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Exploring the link between Learning Styles and Gender among Distance Learners

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Abstract

The main theme of this study is to identify the USM distance learners learning styles preferences across gender with their preferred usage of videoconferencing delivery modes in SDE-USM, namely live, streaming and recording. 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 descriptive analysis (mean and standard deviations). The SPSS software version 17 was utilized for data analysis. This study showed that majority of the female students favored independent, competitive, dependent, participative and collaborative learning styles whereas male students were avoidant learners. The researchers recommend that further studies explore other learning style theories with other delivery methods besides including a larger sample from different institutions.

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. With the usage of videoconferencing technology in the teaching and learning process, students have the opportunity to communicate with lecturers and other students, sharing information as well as being

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active participants in the videoconferencing session. 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. Findings by Carville and Mitchell (2001) showed that student have developed learning strategies and skills with the usage of videoconferencing technology. However, the technology capacity and constraint should be given attention as it would affect the students' learning process. One-way communication can also occur if the student did not participate during the session. Latchem and Rapley (1992) also found that during videoconferencing implementation, many problems occurred as seen from the quality of audio, screen and image.

The literature showed videoconferencing offers many advantages to educational institutions. According to Martin (2005), Rose et al. (2000), Townes-Young and Ewing (2005) and West (1999), 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. Three types of videoconferencing delivery modes are used in SDE-USM, namely live, streaming and recording. Live videoconferencing is a synchronous technology that allows "live" interaction between the lecturer and student, whereas streaming and recording videoconferencing is an asynchronous technology that involves significant delays between message transmission and recipient.

Gardner (1993) and Sadler Smith (1996) found 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. All students have their own learning styles. Grasha and Yangarber-Hicks (2000) explained that learning style is an individual's preference for how to learn. Students in SDE-USM are mainly adult students. Adult students have their own careers, family responsibility and have years of experience. Thompson (2002) and Kramarae (2001) stated that of late, female students were found to enroll in online courses as compared to male students. Rooney et al. (2006) predicted that beginning in 2006 until 2015, females will be starting to participate in programs offered by educational institutes to enhance their qualifications. Richardson and King (1991) as well as Perraton (1993) declared that female learners dominate entry into distance learning (DL) programs. In an internet-based learning environment, Lee (2002) found that male learners showed more positive change in behavior and higher motivation for learning as opposed to female students. In looking at the gender aspect with respect to efficacy in computer usage at the Open University Malaysia (OUM), male students were found to be more skilled in operating equipment and maintaining the computer as opposed to females (Abdul Razak Habib, Hanafi Atan, Rozhan M. Idrus, & Mohd Arif Ismail, 2003). Fischer (1992) and Dimmick et al. (1994) stated that the differences with respect to gender can also lead to differences in usage of media between males and females in the teaching and learning process. The study by Hamidah et al. (2009) on several educational institutions all over the northern part of Malaysia showed that female students were more inclined toward collaborative learning, participative, dependence and competitive styles.

Ford and Chen (2000) considered that learning styles are the most important elements that affect the learning process and gaining knowledge. The female students, especially married females and those who had responsibilities as mothers, usually face various challenges in terms of allocating time and energy when furthering their studies. Houtz dan Gupta (2001) stated that although males and females showed a positive attitude to technology usage, the male students had a more positive view of technology use as opposed to the females. 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. Descriptive research is suitable for use in research that aimed at describing a scenario that is happening in the population. This study focuses 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 (Md Noor, 2001). The theoretical foundation for this study is based on the Grasha-Reichmann learning styles model such as independent, dependent, competitive, collaborative, avoidant and participative. The "independent learners" prefer to work alone, do not rely on their lecturers to give direction on their studies and they are very confident learning on their own. The "dependent learners" typically need guidance and feedback from the lecturers or their peers. They prefer to have detailed instructions on how to complete assignments and to have someone to tell them what to do for their learning. The "avoidant learners" tend to take little responsibility and are reluctant to learn. Generally, they do not enjoy learning, tend to feel it is unnecessary to compete with other students to get a good grade, have a high absenteeism and are also poorly organized in their work. On the other hand, the "participative learners" are eager to take responsibility for their learning, interact well with their peers and are highly motivated. The "competitive learners" are described as those who want to do better than their peers. They feel it is necessary to compete with other students for the lecturers' attention and being the best students are the goals of competitive learners. The "collaborative learners" prefer to work and learn through sharing and cooperating with the lecturers and their peers as well as enjoy working with other students on classroom activities and discussion.

All respondents in this study were off-campus undergraduate students enrolled in the Bachelors degree program. The population for this study consisted of students enrolled in SDE-USM for the 2009/2010 academic session for courses such as Management, Social Sciences, Humanities and Sciences. 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%) were selected as the subjects.

2.1. Data collection

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 for high school, college or university students in order to determine students' learning styles when interacting with lecturers and peers. The scale is one of the keys that differentiate elements of a distance class as it focuses on the lack of social interaction between lecturers and peers. Therefore, this scale is also relevant to use in a distance education setting. By using this scale, an instructor may optimize the teaching and learning environment for all students and design courses based on students' learning styles.

2.2. Data analysis

A descriptive analysis (means and standard deviations) were used to determine the differences between students' learning styles across gender with the usage of videoconferencing delivery modes. This analysis is appropriate to be used to analyze the value of the mean score that differed significantly. The data were then analyzed using statistical analysis by SPSS software version 17.0.

3. Findings and Discussion

To look at the relationship between learning styles and use of three modes of delivery of video from the gender aspect, the means and standard deviations were used. In this analysis, the level of significance used was .05 at the confidence level of 95%. Based on Table 1.1, the means and standard deviations for both genders were compared for the three modes of delivery of video conferencing technology to determine whether any significant differences existed based on the Grasha-Reichmann (1974) learning styles.

The research findings show that, on the whole, the mean values for each item in usage of mode of delivery of video session exceeded 2.50. This shows that the respondents had a positive view of applying usage of mode of delivery of video session suited to their learning style base on the Grasha-Reichmann (1974) learning style. Comparing between the three modes of video session delivery, the students gave higher mean values and had higher standard deviations for the recorded mode of delivery, followed by live video and streaming. This suggests that on the whole, the students agree that use of video recording sessions was more appropriate in fulfilling their needs as adult learners following a distance learning program.

Looking at the mean values for the three modes of delivering video technology sessions in relation to gender, we found that on the whole, female students recorded a higher mean than male students based on comparison of usage of mode of delivery of video session. Table 1.1 also shows that female students showed higher mean than male students for the independent, competitive, dependent, participative and collaborative learning styles; whereas male students recorded higher means for the avoidant learning style.

Table 1: Comparison of Means and Standard Deviation between attributes of video conferencing media technology and gender.

Learning Styles	Mean & Standard Deviations			
	Gender	Live	Streaming	Recording
Independent	Male	2.71 (0.50)	2.60 (0.44)	2.77 (0.53)
	Female	2.74 (0.52)	2.67 (0.46)	2.79 (0.56)
Avoidant	Male	2.78 (0.46)	2.77 (0.42)	2.79 (0.54)
	Female	2.70 (0.43)	2.63 (0.40)	2.77 (0.51)
Competitive	Male	2.66 (0.42)	2.60 (0.42)	2.67 (0.43)
	Female	2.68 (0.44)	2.63 (0.41)	2.69 (0.46)
Dependent	Male	2.63(0.43)	2.60(0.40)	2.66(0.47)
	Female	2.65 (0.45)	2.61 (0.42)	2.68 (0.49)
Participative	Male	2.52(0.40)	2.59(0.35)	2.56(0.43)
	Female	2.54 (0.42)	2.50 (0.39)	2.58 (0.45)
Collaborative	Male	2.56(0.30)	2.56(0.25)	2.51(0.35)
	Female	2.59 (0.33)	2.59 (0.29)	(0.39)

*significant at the .05 level

4. Conclusion

Videoconferencing technology should not be regarded only as a tool because it can also act as something that may contribute to the effectiveness of distance learning programs. Distance education program is different from conventional programs. Limited contact and student-lecturer interaction may make the students

experience feelings of isolation when enrolling in a distance education program. Technology can be used as a valuable tool to promote and strengthen certain learning styles with a specific mode of delivery.

Each student is an individual with a different objective, learning style, capability and ambition. Awareness of the students' learning styles may help the institution to design an effective course and teaching instruction to the students. Grasha (1996) stated that students' learning styles are flexible and can be changed depending on their experience in the classroom. To strengthen the students' learning styles, we suggest that the lecturers have to be more productive to interact with their students and discuss the learning material during the live videoconferencing session. We 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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