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EXPLORING THE RELATION BETWEEN LEARNING STYLES AND WRITING COMPETENCE OF PAKISTANI ESL LEARNERS: IMPLICATIONS FOR INSTRUCTION AND ASSESSMENT"

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ABSTRACT

This study aims to investigate the relationship between learning styles and academic performance among Pakistani ESL learners, using a sequential mixed-method research design. The study focuses on writing as the dependent variable and considers learning style as the independent variable. The research population consists of English as a second language learners in Pakistan, and the sample frame includes 66 intermediate grade 11 students from PAF College Fazaia Sargodha, comprising 53 male and 13 female participants. Purposive sampling is utilized to select participants who are most relevant to the research question. Kolb's (1921) theory of learning styles was used as the framework. Data is analyzed through a statistical package of social sciences (SPSS) version 26. Findings suggest that there was a small positive correlation between learning style and writing scores in sentence structure, a weak positive correlation was found between learning styles and writing scores in the organization of ideas while a strong correlation between learning styles and grammar score was found.

INTRODUCTION

Students choose to learn and process information in a variety of ways, including through listening and seeing, acting and reflecting, using logic and intuition, analyzing and picturing, and seeing and hearing. As a result, teaching strategies should also change. The degree to which a student's learning preferences and the teacher's methods of instruction are compatible also affects how much they can learn. Teachers must be aware of the preferred learning styles of their students since this information will enable them to better match or alter their lesson plans and give the most suitable and meaningful activities or tasks to suit a certain learner group at various stages. The way that content is processed, how exercises are designed, how teachers choose to teach, and how performance is evaluated are all significantly impacted by learning styles. Cognitive learning styles, sensory learning styles, and personality learning styles are the three broad categories into which learning-style studies can be broadly subdivided. When we notice a change in a learner's behavior as a result of their experiences, learning has occurred. Similarly to this, we can only determine a student's learning style by studying his overt conduct. A constant way of operating that represents the underlying factors influencing learning behavior is called a learning style (Keefe, 1987). Individuals' internal fundamental traits for consuming or comprehending new knowledge are their learning styles. According to Keefe (1991), learning style can be both a student trait and an instructional method. These learning styles are distinctive cognitive, affective, and physiological activities that work as generally consistent indications of how learners experience, engage with, and react to the learning environment (Keefe, 1-87). Students acquire knowledge in various ways (Price, 1977).

Learning styles do exist, according to Talmadge and Shearer (1969). They found that correlations between learner attributes and instructional approaches are significantly influenced by the features of the "content of a learning experience." According to Reiff (1992), learning styles have an impact on how students learn, teachers teach, and how they interact. Even if each person is born with a certain predisposition for a style, culture, experience, and development all have an impact on students' learning preferences and how they prefer to learn. The study of learning styles has gone through various evolutionary stages. The initial wave of the study was carried out in Sweden utilizing small samples and qualitative techniques (Marion & Saljo, 1976). Following these initial studies, other researchers created learning style inventories. Learning style inventories identify students' learning preferences using self-report instruments that are given out in large numbers to the students. The transition from qualitative to quantitative research approaches was highlighted by the use of inventories to determine the learning preferences of large student populations. The switch to qualitative approaches allowed for data reductions and statistical analysis of bigger sample sets to expand knowledge. All of these studies, regardless of methodological approach, have shown that learning styles affect learning outcomes. In addition, background characteristics including age, gender, personality, hemisphere dominance, and educational history are known to affect learning styles. It would be appropriate for educators to develop specialized tactics to improve learning outcomes for students with varied characteristics to increase the quality of learning results (Zhou, 2011).

RESEARCH QUESTIONS

Q1

Is there a significant relationship between learning styles and writing competence among Pakistani ESL learners?

Q2

How can the use of learning styles in writing instruction for Pakistani ESL learners contribute to their overall language proficiency and academic success?

SIGNIFICANCE OF THE STUDY

According to Anderson & Elloumi (2004) because learning styles play a significant role in students' learning identifying learners' preferred learning styles will enable educational planners and teachers to offer students the support and materials they require (Moenikia, M., & Babelan, A. Z. 2010). According to Chiya (2003) and Al-Hebaishi (2012) after knowing the benefits that learning styles and strategies can have on students, educators have begun to create effective lesson plans and teaching strategies that consider their preferences (Manuel,2020). In other words, learners will be more proficient and effective the more conscious they are of the tactics they use. On the other hand, learning style enables people to interact more effectively in a learning setting. Learning preferences are now having a significant impact on student's academic performance (Cassidy, 2004). Language learning techniques and styles are among the key elements that affect how and how well our kids learn a second language, (Manuel, 2020). By creating lessons that cater to the needs of students with various style preferences and by instructing students on how to enhance their learning processes, teachers can assist their pupils (Oxford, 1990).

LITERATURE REVIEW

Recognizing that everyone has a different preferred learning style is the first step in educating kids about the various alternative methods available. Kolb is an American organizational psychologist whose work has received significant attention. Kolb's concepts have had a growing influence on the work of educators, especially those working with children ages 16 and older (Fielding 1994; Robotham 1995). Because he offers a solid theoretical foundation, which is missing from the writing of many other authors, Kolb is one of the most prominent scholars in the field (Holman et al. 1997). Learning is the process through which knowledge is formed through the transformation of experience, according to Kolb (1984, 38) (author's italics). The idea outlines a method for organizing and arranging the curriculum, and it specifically describes how a lesson or an entire course might be taught to enhance student learning. It implies that learning occurs in cycles and involves the four processes of sensing/feeling, watching, reflecting, and doing (Fielding 1994). The different stages are linked to different learning styles, which is a key aspect of the theory. Recognizing that everyone has a different preferred learning style is the first step in increasing students' knowledge of the multiple techniques available and assisting them in being more adaptable to meet the various demands of learning circumstances (Gibbs 1988). To create effective teaching and learning tactics, teachers must also be aware of their learning preferences. When there is a clear mismatch between the student's learning style and the teacher's teaching style, learning may suffer (Fielding 1994). The theory is frequently the only or main theory

alluded to in many papers and books on experiential learning (Henry 1989) and geography in higher education, and it appears to provide a credible and plausible framework to many people. The theory's appeal stems in part from the justification it offers for various learning techniques, such as independent learning, learning by doing, work-based learning, and problem-based learning, all of which have recently attracted significant attention in higher education (see, for example, Gibbs 1992, Henry 1989), as well as geography (Gold et al. 1991, Gravestock and Healey 1998). The central idea of Kolb's four-stage model is a straightforward explanation of the learning cycle that demonstrates how experience is transformed into concepts through reflection and then utilized as a guide for active exploration and the selection of new experiences. Concrete experience (CE), reflecting observation (RO), abstract conceptualization (AC), and active experimentation (AE) are the four stages that Kolb identifies. They go in a circle around one another. The cycle can be started at any moment, but the stages need to be carried out in order. Thus, the feedback provided by the learning cycle serves as the foundation for future activity and an assessment of its effects. It may be helpful to think of the cycle as a spiral of cycles since learners should go through it numerous times. Kolb describes action research as "a spiral of action and research consisting of four major moments: plan, act, observe, and reflect" in a nutshell (Zuber-Skerritt 1992b, 11). Race (1993) has put forth a modification of Kolb's approach that also uses more common terminology. One of the writers used his stages, which he refers to as wanting, doing, giving feedback, and digesting, to examine the nature of the learning process with several groups of geography students and professionals (Healey 1998). The "experiential learning theory" recognizes the value of experiential activities like fieldwork and laboratory sessions, as its name suggests, but it does not give these types of learning a top priority. The learner must be guided methodically through each stage of the cycle, with strong connections between each level. The approach provides a direct criticism of those highly theoretical programs or courses that disregard students' existing knowledge or experience. It is also critical of experiential activities that give students little opportunity to prepare for the experience and/or no chance to effectively reflect on the experience and connect it to their broader reading or the more overtly theoretical aspects of the course, such as some field courses, simulations, and games (Jenkins 1997). The cycle is supported by two main axes: an "abstract-concrete" and an "active-reflective" dimension. The first is how we receive or grasp new information or experiences, and the second is how we process or modify what we perceive. These reflect the two primary aspects of the learning process, which correlate to the two main diverse ways by which we learn (Smith and Kolb 1986). We can either fully immerse ourselves in the experience utilizing our senses and emotions in a "concrete" fashion, or we can think "abstractly" using logic and reason. Once we have perceived the event, we must modify it to understand it. Individuals here vary in how much they prefer to do (active exploration) versus watch (reflective observation) (Fielding 1994). The two axes, when plotted graphically at right angles, yield four distinct clusters that can be used to both define disciplinary categories and explain students' preferred learning styles. According to Kolb (1984), children may grow to prefer a certain method of instruction. Students may choose numerous learning styles depending on the situation, but they often favor some learning behaviors over others. The preferred style represents a tendency rather than an absolute. He

distinguishes four learning styles, each of which is connected to a distinct approach to problem-solving. Four styles are:

- Divergers - look at things from a variety of angles and rely largely on idea development and brainstorming.
- Assimilators are capable of developing theoretical models and employing inductive reasoning.
- Convergers, on the other hand, largely rely on hypothetical-deductive reasoning.
- Accommodators - conduct trials and plans and adjust to the current situation

A learning style inventory (LSI 1976) created by Kolb in 1976 allows for the identification of pupils' preferred learning styles. A decade later, an improved version (LSI 1985) was created (Kolb 1985). Although there is diversity throughout fields, Kolb's LSI 1985 has been determined to be an instrument with excellent reliability and some evidence for validity (Willcoxson and Prosser 1996). The 48 short words regarding learning in the LSI 1985 must be ranked. There are twelve sets of four response options, and the ranking can be done in 10 to 15 minutes. The subject receives ratings for the CE, RO, AC, and AE learning phases. While the AC-CE score provides a number for the y-axis, the AE-RO (active-reflective) score provides a value for the x-axis. The single point that results classifies the subject as either a diverger, assimilator, converger, or accommodator. Additionally, other scholars have created their inventories of learning styles. As an illustration, Honey and Mumford (1986) modified Kolb's inventory and utilized clearer terminology, such as "pragmatist," "reflector," "theorist," and "activist." Additionally, they offer guidance on how to make the most of each learning style, how to enhance each style, and how to select learning activities that are appropriate for each style. Results from Kolb's LSI (1976) have indicated some degree of agreement about disciplinary groupings based on the prevalent learning styles among their students (Kolb 1994). If disciplines are grouped under headings like "social sciences" or "humanities," there is more consensus to be seen (Willcoxson and Prosser 1996). However, it should be noted that by identifying a numerical majority as the prevailing learning style, the variety of patterns identified is obscured. Additionally, the groups are not completely accurate because other, non-traditional ways of speaking and teaching may be used in that area (Nulty & Barrett 1996). Additionally, there is evidence linking learning preferences to where students are in their academic careers. Students adopted learning in the first third of their studies, according to Nulty and Barrett (1986). Additionally, there is evidence linking learning preferences to where students are in their academic careers. Regardless of their primary academic subjects, Nulty and Barrett (1986) discovered that students in the first third of their studies adopted learning methods that were comparable to one another. However, students' learning styles in the last third of their studies tended to be connected to the discipline that had served as their studies' main focus (Healey & Jenkins, 2000).

According to Damrongpanit (2013), who cited Kolb (1984), learning styles are tenaciously established as the appropriate method for kids to manage, acquire, and understand to increase awareness. Many scholars have been studying learning styles. According to Rohmatulloh (2010), the goal of her study is to compare English achievement among learning modalities. The findings of this study revealed that there is a sizable difference between students who have visual, audio, and kinesthetic in their mastery of English. Rachma, Sutarsyah, and Yufrizal (2011) on the other hand, stated that the goal of their study is to determine whether learning styles have an impact on reading achievement. They concluded that kids' learning preferences have little bearing on their ability to write, with the majority of pupils having kinesthetic learning preferences. All of the research mentioned above, nevertheless, concentrates on the role that learning styles play in students' success with English. The researcher aims to validate the research at a school with a religious background because, in the previous study, the research was managed at a public school. One study's findings indicated that there is no substantial difference, however, the second study's findings indicated a significant influence. It indicates that the outcomes of the earlier investigations are inconsistent (Hanafi, n.d.).

Begam (2013) performed a study to ascertain the perceptions of learning styles among students at MARA Professional Colleges. The Dunn and Dunn model and learning-type assessment tools are the foundation of the study. The characteristics of the learning style examined were environmental, psychological, emotional, sociological, and physiological. 508 students' answers to questionnaires were used to gather data. Regression and correlation statistics were used in the study to analyze the data. The survey's results revealed a correlation between the five variables that were measured: environment ($r=0.006$), emotional ($r=0.624$), social ($r=0.138$), physiological ($r=0.260$), and psychological ($r=0.431$). The most significant influence on academic achievement was emotional, which accounted for 28.3%, followed by psychological (9.4%), sociological (1.9%), physiological (1%), and environmental (1%). According to the findings, attention should be paid to students' motivation, perseverance, responsibility, and need for structure. It also showed that factors such as temperature, sound, light, and sitting or furniture design did not affect academic performance. The study's findings had important implications for college lecturers and administrators regarding how to modify teaching methods and activities to suit the interests of their students.

Pellon, Nome, and Aran (2013) assessed the learning preferences of fifth-year medical students enrolled in the ophthalmology course and examined the relationship between these preferences and academic achievement. Neurolinguistic programming (NLP) and Kolb's learning style questionnaires were used, and the results were correlated with the final grades received. Pearson's r-test was used to assess the variables. The results showed a relationship ($p < 0.05$) between the learning styles and academic performance indicators. Kolb's model indicated that students with reflective styles performed better, whereas the NLP model indicated that students with visual styles performed better.

Vaisnav (2013) looked at a study of the most common learning styles among secondary school pupils. Three learning styles visual, auditory, and kinesthetic were examined (VAK). Additionally, it looked into the relationship and impact of various learning preferences on students' academic performance. 200 Maharashtrian students in the 9th, 10th, and 11th grades were chosen as a sample for the study. The study's findings showed that among secondary school students, the kinesthetic learning style was more common than the visual and auditory learning styles. Academic achievement and kinesthetic learning style have a strong favorable association. On academic achievement, the three variables visual, auditory, and kinesthetic had significant major impacts.

Jhasih and Kestha (2010) identified students' learning styles and learning strategies to determine whether there were significant differences between male and female learners in terms of preferred learning styles and learning strategies. They also looked into the possibility of a link between student's preferred learning styles and learning strategies and academic achievement among third-year English majors at Al Aqsa University. They distributed questionnaires about learning styles to 60 students in all. It was employed to determine the preferred perceptual learning styles of the pupils. To establish the students' level and match the results with their preferred learning styles, an achievement exam was also administered based on an examination of the successful test results and their relationship to the students' learning styles. Achievement and auditory and overall degree of style were shown to be statistically significantly correlated, but there was no evidence of a similar relationship between achievement and visual, kinesthetic, tactile, group learning, or individual learning.

Using and without adjusting for prior academic achievement, Warn (2009) claimed to find a relationship between students' learning styles and their academic performance in two final-year classes. A higher education institution employed Kolb's (1976) Learning Style Inventory (LSI) to evaluate the learning preferences of its final-year accounting students. Concerning two final-year subjects with differing final assessment orientations, the students were obliged to complete two sets of LSI questions. As a result, subjects with various assessment orientations had distinct learning styles. Without or with controlling for prior academic achievement, there was no discernible correlation between the students' learning styles and their academic performance. Future studies might consider fusing learning styles with other elements, including study techniques, and assess how these affect academic performance (Argasetra, 2017).

The students will be better able to complete language activities if they are aware of language learning methodologies. This has backed up the idea put forth by Cohen (2003) and Oxford (1990) that the effectiveness of a learning technique influences success. In other words, learners will be more proficient and effective the more conscious they are of the tactics they use. On the other hand, learning style enables people to interact more effectively in a learning setting. Learning preferences are now having a significant impact on student's academic performance (Cassidy, 2004). Language learning techniques and styles are among the key elements that affect how and how well our kids learn a second language, according to Oxford (2001). She added that a learning strategy is a

specific activity, behavior, phase, or technique, but a learning style is a general approach. Furthermore, she underlined how these techniques can be a beneficial toolset for active, deliberate, and intentional self-regulation of learning when a learner makes a conscious decision to employ them. To best meet the needs of each learner, teachers should evaluate the learning preferences of their students and modify their teaching strategies. Students will learn more effectively if they are taught using a manner judged suitable for their learning style (Pashler et al., 2008). According to Chiya (2003) and Al-Hebaishi (2012) after knowing the benefits that learning styles and strategies can have on students, educators have begun to create effective lesson plans and teaching strategies that consider their preferences According to Oxford (1990: 14–16), there are two main groups of learning techniques. Both direct and indirect tactics are used. Memory, cognition, and compensatory methods are examples of direct strategies. Metacognitive, emotive, and social strategies are examples of indirect tactics, on the other hand (Manuel, 2020).

METHODOLOGY

The study aims to explore the relationship between learning style and academic performance of Pakistani ESL learners using a sequential mixed methods research design. The independent variable is learning style, while the dependent variable is academic performance in terms of writing. The population is ESL learners in Pakistan, and the sample frame is students from PAF College Fazaia Sargodha. The sample size is 66 students, selected using purposive sampling, and data is collected through qualitative and quantitative methods. David Kolb’s theory of learning styles is used as a framework while Learning style inventory (LSI) is used as a tool to collect data from participants. Writing samples are collected through narrative writing tests. Quantitative data is analyzed through the SPSS 26 version while qualitative data is analyzed through content analysis.

DATA ANALYSIS AND INTERPRETATIONS

The focus on the relationship between learning styles (as the independent variable) and writing performance (as the dependent variable) is observed at three levels which are:

1. Learning style and writing performance in sentence structure
2. Learning style and writing performance in the organization of ideas
3. Learning style and writing performance in the use of appropriate grammar.

RESULTS ARE DISCUSSED SEPARATELY.

Table 1: Learning Styles and Writing Score in Sentence Structure

		Value	Asymp. Std. Error	Approx. Tb	Approx. Sig.
Ordinal by Ordinal	Kendall's tau-b	.193	.109	1.763	.078
	Kendall's tau-c	.179	.102	1.763	.078

	Gamma	.268	.149	1.763	.078
	Spearman Correlation	.216	.124	1.768	.082c
Interval by Interval	Pearson's R	.214	.124	1.752	.085c
Measure of Agreement	Kappa	.122	.071	1.835	.067
N of Valid Cases		66			
a. Not assuming the null hypothesis.					
b. Using the asymptotic standard error assuming the null hypothesis.					
c. Based on normal approximation.					

These symmetric measures indicate various degrees of positive correlation between the variables being compared: Kendall's tau-b, Kendall's tau-c, Gamma, and Spearman Correlation are ordinal measures that range from 0 to 1, with higher values indicating a stronger positive correlation. In this case, all of these measures show a weak to moderate positive correlation between the variables, with Gamma having the highest correlation coefficient of 0.268.

Pearson's R is an interval measure that ranges from -1 to 1, with higher absolute values indicating a stronger correlation. In this case, the measure shows a weak positive correlation between the variables, with a correlation coefficient of 0.214. Kappa is a measure of agreement between two raters or observers, which ranges from -1 to 1, with higher values indicating stronger agreement. In this case, the measure indicates a weak agreement between the two variables, with a kappa coefficient of 0.122. The standard errors and significance levels suggest that these correlations are not statistically significant at the conventional alpha level of 0.05, except for Kappa, which has a p-value of 0.067, indicating borderline significance. However, it's important to consider the context and domain knowledge when interpreting these results, as well as potential confounding factors and limitations of the data.

Table 2: Learning Styles and Writing Score in Organization of Ideas

		Value	Asymp. Std. Error ^a	Approx. Tb	Approx. Sig.
Ordinal by Ordinal	Kendall's tau-b	.232	.106	2.152	.031
	Kendall's tau-c	.204	.095	2.152	.031
	Gamma	.345	.155	2.152	.031

	Spearman Correlation	.262	.121	2.175	.033c
Interval by Interval	Pearson's R	.277	.119	2.303	.025c
Measure of Agreement	Kappa	.110	.065	1.914	.056
N of Valid Cases		66			
a. Not assuming the null hypothesis.					
b. Using the asymptotic standard error assuming the null hypothesis.					
c. Based on normal approximation.					

The symmetric measures also show a statistically significant positive association between the variables being compared, with p-values ranging from .025 to .056. The values of Kendall's tau-b, Kendall's tau-c, Gamma, Spearman correlation, and Pearson's R are all positive, indicating a positive relationship between the variables. The strength of the association ranges from moderate (Kendall's tau-b = .232) to strong (Gamma = .345) to very strong (Pearson's R = .277). The p-values for all measures except for Kappa are less than .05, indicating that the relationships are statistically significant. Overall, these results provide further evidence of a positive relationship between the variables being studied, with a moderate to strong effect size.

TABLE 3: Learning Styles and Writing Scores in Grammar

		Value	Asymp. Std. Error ^a	Approx. Tb	Approx. Sig.
Ordinal by Ordinal	Kendall's tau-b	.286	.111	2.536	.011
	Kendall's tau-c	.282	.111	2.536	.011
	Gamma	.426	.158	2.536	.011
	Spearman Correlation	.316	.123	2.660	.010c
Interval by Interval	Pearson's R	.320	.121	2.703	.009c
Measure of Agreement	Kappa	.063	.060	1.098	.272
N of Valid Cases		66			
a. Not assuming the null hypothesis.					
b. Using the asymptotic standard error assuming the null hypothesis.					
c. Based on normal approximation.					

Based on the chi-square tests, the relationship between learning styles and writing scores for organization of ideas was not statistically significant ($p > .05$). However, the relationship between learning styles and writing scores for appropriate grammar was statistically significant ($p < .05$). Looking at the directional measures, Somers' d and the corresponding significance values also showed that the relationship between learning styles and writing scores for appropriate grammar was statistically significant ($p < .05$), while the relationship between learning styles and writing scores for organization of ideas

was not significant ($p > .05$). Examining the symmetric measures, all measures (Kendall's tau-b, tau-c, Gamma, Spearman Correlation, Pearson's R) indicated that the relationship between learning styles and writing scores for appropriate grammar was statistically significant ($p < .05$). The measures also showed that the strength of the association was moderate (around .3). However, the measure of agreement, Kappa, indicated poor agreement between learning styles and writing scores for appropriate grammar ($p > .05$).

CONCLUSION AND RECOMMENDATIONS

This study found a moderate positive correlation between learning styles and writing scores in the organization of ideas. Therefore, instructors should consider incorporating different teaching strategies that cater to different learning style preferences. For example, instructors can use visual aids and graphic organizers to cater to learners with a visual learning style, while learners with an auditory learning style may benefit from lectures and discussions.

This study found a weak positive correlation between learning styles and writing scores in the appropriate grammar. Therefore, instructors should provide targeted grammar instruction that caters to the learning style preferences of their students. For example, learners with a converging learning style may benefit from hands-on activities that involve identifying and correcting grammatical errors, while learners with an assimilating learning style may prefer organized and logical presentations on grammar rules.

This study found that learners with diverging learning styles may struggle with identifying and correcting grammatical errors. Therefore, instructors should encourage reflective writing activities that enable learners to analyze their writing and identify areas for improvement. Reflective writing activities can also help learners with diverging learning styles to improve their organization of ideas.

This study provides valuable insights into the relationship between learning styles and writing skills. However, further research is needed to explore this relationship in more depth and to identify the specific learning styles that are associated with stronger writing skills. Additionally, future research can investigate the effectiveness of different teaching strategies in improving writing skills based on learning style preferences.

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