

## The effect of indirect feedback on students' writing performance across different learning strategies

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### Suggested Citation:

Aridah, A., & Iswari, W.P., (2021). The effect of indirect feedback on students' writing performance across different learning strategies. *Cypriot Journal of Educational Science*. 16(3), 1021-1035. <https://doi.org/10.18844/cjes.v16i3.5820>

Received October 30, 2020; revised from February 12, 2021; accepted from April 19, 2021.

Selection and peer review under responsibility of Prof. Dr. Huseyin Uzunboylu, Higher Education Planning, Supervision, Accreditation and Coordination Board, Cyprus.

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### Abstract

This paper aims at knowing how indirect feedback affects the writing performance of students who have different language learning strategies. The study used pre-experimental design with pretest and posttest design. Twenty-one students participated in the treatment which lasted for one semester. The treatment applied a process writing approach in which feedback provision was one of the steps in the process. The students were required to write five essays on different topics and the teacher gave indirect feedback on each essay draft. During the revision session, the students revised and rewrote their essays following the feedback provided by the teacher. The last version of each essay was scored. The results showed the students' writing performance significantly improved from the first essay to the succeeding essays, regardless of their learning strategies. However, a significant difference in writing performance across different learning strategies was not found. They both performed equally well.

Keywords: Direct Strategies, Indirect Strategies, Indirect Feedback, Process Approach, Writing Performance;

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## 1. Introduction

The fact that the students still find difficulties in producing a piece of effective writing, although feedback and corrections have been given, has created frustration on the side of teachers and confusion on the side of students. Until recently, what constitutes most effective feedback is still an issue of controversy. The research findings did not give a common conclusion that can be followed by the teachers to maximize their feedback provision. Some research findings revealed that one form of feedback has a higher level of effectiveness than the others whereas other studies showed the opposite results. Ferris (2006), for example, discovered that students who received either direct or indirect feedback were able to effectively revise and correct their errors. This indicated that both direct and indirect forms of feedback are equally effective.

Other studies, however, showed contradictory findings. For example, Lalande (1982) reported that indirect written feedback could reduce the errors made by the students whereas direct written feedback could not. In addition, Hyland and Hyland (2006) stated that indirect written feedback helps students to benefit from both guided learning and problem-solving. The efficacy of indirect feedback was also confirmed in a study conducted by Baleghizadeh and Dadashi (2011) who discovered that this form of written feedback provision contributed to improve students' written work more effectively compared to the direct feedback provision. All of these findings are contradictory to the claim given by Ferris and Roberts (2001) who discovered that direct written feedback was more effective than indirect written feedback and the study conducted by Ferris (2011) who found that direct corrective feedback given by the teacher led to more accurate revisions (88%) than indirect corrective feedback (77%). The findings on the efficacy of indirect feedback were also not in line with Chandler (2003) who claimed that direct feedback was more effective in helping students produce the correct form in their writing and this form of feedback is more preferred by the students compared with indirect corrective feedback.

The findings of the earlier studies indicated that there was no fixed agreement among scholars as to what form of feedback is most effective in reducing the problems in students' writing. Some studies such as Ferris and Roberts (2001) and Ferris (2011) found that direct feedback was effective in improving students' writing while other studies such as Lalande (1982) and Robb, Ross, and Shortereed (1986) found that the type of feedback which was effective in decreasing the students' errors was the indirect feedback. The different forms of feedback existing in language learning and teaching process and the disagreement made by researchers are two factors which sometimes make teachers confused about which one should be used to effectively develop students' writing performance. Therefore, it is important that a deeper study on the effect of one particular form of feedback be conducted to provide information to the teachers about the form of feedback recommended to use and how this particular form of feedback works in a different context, i.e. in a foreign language context, which might be different from the context where the earlier researchers conducted their studies.

Another factor which might contribute to the effectiveness of one particular form of teacher written feedback is individual differences (IDs) in language learning. This factor was not taken into account by most of the previous researchers (e.g. Ferris, 2011, Baleghizadeh & Dadashi, 2011, and Chandler, 2003). One researcher of written corrective feedback who considered individual differences of the students in her study is Sheen (2011). She explored some aspects of individual differences such as language anxiety, language aptitude, and language attitude. However, other individual differences such as motivation, gender, interests, intelligence, and language learning strategies are still rarely

taken into consideration. It is generally known that students' IDs also play roles in language leaning achievement, so that they cannot be ignored. Research findings above showed that some factors of individual differences contribute to the effectiveness of feedback provision on the students' writing performance. In the context where English is learned as a foreign language, such as in an Indonesian context, an appropriate use of feedback to develop students' writing skill is needed. Likewise, individual differences also need to be taken into consideration when a teacher gives feedback to the students.

One of the individual differences believed to contribute to success in language learning either as a direct or as a mediating factor is language learning strategies (LLS). It is found that a good or successful language learner used certain language strategies (For example, O'Malley and Chamot, 1990; Oxford, 1990, and Griffiths, 2015; and Griffiths (2018). Those studies gave more emphasis on successful language learning in general. They did not focus on a specific area of language such as language skills and language components. The roles of LLS in a more specific area such as how they contribute to the successful paper revision in writing process are rarely studied. The ways students revise or correct their writing after receiving feedback from their teachers may be associated with the language learning strategy use, i.e. direct or indirect language learning strategies. Direct language learning strategies refer to how a learner generates or uses the language, including how to understand and use a new language, while indirect language learning strategies deal with the management of learning in general.

Because most of the studies conducted previously concentrated on the roles of LLS on the success of language learning in general, the present study focused on a more narrowed area of language learning. It investigated whether indirect feedback affected the students' writing performance and whether there was a significant difference in writing performance between students who used direct language learning strategies and those who used indirect language learning strategies after they received indirect feedback from the teacher. It is expected that by discovering the type of language learning strategies, the students may be facilitated to achieve maximal uptake in revising their papers. It is also expected that the teachers will maximize the effects of their teaching, which in turn will improve the students' learning performance.

### *1.1. Indirect feedback and writing performance*

Indirect feedback in this study refers to the feedback received by the students on their papers in which the teacher only indicates the errors without fixing them (Ellis, 2009). It can be in the form of "underline, circle, code, or other mark – but does not provide the correct form, leaving the students to solve the problem that has been called to his or her performance" (Ferris, 2006:83). There have been a lot of research reports which showed the comparison between the effectiveness of indirect feedback and that of other forms of feedback. The findings still did not show an agreed conclusion because of the diverse learning and teaching contexts and settings. The studies included those conducted by Ferris and Robert (2001), Hyland and Hyland (2006) and Ferris (2011). Ferris, for example, said that direct feedback was helpful in short term revision but indirect feedback for a long term revision. She stated: "However, over the course of the semester, students who received primarily indirect feedback reduced their error frequency ratios substantially more than the students who received mostly direct feedback" (p.33). But again, Ferris kept insisting on arguing that direct feedback was more effective than indirect feedback. According to her, direct feedback is easier for students to act on and it does not require much knowledge and effort on their part. However, the proponents of indirect feedback options argued that the form of indirect feedback is able to help students benefit from guided learning and problem-solving, to encourage them to be reflective on the existing knowledge as well as to

enable them to retain much deeper processing levels, which, in turn, lead to more effective self-editing and foster long-term retention of the acquired target forms (Lalande, 1982; Hyland and Hyland, 2006).

Is indirect feedback really more effective than direct feedback in improving students' writing performance? This question leads us to conduct a deeper investigation on how effective the indirect feedback is in increasing the quality of students' writing both for short and long term performances. There are three reasons why indirect feedback became the focus of this study. First, indirect feedback gives an opportunity for students to do self-correction which may encourage self-learning. It has been argued that since indirect feedback encourages the students to self-correct their errors using either their previous knowledge or any external resources such as writing and/or grammar books, it can promote guided learning and problem-solving on the part of the learner (Lalande, 1982; Chandler, 2003). Second, for this reason, indirect feedback is more likely to foster long-term learning than direct feedback (Bitchener & Knoch, 2008; Lalande, 1982). Because students pay big efforts to revise or correct their writing without any help from instant correction from their teacher, this may lead them to have long-term retention so that they will not make any further similar errors. Third, indirect feedback promotes students' curiosity of why one particular linguistic aspect is wrong or erroneous. The answer of their curiosity drives them to learn and prevent them from making the same mistakes.

### 1.2. *Learning strategies and feedback*

Experiences in giving feedback to students' writing showed that not all students make uptake and get benefits from the feedback given to them. Storch and Wigglesworth (2010) studied how learners processed, made uptake and retained feedback on their writing and they found that learner reached a lower level of uptake compared to the amount of feedback given. This finding indicated that although the teacher persistently provides feedback in the form of comments, corrections, symbols and other signs to indicate that their language has something wrong, the students still frequently make the same mistakes. It is acknowledged that this condition may also be related to the gradual process of learning in which students may not be able to instantly learn from their mistakes. They need a relatively long time which allows them to process the information for further retention. However, gradual process of learning is not the only factor which prevents students from uptake and long retention of the feedback. There are other factors which may contribute to the success of students in making use of feedback in order to be incorporated into their revision.

One possible factor contributing to success in language learning is individual differences (IDs). It is claimed that IDs are mostly identified as attributes affecting academic and linguistic competences in general and students' performance in the process and tasks of writing (Ferris & Hedgcock, 2005). They further stated that "the factors of individual differences need to be clearly understood which include learners' backgrounds, needs, expectations, styles, and strategies, as well as institutional requirements" (p.106). These individual differences are particularly required when teachers want to formulate the course objectives and the teaching goals. Writing performance as one aspect of the academic and language competences is hypothesized to be not only influenced by corrective feedback provision but also mediated by other factors. Ferris (2003: 125) proposed that when a teacher gives feedback on the students' paper, he or she needs to consider the students' IDs. Moreover, Pawlak (2014: 163) said that the effectiveness of feedback can be linked to IDs among learners, the context of learning and the inherent linguistic features and characteristics, and inevitably those three factors also interact with each other.

Furthermore, Pawlak (2014:164) identifies that IDs consist of individual variation and cognitive aspects such as aptitude, age, memory, and cognitive styles; affective aspects such as anxiety, motivation, and personality; and social aspects such as attitudes, genders, beliefs and preferences. All of these aspects could be assumed to have a mediating effect on the feedback intervention to which students are exposed. They are also hypothesized to affect the character and level of student engagement with negative feedback, thus affecting long-term development of language. Even though there are a lot of mediating factors which are hypothesized to affect the students' language development, language learning strategies are not mentioned as one of the factors. Is language learning strategy included as one factor in the IDs? Dörnyei (2005:6) stated that besides language aptitude and motivation, another learner factor which helps learners to develop through their active and creative participation in the process of learning and through the individualized learning method is language learning strategies. He added that "language learning strategies has been included into the inventory of important learner characteristics" (p.6) and they "have been traditionally included in the taxonomy of individual differences" (p.162). Finally, Sheen (2011:129) asserted that language learning strategies can be categorized as cognitive factors in addition to such factors as intelligence and language aptitude and these factors, especially affective factors have become the focus of most studies in second language learning. Unfortunately, there were no sufficient studies which examined how language learning strategies play a role in mediating corrective feedback and writing performance.

The present study then focused on language learning strategies which are assumed to be influential on the efficacy of corrective feedback because other individual differences such as motivation, language aptitude and learners attitude have been found to mediate the effectiveness of feedback on writing (Sheen, 2011). Language learning strategies are defined as the specific behaviors or thoughts that learners apply to assist them in comprehending, learning and retaining new information and the application of learning strategies covers the students who learn English both as a second and as a foreign language learning (O'Malley and Chamot (1990: xii). Furthermore, Schmeck (1988) viewed learning strategies as "combinations of cognitive (thinking) skills implemented when a situation is perceived as one demanding learning" (p.17). Oxford (1990) describes learning strategies as "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations" (p. 8).

Language learning strategies are classified in different ways. O'Malley and Chamot, (1990) divided learning strategies into three categories which include Metacognitive Strategies, Cognitive Strategies, and Social/affective Strategies. Oxford (1990) divides learning strategies into two big categories: direct and indirect strategies. Direct strategies are dealing with language while indirect strategies are dealing with the general management of learning. Furthermore, Oxford classified direct strategies and indirect strategies into 3 types respectively. The direct strategies include memory strategies, cognitive strategies and compensation strategies, while indirect strategies include metacognitive strategies, affective strategies and social strategies. The illustration of the different types of learning strategies can be seen in the following figure:

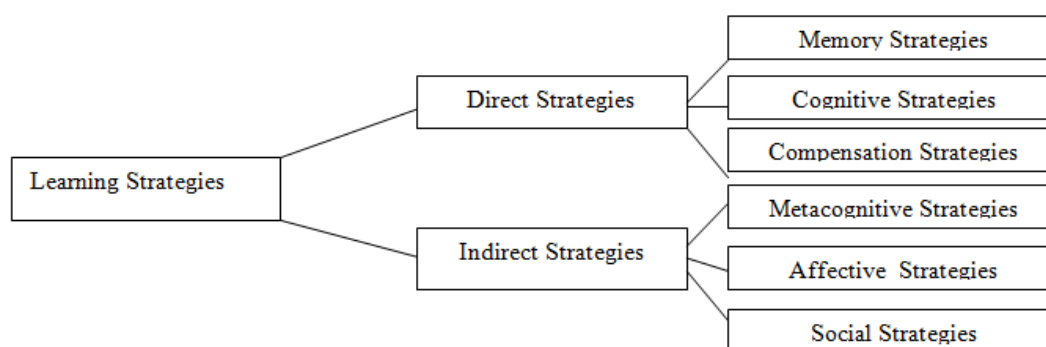


Figure 1. Different types of language learning strategies

In relation to feedback provision, Ellis (2010, p. 338) agreed that individual differences “mediate between the CF that learners receive and their engagement with the CF and thereby influence learning outcomes.” Therefore, it is assumed that learning strategies can be a variable which affects the efficacy of corrective feedback and it “provides a basis for examining each one separately and for investigating the relationships between them” (p. 346).

## 2. Research methodology

### 2.1. Design

This study was quantitative and employed a pre-experimental design with pretest and posttest. The pretest included all essays written by the students before feedback was given by the teacher. It consisted of all types of essay which were assigned to the students during one semester. They were assigned to write five essays on various topics, one essay in every two meetings. Then, teacher provided indirect feedback in every aspect of their essay. After that, they were asked to revise and to rewrite their papers based on feedback given by the teacher. So there were 5 essays written by each student. The final versions or the second drafts of their papers were assessed to determine the successfulness of indirect feedback in improving their performance in writing.

The posttest was the essay written by the students at the end of the semester. This was given two weeks after the writing process was completed. This aimed to find out whether there was a long retention about the feedback that had been given to them. This posttest was also used as the final test in which the students wrote the essay independently and no more feedback was provided. This posttest was the sixth essay the students had to write.

### 2.2. Participants

There were 21 students of the English Education Department at Mulawarman University, Samarinda, Indonesia participating in this study. They were taking Upper Intermediate Writing Course at the time this study was being conducted. They were selected as the participants because they had taken 2 writing courses before with the assumption that they had sufficient skills in writing and the ability to produce pieces of writing eligible to assess. The participants were selected by using total sampling technique, meaning that all students in the existing class were taken as the sample of the study.

### 2.3. *Data collection*

The data of this study was collected through 2 different instruments: writing tasks and a questionnaire of language learning strategies. The writing tasks consisted of writing assignments of 5 different types of essays which were given in different periods during the semester and one writing task for posttest. The tasks were the parts of the writing process in which the students received indirect written feedback on every writing task they have completed. The tasks were handed in to the teacher, and the teacher provided feedback in the forms of symbols, underlines, circles, question marks and other signs which indicated that there were something wrong with the language. The teacher did not give correction but let the students to use their cognitive skills to revise their mistakes or to solve the problems in their papers. The teacher then returned the papers back to the students for revision. They were asked to revise, edit and rewrite their papers in response to the feedback they received on their paper and then they handed in again to the teacher for scoring. The posttest was independent writing where no more feedback was given.

The second instrument used to collect data was a questionnaire of language learning strategies called Strategy Inventory of Language Learning (SILL) adopted from Oxford (1990) and it was distributed at the end of the semester after all of the writing tasks had been completed and scored.

### 2.4. *The Procedure of the Treatment*

The treatment was given by following the steps of the writing process approach, starting from pre-writing, writing the first draft, feedback and revision, writing the final draft and publishing. The step of feedback and revision was the main step of this research procedure in which indirect feedback was given by the teacher and the students were asked to revise and to rewrite their paper before they handed them in again to the teacher for scoring. There were five cycles of writing process. In each cycle, the students wrote an essay with a particular type. In cycle one, the type of essay was an example essay, followed by comparison and contrast essay in cycle two, classification essay in cycle three, process essay in cycle four, and argumentative essay in cycle five. In the posttest the students were given freedom to choose the type of essay they wanted to write. The topic of each type of essay was provided by the teacher and they had to write the essay in the classroom in a certain amount of time.

### 2.5. *Data analysis*

The data consisted of two sets. The first set was the students' scores of their writing which were assessed by using an analytic scoring system adopted from the ESL Composition Profile developed by Jacobs, et.al. (1981). In order to maintain the reliability of the scores, in addition to the teacher as the first scorer, two other independent scorers were employed to score the essays. The second set of data was the scores of the language learning strategies questionnaire (SILL), which was scored using Likert Scale.

In analyzing the data of writing performance, repeated measures ANOVA was used in order to compare the students' performance in each essay during the treatments (the drafts of each type of essay which had been revised or re-written by the students). This aimed to find out whether there was a significant difference between the quality of the first essay and those of subsequent essays. This was also to see how effective the indirect feedback in improving the quality of the students' writing from time to time after being provided with feedback. T-test was used to compare the quality of the students' writing during the revision process and the quality of the students' writing in the posttest.

The second set of data obtained from the questionnaire of SILL was analyzed by grouping the students who used direct strategy and those who used indirect strategies. The type of learning strategy used by the students was identified by classifying the scores into two groups: those who scored higher in the direct strategy and those who scored higher in the indirect strategy. In order to see what type of language learning strategies that was benefitted by indirect feedback, t-test was performed again to compare the average score of the students with direct strategies and those with indirect strategies.

### 3. Findings and discussion

#### 3.1. The effect of indirect feedback on students' writing performance

The results of data analysis revealed that the students' score consistently increased from the first essay to the last essay after they received indirect feedback (69.4 in the first essay to 75.2 in the last essay). It is shown in the descriptive statistical analysis that the students were able to gain 5.8095 points from the first essay to the fifth essay. The average scores of students' essays and the increasing trend of the means are presented on Table 1 and in Figure 1 respectively.

Table 1. The Average Scores of Each Essay  
Descriptive Statistics

Essays	Mean	Std. Deviation	N
Example	69.4048	7.54423	21
Contrast-Comparison	72.8810	5.89259	21
Classification	72.9048	5.81296	21
Process	74.5000	4.20119	21
Argumentative	75.2143	4.48211	21

Table 1 showed that the students' score improved from essay 1 to every consecutive essay. The highest score was found in the last essay (argumentative essay). This indicates that indirect feedback was able to improve students' writing performance. Figure 1 also clearly describes how the average scores of students' essay show a consistent increase although the essay 2 and essay 3 seemed not to show a substantial improvement.

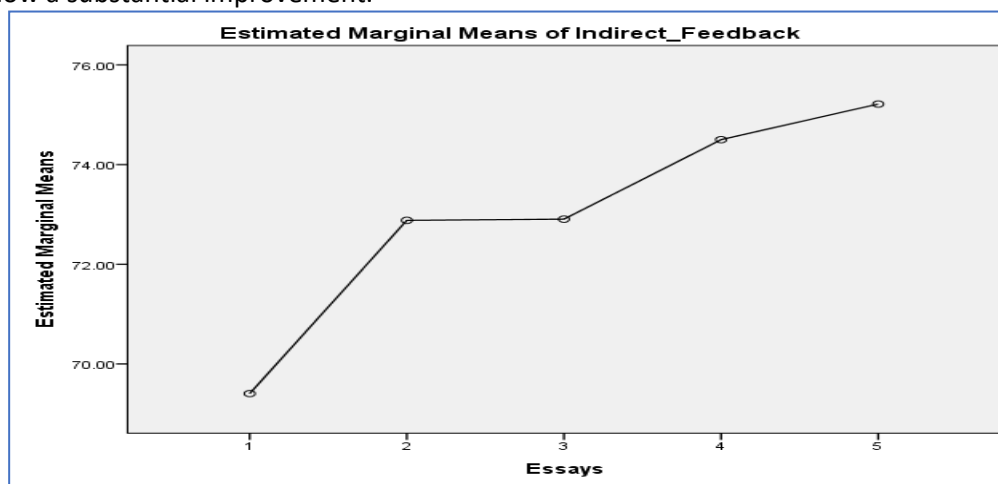


Figure 2. The trend of average score in students' essay



To prove whether the improvement in one essay to another essay was significant, one-way ANOVA with repeated measures was performed. The result of the statistical analysis is presented in the following table.

Table 2. The result of ANOVA with Repeated Measures for the Essays with Indirect Feedback

Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
	<b>Sphericity Assumed</b>	<b>422.105</b>	<b>4</b>	<b>105.526</b>	<b>9.494</b>	<b>.000</b>	<b>.322</b>
Essays	Greenhouse-Geisser	422.105	3.068	137.584	9.494	.000	.322
	Huynh-Feldt	422.105	3.687	114.486	9.494	.000	.322
	Lower-bound	422.105	1.000	422.105	9.494	.006	.322
	<b>Sphericity Assumed</b>	<b>889.195</b>	<b>80</b>	<b>11.115</b>			
Error(Essays)	Greenhouse-Geisser	889.195	61.359	14.492			
	Huynh-Feldt	889.195	73.739	12.059			
	Lower-bound	889.195	20.000	44.460			

The result of the one-way ANOVA with repeated measures demonstrated that the improvements of the students' essay in each type (from the example to argumentative types of essay) were significant with  $F(4, 80) = 9.494$ ,  $p\text{-value} = 0.000 < \alpha = 0.05$ , with the main effect  $\eta^2 = 0.322$ . This analysis had proven that indirect feedback had a significant effect on the improvement of students' writing performance, which was proven by the significant increase in the scores of their essay from time to time after they received indirect feedback from the teacher. This finding is also consistent with the result of a study conducted by Aridah (2016) who found that although both types of feedback (direct and indirect feedback) were equally helpful in promoting students' writing performance, the indirect feedback was still superior compared to the peer feedback investigated in the treatment.

The fact that students consistently performed better in writing after they received indirect feedback was in line with the earlier research findings (e.g. Lalande, 1982; Hyland & Hyland, 2006), revealing that indirect teacher written feedback was beneficial in improving students' writing. This may imply that indirect feedback allowed the students to make use of the learning opportunity, as they found ways to revise their own mistakes in writing with the clues given by the teacher. This learning process seemed to prevent them from making the same mistakes in the next writing tasks, and this might result in long-lasting improvement in their writing performance.

Some recent studies conducted in different countries also supported this finding. Alhumidi and Uba (2016), for example found that in Kuwait the students' writing as well as their language skills got improved after they received indirect feedback. They then suggested that it is not necessary to correct all of the errors made by the students, but to correct only "those errors which are deemed necessary to correct" (p. 361). In relation to the perception of teacher and students towards the efficacy of indirect feedback, Linh (2018), discovered that students and teachers in Vietnam had the same perception that indirect feedback is effective in treating grammatical errors. Furthermore, statistically significant improvement was also found in students' writing accuracy after indirect feedback was given and even this type of feedback is able to stimulate students' independent learning (Shirotha, 2018).

### 3.2. The improvement of students' writing in each aspect of writing

Apart from the students' overall writing scores, the improvement of the students' writing can also be seen from each aspect of writing. The students' writing was measured using the analytic scoring system adopted from the ESL composition profile, comprising the aspects of content, organization, vocabulary, language use, and mechanics. Figure 2 showed the students' performance in each writing aspect and it compared their writing performance during the revision process and that in the posttest (independent writing).

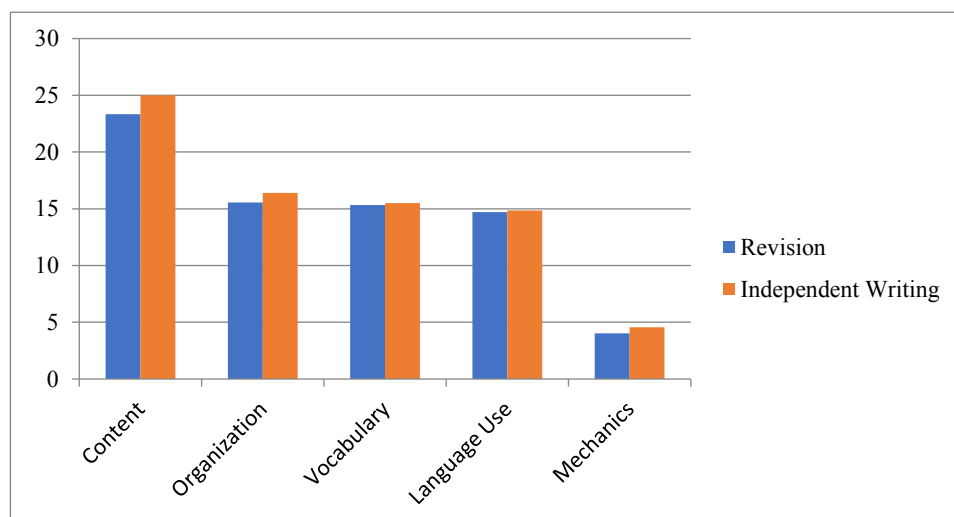


Figure 3. The performance of students in each aspect of writing

A closer look at data in Figure 2 confirms the result of the students' overall writing performance. This indicated that the students really got benefits from indirect feedback. In each aspect of writing, the students gained a higher score, especially in content, organization and mechanics, and slightly higher in vocabulary and language use. The students were able to show their improved writing performance in both content (and organization) and form (i.e. vocabulary, language use, and mechanics). The revision process seemed to successfully engage the students to work on their writing. After being given written indirect feedback, the students were able to correct most of their own mistakes and overcome their problems in writing. This writing process trained students to become more independent and responsible for the quality of their writing. It has been proved by the result of the study, in which the students' writing performance was even better at the stage of independent writing, or when no more revision was given.

### 3.3. Students' writing performance across different language learning strategies during the revision process and independent writing

It was mentioned before that another factor which is assumed to influence students' writing performance as a mediating variable for feedback provision is Language Learning Strategies (LLS). The strategies used by the students in language learning, especially in understanding and using the feedback received from the teacher may affect their writing performance. Therefore, it is also important to examine the role of language learning strategies in improving the students' writing. More specifically, this study also aimed at finding whether indirect feedback was mediated by certain

language learning strategies in maximizing the revision of students' writing, which in turn lead to maximum performance.

The result of questionnaire showed that from 21 students participating in this study, 9 students were identified to use direct LLS and the other 12 students mostly used indirect LLS. The result of data analysis demonstrated that during the revision process the students with direct LLS scored slightly higher than those with indirect LLS (direct LLS = 73.09; indirect LLS = 72.9). The comparison can be seen in the following figure.

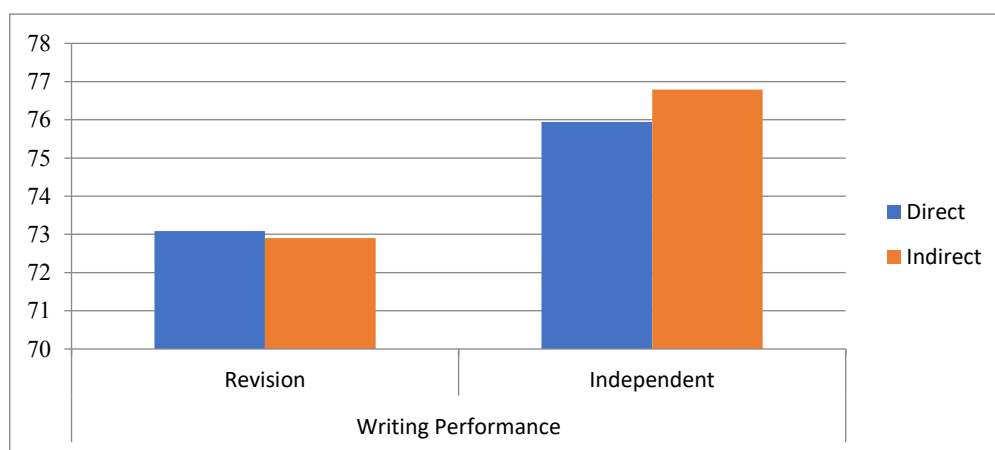


Figure 4. Students' writing performance across different LLS in the revision process and in the posttest (independent writing)

Then, the average scores of the students were tested using t-test to determine whether the difference was significant. It was found that there was no significant mediating effect of LLS on students' writing performance,  $t(19) = 0.0857$ ,  $p = 0.466$  despite direct LLS ( $M = 73.08$ ,  $SD = 6.512$ ) achieving higher score than indirect LLS ( $M = 72.9$ ,  $SD = 3.47$ ). This implies that LLS did not contribute sufficiently to the way the students revised their writing. Whatever the strategies used by the students, it did not affect their performance in revising their essays.

Table 3. The Result of t-test of the students' writing in the revision process across different language learning strategies

	Variable 1	Variable 2
Mean	73.08888889	72.9
Variance	42.41111111	12.30545455
Observations	9	12
Pooled Variance	24.98152047	
Hypothesized Mean Difference	0	
Df	19	
t Stat	0.085703628	
P(T<=t) one-tail	0.466299355	
t Critical one-tail	1.729132792	
P(T<=t) two-tail	0.932598709	
t Critical two-tail	2.09302405	

The same result was found in the students' independent writing (posttest) where direct LLS and indirect LLS did not show a statistically significant difference ( $t(19) = -0.46, p = 0.325$ ) even though the average score of indirect LLS ( $M = 76.79, SD = 2.97$ ) was higher than that of direct LLS ( $M = 75.94, SD = 5.41$ ). This also implied that whatever the strategies used by the students in the independent writing, they would not affect their performance.

Table 4. The Result of T-test of the students' writing in the independent writing across different language learning strategies

	<i>Variable 1</i>	<i>Variable 2</i>
Mean	75.94444444	76.79166667
Variance	29.27777778	8.839015152
Observations	9	12
Pooled Variance	17.44480994	
Hypothesized	Mean	
Difference	0	
Df	19	
t Stat	-0.460009126	
P(T<=t) one-tail	0.325365142	
t Critical one-tail	1.729132792	
P(T<=t) two-tail	0.650730285	
t Critical two-tail	2.09302405	

These findings indicated that indirect feedback received by the students to improve their writing quality was not dependent on a certain type of LLS. Both types of LLS (direct and indirect) did not mediate the indirect feedback and the students' writing performance. The students would perform the same regardless of the types of learning strategies they used. Because there were a very limited number of studies investigating the roles of LLS in improving writing performance, it was hard to provide research findings which support this result. The example of studies which examined the effect of LLS on language learning was that conducted by Nisbet, Tindal, and Arroyo (2005) who reported that LLS did not significantly affect the language ability of university students in China. Their study revealed similar finding to the finding of this research. However, their study did not focus on a specific issue in writing as the present study did. They then proposed that it is necessary to examine "the relationship between learning strategies and proficiency, and the possible interplay of learner autonomy, across diverse cultural settings" (p.106).

If Nisbet, et.al., (2005) investigated the roles of LLS on language proficiency without focusing on a specific type of feedback, other researchers such as Sheen (2007, 2011) focused on a specific type of feedback but not discussing language learning strategies as the aspect of individual differences. Sheen (2007) discussed the roles of language analytic ability as a mediating variable between corrective feedback and writing ability. She discovered that corrective feedback was affected by different levels of analytic ability. Learners with a high degree of language-analytic ability got more benefit from teacher corrective feedback than those with a low degree of language-analytic ability. Furthermore, Sheen (2011) explored three different variables of IDs concurrently and reported that the efficacy of written correction was mediated by both aptitude and attitude of learners whereas language anxiety did not have a mediating effect on the successful written correction. This result

confirmed that some of the variables in IDs actually did not play significant roles in mediating the effectiveness of corrective feedback. This also might become the justification for the result of the present study that the language learning strategies did not have a significant impact on the success of indirect feedback in improving the students' writing. Factors other than LLS might have greater contribution to the efficacy of indirect feedback and other types of feedback, but not LLS. Therefore, there is a need to further investigate the contribution of those factors in mediating the impact of different types of feedback on the improvement of writing. Dörnyei (2005) stated that the variables of IDs, including motivation, aptitude as well as learning styles, indisputably have crucial roles in language learning, especially in a foreign language context.

#### 4. Conclusion

The result of the statistical analysis proved that indirect feedback affected students' writing performance. It enabled the students to improve their scores in the successive essays during the process of revision as well as in the independent writing (posttest), where there was no more feedback given. In terms of language learning strategies, it was found that the efficacy of indirect feedback in writing performance was not significantly mediated by any of the two types of LLS. It is acknowledged that this finding should be subject to caution due to the small sample size employed in this study. However, the finding might be used as an initial instructional implication to writing performance that indirect written feedback gives benefit to students regardless of the type of LLS they used, direct or indirect strategies. Both types of LLS work equally well when the students are revising their essays. No one type of LLS is superior over another. Therefore, in the process of teaching and learning, especially in the process of correcting and giving comments on students' papers, the aspect of language learning strategies might not be a major concern for teachers. Some other IDs such as motivation, intelligence, interest, language aptitude, learner attitude, age, anxiety, learning styles, personality and gender should be taken into account when the teacher responds and provides comments on students' writing. The next researchers may consider including these individual variables when researching the efficacy of feedback and should employ larger sample size to obtain more convincing results.

#### 5. Recommendations

This study employed a small number of samples. Future researchers should take a bigger sample in order to make the result more convincing. In addition, the mediating variable used to mediate between the efficacy of feedback and the students' writing performance was language learning strategies. Next researchers should consider investigating other mediating variables which are hypothesized to have contribution to maximize the efficacy of written feedback in improving students' writing.

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