THE COMPARISON BETWEEN AUDITORY LEARNERS AND VISUAL LEARNERS' ACHIEVEMENT IN WRITING SKILLS

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ABSTRACT

This quantitative research is aimed to find out (1) the writing quality of both visual and auditory learners; (2) whether or not the writing quality of auditory learners is significantly different from that of visual learners; and (3) which type of learners has better writing quality. This research applied causal-comparative design in analyzing and comparing the writing skills between the visual and auditory learners. The research participants were the sixth semester students of English Education Department of UIN Alauddin Makassar in the academic year of 2017-2018. The data were collected using two kinds of instruments, namely Perceptual Learning Style Inventory and writing test. The results showed that both the visual and auditory learners are in normal criteria of writing quality, and also, there is not any significant difference in writing quality between auditory learners and visual learners. Nevertheless, auditory learners tended to outweigh the visual learners in terms of the total score regardless the insignificancy of the difference. On the other hand, the significant difference of the mean score found from the t-test result underscores the ideas that the learning styles and other contributing factors to writing production to satisfy students' learning are consistent with the theories used in this study. It proves that every individual's learning preferences differ significantly, and the stronger the preference, the more important it is to provide compatible learning and teaching strategies which involve students' strategies, knowledge and purposes.

Keywords: Learning Styles, Auditory Learners, Visual Learners, Writing Skill

INTRODUCTION

In teaching a foreign language, an important thing to be considered by teachers is learning style. Students have different learning style, which usually presents both teachers and students with a problem when classes are taught in one set that might only benefit one kind of learner. Therefore, teachers have to be aware of individual learning styles and learner diversity.

In many cases, learning style influences both students' motivation and performance in the classroom. Students' motivation and performance will increase if teaching approaches match with their preferred way of processing information. This phenomenon significantly affects students learning outcomes. Therefore, in teaching process, teachers need to adopt approaches to teaching and assessment that enable students with different learning style to learn effectively.

The numerous learning style theories can be broken down in different ways. The model used by James and Gardner in 1995, for example, is dimensional model of perceptual, cognitive, and affective (Brown, 1998). Perceptual learning style theories concentrate on the physical and sensory elements that leaner uses to interpret external stimuli. Perceptual learning style theories usually include such learning dimensions as the visual, auditory, tactile, and kinesthetic. Currently, perceptual theorists are expanding their research to include cultural and gender differences. The most used instrument by perceptual learning style theorists is the Multi-Model Paired Associates Learning Test (MMPALT) (James and Gardner, 1995).

In relation to teaching a foreign language, Reid (1995) divides learning styles into three major categories that are relevant to the field of foreign language learning: sensory learning styles, cognitive learning styles and affective/temperament learning styles. Sensory learning styles attribute perceptual preferences to physical environment in which people learn. Perception involves receiving, obtaining and discerning information, ideas and concepts (Guild, 2001).

People learn using different perceptual preferences. These perceptual differences affect how people obtain and process information. Dunn in Penger (2008) introduces the three main perceptual learning styles: auditory, visual and kinesthetic as dominant learning styles. Learners use the three preferences to receive and learn new information and experiences.

Brown (2007) claims that learners' styles represent preferred approaches rather than immutable stable traits means that learners can adapt to varying contexts and situations. Some people have one dominant learning style, and use the others only as supplements. Everyone can develop ability in their fewer dominant styles, as well as increase their skill with styles they already use well.

Research findings on learning styles are vast and draw on some focuses, including those that are related to writing skill. Ahmad (2008) conducted a correlational study

between the correlation between learning styles and paragraph organization styles of the sixth semester students of English education department of UIN Alauddin Makassar. The study aimed at examining the correlation between students' learning styles with special reference to the use of brain hemisphere and paragraph organization styles developed at the English Education Department of UIN Alauddin Makassar in 2008. The study found that there was a significant correlation between the left-brain learners and logical style paragraph development, the right-brain learners and intuitive style paragraph development, the bi-lateral brain learners and combinative style paragraph development with the Chi-Square test of 21.278 which was more sgnificant than the Chi-Square table of 9.4877 for $\alpha = 0.05$ and df = 4. Besides, the level of probability was below 0.05 (0.000 < 0.05) indicating that the correlations were significant.

Another study has been done by Jensen and DiTiberio (1989) among Native English Speakers (NESs) writing classes in some universities in America. Using the MBTI with writers at various levels of proficiency, they concluded that individual students' personality types influence their approach to writing tasks and responses to freshman English instruction. The study suggested that different students engage in different writing processes, not one uniform writing process. They exemplified that some students may need to incubate ideas a long time before writing, whereas others may benefit greatly from free writing activities. Some students may think a draft through thoroughly in their heads before writing, while others may engage in "discovery," finding what they wish to say through a lengthy drafting process. Learning styles preferences associated with dimension of MBTI type are extroversion vs. introversion, sensing vs. intuition, thinking vs. feeling, and judging vs. perceiving.

Impulsivity and reflectivity are also parts of cognitive styles or another learning styles. In this case, Kagan (1986) tried to observe such styles relating to the implication of second-language teaching. He and his colleagues successfully found out that inductive reasoning was more effective with reflective persons and deductive reasoning was more effective with impulsive persons. The findings imply that teachers of English should have awareness on their students' preference styles before deciding the type of reasoning needed to perform including in writing process.

The above studies are in line with learning styles points of view from the expertise. Dunn and Dunn's (1993) states that learning style is the way students start to concentrate on, process, internalize, and remember new and difficult information. Each individual's

preferences differ significantly, and the stronger the preference, the more important it is to provide compatible instructional strategies (Braio, Dunn, Beasley, Quinn, and Buchanan, 1997). Most instructors are not cognizant of the fact that less than a third of their pupils can recall what they hear or see during a classroom lecture (Dunn, 2003). However, many of these same learners remember well when they learn tactually by using their hands, or kinesthetically through whole body movement. Nonetheless, many tactual and kinesthetic students cannot achieve success in college because they are expected to sit and listen passively in class when they, instead, crave active engagement to learn effectively.

Perceptual learning style described by Dunn and Dunn in Penger, Tekavcic and Dimovski (2008) as a domination of visual, auditory and kinesthetic functions of someone in processing information. A visual learner is characterized by mind sometimes strays during verbal activities, observes, rather than talks or acts; may be quite by nature, organized in approach to tasks, likes to read, usually a good speller, memorize by creating mental images, thinks in pictures, easily put off by visual distraction, finds verbal instructions difficult, remembers faces, strong on first impressions, likes drawing and doodling, may have good handwriting, enjoys using color, notices details, often a quick thinker, and may focus on the 'big picture' and use advanced planning.

An auditory learner generally talks to self-aloud, outgoing by nature, whispers to self while reading, may hum or sing while working, likes to be read to, memorizes by steps in a sequence, very aware of rhythm, easily distracted by noises, may have difficulty with written materials, remembers names, may assess people by the sound of their voice, enjoys music and the sounds of words, enjoys talking and listening, and may need time to think (discuss with himself/herself).

A kinesthetic learner generally in motion most of the time/fidgety, outgoing by nature; expresses emotion by physical means, will try new things – likes to get involved, reading is not a priority, may find spelling difficult, likes to solve problems by physically working through them, very good body control, good timing and reflexes, likes physical rewards, remember what they have done rather than seen/heard, enjoys handling objects, enjoys doing activities, likes to use gestures and touch people while talking to them, and may need time to think (e.g. process the action involved).

After having identified the characteristics of the three modalities of perceptual learning preference, it can be found that auditory and visual styles are contrasted in several ways. These two types of learning styles are the main concern of this study. Visual style

refers to a preference for learning through vision. Visual learners rely on their sight to take in information and they will lose focus during oral lectures. In contrast, the auditory style refers to the use of hearing sense in getting information. Auditory learners can often follow verbal instructions very well and retain new information better when they talk it out.

Those contrastive differences usually bring about serious problem for language teachers in presenting the material. The materials for visual learners may not be suitable for auditory learners and vice versa. Guild (2001) states that acceptance of learning styles differences demands an approach that develops skills through strengths. Once lecturers become aware that different students learn differently, they will be able to accommodate approaches by considering students' different learning styles. In foreign language classrooms, learning style is one of determinant factor for the success of English learners (Husain, 2000). Matching students' learning style preferences to specific learning activities can improve learning outcomes. Students tend to apply and transform the information received into a "style" that matches their strengths, based on their experiences and ability.

Every learner will have different ways of developing or organizing her or his ideas in a piece of writing task. Some learners may prefer to use deductive thinking styles while others may prefer to use the inductive ones. Some will prefer to use comparing whereas others will prefer to use contrasting in adding details into their paragraphs. Maybe some learners will choose to put their topic sentence at the beginning of the paragraph while others will choose to put it at the end of the paragraph. Perhaps some learners prefer to describe their ideas of what they have seen while others from what they have heard. The tendency may vary according to the way they perceive information and process it in their minds. The way to communicate the ideas given in the paragraph development will also vary according to their communication styles and ability. As a result, the quality of writing is assumed to be different depending on the individual's learning style preferences.

Although Felder and Spurlin (2005) claimed that learning styles are not affected by educational background, however, there might be some barriers protecting them against producing a good quality of writing based on their perceptual learning styles, such as IQ, prior knowledge of writing skills, knowledge of the target language especially vocabulary and structure element, and socio-psychological and physiological factors. Therefore, the researcher may predict that there must be a significant correlation between individual's learning styles and their writing quality if all the extraneous variables have been carefully controlled.

METHOD

This research applied causal-comparative design in collecting the data. This study was intended to determine the cause for preexisting differences in groups of individuals, especially for learning styles differences. The participant of the research was the sixth semester students of English Education Department of UIN Alauddin Makassar in the academic year of 2017-2018. The number of populations was 202 students. The sample was taken purposively means that only those who are auditory and visual were involved in this research. The combinative types were eliminated from the research. However, since the unit analysis of writing in this study was quite large, the researcher decided to take 19 students of visual and 19 students of auditory type. The total number of samples was 38.

There were two types of instruments employed in this study, namely perceptual learning style's inventories and writing tests. The inventory consisted of 20 statement items used to measure the students' perceptual preference in processing information and covered only auditory and visual sensory perceptions, while the writing tests were used to measure the students' writing quality for both auditory and visual types of learner. The tests of writing skills consisted of a topic to write with a set of activities the students should do during the test. The test was limited to 45 minutes of length. The criteria of writing assessment were taken from online material for effective writing rubric (Rubistar for Teacher Organization: 2006).

The data obtained from the inventory and writing test were analyzed and interpreted using *Statistical Packages for the Social Sciences (SPSS)*. The researcher used descriptive statistics mean score and standard deviation to measure the writing quality of both visual and auditory learners. To measure whether the writing quality of auditory learners is significantly different from that of visual learners, the researcher used the t-test for paired samples and set the level of significance for the inferential data calculation at α 0.05. The critical t-table for α 0.05 with the degree of freedom df = 36 is 2.029. To accept the alternative hypothesis, the two-tailed test result should not be in the interval of -2.029 to +2.029. The alternative way of deciding the significance of the difference, the probability level has to be smaller than the significance level 0.05. Lastly, to measure which type of learners has better writing quality, the researcher used the mean difference for the writing quality score.

FINDINGS AND DISCUSSION

a. Description of the Students' Perceptual Learning Style Preference

Based on the inventory for perceptual learning styles, the researcher found out that there were three types of perceptual learning style mainstreaming in this study; auditory, visual and combination of auditory and visual. The number of auditory and visual learners was 19 each or 43.18 percent each. The combinative styles were 6 students or 13.64 percent. As the research searched for the auditory and visual learning style only, the combinative style was eliminated from this study and involved those with auditory and visual styles only. To be clearer about the number and the percentage of all the styles, see the bar-chart below:

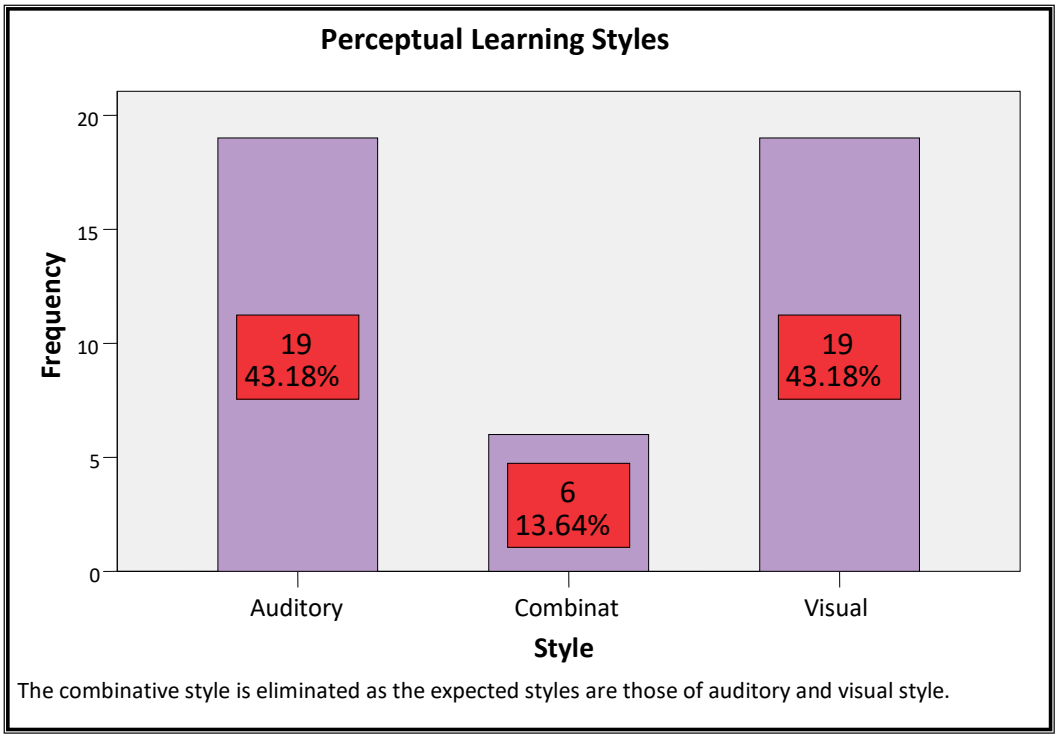

Figure 1. Bar-Chart of Perceptual Learning Styles

b. Description of the Writing Quality of Auditory and Visual Learners'

Table 1 below shows the frequency distribution of writing score of auditory learners. The data in the table indicate that of the 19 students with auditory preference, one of them

gets score 3.00, 1.67 and 1.33; two of them get score 2.67; five of them get score 2.33; and nine of them get score 2.00.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	1	5.3	5.3	5.3
	2.67	2	10.5	10.5	15.8
	2.33	5	26.3	26.3	42.1
	2.00	9	47.4	47.4	89.5
	1.67	1	5.3	5.3	94.7
	1.33	1	5.3	5.3	100.0
	Total	19	100.0	100.0	

Table 1. Frequency Distribution of Auditory Learners' Writing Score

Table 2 shows the mean score of and standard deviation of writing score of those with auditory style. The mean score of the writing quality of auditory learners is 2.1574. It means that the students with auditory preference are in normal criteria of

	N	Minimum	Maximum	Mean	Std. Deviation
Writing_Score	19	1.33	3.00	2.1574	.37488
Valid N (listwise)	19				

Table 2. Mean Score and Standard Deviation of Auditory Learners'

The standard deviation is 0.37488 means that the deviation of the individual's mean score to the total mean score is in normal distribution since the deviation is not more than 3.00.

Table 3 below shows the frequency distribution of writing score of visual learners. The data in the table indicate that of the 19 students with visual preference, one of them gets score 2.67 and 1.00; three of them get score 2.33, 1.67 and 1.33; and eight of them get score 2.00.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.67	1	5.3	5.3	5.3
	2.33	3	15.8	15.8	21.1
	2.00	8	42.1	42.1	63.2
	1.67	3	15.8	15.8	78.9
	1.33	3	15.8	15.8	94.7
	1.00	1	5.3	5.3	100.0
	Total	19	100.0	100.0	

Table 3 Frequency Distribution of Visual Learners' Writing Score

Table 4 below shows the mean score of and standard deviation of writing score of those with visual style. The mean score of the writing quality of visual learners is 1.8768. It means that students with visual preference are in normal criteria of writing quality. The standard deviation is 0.41905 means that the deviation of the individual's mean score to the total mean score is in normal distribution since the deviation is not more than 3.00.

	N	Minimum	Maximum	Mean	Std. Deviation
Writing_Score	19	1.00	2.67	1.8768	.41905
Valid N (listwise)	19				

c. The Difference in Quality of Writing of Visual and Auditory Learners

Table 5 below shows the summary statistics of both independent sample groups. The mean score of writing quality for auditory learner is 2.16 and 1.88 for visual learners. The standard deviations of both sample groups are between -3.00 to +3.00. It means that the mean scores for individuals in the groups are in normal distribution. The mean scores of both groups are different but to be able to determine whether the difference is significant or not, the researcher used the t-test score for independent sample t-test in table 6.

	Styles	N	Mean	Std. Deviation	Std. Error Mean
Writing_Score	Auditory	19	2.16	.375	.086
	Visual	19	1.88	.419	.096

Table 5. Group Statistics of Mean Score and Standard Deviation

Table 6 below shows the independent sample t-test score for both groups. The t-test for two different sample groups is done in two stages. The first stage is to examine whether the variance of the two groups can be regarded as identical or not. The second stage is to examine the difference between the average score of the two samples.

The data in table 6 shows that that the F score for the equal variances assumed is 0.306 with the probability 0.583. Since the probability is larger than 0.05, the two variances are significantly equal. The next stage is to examine if the two mean scores are significantly different or not. For this reason, the researcher used null hypothesis (H_0):

"there is not any significant difference of writing quality between auditory learners and visual learners", and alternative hypothesis (H_1) stating that *"there is a significant difference of writing quality between auditory learners and visual learners"*.

The mean difference of the two samples is 0.28 (2.16 – 1.88 = 0.28). The lower difference in 95% confidence interval is 0.019 and the upper difference is 0.542. It means that the difference in the writing score of both samples is between 0.019 and 0.542 with the average difference is 0.281. The t-test score for both samples is 2.175. Compared to the critical t-table 2.029 for α 0.05 with the degree of freedom df = 36, the t-test score is larger. Since the t-test score is larger than the critical t-table value, the alternative hypothesis stating that *"there is a significant difference of writing quality between auditory learners and visual learners"* is rejected and accepts the null hypothesis stating that *"there is not any significant difference of writing quality between auditory learners and visual learners".* It means that both mean scores are not significantly different.

			Writing Score	
			Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F		.306	
	Sig.		.583	
t-test for Equality of Means	t		2.175	2.175
	df		36	35.562
	Sig. (2-tailed)		.036	.036
	Mean Difference		.281	.281
	Std. Error Difference		.129	.129
	95% Confidence Interval of the Difference	Lower	.019	.019
		Upper	.542	.542

Table 6. Independent Sample t-test for Writing Quality

d. Better Writing Quality

One of the data in table 6 above indicates the mean difference of the writing quality between the auditory and the visual learners. The mean difference between the two samples is 0.281 (2.16 – 1.88 = 0.28). The lower difference in 95% confidence interval is

0.019 and the upper difference is 0.542. It means that the difference in the writing score of both samples is between 0.019 and 0.542 with the average difference is 0.281. Compared to the polarized interval standard criteria of quality, 0.281 is placed in the interval 0.00 – 0.79 which means the mean difference is not significant to state that one is better than the other. In other words, none of them is better or both of them are in normal quality.

There were three different areas of writing quality assessed in this study, namely content, paragraph structure and mechanics. The three areas assessed were assumed to contribute to the quality of writing of both types of learners disregarding some extraneous variables that might contribute to the results.

The descriptive statistical analyses in the findings show that the writing quality of both types of learners was between the interval of 1.34 and 2.67 or in normal quality. The normal quality of writing is interpreted as neither dissatisfactory nor satisfactory. The researcher assumes that the similar result of both groups is caused by their prior writing skills and linguistic knowledge and not merely by their learning styles. The reason to assert this point is that both groups are in the same semester and have relatively similar level of writing skills.

Besides, the mean difference between both groups' writing score, which is intended to find better writing quality, shows the insignificant contrast. It obviously means that none of the styles produced excellent writing based on the predetermined objective criteria for writing quality. Nevertheless, auditory learners tended to outweigh the visual learners in terms of the total mean score by 0.281 points regardless of the insignificance of the difference. As auditory learners perceived and process information generally by talking to self-aloud, whispering to self while reading, humming or singing while working or memorizing by steps in a sequence, they could easily remember the rubric or the direction pronounced by the researcher when instructing them to write for this study. For this reason, although still needs more evidence, they might take advantage of such situation than their peers with visual style.

The significant difference of the mean score found from the t-test result underscores the ideas that the learning styles and other contributing factors to writing production to satisfy students' learning are consistent with the theories used in this study. Students' reported patterns of writing within the categories of content, paragraph structure and mechanics supported the idea that learning styles play a role in such skills. This is consistent with the theoretical model presented by Braio et al (1997) that each individual's

preferences differ significantly, and the stronger the preference, the more important it is to provide compatible instructional strategies which to some extent involve students' strategies, knowledge and purposes.

As the research has proved that perceptual learning styles contribute to writing performance, some implications need to be drawn upon language learning and teaching, particularly in teaching writing. As Jonassen and Grabowski (1993) have identified three fundamental truths of successful learning, instructional design should take into account as many of the factors as mentioned above, especially when approaching collaborative learning experiences involving diverse learning styles. The three fundamental truth are that learners who command their own learning often master more things than those who rely on being taught; learners have a different sense of themselves, of their time, and what is worth learning and why; and learners learn most enjoyable by choosing from a rich array of environment, media, methods, and experiences that mean the most to them. By identifying all students' preferred learning styles, instructional designers can develop design strategies addressing environmental learning preferences. Implementation of these strategies can help motivate learners while creating a positive learning environment to achieve positive outcomes in all educational levels (Riding and Sadler-Smith 1992). These fundamental design practices have potential application for all educators.

When teaching writing to tertiary students or even lower, they can be encouraged to employ their skills according to their preferred learning styles. For visual learners, for example, they can be encouraged by visualizing skills in considering the content, layout, length and process of writing. Among the techniques are visualizing through still pictures, a television documentary, drawing, text, writing procedures, idea by idea, paragraph by paragraph through diagrams or tables, concept mapping for information writing, studying examples of writing, film, video, computer images, spellings focusing on word roots and families, using 'look, cover, write, check' to memorize spellings; seeing words within words. For auditory learners, they can be encouraged by hearing writing read aloud, collaborative writing, role play interviewing, telephoning, hearing the voice, writing frames and sentence starters by saying it, and spellings learning through repeating letters aloud, hearing words within words, saying words in an exaggerated way, and utilizing sense of rhythm and rhyme.

Lastly, the occurrence of combinative style in this research implies that when considering preferred styles of learning, it is probably more helpful to think of learning as a

range of styles students all have to some degree like 'having a strength in auditory learning', for example, rather than 'being an auditory learner'. The notion of a person having only one learning style is perhaps inappropriate, especially as the knowledge of learning styles has not been completed by any means. For this reason, teachers need to consider ways of accessing the full range of students' learning strengths.

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