THE EFFECT OF LEARNING STYLE BASED ACTIVITIES ON READING ACHIEVEMENT OF NURSING STUDENTS

Delta Rahwanda, Hery Yufrizal, Tuntun Sinaga
English Departement, University of Lampung
rahwanda_delta@yahoo.com

Abstract. This study investigated the effect of learning styles-based activities on reading achievement of nursing academy students and the congruence between the post-test results and the questionnaire results. The subject of this research was the fourth-semester students of Bunda Delima nursing academy, Bandar Lampung. They were chosen purposely by using learning style preference questionnaire and reading test. The data were obtained from the result of three post-tests and questionnaires. One way anova in SPSS (Statistical Package for Social Science) was used to analyze the data. The result shows that there is no significant difference on students' reading achievement after being taught using activities based on a certain learning style and there is congruence between the post-test results and the questionnaire results. However, conducting activities based on student learning style preference help students comprehend the material better.

Keywords: *activity, learning style*

Abstrak. Penelitian ini menginvestigasi dampak dari aktifitas berdasarkan gaya belajar terhadap pencapaian membaca siswa keperawatan dan kesesuaiannya antara hasil tes akhir dan hasil angket. Subyek penelitian ini adalah mahasiswa semester empat akademi keperawatan Bunda Delima, Bandar Lampung. Mereka dipilih menggunakan angket kecenderungan gaya belajar dan tes. Data diperoleh dari hasil tiga tes dan angket. One way anova di SPSS (Statistical Program for Social Science) digunakan untuk menganalisa data. Hasil penelitian menunjukkan bahwa tidak ada perbedaan signifikan pada pencapaian membaca siswa setelah diajar menggunakan aktifitas berdasarkan gaya belajar tertentu dan ada kesesuaian antara hasil tes dan hasil angket. Bagaimanapun, mengadakan aktifitas berdasarkan kecenderungan gaya belajar siswa membantu mereka memahami materi lebih baik.

Kata Kunci:*aktifitas, gaya belajar*

INTRODUCTION

Reading involves responding to text, rather than producing it. Learners need to understand the language of the text of the world. When learners read, they would understand the information from the written text. In achieving the information, students have different way that refers to the style they have during the learning process. Natural difference among students in absorbing the information is called learning style. Learning style is defined as how an individual approaches, processes, and retains new and difficult materials (Olsson, 2009:6). The term of learning style refers to the view that different people learn information in different ways.

Reading becomes difficult because the students sometimes must accept materials which are higher than their English skill and they have to be able to understand the reading aspects of the reading texts. Both learners and teachers awareness of the individual differences among students can be of great help in successfully leading them through the process of instruction. Without sufficient knowledge about students' styles, teachers are not likely to provide the required variety to match the diversity that exists among the students in a class.

Many experts believe that every learner has different way of learning and uses a learning style. Visual learner is supposed to be easier to absorb the information of material by using visual style; auditory learner is supposed to be easier to absorb the information of material by using auditory style, and kinesthetic learner is supposed to be easier to absorb the information of material by using kinesthetic style. There are some studies that analyzed about learning style. Those studies have similar ways in getting the result which used questionnaires as the instrument and there is no explanation on what the teachers should do after they know the learning style preferences of their class. Furthermore, the significance results of the studies after using learning style based strategy do not reveal what kind of learning styles that gives more impact to the students as the researchers just mixed the visual, auditory, and kinesthetic learning style into a strategy. The previous studies do not reveal about whether students absorb better based on their learning styles preferences. The previous studies also do not reveal student's feedback toward learning process based on learning style. Therefore, this study is intended to reveal the effect of learning style based activities on reading achievement in addition to find out whether visual learners achieve better using visual activities, auditory learners achieve better using auditory activities, and kinesthetic learners achieve better using kinesthetic activities.

Furthermore in this research, the researcher takes theories delivered by DePorter and Hernacki (1992: 112) which is called the VAK model. This learning styles model was developed by psychologists to classify the most common ways that people learn. The VAK learning style model is based on three human senses. This model becomes the most popular model of learning style because it is easy to recognize and just has three styles of learning style; visual, auditory and kinesthetic. According to this theory, there are three different learning styles:

1. Visual learning style students prefer to have sight as their primary sense. They are easier to understand the information by seeing directly to the material. They also like watching as the activity.
2. Auditory learning style students prefer to listen as their primary sense. Students who are auditory in their learning style are good at listening to a story and then retelling it. They enjoy someone reading aloud while they follow the text.
3. Kinesthetic learning style students prefer to have physical activities as their primary sense. Students of this learning style can often not sit still for a long period of time.

In reference to the limitation of problems, the formulation of research questions are as follows:

1. Is there any significant difference of Visual, Auditory, and Kinesthetic learning styles based activities on reading achievement of nursing academy students?
2. Is there any congruence between students' feedback and students' result of Visual, Auditory, and Kinesthetic learning styles based activities?

RESEARCH METHOD

This research analyzed one class as the object in addition to find the effect of learning style based activities on reading achievement of nursing academy students. This research used one class with three different groups within the class, so that it is called as quasi experimental design. Quasi experimental design is a research design that uses a class for double function, as controlled and experimental group. When the design uses either multiple groups or multiple waves of measurement, the design is considered as quasi experimental design (Marczyk, DeMatteo, Festinger, 2005: 123). The reading activities given to the learners were based on three learning styles and then the researcher found out the effect of the study. The students learned some reading materials related to nursing topics. There are six reading materials which were already measured by ATOS Test Analyzer Result to make sure that the materials have the same difficulty level.

RESULT AND DISCUSSION

The first treatment was conducted two times which concerned on reading activities based on visual learning style. The students are supposed to understand the reading materials through visual activity. The treatments reveal the result of achievement among visual, auditory, and kinesthetic learners toward reading activities based on visual style.

The researcher found out that visual learners get the highest mean compared to auditory and kinesthetic learners. Whether the difference is significant or nor, it can be described by ANOVA table. The researcher found out that the probability (sig.) is .142 which means that the sig. is bigger than 0.05. The researcher concluded that there is no significant difference on students reading achievement toward reading activities based on visual learning style. All students can understand the reading materials based on visual learning style, however the visual

learners get better score comparing to auditory and kinesthetic learners.

ANOVA SPSS output of post-test 1 result

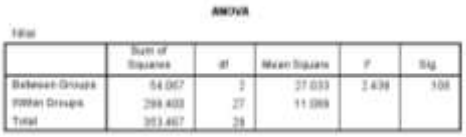
The second treatment was conducted two times which concerned on reading activities based on auditory learning style. The students are supposed to understand the reading materials through auditory activity and media. The following table reveals the result of achievement among visual, auditory, and kinesthetic learners toward reading activities based on auditory style.

ANOVA SPSS output of post-test 2 result

The researcher found out that auditory learners get the highest mean compared to visual and kinesthetic learners. Whether the difference is significant or not, it can be described by ANOVA table. The SPSS output of ANOVA table reveals the probability (sig.) is .157 which means that the sig. is bigger than 0.05. The researcher concluded that there is no significant difference on students reading achievement toward reading activities based on auditory learning style. All students can understand the reading materials based on auditory learning style, however the auditory learners get better score comparing to visual and kinesthetic learners.

The third treatment was conducted two times which concerned on reading activities based on kinesthetic learning style. The students are supposed to understand the reading materials through kinesthetic activity and media. The following table reveals the result of achievement among visual, auditory, and kinesthetic learners toward reading activities based on kinesthetic style.

ANOVA SPSS output of post-test 3 result



The researcher found out that kinesthetic learners get the highest mean compared to visual and auditory learners. Whether the difference is significant or nor, it can be described by ANOVA table. The SPSS output of ANOVA table reveals the probability (sig.) is .106 which means that the sig. is bigger than 0.05. The researcher concluded that there is no significant difference on students reading achievement toward reading activities based on kinesthetic learning style. All students can understand the reading materials based on kinesthetic learning style, however the kinesthetic learners get better score compared to visual and auditory learners.

The following table is the statistical result correlation from SPSS output of questionnaire toward treatment 1 (visual activities):

Correlations

		Postest1	Feedback
Postest1	Pearson Correlation	1	.606**
	Sig. (2-tailed)		.000
	N	30	30
Feedback	Pearson Correlation	.606**	1
	Sig. (2-tailed)	.000	
	N	30	30

** Correlation is significant at the 0.01 level (2-tailed).

According to the correlations SPSS output, the sig. score is 0.000 that is

smaller than 0.05 which means that there is significant correlation between post-test result and the feedback of the students. In other word, there is congruence between the result of post-test 1 and the feedback from the students. Then the R score (Pearson Correction) is .606 that is bigger than R table 0.576 which means that there is correlation between post-test result and students' feedback.

The following table is the statistical result correlation from SPSS output of questionnaire toward treatment 2 (auditory activities):

Correlations

		Postest1	Feedback
Postest1	Pearson Correlation	1	.651**
	Sig. (2-tailed)		.000
	N	30	30
Feedback	Pearson Correlation	.651**	1
	Sig. (2-tailed)	.000	
	N	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

According to the correlations SPSS output, the sig. score is 0.000 that is smaller than 0.05 which means that there is significant correlation between post-test result and the feedback of the students. In other word, there is congruence between the result of post-test 2 and the feedback from the students. Then the R score (Pearson Correction) is .651 that is bigger than R table 0.576 which means that there is correlation between post-test result and students' feedback.

The following table is the statistical result correlation from SPSS output of questionnaire toward treatment 3 (kinesthetic activities):

Correlations

		Postest1	Feedback
Postest1	Pearson Correlation	1	.596**
	Sig. (2-tailed)		.001
	N	30	30
Feedback	Pearson Correlation	.596**	1
	Sig. (2-tailed)	.001	
	N	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

According to the correlations SPSS output, the sig. score is 0.001 that is smaller than 0.05 which means that there is significant correlation between post-test result and the feedback of the students. In other word, there is congruence between the result of post-test 1 and the feedback from the students. Then the R score (Pearson Correction) is .596 that is bigger than R table 0.576 which means that there is correlation between post-test result and students' feedback.

The students who have been facilitated with their own learning style activities actually get the best result comparing to another student with different learning styles. When the students learn through their references of learning style, they achieve more in understanding the learning materials. This result is relevant with the statement delivered by Olsson (2009: 6) that everyone learns through their own learning style and if the students' learning styles and preferences are accommodated, they are more likely to perform successfully. Similarly, Hamdani (2015: 125) stated that recognizing learners' learning style would enhance the quality of education, making it more appropriate for that individual learner. An individual usually are able to access all kinds of learning styles but one of them become the most dominant within individual in retaining the information. This fact is

also supported by the result of the research that students who learn with their own learning style show the highest mean. After the treatments which were based on visual activities, the visual students got the best mean comparing to auditory and kinesthetic students. In line with this finding, Brown (2007: 138) states that visual learners prefer to like table, picture, and graphic information. Similarly, DePorter and Hernacki (1999: 116) state that visual learners prefer to remember what they see than what they listen and they remember by visual association. The learners learn best through seeing (Spratt, Pulverness, William: 2005: 52). They like to observe rather than talks or acts and visual is the dominant way in learning process. Penger and Tevakcic (2009: 9) state that visual learners memorize by creating mental images, thinking in pictures and easily putting off by visual distraction. Students with visual learning style prefer to use vision as the primary activity during learning process.

While the treatments which were based on auditory activities, the auditory students got the best mean comparing to visual and kinesthetic students. In line with this finding, Brown (2007: 138) states that auditory learners prefer to like to listen and audiotape. Similarly, DePorter and Hernacki (1999: 118) state that auditory learners prefer to listen during learning session than to see. They like to talk, to discuss and to explain about something. The learners learn best through hearing (Spratt, Pulverness, William: 2005: 52). Auditory learners discover information through listening and interpreting information by the mean of pitch, emphasis and speed (Gilakjani, 2012: 106). Students with auditory learning style tend to listen during the learning process to retain the information.

When the treatments were based on kinesthetic activities, the kinesthetic students got the best mean comparing to visual and auditory students. In line with this finding, Brown (2007: 138) states that kinesthetic learners prefer to like on demonstration and physical activities which involve body movement. Similarly, Spratt, Pulverness, William (2005: 52) state that kinesthetic learners learn best through using the body. Penger and Tekavcic (2009: 9) state that kinesthetic learners like to get involved, express emotion by physical means and like to solve problem by physical work. Reid states in Zarei (2016: 46) that kinesthetic learners prefer to have whole-body movement. They like to involve physical responses (Barzegar and Tajalli, 2013: 8). Students with kinesthetic learning style tend to have some body movements during the learning process.

Concerning to results which are not significantly different, it can be concluded that students with certain learning style can understand the material when the activities are based on different learning style that they do not prefer. So that, visual learners can understand materials even the activities during the learning process are based on auditory or kinesthetic learning style, auditory learners can understand materials even the activities during the learning process are based on visual or kinesthetic learning style, and kinesthetic learners can understand materials

even the activities during the learning process are based on auditory or visual learning style. It means that a student actually can naturally adapt to the activities which based on certain learning style. This fact is also relevant with the theory delivered by Brown (2007: 138) that a learner can adapt to the different context and situations. This fact is also relevant with the results of the questionnaire which describe that majority of the students seem to enjoy the activities even the activities are not based on their learning style preferences. This is also relevant with the finding of the research conducted by Erginer (2014: 66) that there is a slight correlation between reading comprehension skills and learning styles and that no learning style is a significant predictor of reading comprehension skill. The activities just give slight effect on the reading achievement of the students. In line with this fact, DePorter and Hernacki (1992: 112) stated that every individual learns the materials by using three modalities in certain level, but most people prefer to one. So that, a learner actually is able to use some kinds of learning styles during the learning process. Similarly, Singh, Govil, Rani (2015: 3924) stated that everyone has a combination of various learning styles. Some people may find that they have a dominant style of learning, with far less of the other styles while others find that they use different styles in different circumstances. Another opinion delivered by Moustafa (1999: 10) that learning style theory holds the belief that individual students are successful in learning with different learning style. Not all students learn well by using the same learning style. The researcher concluded that there is no learning style which is the best or dominant than other learning style as they play at the same role or level.

Another reason why the result does not show any significant different is because every individual actually does not prefer 100% to a learning style. Every individual has mix preferences on learning style. This is also relevant with the statement delivered by Bandler and Grinder which is cited in DePorter, Reardown, Nourie (1999: 85) that most of the people have access to those three modalities; visual, auditory, and kinesthetic. Similarly, Markova as cited in DePorter, Reardown, Nourie (1999: 85) stated that people do not prefer to a certain modality, they also combine certain modalities which give them talent and certain natural weakness. This fact becomes one of the main reasons why the result of the research is not significantly different. Even a group of students prefers to a certain learning style, the members of the group actually vary in accessing the learning styles that they prefer. A student might have 80% of visual preferences, another student might have 70% of visual preferences, and some students might have 75% of visual preferences. So that, even they prefer to the same learning style, they actually have internal differences which can be seen from the result of the learning style preferences questionnaire. And actually these internal differences happen to all kinds of learning styles; visual, auditory, and kinesthetic.

Investigating the results of questionnaire from visual, auditory, kinesthetic learners toward treatment

1, 2, and 3, then the R scores (Pearson Correction)are bigger than R table 0.576 which mean that there are correlations between post-test results and students' feedbacks.

CONCLUSIONS

The finding of the research reveals some conclusions about the effect of learning style based activities on reading achievement of nursing academy students. In general, every learning style gives positive impact on the students' reading achievement. This can be seen from the means of the students but the result may vary one to another.

The conclusions on the result of reading activities development based on learning styles are also supported by the result of the reflective questionnaire. The result of the questionnaire reveals that all students actually can understand any kind of activities and able to follow the materials during the learning process but there is a tendency that when a learning style is conducted within the class room, that learning style would slightly outperform comparing to another learning styles. This result also reveals that there is no the best learning style and when they are implemented together, they take the same role and level. Last, there is a comprehensive relationship between the post-test results and the questionnaire results.

The researcher would like to suggest that the finding reveals that there is no significant difference among three learning styles, but as teachers, we should consider the students' learning style as they achieve better when they learn through their learning style.

When teaching in classroom with some variety of learning style preferences, teacher may just concern on a certain learning style only as the students can adapt to the activities. If anyone wants to conduct similar research, it is advisable to make bigger sample or population as this research sample has only 30 students (10 students for visual, 10 students for auditory, and 10 students for kinesthetic).

For further research, when classifying the learning style preference, it is advisable to choose students who have similar score on preference to make it more valid. For further researcher, it is suggested to conduct a research more in depth in the field with different context. Moreover, since this research was conducted in reading skill, it is also recommended that other researchers conduct some studies in another skill such as writing, speaking, and also listening.

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