RELATIONSHIP BETWEEN LEARNING STYLE AND ACADEMIC PERFORMANCE OF ACCOUNTING UNDERGRADUATES IN ONLINE CLASSES

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Abstract: Learning style refers to learners' favoured approach to learning, which includes the process of receiving, collecting, processing, and interpreting to become knowledgeable. There are different learning styles. Three of the most popular ones are visual, auditory, and kinaesthetic. This study aims to investigate the effect of different learning styles on academic performance of students and relationship between learning styles and academic performance of students in online classes. A sample of 94 accounting undergraduates was selected for the study. Findings of the study revealed that, visual learning style was found to be more prevalent than auditory and kinaesthetic learning styles. There was no significant effect of learning style on students' academic performance in online classes. Besides that, there was also a very low negative relationship between learning style and students' academic performance in online classes.

Keyword: Learning style, Academic performance, Accounting

Introduction

Learning is the process of acquiring new knowledge, understanding and skills. The learning process takes place throughout our lifetime even since birth. Thus, through learning, humans experience a process of change so that their knowledge, understanding, and skills change as well (Tanti et al. 2018). In the context of learning new knowledge in certain academic field, both students and teachers need to be responsible and play an active role in creating an effective learning process. Besides that, not only teaching methods and approaches, but students' learning styles also affect the success of learning (Riener & Willingham, 2010).

In the learning process, a person needs a way that is considered suitable or comfortable with what he or she behaved during the learning process. Comfort in learning is a learning style that is considered suitable by the learner (Holliday & Said, 2008). Learning style is a combination of how students absorb input given by teachers, then organize and process the information (Abante et al. 2014). Therefore, learning style emphasizes on aspect especially when dealing with information, seeing, listening, writing, and saying. If students learn according to their learning styles, it will be much easier for them to process the input provided by the teacher and understand the lesson better. According to the VAK learning style theory, learning style can be divided into three categories: visual learner, auditory learner, and kinaesthetic learner.

Furthermore, to ensure that students can have better understanding, teachers tend to use variety of teaching methods that can suit their students' learning style. It can be executed easily in face-to-face classes. Hence, teachers can be creative by enhancing classroom environment and opt for effective learning styles in the classroom to provide enjoyable lessons. However, ever since pandemic Covid-19 struck, all teaching and learning activities are conducted through online. Challenging at first for teachers who have limited knowledge in computer skill and information technology, but they were diligent to search for the most appropriate teaching method. Nevertheless, in earlier phase of the online teaching and learning, most teachers use pre-recorded teaching videos and live meetings as their teaching method.

With regards to online learning or e-learning, finding the best teaching method always be the main issue in promoting effective learning process. Some teachers think that live meetings approach is the best method, but some teachers think otherwise. Because of this reason, they ignore the importance of students' learning style as one of the factors that contribute to effective learning process. As a result, most researchers focus on investigating the relationship between teaching method and students' performance. There are limited studies that focus on students' learning style and their academic performance. Furthermore, most of the research were conducted in face-to-face classes, not in online classes during covid 19 pandemic.

Due to little attention has been paid to this matter, this study aims to evaluate the effect of students' learning style on their academic performance in online classes, and at the same time to investigate the relationship between students' learning style and academic performance of students in online classes. Hopefully, this study also able to solve the issue whether the same teaching approach can be implemented or not in online classes throughout the lessons. Thus, this study focuses on answering to several questions:

1. Is there any significant effect of learning style on students' academic performance in online classes?
2. Is there any significant relation between students' learning style and students' academic performance in online classes?

Literature Review

Learning style

In general psychology, the term learning styles refers to learners' favoured approach to learning, which includes the process of receiving, collecting, processing, and interpreting to become knowledgeable (Sahabudin & Ali, 2013). The VAK learning styles model suggests that most people can be divided into three styles of learning.

First, *visual* learner tends to see or observe things, including pictures, diagrams, demonstrations, displays, handouts, films, flipchart, etc. These people will use phrases such as 'show me', 'let's have a look at that' and will be best able to perform a new task after reading the instructions or watching someone else do it first. These are the people who will work from lists and written directions and instructions.

Second, *auditory* learner tends to process information through listening to the spoken word, of self or others, of sounds and noises. These people will use phrases such as 'tell me', 'let's talk it over' and will be best able to perform a new task after listening to instructions from an expert. These are the people who are happy being given spoken instructions over the telephone and can remember all the words to songs that they hear.

Third, *kinaesthetic* learner prefers physical experience like touching, feeling, holding and doing practical hands-on experiences. These people will use phrases such as 'let me try', 'how do you feel?' and will be best able to perform a new task by going ahead and trying it out, learning as they go. These are the people who like to experiment, hands-on, and never look at the instructions first.

Effect of learning style and performance of students

Research done by Cano & Garton, 1994 suggests that learning style is an important factor in students' achievement. Furthermore, in other studies such as, Vaishnav (2013) reveals that different learning styles are more effective on academic achievements of students. The computed effect of (VAK) learning style is significant. It means there exists a significant effect of different learning styles on academic achievements. Those findings are consistent with study done by Dobson (2010). He also found that there was a significant association between learning style and course scores. However, Karakaya et al. (2001) found there was no significant difference in test scores between students with different learning style. Based on a review of prior literature, most studies focused on traditional/ face-to-face classes. There are limited studies dealing with online classes. Therefore, the following hypothesis is generated.

H1: There is no significant effect of learning style on academic performance of students in online classes.

Relationship between learning style and performance of students

In previous studies, there have been noted correlations between learning style and cumulative grade point average (Torres & Cano, 1994). Dobson (2009) found a significant relationship between learning style and course performance. He also reported auditory learners had the highest mean overall class score, while kinaesthetic learners had the statistically lowest mean scores. Furthermore, Cano (1999) revealed that learning style correlated low, positive, and significant with CGPA in the year 1995. Then, a year later, he found that the relationship between learning style and CGPA was significant, moderate, and positive. Apart from that, result of research done by Vaishnav (2013) indicated there exist a negligible correlation between visual learners and academic achievements, positive low correlation between auditory learners and academic achievements, and positive high correlation between kinaesthetic learning style and academic achievements. Since it is hard to find studies that report no relationship between learning style and performance of students, thus the following hypothesis is generated.

H2: There is no significant relation between learning style and academic performance of students in online classes.

Methodology

In order to collect the information for this study, questionnaires were distributed to the students via online (Google Forms). It comprised of two parts. Part 1 included items which focus on the students' demographic characteristic which is gender. Part 2 included learning style questionnaire, where VAK Learning style self-administration questionnaire which was developed by Victoria Chislett & Alan Chapman, 2005 was used. It is a self-administration questionnaire composed of 30 multiple choice questions. The overall questions include three options (A, B, and C). Option A represent visual learning style, option B represent auditory learning style, and option C represent kinaesthetic learning style. After answering the questionnaire, students were divided into three groups: (1) Visual, (2) Auditory and (3) Kinaesthetic.

In addition, the students' academic performance was measured by their overall marks in the Fundamental of Cost Accounting (MAF151) course. MAF151 course was chosen to represent the students' academic performance in online classes where pre-recorded teaching videos were used in course delivery. The overall marks are the total score for assessment and final exam. Scores for academic performance are in the range of 0-100. The higher the score, the higher their academic performance.

The target population includes the 104 students of Diploma in Accountancy program at Universiti Teknologi Mara (UiTM) Pahang, who enrolled in MAF151 course. The sample size in the current study was 94 representing 90.38% of the total population.

For the purpose of quantitative data analysis, Statistical Package for Social Science (SPSS) was used. Some of the statistical techniques such as "Descriptive Statistic" and the "One-way ANOVA" were used to study the learning style and students' academic performance in online classes.

Result and Discussion

Descriptive Statistic

A simple descriptive statistic was carried out to show the number of students according to their gender and learning style. According to Table 1, out of 94 samples, 21 students, i.e. 22.3% of total sample were male and 73 students, i.e. 62.6% were female. Then, 54 students, i.e. 57.4% of total sample were visual learner, 21 students, i.e. 22.3% were auditory learner and 19 students, i.e. 20.2% were kinaesthetic learner. Results show that, numbers of visual learners are more than auditory and kinaesthetic. It means visual learning style is more prevalent among students.

Table 1 Student Profile

	Frequency	Percent (%)
Gender:	21	22.3
Male	73	77.7
Female		
Learning Style:		
Visual	54	57.4
Auditory	21	22.3
Kinaesthetic	19	20.2
Total	94	100

We also compared the learning style according to gender. Based on Table 2, visual learning style for male is 47.6%, 19.1% is auditory learning style, and 33.3% is kinaesthetic learning style. On the other hand, visual learning style for female is 60.2%, 23.3% is auditory learning style, and 16.5% is kinaesthetic learning style.

Table 2 Comparison between Male and Female according to VAK Learning Style

		Male	(%)	Female	(%)
Learning Style:	Visual	10	47.6	44	60.2
	Auditory	4	19.1	17	23.3
	Kinaesthetic	7	33.3	12	16.5
Total		21	100.0	73	100.0

Comparison of students' academic performance according to learning style

To identify the effect of learning style on students' academic performance in online classes, one-way ANOVA was run with learning style as the independent variable and students' academic performance as the dependent variable. Based on Table 3, results of ANOVA showed an insignificant difference between learning style and students' academic performance in online classes; $F\ (2,91) = 2.54,\ p=.084$. Since the results were statistically insignificant, post-hoc analysis was not performed. It means there is no significant effect of learning style on academic performance of students in online classes. Thus, hypothesis one (H1) was supported. This finding was consistent with studies reported by Karakaya et al. (2001).

Table 3 Mean comparison according to learning style in online classes.

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	419.434	2	209.717	2.546	.084
Within Groups	7496.534	91	82.379		
Total	7915.968	93			

Correlation between learning style and students' academic performance

A Pearson product-moment correlation was performed to examine the relationship between learning style and students' academic performance in online classes. The results as presented in Table 4 revealed the learning style has a very low negative correlation with academic performance and statistically significant ($r = -.23,\ p< .05$). It indicates that students with visual learning style which were labelled with smaller number "1", reported higher academic performance as compared to students with auditory learning style (labelled as 2) and kinaesthetic learning style (labelled as 3). Hence, hypothesis two (H2) was rejected.

Table 4 Correlation between learning style and academic performance in online classes.

		Performance
Learning Style	Pearson Correlation	-.226*
	Sig. (2-tailed)	.028
	N	94

*. Correlation is significant at the 0.05 level (2-tailed).

Conclusion

This study was conducted to examine the effect of learning style on students' academic performance in online classes and to investigate the relationship between learning style and students' academic performance in online classes. The learning style is classified into three categories, Visual, Auditory and Kinaesthetic. Visual learning style is found to be more prevalent than auditory and kinaesthetic learning style. There exists no significant effect of learning style on students' academic performance in online classes. This shows that no significant difference in marks among students with different learning style. Besides that, there exists a very low negative relationship between learning style and students' academic performance in online classes. Students with visual learning style perform better than students with auditory and kinaesthetic learning style. Since their marks are not differ to each other, and the learning style and students' academic performance is correlated very low, this suggests that the same teaching method (refers to pre-recorded teaching videos are used in course delivery) can be implemented in online classes throughout the lessons because this approach do not bias to certain learning style.

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