

They attempted to enhance participants 'understanding of their learning process. In other words, their inquiry aimed to find an association between learners' autonomy and self-efficacy during the learning procedure. Empowering learners to arrange their learning procedure was the inquiry's ultimate goal. According to the obtained results self-efficacy and autonomy directly affect each other. The third probable justification for the process-based writing method's priorities over the product-based writing method (regarding self-efficacy and autonomy) could be because of the reality that the process-based writing method positively and directly affects the participants' writing proficiency, critical thinking ability, and autonomy.

The present research results were congruent with Bashiri and Shahrokhi's (2016) study in which they probed the process-based writing method functions on writing expertise, autonomy, and critical thinking progression. The result indicated that the process-based writing method positively and directly impacts the participants' proficiency regarding writing expertise, critical thinking, and autonomy. The fourth possible justification for the relatively higher Pearson correlation coefficient between autonomy and self-efficacy in the process-based writing classes over the product-based writing classes might be because of the different strategies that are utilized by different people in the process-based writing classes. Therefore, the newly investigated inquiry outcomes have an equal and the same consequence as the exploration fulfilled by Sánchez and Pinzón (2019) in which they concluded that process method and different writing strategies utilization would enhance the students' self-efficacy and self-confidence in writing instruction classes. The investigators who conducted partially the same inquiry with equal outcomes are as follows; Abas and Abd Aziz (2016), Alnufaie and Grenfell (2012), and Griva et al. (2009).

The correlation between autonomy and strategy use in product/process-based writing instruction was the third step. Pearson correlation coefficient between strategy use and autonomy was significantly higher for the process-based writing classes. One possible argument for the higher Pearson correlation coefficient between strategy use and autonomy in the process-based classes may be related to the students' self-regulation, which would be promoted during the process-based writing classes. The results were in line with Lam's (2015) research, in which the researcher attempted to investigate the advancement of self-activating learning of EFL students in process-based writing courses. The finding revealed that strategy instruction in writing is a must because it helps students to be more self-regulated. Another probable justification for the higher Pearson Correlation Coefficient between strategy use and autonomy in the process-related writing classes compared to the

product-related writing classes might be due to the higher autonomy level that students would acquire in the process-related writing instruction. The present inquiry results were partially in harmony with Truong and Nguyen's (2023) investigation results, in which they investigated the instructors' opinions about boosting their students' autonomy in writing classes. Yet another likely argument for better participants' performance in process-related writing instruction in comparison with product-related writing instruction might be due to the direct association which is between the learners' self-efficacy and autonomy. The present research outcomes were partially congruent with Cotteral and Crabbe's (1999) exploration. The obtained results clarified that self-efficacy and learners 'autonomy are mutually influencing. Their investigation's ultimate aim was to make participants capable enough to arrange their own learning procedures. To put it in a nutshell, the more autonomous the students were, the more awareness they would acquire about their learning process.

The first likely justification for the lower correlation coefficient among variables under investigation (self-efficacy, autonomy, language proficiency, and strategy use) in the product-based writing classes might be due to the high emphasis placed on product-related writing instruction. Critics claim that it is right that grammatical points and vocabulary sequences are the cornerstones of EFL/ESL writing classes but writing skill is not just confined to these things. Although accuracy and correctness are essential factors that product-oriented teachers put high emphasis on (Silva, 1990), many students who have mastered the grammatical points are not able to write a well-organized text (Hyland, 2003). Moreover, the product-related writing method only emphasized the ultimate product. It does not explain how to write, and because of this, the processes and stages of writing would remain covered (Flower & Hayes, 1977). The second probable reason behind the lower correlation coefficient among the variables in this investigation (self-efficacy, autonomy, language proficiency, strategy use) in the product-related writing classes might be because of the feedback that is given one time on the last draft (Badger & White, 2000). The third probable argument for the inferior correlation coefficient between the variables in the product-based writing classes can be its excessive emphasis on correctness. According to Gen (2005), in product-based writing classes, first, the learners must finish their writing assignments and then deliver them to their teachers, later their papers which were full of red mark corrections would be returned to them. Unfortunately, even though students pay high attention to their errors, their writing skills remain unchanged and without any sign of improvement. In this regard, Kuzu (2007), pointed out that in the old methodology of English writing, the teachers were considered to be sources of information while learners were consumers of their teachers' knowledge. The

fourth possible justification for the worse correlation coefficient in product-related writing instruction might be that in product-oriented writing instruction, "modeling" is considered to be an effective way of both giving feedback to students and teaching instructions (Saeidi & Sahebkheir, 2011).

Conclusion

The conclusion is primarily concerned with the generalizability of the findings. It can be concluded that the process-oriented approach to writing instruction is advantageous over the product-oriented one. Broadly speaking, EFL students' autonomy, self-efficacy, language proficiency, and strategy use could be boosted if teachers adopt the process-oriented approach. Moreover, teachers can provide more appropriate feedback on students' written works and allow them to have more revisions if necessary. However, potential challenges of the process-based approach could be time constraints, consistency in providing proper feedback throughout the instructional period, and students' adherence to the adopted plan.

Just like any other study, the current study is not carried out without some limitations. The main limitation concerns the reactivity effect while filling out the questionnaire forms. The second limitation pertains to the candidates' total numbers in each group. Each group participant number was unequal, for instance, the participants' total number in the process-related writing classes was about 298 while in the product-related writing classes, the number was about 85 students.

The current inquiry attained outcomes clearly elucidated that process-based writing instruction has priorities over product-based writing instruction, but still, more gaps remained uninvestigated that required more research tasks to be manipulated by getting aid from more upcoming investigators. The association among only four variables was investigated in the current inquiry therefore, for further investigation, motivation, anxiety, self-esteem, and other related variables impact on the process and product-related writing classrooms would be recommended for further inquiry. The present inquiry emphasis was only on the university students, whereas other studies could be carried out while the researchers expand the field of study and involve high school students to boost the generalizability of the research. Finally, it is suggested for future studies, the number of participants for both product/process-based writing classes should be equal.

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