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Learning styles and gender differences of USM distance learners

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Abstract

This study is aimed at identifying the learning styles of School of Distance Education USM distance learners and the differences based on gender with the usage of videoconferencing technology. The theoretical foundation for this study is the Grasha-Reichmann learning styles model such as independent, dependent, competitive, collaborative, avoidant and participative. A total of 394 respondents answered the questionnaire distributed to them and collected data were analyzed using chi-square test and t-test. The SPSS software version 17 was utilized for data analysis. This study showed that significance differences existed between the students' learning styles with the usage of videoconferencing technology based on gender. The researchers recommend that further studies explore other learning style theories with other delivery methods besides including a larger sample from different institutions.

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1. Introduction

The School of Distance Education, University Sains Malaysia (SDE-USM), previously known as the Centre for Off-Campus Studies was established in 1971. SDE-USM provides opportunities for working adults to obtain tertiary education. Videoconferencing technology also known as “USMVideoNet” had been introduced at SDE-USM since 1995 as one of the teaching and learning delivery mechanism. The videoconferencing technology connects the USM main campus to other regional centers throughout Peninsular Malaysia. This technology uses international internet protocol of H.323, including the ability to integrate data and video with the TCP/IP network. Many literatures showed that there are many advantages of videoconferencing in educational institutions. According to Martin (2005), videoconferencing technology minimizes the time and costs savings between remote locations, helps to fill in the gaps of teaching services besides improving access to learning.

Allinson and Hayes (2000) stated that every student has different learning styles. Grasha (1996) has defined learning styles as personal qualities that influence the students’ ability to obtain information, to interact with peers and the teacher as well as to participate in the teaching and learning process. Students in SDE-USM are mainly composed of adult students. Adult students have their own careers, family responsibility and have years of experience. Huang (2002) stated that adult learners have different learning styles as compared to young learners. They bring several years of experience and knowledge to any learning situation. Hence, it is expected that they would prefer different learning styles especially with the usage of technology in teaching and learning process.

According to Waldeck et al. (2001) and Santovec (2002), although literature review related to gender has been studied widely, there is still a lack of research related to the aspect of gender and learning style, online learning and student involvement in the T & L process. Slater et al. (2007) stated that male and female students have specific learning style preferences. Female students especially those who are married and carry roles as a mother, seem to face lots of challenges while dividing their time and energy when pursuing their studies. Thus, this study attempts to fill the gap in adult student learning styles research by investigating the impact of information technology, specifically videoconferencing technology on learning styles of distance learners. The main objective of this study is to identify the learning styles and gender differences of SDE-USM distance learners with the usage of videoconferencing technology.

2. Methodology

This study is a descriptive study on the learning styles of adult students in SDE-USM. This study focus on the videoconferencing technology as it is one of the educational tools for the teaching and learning process in SDE-USM and the best tool that has been recognised in Malaysia. The theoretical foundation for this study is based on Grasha-Reichmann learning styles model such as independent, dependent, competitive, collaborative, avoidant and participative. All respondents in this study were off-campus undergraduate students enrolled in Bachelors degree program. The population for this study consisted of students enrolled in SDE-USM for the 2009/2010 academic session and researchers used stratified random sampling to ensure that the subjects are truly represents the population in SDE-USM. Of the population of 5461 students, only 394 (7%) students were selected as the subjects.

Source of information used in this study consisted of primary and secondary data. Primary data were obtained through the instrument of questionnaire. The secondary data were obtained by reviewing reference books, journals, theses and internet online sources. The instrument used in this study is the Grasha-Reichmann Student Learning Styles Scale (GRSLSS). The GRSLSS is an instrument focusing on the interaction and instructional preferences of participants. This scale is suitable and relevant to use in a distance education setting. The 60 questions of the Grasha-Reichmann Student Learning Styles Scale have many items repeatedly and these

may make the respondents feel bored to answer the questionnaires honestly and accurately. The researcher has translated and modified the Grasha-Reichmann Student Learning Styles Scale into 18 questions to make it concise and simple with six subscales that represent the learning style categories. The questionnaire used a Likert scale of four points such as “strongly agree, agree, disagree and strongly disagree”. To determine the reliability of the questionnaire instrument, the Cronbach alpha was calculated to be at .85. This means that the questionnaire is applicable to be used for this study. Chi-square test and t-test have been used to analyze the data. The data were then analyzed using statistical analysis of SPSS software version 17.0.

3. Finding

To answer the hypothesis that is to determine the significant differences between adult students’ learning styles with gender, chi-square test was used with the confidence level of .05. The findings showed that the significant values for male and female are smaller than the significant level of .05. Thus, the hypothesis which states that there are significant differences between students’ learning styles with gender is acceptable. From the students’ responses, it is clear that there are significant differences based on gender with the usage of the videoconferencing technology in the teaching and learning process.

Table 1: Chi-square test for gender.

Gender	Learning Styles		
	Chi-Square Value	df	p
	12.251	5	0.000

*df – degrees of freedom, p – significant value, * Significant level of 0.05*

The t-test analysis was used to determine the significant value that is statistically different from each group with the significant level of .005 and 95% confidence level. Referring to Table 2, the result showed that the p-value for the independent, avoidant, participative and collaborative learning styles are less than the significant level of .05. For the competitive and dependent learning styles, the result showed that the p- value are more than .05. This means that there is a significant difference between the independent, avoidant, participative and collaborative learning styles with male and female students.

Findings of this study are in contrast to that of O’Faithaigh (2000) who found that female learners were more inclined to apply the competitive learning style and males were more in favor of dependence in learning. The findings obtained by Hamidah et al. (2009) also found that female students were more inclined to practice collaborative, dependent and competitive learning styles. This implies that female students who followed the DL program at SDE-USM are more independent, have the competitive characteristic and like to take part in activities in the lecture hall. In contrast, male students were more in favor of avoiding the T&L process through videoconferencing.

Table 2: Result of the t-Test for gender

Differences between adult students’ learning styles with gender			
There is a significant difference	p	There is no significant difference	p
Independent	0.00	Competitive	0.79
Avoidant	0.00	Dependent	0.43
Participative	0.00		
Collaborative	0.00		

*p – significant value, * Significant at the level of .05*

4. Conclusion

Technology can be used as a valuable tool to promote and strengthen certain learning styles with specific mode of delivery. Awareness of the students' learning styles may help the institution to design an effective course and teaching instruction to the students. The researchers also suggest that further research should explore the different types of learning styles with other delivery modes, utilize other learning style theories and models as well as do a comparative study on the learning style differences between students in the distance education program and on-campus students.

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