

International Journal of Learning, Teaching and Educational Research
 Vol. 21, No. 4, pp. 316-336, April 2022
<https://doi.org/10.26803/ijlter.21.4.18>
 Received Feb 25, 2022; Revised Apr 19, 2022; Accepted Apr 25, 2022

Students' Preferences and Learning Styles in Relation to Reading and Writing Strategies at Distance Higher Education

Carmen Benitez-Correa , Alba Vargas-Saritama , Paul Gonzalez-Torres ,
 Ana Quinonez-Beltran  and Cesar Ochoa-Cueva 
 Universidad Técnica Particular de Loja, Loja, Ecuador

Abstract. The aim of the present descriptive research study is to determine the students' reading and writing achievement level according to their learning styles, as well as their preferences regarding the reading and writing strategies in English, as a Foreign-Language (EFL) course. This work is a contribution to the debate on the controversial issue about the influence of learning styles on EFL reading and writing skills. The sample for this research was a group of 120 distance-university students (45 males and 75 females) enrolled in an English program. The data-collection instruments used comprised a perceptual learning-style preference questionnaire, reading and writing of online tasks, and a preference questionnaire related to reading and writing strategies, which were planned for the course. The data from the questionnaires and the students' scores were analyzed statistically. The findings revealed that there is a minimal difference in the EFL students' reading and writing achievement across four learning styles. In addition, students prefer reading strategies, such as multiple-choice questions, matching exercises, filling the blanks, and answering open questions. As for writing, the learners preferred strategies that include brainstorming, answering multiple-choice questions, matching, filling in the blanks, and answering open questions.

Future researchers are encouraged to conduct studies on the relation of learning styles and EFL reading and writing skills with different levels of EFL proficiency, in order to see whether there are any differences in academic achievements or preferences, regarding the reading and writing strategies in students' learning styles.

Keywords: English learners; higher education; learning styles; reading strategies; writing strategies

1. Introduction

According to Ajideh et al. (2018), students apply their own individual experiences, learning styles and strategies to their own learning process. Indeed, learning

styles and strategies help learners to explore their skills and to enhance their learning experiences. Moreover, learners can employ a variety of learning styles, which include an essential element in creating effective learning environments. Considering that each student has his/her own way of learning, their needs must be addressed in the teaching-learning process (Adnan & Marlina, 2017). In this sense, appropriate environments should be provided by teachers, in order to meet students' academic needs (Becker et al., 2007). Similarly, learners' diversity is a crucial factor to bear in mind, when teachers choose the activities to incorporate in the language classroom. This decision is crucial because an appropriate planning of the lessons would allow teachers to adapt their teaching and to provide suitable activities, in order to meet a particular learner group's needs (Zhou, 2011). In the field of EFL, learning styles are also of paramount importance to teach the four fundamental skills of speaking, listening, reading, and writing.

From the four fundamental skills mentioned above, we can highlight the crucial role of reading and writing skills. As for reading skills, they are essential to process information (Yan, 2017) and an important element for consolidating and spreading knowledge of the language (Rivers, 1981). Reading also leads to the improvement of grammar, vocabulary and writing (Kim & Krashen, 1997). Furthermore, through reading, critical thinking skills and effective communication can be enhanced. With respect to writing skills, they are a central tool for learners to develop literacy and to express themselves in a way that could not be done in spoken language.

Both reading and writing help learners to acquire and to develop vocabulary, grammar and critical thinking skills (Ministerio de Educación del Ecuador [Ecuadorian Ministry of Education], 2016). Considering the relevance of the aforementioned skills for EFL teaching, Hao and Sivell (2002) highlighted that reading and writing need to be taught together, in order that the knowledge and skills of reading can be transferred to the writing.

The teaching of the EFL reading and writing skills may require the consideration of students' learning styles, in order to meet their needs and preferences. In this way, teachers should facilitate an ideal environment that meets these needs, integrating a variety of learning experiences, including different learning styles (Becker et al., 2007). Over the last few years, researchers in the field of EFL have widely discussed the influence of learning styles on EFL reading and writing skills separately; thus, being a controversial issue with varied results (e.g. Srijongjai, 2011; Balcı, 2017; Ajideh et al., 2018; Aliakbari & Tazik, 2019; Foroozandehfar & Khalili, 2019; Sabarun et al., 2020).

Based on the points above, our research study attempts to contribute to the debate on the influence of learning styles on the development of EFL reading and writing skills, integrating these two abilities. We will also examine the students' EFL reading and writing achievement level, according to their learning styles. Another contribution of our research is the study of the learners' preferences regarding the strategies in an EFL reading and writing course, which will provide a new

perspective in this controversy. Therefore, the following research questions will be addressed in the present study:

What is the students' achievement in reading and writing skills, according to their learning styles?

What are the students' preferences regarding the reading strategies, which need to be addressed in the course?

What are the students' preferences regarding the writing strategies addressed in the course?

2. The Literature Review

2.1 Learning EFL Writing

Nunan (2003) states that writing involves a physical and mental effort. At its elemental level, writing is a physical activity that binds words or ideas to some medium. In this regard, as a mental work, writing comprises creating ideas and thinking about ways to express these activities, and to bring them together into larger portions of texts, which are understandable to the audience. By the same token, writing is a process that the writer undertakes, in order to obtain a final written product. This process contains four main steps: planning, drafting, editing and a final draft (Harmer, 1998; Richard & Schmidt, 2002).

Recently, the social notion of writing has been included in the afore-mentioned perspectives. In this context, Shokrpour and Fallahzadeh (2007) explained that writing is both a cognitive process and a complex social act; since it is the reflection of the writer's capability via his/her communication abilities.

In addition, writing in English, as a foreign language in the classroom, according to Darus and Ching (2009), is a complex activity, which is an essential skill for the learners to master in a foreign language, in order to communicate their thoughts effectively. On the other hand, the teaching of writing to EFL students includes reinforcement, language development, learning style, and especially, writing as a skill in itself (Harmer, 1998).

2.2 Learning EFL Reading

Reading is one of the most significant skills that determine success in the educational and professional fields (Alderson, 1984). In addition, reading is an essential activity in the language classroom from, through which students can obtain information, undertake enjoyable tasks, as well as to consolidate and increase their knowledge of the language (Rivers, 1981). As Kim and Krashen (1997) stated, learners who read more, acquire more vocabulary, and improve their grammar and writing skills.

Moreover, Nunan (2003) posited that reading is an activity in which readers associate information of the text that they are reading with their previous knowledge, in order to acquire meaning. He also believed that when the readers identify the topic of reading, this would result in the acquisition of a positive attitude towards reading; and thereby, the process of combining the information from the text with their background knowledge should become easier.

Likewise, Mikulecky (2008) explained that reading is a thinking process that can be performed both consciously and unconsciously. It is conscious; because readers can apply different strategies to construct the meaning that the writer wishes to convey. On the other hand, reading is unconscious; because readers undertake reading tasks by contrasting information in the passage with their previous experience. Furthermore, Bayless (2010) believed that reading is a habit that leads people to success in academic endeavors and in life. In this regard, Mikulecky (2008) argued that reading instruction is an essential component in any second and foreign language curriculum.

2.3 Strategies for developing EFL reading and writing skills

Regarding the term strategy, it has been said that it includes a number of comprehensible sets of actions that have been planned, in order to acquire a specific objective (Bell, 2002). In addition, Brown (2007) defined this term as a set of procedures planned, with the aim of addressing a problem or a task. He adds that a strategy is a kind of detailed procedure for tackling a problem or task that allows us to work, in order to attain various goals. Moreover, Oxford and Ehrman (1995) mentioned that second-language learning strategies are those sets of activities, manners, phases, or techniques, which students employ, in order to improve their learning skills.

In the context of learning a foreign language, a strategy is seen as two central processes. The first of these is the learning strategy related to what the student receives, retains, and communicates. The second one comprises communication strategies, which are related to what the student produces, the way learners communicate meaning, and how messages are delivered to others (Selinker 1972). In the field of EFL reading and writing, some researchers have investigated the implications of the use of the learning strategies, in order to support the teaching of these skills. In the following lines, some of the most common ones will be described.

2.3.1 Predicting the content before reading

Readers use this strategy to guess what will happen next, based on their previous experiences and knowledge (Block & Israel, 2005). In addition, Oczkus (2003) states that prediction helps students to set a purpose for their reading; and it promotes their interaction, which increases students' interest and improves their comprehension of the text.

2.3.2 Inferring the meaning of words, ideas and the intentions of the writer

Küçükoğlu (2013) states that inferring means to read between the lines. It allows readers to guess what is currently happening, based on the hints in the text and what they already know about the text. Inference is an important strategy; because it helps readers to draw conclusions, to predict, and to create meaning from the text.

2.3.3 Identifying the main idea and the supporting ideas

Main ideas allow the readers to know what the writer wishes to communicate about a topic. The main idea is usually in the first paragraph of the text; and it is

often expressed directly. Identifying main ideas is important because it helps readers to have a better understanding of the text, to summarize the information of the text in their own words, and to build their confidence to read longer texts.

On the other hand, supporting ideas are the sentences that support or explain the main idea of the whole text, or of a paragraph. Identifying details is important because they help readers to understand specific information that the writer is attempting to express. Examples, facts, comparisons and statements, among others, are used as supporting sentences, in order to explain the main idea (Hartmann & Mentel, 2007).

2.3.4 Taking notes to identify the ideas in a text

This strategy improves students' understanding and retention from reading; because it allows them to take notes of the most relevant ideas from the text, instead of copying a great deal of the information. To take good notes, students should maintain their focus, while reading, analyze the text, and think critically about what they are reading (The Learning Center, 2021).

2.3.5 Questioning

This strategy helps students to clarify their doubts about what they have read and to monitor their level of reading comprehension. In this context, Harvey and Goudvis (2000) stated that asking questions is a useful strategy that allows readers to construct meaning, to increase their understanding, and to find information and solutions. In addition, questioning can be used to assist the students at any stage of the reading process (before, during, and after reading).

2.3.6 Using graphic organizers

The most common graphic organizers used in reading and writing activities include Venn diagrams, concept maps, and timelines.

Comparing the ideas of reading by using Venn diagrams

This strategy helps readers to compare and check their comprehension through a visual presentation. A Venn diagram has overlapping circles, which contain the similarities and differences between two facts. Differences are included in the parts of the circles that do not overlap; meanwhile, similarities are included in the parts that do overlap (Pavlik & Keenan, 2007).

Making concept maps

A concept map is a visual representation of the main idea and the supporting details in the text. In addition, writers use concept maps to generate and to organize their ideas for writing (Pavlik & Keenan, 2007).

Making timelines

This strategy is used by writers to organize the events in chronological order; it indicates, the order in which those events happen (Pavlik & Keenan, 2007).

2.4 Definition of learning styles

Research on learning styles has been a subject of interest and controversy over the recent years, due to the diversity of definitions and classifications (Coffield et al., 2004). In this respect, some authors provide different definitions of learning styles,

even though they are somehow oriented to the same idea. For instance, one early definition of learning styles was that they are related to behaviors that indicate the way someone learns from their environment and adapts to it (Gregorc, 1979).

Learning styles can also reflect preferences for one mode of learning or adaptation; although these preferences may vary, depending on the situation (Kolb, 1981). Similarly, a student's preferred way of learning can be determined by the person's attitudes and behavior (Honey & Mumford, 1992).

Moreover, Vermunt (1996) considers learning styles as activities that are often employed by students along with their learning orientation and their mental model of learning. This author also asserts that learning styles are neither mutually exclusive, nor are they conceived as a personality attribute that cannot vary; but they are rather the results of a temporary interaction between individual and environmental factors. Likewise, Reid (1995) states that learning styles are the internal features that are often used unconsciously by the learners for receiving and processing new information.

Generally, it can be seen that learning styles can be associated with the way methods in the learning process are used (Othman & Amiruddin, 2010). Therefore, based on the definitions above, learning styles become a crucial factor in the learning process.

2.5 The Importance of learning styles

Individual differences have been an essential point of debate, when learning a language. Thus, learning styles are among the most discussed factors in research on language learning (Ehrman et al., 2003; Oxford, 2001). In addition, the learning process is meant to bring about cognitive changes to a person's behavior (Othman & Amiruddin, 2010). For this reason, as stated by Becker et al. (2007), it is essential to consider students' learning styles and to combine teaching methods and strategies in the classroom. In this sense, any teaching method – even the traditional ones – should be considered necessary in the classroom, in order to cope with students' needs. Therefore, teachers should create an appropriate environment that meets students' academic needs in such a way that diverse learning experiences are integrated, including a variety of learning styles.

2.6 Classification of learning styles

The information on students' learning styles is beneficial when the learner takes the necessary action, as part of a reflection on their learning process (Fleming & Baume, 2006). Due to the importance of learning styles in the classroom, it is necessary to address their classification. Some authors classify them by considering the dimensions that result in four styles: divergent, convergent, assimilating, and accommodating (Kolb, 2014). In this respect, Honey and Mumford (2006) adapted Kolb's model; and they came up with four learning styles: activist, reflector, theorist, and pragmatist.

More popular classifications that have been used in language-learning research have common points that deal with the physical and perceptual learning means with which students feel more comfortable (i.e. sensory preferences). These

classifications consider visual, auditory and kinesthetic students as common points (Dunn & Dunn, 1978; Reid, 1995; Oxford, 2003; Fleming, 2006). From all these scholars, Reid (1995) is considered as one of the most relevant researchers in the field. In this respect, she classifies learning styles based on the sensory preferences, as follows: visual, auditory, kinesthetic (movement-oriented), and tactile (touch-oriented).

She mentions the following characteristics of these learning styles. For example, visual learners like to learn by reading and working with pictures, graphs, charts, or diagrams. They will retain knowledge from what they observe; and they would prefer written instructions. Auditory learners prefer lectures, conversations, and oral instructions; consequently, they learn by listening and speaking. They feel comfortable in activities that involve interactions, and they are introduced to new knowledge by hearing it. As for kinesthetic and tactile students, they prefer movement, so they like to move around the classroom. They like to learn by manipulating objects and involving their whole body in the process of learning. In recent years, EFL scholars have widely discussed the influence of learning styles on EFL reading and writing through various studies.

2.7 Previous studies

Srijongjai (2011) studied the learning styles of English major students in the EFL writing classroom. A group of 88 second-year English majors were monitored by considering two instruments: the Memletics Learning-Style Inventory and a semi-structured interview. The results showed that the predominant students' learning styles were social and aural. They also found that there were no significant differences in the students' learning styles, based on their achievement levels in the writing class.

Balcı (2017) determined the effects of learning-style based activities on students' reading comprehension skills in a quasi-experimental study. The sample included 78 freshmen university students, 39 students in the control group, and 39 in the experimental group. The experimental group worked with learning-style based activities; while the control group continued with traditional classes without any change. Both groups received three sessions of one hour a week for eight weeks. The findings revealed that reading comprehension post-test scores and the Self-Efficacy Scale for English post-test scores of the experimental group were higher.

It was also determined that there was a significant correlation between English-reading comprehension achievement and English self-efficacy. In conclusion, learning-style based activities improved reading comprehension skills and the English self-efficacy perceptions.

Ajideh et al. (2018) determined the relationship between students' learning styles and their ESP reading strategies in an academic setting of an Art and Sciences program. For this purpose, 313 undergraduate students participated in this study by completing two questionnaires: The Perceptual learning style preference questionnaire by Reid (1984) and a survey of various reading strategies. Through the use of the Pearson correlation coefficient, it was concluded that Art students

prefer kinesthetic, auditory, visual and tactile learning styles. On the other hand, Science students favored the kinesthetic, as their major learning style. As for the reading strategies in ESP texts, the most preferred were the cognitive strategies for both Art and Science students.

Aliakbari and Tazik (2019) investigated the effects of accommodating writing assignments to the learning styles of EFL learners in their writing improvement. The participants were 22 EFL visual learners. To gather the data, pre- and post-tests were given to the students. During the intervention, the students worked on writing assignments on those topics that matched their styles. The means of pre- and post-tests were subjected to a matched t-test. The results showed that those students who had completed tasks, according to their learning style improved their writing. They concluded that taking individual differences into account increased the number of writing students to be promoted. Foroozandehfar and Khalili (2019) explored the relationship between EFL students' personality types, learning styles, and reading fluency. One hundred and thirty EFL learners participated in this study.

In order to complete this process, the data were gathered by administering the test of Nelson to determine students' proficiency level, the Holland's questionnaire to identify the participants' personality types, and the Active Skills for the Reading approach, as proposed by Neil J. Anderson for measuring reading fluency. Finally, the researcher applied Reid's Perceptual Learning Style Preference (PLSP) to determine the students' learning-style preferences. The findings revealed a significant relationship between individual personality types and learners' reading fluency. Furthermore, it was found that personality types directly influenced students' reading fluency.

Sabarun et al. (2020) measured the interaction effects of gender and learning styles in EFL writing performance. This study applied an ex-post facto research design by using questionnaires and tests as the research instruments. The participants were 80 L2 learners consisting of 38 males and 42 females, 23 visual, 33 auditory, and 24 kinesthetic learners. The results revealed that female students' performance was higher. The visual students obtained the highest score, followed by the auditory and the kinesthetic learners. In addition, the learning style is just one variable that affects the students' achievement; and there are many other variables that affect successful learning.

3. The method

3.1 Setting and Participants

The participants included 120 students (45 males and 75 females) from a university TEFL distance program in the southern region of Ecuador. These students were enrolled in three different reading and writing courses, which lasted five months. Their ages ranged from 18 to 25 years old; and their proficiency level was B1, according to the Common European Framework of Reference for Languages: Learning, teaching, assessment (Council of Europe, 2001).

3.2 The instruments

The instruments used were the following:

The perceptual learning-style preference questionnaire

The perceptual learning-style preference questionnaire compiled by Reid (1984) was administered to the students to determine their learning styles. Visual, auditory, kinesthetic and tactile learning styles were identified for the purpose of this study; however, group and individual types were not included in the questionnaire; because the participants were distance students. This questionnaire comprised 20 items in the form of a Likert scale (See Appendix 1).

Reading and writing online tasks

These tasks included synchronous (chats and video-collaboration sessions) and asynchronous approaches (forums, online quizzes, and reading and writing assignments). All these activities were graded out of ten points, and an average was obtained, in order to determine the students' achievement level, according to their styles.

The Preference questionnaire related to reading and writing strategies

This questionnaire included 25 items (13 for reading and 12 for writing) that enquired about students' preferences regarding the reading and writing strategies that they completed in the reading and writing courses. This questionnaire was appropriately piloted, in order to validate it before its application (See Appendix 2).

3.3 The procedure

The present descriptive research study used a non-probability sampling method, in which the participants were not randomly selected (Creswell, 2015). They were chosen, according to the course and class that the instructors were teaching. In order to determine the students' learning styles, we asked them to complete a perceptual learning-style preference questionnaire, which was administered by email.

During the reading and writing course, the students completed some activities, such as forums, chats, online quizzes and reading and writing assignments. In the case of forums, the students wrote one summary paragraph and one opinion essay. As for chats, the students discussed two different topics, which were related to inference skills, mechanics and grammar in two chats. In four online quizzes, the learners responded to close-ended questions that evaluated mostly reading comprehension. For the reading and writing assignments, the students completed four activities related to learning new vocabulary, reading comprehension, and writing different types of paragraphs and essays, which were graded on the basis of the rubrics detailed in the course planning. All the activities mentioned above were used to determine the students' average grades, and their achievement levels, according to their learning styles. After finishing the course, a preference questionnaire was administered, in order to determine the reading and writing activities that the students liked the most in their learning process.

The data obtained were statistically analyzed in order to know students' preferences. Students' learning styles were determined on the basis of the instructions and scales provided by Reid (1984), in order to tally the students' responses to the perceptual learning-style preferences. As for the students reading

and writing tasks, the scores of the different activities were averaged. Moreover, the students' preferences were determined by calculating the frequencies and percentages of the responses for the reading and writing strategies. The research process for this study is illustrated in Figure 1.

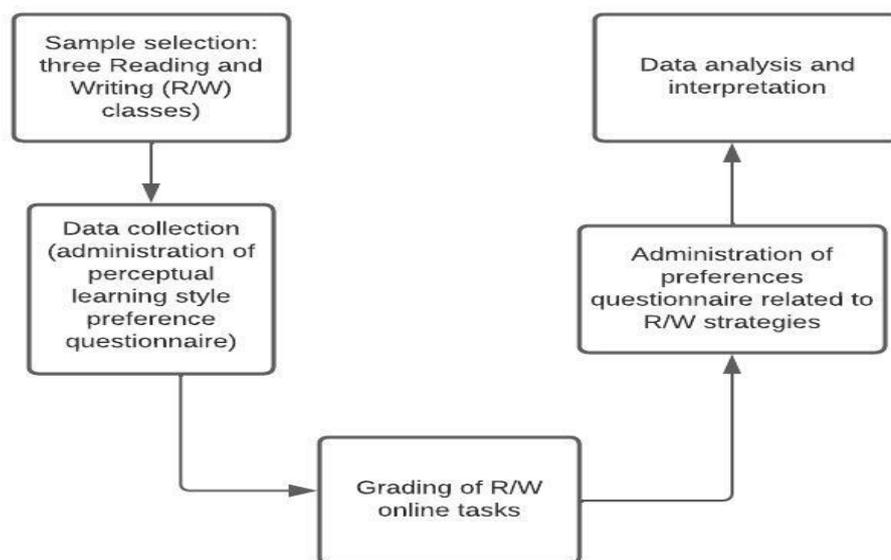


Figure 1. The *Research Process*

4. The results

4.1 What were the students' achievements in reading and writing skills, according to their learning styles?

Table 1: Percentage of students by learning styles and their average reading and writing scores

Learning style	%	Average reading and writing scores
Visual	13	8.32 / 10
Auditory	30	8.18 / 10
Kinesthetic	39	8.55 / 10
Tactile	18	8.29 / 10
TOTAL	100	Average: 8.33 / 10

Table 1 indicates the different students' learning styles of the sample (visual, auditory, kinesthetic and tactile), which were determined after applying the adapted version of the Perceptual Learning-Style Preference Questionnaire (Reid, 1984). According to this author, visual students learn when provided with pictures, graphs, charts or diagrams; likewise, they prefer written directions. On the other hand, auditory learners prefer lectures, conversations and oral interactions; since they learn by listening and speaking. As for the kinesthetic

pupils, they learn by moving their whole body; while the tactile students prefer to learn by manipulating tangible objects.

The percentages displayed revealed that most of the students (39%) have a kinesthetic learning style, which means that they are good at using gestures and doing physical activities aligned with the physical memory. The students with an auditory learning style also occupy an important part of the sample (30%), together with a minor portion of tactile (18%) and visual learners (13%).

- The Table above also shows the students' average scores for each learning style. Based on the average scores of each group of students, we can observe a slight difference in achievement among the students on the different learning styles. However, the kinesthetic group has an advantage over the rest of the group (8.55 / 10), whereas the auditory group has the lowest average (8.16 / 10).

The minimal difference among the four groups may indicate the inclusive nature of the activities performed throughout the *reading and writing courses*. In other words, the activities of the course were varied; and they addressed the four learning styles identified in this study.

4.2 What are the students' preferences regarding the reading strategies addressed in the course?

Table 2: Students' preferences in reading strategies

Statements	High		Average		Low	
	f	%	F	%	f	%
1. Predicting the content before reading.	51	42.5	66	55	3	2.5
2. Inferring the meaning of words, ideas and the intentions of the writer.	51	42.5	63	52.5	6	5
3. Identifying the main ideas.	54	45	54	45	12	10
4. Identifying the supporting ideas.	36	30	66	55	18	15
5. Guessing the meaning of words from the contexts.	42	35	66	55	12	10
6. Taking notes to identify the main ideas in a text.	45	37.5	60	50	15	12.5
7. Taking notes to identify the details in a text.	45	37.5	57	47.5	18	15
8. Contrasting the readings.	42	35	63	52.5	15	12.5
9. Comparing the ideas of readings by using the Venn diagrams.	33	27.5	72	60	15	12.5

10. Answering the multiple-choice questions.	69	57.5	48	40	3	2.5
11. Matching words to their definitions.	78	65	42	35	0	0
12. Filling in the blanks.	66	55	48	40	6	5
13. Answering open questions.	60	50	54	45	6	5

According to Table 2, the level of preference of most of the strategies was average; these strategies include predicting the content before reading, inferring the meaning of words, ideas and the intentions of the writer, identifying the main ideas, identifying supporting ideas, guessing the meaning of words from the contexts, taking notes to identify the main ideas in a text, taking notes, in order to identify the details in a text, contrasting the readings, and comparing the ideas of readings by using the Venn diagrams. As for the strategies of answering multiple-choice questions, matching words to their definitions, filling in the blanks, and answering open questions, this table indicates that they have a high level of preference.

These results indicate that students are more familiar with reading strategies, such as answering multiple-choice questions, matching words to their definitions, filling in the blanks, and answering open questions, which are the most preferred. Moreover, in the reading and writing course, the strategies proposed included motivating language activities, such as reflective reading.

4.3 What are the students' preferences regarding the writing strategies addressed in the course?

Table 3: Students' preferences in writing strategies

Statements	High		Average		Low	
	f	%	f	%	f	%
1. Brainstorm ideas about a topic.	57	47.5	57	47.5	6	5
2. Make concept maps.	33	27.5	63	52.5	24	20
3. List ideas before writing.	51	42.5	63	52.5	6	5
4. Make T-charts.	24	20	57	47.5	39	32.5
5. Make timelines.	45	37.5	51	42.5	8	6.67
6. Answer Wh-questions before writing a paragraph or essay	48	40	54	45	18	15
7. Answer multiple-choice questions	66	55	54	45	0	0
8. Match words to their definitions	78	65	39	32.5	3	2.5

9. Fill in the blanks	66	18.33	51	14.16	3	0.83
10. Answer open questions	66	55	45	37.5	9	7.5
11. Write paragraphs or essays	48	40	66	55	6	5
12. Write comparative paragraphs or essays by using the Venn diagrams	33	27.5	72	60	15	12.5

Regarding Table 3, we can see that an equal number of students have an average and a high level of preference, when it comes to the brainstorming of ideas about a topic. In most of the strategies, the students have an average level of preference. These strategies are related to making concept maps, listing ideas before writing, making T-charts, making timelines, answering Wh-questions before writing a paragraph or essay, writing paragraphs or essays, and writing comparative paragraphs or essays by using the Venn diagrams.

Some of the strategies, such as answering multiple-choice questions, matching words to their definitions, filling in the blanks and answering open questions, have a high level of preference. It is important to mention that strategies about graphic organizers, specifically making concept maps and T-charts do not have a level of preference as high as those or the other strategies.

The results indicate that the strategies preferred by the students match their learning styles as well. As with the reading strategies, the students are more familiar with some writing strategies, such as brainstorming the ideas about a topic, answering multiple-choice questions, matching words to their definitions, filling in the blanks, and answering open questions. These types of activities include hands-on and visual tasks that benefited all the students' learning styles.

5. Discussion

5.1 What were the students' achievement in reading and writing skills, according to their learning styles?

The predominant learning styles in the sample studied were kinesthetic and auditory. The differences in the average reading and writing scores of the four student groups, divided per learning styles, was minimal, with a slight advantage for the students with the kinesthetic learning style. The strategies proposed for the reading and writing course addressed a variety of learning styles. For instance, based on what Reid (1995) stated about the different types of learners and the tasks that they preferred, activities, such as video-collaborations, audios of reading passages, videos, and reading aloud, could have been more useful for auditory learners to improve their achievement.

The strategies related to taking notes by using charts, using pictures to predict content, highlighting words or phrases, and reading passages, might be more suitable for visual learners. As for the kinesthetic learners, collaborative activities, hands-on activities, as well as watching videos and pictures, could have been very useful for them. The tactile learners' academic achievements were benefited by writing notes or instructions and hands-on activities. These results were similar

to the ones found in Srijongjai (2011), who concluded that there were no significant differences in the students' learning styles, based on their achievement levels in the writing class.

5.2 What are the students' preferences regarding the reading strategies addressed in the course?

Based on the results, the reading strategies preferred by the students were answering multiple-choice questions, matching words to their definitions, filling in the blanks, and answering open questions. Apparently, the students were more familiar with these types of strategies; since they have been applied in other courses as well. In addition, the strategies proposed in the reading and writing course included various motivating language activities, such as reflective reading.

Consequently, students can learn in ways that best suit their styles (Kroonenberg, 1995). These preferred strategies seem to cover the preferences of the students' different learning styles. In fact, learning-style based strategies can improve reading-comprehension skills (Balci, 2017).

5.3 What are the students' preferences regarding the writing strategies addressed in the course?

The results indicate that the writing strategies preferred by the students are brainstorming ideas about a topic, answering multiple-choice questions, matching words to their definitions, filling in the blanks and answering open questions. Such strategies matched the students' learning preferences; because they included hands-on and visual tasks, which benefited all the students' learning styles. Likewise, students are used to working on these types of strategies in other courses of the English program. This means that the way a course is planned can be presented to students with different styles; and students should not be forced to follow any specific path. They should be given the freedom to explore the activities or material that is more aligned to their learning styles (Van Waes et al., 2014).

6. Conclusions and Recommendations

There was a minimal difference in the EFL students' reading and writing achievement across the four learning styles. In this sense, the various activities carried out in the course taken by the students favored the four learning styles addressed in the present study.

The EFL reading strategies preferred by the students include answering multiple-choice questions, matching words to their definitions, filling in the blanks, and answering open questions. Students seem to be more at ease with these types of strategies. This is beneficial because such strategies can suit their learning styles. The EFL writing strategies most used by the students involve brainstorming ideas about a topic, answering multiple-choice questions, matching words to their definitions, filling in the blanks and answering open questions. In this respect, students are used to working with these types of strategies; since they have been implemented in other university courses. All in all, the writing strategies of the course have attempted to address students with all the different learning styles.

In order to ensure the learning of EFL reading and writing skills, teachers should incorporate in their lesson plans strategies that address the different learning styles that students might have. One suggestion would be to make a diagnosis before planning the course, in order that the learning styles can be considered in the different activities.

It is important to include a variety of reading strategies in courses that involve this skill. In this way, students will feel more motivated and willing to work on activities that would actually contribute to the development of EFL reading skills. A variety of strategies should be considered when teaching writing skills to address the different EFL students' learning styles, in addition to enhancing their motivation.

The findings of this study certainly contribute to understanding the students' achievement levels, their learning styles, and their preferences regarding the strategies of an EFL reading and writing course. However, the limitation that can be noted in this research is that the participants in the study belonged to only one higher education institution; thus, larger-scale research is suggested, in order to provide additional insights related to learning styles and other issues. Finally, future research should address the relation of learning styles and EFL reading and writing skills with different levels of EFL proficiency, in order to find out whether there are variations in the academic achievement or preferences regarding reading and writing strategies among the students' learning styles.

7. References

- Adnan, A., & Marlina, L. (2017). *EFL Students' Learning Style in English as General Course at Universitas Negeri Padang*. Fifth International seminar on English Language and Teaching (ISELT 2017): Advances Science, Education and Humanities (ASSEHR). <http://repository.unp.ac.id/id/eprint/22475>
- Ajideh, P., Zohrabi, M., & Pouralvar, K. (2018). Investigating the relationship between learning styles and ESP reading strategies in academic settings. *International Journal of Applied Linguistics and English Literature*, 7(3), 156-164. <https://doi.org/10.7575/aic.ijalel.v.7n.3p.156>
- Aliakbari, M., & Tazik, K. (2019). The Match or Mismatch of EFL Students' Learning Styles and Writing Assignments. *Applied Linguistics Research Journal*, 3(2), 35-47.
- Alderson, J. (1984). Reading in a foreign language: A reading problem or a language problem? In J. C. Alderson & A. H. Urquhart (Eds.), *Reading in a foreign language* (pp. 1-27). Longman.
- Balci, Ö. (2017). The Effects of Learning-Style Based Activities on Students' Reading Comprehension Skills and Self-Efficacy Perceptions in English Foreign Language Classes. *Higher Education Studies*, 7(4), 35-54. <http://doi.org/10.5539/hes.v7n4p35>
- Bayless, C. (2010). Growing a reading culture: Just for Parents. <http://www.slideshare.net/Through the Magic Door/growing-a-reading-culture-1647123>
- Becker, K., Kehoe, J., & Tennent, B. (2007). Impact of personalized learning styles on online delivery and assessment. *Campus Wide Information Systems*, 24(2), 105-119. <https://doi.org/10.1108/10650740710742718>
- Bell, L. (2002). Strategic planning and school management: full of sound and fury, signifying nothing? *Journal of Educational Administration*, 40(5), 407-424. <https://doi.org/10.1108/09578230210440276>

- Block, C. C., & Israel, S. E. (2005). *Reading first and beyond: The complete guide for teachers and literacy coaches*. Corwin Press.
- Brown, H. (2007). *Principles of language learning and teaching*. Pearson Education.
- Coffield, F., Moseley, D., Hall, E. & Ecclestone, K. (2004). *Learning styles and pedagogy in post-16 learning: A systematic and critical review*. Learning and Skills Research Centre.
- Council of Europe. Council for Cultural Co-operation. Education Committee. Modern Languages Division. (2001). *Common European framework of reference for languages: Learning, teaching, assessment*. Cambridge University Press.
- Creswell, J. (2015). *Educational research: Planning, conducting and evaluating, quantitative and qualitative research* (5th ed.). Pearson.
- Darus, S., & Ching, K. H. (2009). Common errors in written English essays of form one Chinese students: A case study. *European Journal of Social Sciences*, 10(2), 242-253.
- Dunn, R. S., & Dunn, K. J. (1978). *Teaching students through their individual learning styles: A practical approach*. Prentice Hall.
- Ehrman, M. E., Leaver, B. L., & Oxford, R. L. (2003). A brief overview of individual differences in a second-language learning. *System*, 31, 313-330. [https://doi.org/10.1016/S0346-251X\(03\)00045-9](https://doi.org/10.1016/S0346-251X(03)00045-9)
- Fleming, N. D. (2006). *V.A.R.K Visual, Aural/Auditory, Read/Write, Kinesthetic*. New Zealand: Bonwell Green Mountain Falls.
- Fleming, N., & Baume, D. (2006). Learning Styles Again: Barking up the right tree! *Educational developments*, 7(4), 4-7.
- Foroozandehfar, L., & Khalili, G. F. (2019). On the relationship between Iranian EFL learners' reading fluency, their personality types and learning styles. *Cogent Arts & Humanities*, 6(1), 1681347
- Gregorc, A. (1979). Learning/teaching styles: potent forces behind them. *Educational Leadership*, 36, 234-237.
- Hao, X., & Sivell, J. (2002). *Integrating reading and writing in EFL composition in China*. Paper presented at the annual meeting of the Canadian association of applied linguistics, Humanities and Social Sciences, Congress, Toronto.
- Harmer, J. (1998). *The Practice of English Language Teaching*. Longman. Essex.
- Hartmann, P. & Mentel, J. (2007). *Interactions Access Reading*. McGraw-Hill.
- Harvey, S., & Goudvis, A. (2000). *Strategies that work: Teaching comprehension for understanding and engagement*. Stenhouse Publishers.
- Honey, P. & Mumford, A. (1992). *The manual of learning styles*. Maidenhead: Peter Honey Publications.
- Honey, P., & Mumford, A. (2006). *Learning styles questionnaire: 80-item version*. Maidenhead.
- Kim, H. & Krashen, S. (1997). Why don't language acquirers take advantage of the power of reading. *TESOL Journal*, 6, 26-28
- Kolb, D. (1981). Experiential learning theory and the Learning Style Inventory: a reply to Freedman and Stumpf. *Academy of Management Review*, 6(2), 289-296. <https://doi.org/10.5465/amr.1981.4287844>
- Kolb, D. A. (2014). *Experiential learning: Experience as the source of learning and development*. FT press.
- Kroonenberg, N. (1995). Meeting language learners sensory-learning style preference. In J.M. Reid (Ed.), *Learning styles in the ESL/EFL classroom* (pp. 74 -86). New York: Heinle and Heinle Publishers.
- Küçüköğlü, H. (2013). Improving reading skills through effective reading strategies. *Procedia-Social and Behavioral Sciences*, 70, 709-714. <https://doi.org/10.1016/j.sbspro.2013.01.113>
- Mikulecky, B. S. (2008). *Teaching Reading in a Second Language*. Pearson Education.

- Ministerio de Educación del Ecuador. (2022, January 18). *Lengua Extranjera*.
<http://educacion.gob.ec/curriculo-lengua-extranjera/>
- Nunan, D. (2003). *Practical English Language Teaching* (International Edition). McGraw-Hill.
- Oczkus, L. D. (2003). *Reciprocal teaching at work strategies for improving reading comprehension*. International Reading Association.
- Othman, N., & Amiruddin, M. H. (2010). Different perspectives of learning styles from VARK model. *Procedia-Social and Behavioral Sciences*, 7, 652-660.
<https://doi.org/10.1016/j.sbspro.2010.10.088>
- Oxford, R. L. (2001). Language learning styles and strategies. In M. Celce-Murcia (Ed.), *Teaching English as a second or foreign language* (pp. 359-366). Boston, MA: Heinle & Heinle.
- Oxford, R. L. (2003). *Language learning styles and strategies: An overview*. Oxford: Gala.
- Oxford, R., & Ehrman, M. (1995). Adults' language learning strategies in an intensive foreign language program in the United States. *System*, 23, 359-386.
[https://doi.org/10.1016/0346-251X\(95\)00023-D](https://doi.org/10.1016/0346-251X(95)00023-D)
- Pavlik, C., & Keenan, M. (2007). *Interactions 1 Writing*. McGraw-Hill.
- Reid, J. M. (1984). Perceptual learning style preference questionnaire. *Learning styles in the ESL/EFL classroom*, 202-204.
- Reid, J. M. (1995). *Preface*. In J. Reid (Ed.), *Learning styles in the ESL/EFL classroom* (pp. viii-xvii). Boston, MA: Heinle and Heinle.
- Richard, J., & Schmidt, R. (2002). *Longman dictionary of language teaching and applied linguistics* (3rd Ed). Longman.
- Rivers, W. (1981). *Teaching foreign language skills*. University of Chicago Press.
- Sabarun, S., Hamidah, H., & Marsiah, M. (2020). The Effect of Gender and Learning Styles on L2 Learners' Writing Performance at Higher Education.
- Selinker, L. (1972). Interlanguage. *IRAL*, 10(3), 209-231.
<https://doi.org/10.1515/iral.1972.10.1-4.209>
- Shokrpour, N., & Fallahzadeh, M. H. (2007). A survey of the students and interns' EFL writing problems in Shiraz University of Medical Sciences. *Asian EFL Journal*, 9(1), 147-163.
- Srijongjai, A. (2011). Learning styles of language learners in an EFL writing class. *Procedia-Social and Behavioral Sciences*, 29, 1555-1560.
<https://doi.org/10.1016/j.sbspro.2011.11.397>
- The Learning Center. (2021, February 18). *Taking Notes While Reading*.
<https://learningcenter.unc.edu/tips-and-tools/taking-notes-while-reading/>
- Van Waes, L., Van Weijen, D., & Leijten, M. (2014). Learning to write in an online writing center: The effect of learning styles on the writing process. *Computers & Education*, 73, 60-71. <https://doi.org/10.1016/j.compedu.2013.12.009>
- Vermunt, J.D. (1996). Metacognitive, cognitive and affective aspects of learning styles and strategies: A phenomenographic analysis. *Higher Education*, 31, 25-50.
<https://doi.org/10.1007/BF00129106>
- Yan, T. (2017). Close reading: The historical trends and application to English learners. *TexTESOL IV - Spring*, 33(1), 38-41.
- Zhou, M. (2011). Learning Styles and Teaching Styles in College English Teaching. *International Education Studies*, 4(1), 73-77. <https://doi.org/10.5539/ies.v4n1p73>

Appendix 1

Perceptual Learning Style Preference Questionnaire by Reid (1984)

Directions:

This questionnaire has been designed to help you identify the way(s) you learn best - the way(s) you prefer to learn.

Decide whether you agree or disagree with each statement. Then indicate whether you:

Strongly Agree (SA)

Agree (A)

Undecided (U)

Disagree (D)

Strongly Disagree (SD)

	SA	A	U	D	SD
1. When the teacher tells me the instructions, I understand better.					
2. I prefer to learn by doing something in class.					
3. I learn better by reading what the teacher writes on the chalkboard.					
4. When someone tells me how to do something in class, I learn it better.					
5. When I do things in class, I learn better.					
6. I remember things I have heard in class better than things I have read.					
7. When I read instructions, I remember them better.					
8. I learn more when I can make a model of something.					
9. I understand better when I read instructions.					
10. I learn more when I make something for a class project.					
11. I enjoy learning in class by doing experiments.					
12. I learn better when I make drawings, as I study.					
13. I learn better in class when the teacher gives a lecture.					
14. I understand things better in class when I participate in role-playing.					
15. I learn better in class when I listen to someone.					

16. When I build something, I remember what I have learned better.					
17. I learn better by reading than by listening to someone.					
18. I enjoy making something for a class project.					
19. I learn best in class when I can participate in related activities.					
20. I learn more by reading textbooks than by listening to lectures.					

Appendix 2

Preferences questionnaire related to Reading and Writing Strategies

How do you rate your preference of the following strategies in your textbook of the Reading and Writing course?		Low	Average	High
Reading Strategies				
1.	Predicting the content before reading.			
2.	Inferring the meaning of words, ideas and intentions of the writer.			
3.	Identifying main ideas.			
4.	Identifying supporting ideas.			
5.	Guessing the meaning of words from contexts.			
6.	Taking notes to identify the main ideas in a text.			
7.	Taking notes to identify the details in a text.			
8.	Contrasting readings.			
9.	Comparing the ideas of readings by using the Venn diagrams			
10.	Answering multiple choice questions			
11.	Matching words to their definitions			
12.	Filling in the blanks			
13.	Answering open questions.			
Writing Strategies				
14.	Brainstorm ideas about a topic			
15.	Make concept maps			
16.	List ideas before writing			
17.	Make T-charts			
18.	Make timelines			

19.	Answer Wh-questions before writing a paragraph or essay			
20.	Answer multiple-choice questions			
21.	Match words to their definitions			
22.	Fill in the blanks			
23.	Answer open questions			
24.	Write paragraphs or essays			
25.	Write comparative paragraphs or essays by using the Venn diagrams			