THE RELATIONSHIP BETWEEN LEARNING STYLE PREFERENCE FOR COMPUTER DRAWING AND LEARNING OUTCOMES IN A COMPUTER AIDED DESIGN COURSE AT A COMPUTER TRAINING CENTER IN TAIWAN

Fang Chao Yang[1]

Richard Lynch[2]

Abstract: The purpose of this study was to explore the relationship between learning styles and learning outcomes of 141 engineering drawing students at a computer training center in Taiwan. This study employed a quantitative research methodology employing both a questionnaire as well as examination scores to address the research objectives. There were five parts included in this study. First, the Learning Style Inventory categorized the learners' learning preferences into four dimensions: perception, input, processing and understanding. Second, the learners' learning styles were compared according to gender. Third, the learners' learning styles and their learning performance were compared. Fourth, the study also compared the learners' learning outcomes between new and current students. Fifth the relationship between the number of times learners repeated the engineering drawing course and their learning performance was computed. Overall, there were eight findings of the study: 1) the most preferred learning style of both female and male students was sensing, visual, reflective and global; 2) there was no significant difference in learning style preference between males and females; 3) there was no statistically significant relationship found in the degrees of the input, processing and understanding learning styles and grade - however, there was a correlation between the perception learning style and grade; 4) the number of male students who were willing to take the exam right after the course was greater than that of female students - however, the average grade of females was higher than that of males; 5) as for learning style preferences between new and current students, new students preferred to learn sequentially and current students were global learners; 6) the number of times students repeated the course did not affect their learning outcomes; 7) in terms of demographic factors and learning style preferences, no statistically significant differences were found; 8) no significant differences were found between demographic factors and learning outcomes.

Keywords: Learning Style Preference, Learning Outcomes

Introduction

Original Equipment Manufacturer (OEM) is a world famous form of Taiwanese manufacturing. It uses a specific form of subcontracting in which a supplier or the manufacturer produces components of a product or the finished product for a customer. Then the customer or retailer makes the product under its own brand name through its distribution channels (Hobday, 2001, as cited in Hsu & Liu, 2006). According to the Ministry of Economic Affairs of Taiwan (Wei, 2009), Notebook computers such as Asus and Acer, LCD Monitors such as HP, Dell, Acer, Lenovo and ViewSonic, and PC motherboards such as Gigabyte are the top three OEM industries in Taiwan. Since the 1980s' the widespread cooperation between Taiwanese manufacturers and Japanese companies has brought the transfer of knowledge, skills and technologies to Taiwan. Japanese companies also help Taiwanese manufacturers to set up the manufacturing equipment and provide technical workers' training. It has also developed the nurturing of manufacturing talent in Taiwan as an industrial based training style.

Until the 1990s', on the basis of the consideration of economic cost and the mature skill development of Taiwanese engineers, the OEM industry in Taiwan gradually developed into an ODM (Original Design Manufacture) format, whereby the suppliers design, produce and integrate the products in order to supersede the former production model which followed the customers' design. The need for engineers to keep improving a design step by step necessitated the increased development of the capacity for drawing and diagramming which plays an important role in the quality of national engineering construction in Taiwan (Kang, Tai & Wang, 1994).

Engineering drawing is one of the most important activities during the process of Research & Development (R & D), manufacturing, quality control and sales of a product. It can be understood as a kind of language that expresses the concepts and ideas of designers, and it is also a communication between each stage of the supply chain of the products including manufacturing and selling until the products arrive to the final customers. Thus, drawing is a valuable tool for industrial manufacturing organizations which can be used to record ideas, exchange views, make production plans, and publicize the product.

The Computer Training Center (CTC) provides the training that enables students to learn the basic knowledge and skills within a short period of time. However, every learner has various personal characteristics, backgrounds, and maturity; thus people have different ways of thinking

[1] M.Ed. Candidate in Curriculum and Instruction, Graduate School of Education, Assumption University, Thailand biscocoya@yahoo.com

[2] Ph.D., Assistant Professor, Program Director of M. Ed. In Curriculum & Instruction, Graduate School of Education, Assumption University, Thailand richardlynch2002@yahoo.com