

Chapter 2

Using Animated Graphics as a Teaching Tool in Patternmaking: A Comparison of Methods

Lynn M. Boorady
Buffalo State College, USA

Jana M. Hawley
University of Missouri, USA

Nancy A. Schofield
University of Wisconsin-Stout, USA

ABSTRACT

The purpose of this study is to evaluate the effectiveness of teaching patternmaking via a computer by comparing the outcomes of a patternmaking lesson being taught in a traditional lecture style to instruction received through a computer-based animation program. A lesson in patternmaking was taught to undergraduate students with varying levels of previous experience using the two instructional methods. A significant difference in learning outcomes was found between the lowest experience level group and the more experienced groups. However, there was no difference found by the method of instruction in the outcomes between the two more experienced groups. Therefore the suggestion is made that computer delivered lessons would be appropriate for students with some prior basic patternmaking knowledge.

INTRODUCTION

The growth in the number of students enrolled in apparel design or product development classes over the past few years has caused instructors to search for ways to meet the needs of all these

students. The greatest problem has been the inability to provide so many students with an equally clear view of an instructor who is giving a patternmaking demonstration. Students can easily miss important details if they cannot see them clearly. One answer to the difficulty of delivering detailed visual information to an increasing number of students is to provide the

DOI: 10.4018/978-1-4666-2017-9.ch002

same demonstration via a computer-based format. Because students could have their own computer monitors to view the demonstration, more students can be accommodated than using the traditional instructor demonstration method. This research focuses on the use of animation delivered via a computer to determine if this method of instruction is as effective as a traditional face-to-face lecture. In this paper, we present an overview of the use of visuals such as static graphics, video and animation in the classroom to facilitate student learning, the value of Constructivism as a teaching method, a description of this study and the outcomes of students' learning patternmaking using two different teaching methods. We conclude with a discussion on improving animated graphics to enhance student learning and the future uses of animation in the classroom.

REVIEW OF LITERATURE

Static Graphics and Visualized Instruction

The study of graphics for instruction has been broad and extensive, covering a range of topics. In general though, graphics can be a useful addition to the learning process if used in a manner that enhances either the spoken word or written text. The use of graphics as attention getters can lead to distraction from the learning process. The inclusion of graphics could help many learners, and, if used to enhance the class content, could help most, if not all, learners (Reiber, 1990). Graphics should therefore be used meaningfully to be considered an enhancement to the learning process.

Many educators use graphics to complement their regular classroom lectures. Studies have indicated, however, that the use of graphics has not necessarily resulted in a difference in student learning when compared to standard lecture format

(Dwyer, 1978; Moore & Nawrocki, 1978). Dwyer goes on to say that "one explanation for this... might be that even though visualization is being integrated into the teaching-learning process, it may not accurately illustrate and/or clarify the content material being presented" (p. 13). Baek and Layne (1988) reiterate this view by stating that when graphics are used, they should help the student notice what characteristics within the graphics are related to the subject matter.

Gropper (1963) noted the intention of using graphics in instruction is that they improve learning. He stated that there are two areas where graphics can help with the acquisition, retention, and transfer of information from the instructor to the student and vice versa. First, graphics can be used as a way of helping students visualize concepts and procedures. Secondly, graphics can be used to help cue a response from the student or to reinforce responses. In both of these instances, the graphics used must be highly relevant to the subject matter being taught. Otherwise, the use of graphics can actually hinder learning by distracting the student or placing the wrong cue or emphasis on the subject matter. Gropper goes on to say that "if student attention can be directed only to that feature of the visual event relevant to a designated response, thereby enabling the student to make only that response, then the use of a visual may be justified" (p. 80).

Some research studies have also shown that the use of static graphics is shown to be superior over using text alone in certain learning modules (Baek & Layne, 1988; Booher, 1975). In his conclusion, Booher (1975) stated that his research indicated that using both graphics and text helped to communicate proceduralized instructions. Indeed, his subjects were able to complete tasks much faster if pictorial information was provided alongside the text. Graphics are best used as visual representations of the verbal material where the visual reproduces what is referred to in the verbal statement (Moore & Nawrocki, 1978).

11 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:
www.igi-global.com/chapter/using-animeted-graphics-teaching-tool/68571

Related Content

K-12 Online Education: Issues and Future Research Directions

Wayne Journell, Ben McFadyen, Marva S. Millerand Kathryn Kujawski Brown (2014). *Handbook of Research on Emerging Priorities and Trends in Distance Education: Communication, Pedagogy, and Technology* (pp. 385-400).

www.irma-international.org/chapter/k-12-online-education/103616

The Use of Online Technology to Facilitate Pre-Service Teachers' Engagement and Cultural Competency Development during an International Field Placement: Reflections from Austria

Tiffany T. Boury, John M. Hineman, Jacqueline Courtney Klentzinand George W. Semich (2013). *International Journal of Information and Communication Technology Education* (pp. 65-79).

www.irma-international.org/article/the-use-of-online-technology-to-facilitate-pre-service-teachers-engagement-and-cultural-competency-development-during-an-international-field-placement/83600

Knowledge Management Trends: Challenges and Opportunities for Educational Institutions.

Lisa A. Petridesand Lilly Ngyuen (2008). *Online and Distance Learning: Concepts, Methodologies, Tools, and Applications* (pp. 3475-3483).

www.irma-international.org/chapter/knowledge-management-trends/27649

Applications of Agent-Based Technologies in Smart Organizations

László Zsolt Varga (2008). *Online and Distance Learning: Concepts, Methodologies, Tools, and Applications* (pp. 2086-2093).

www.irma-international.org/chapter/applications-agent-based-technologies-smart/27533

Grounding Collaborative Learning in Semantics-Based Critiquing

William K. Cheung, Anders I. Mørch, Kelvin C. Wong, Cynthia Lee, Jiming Liuand Mason H. Lam (2007). *International Journal of Distance Education Technologies* (pp. 40-55).

www.irma-international.org/article/grounding-collaborative-learning-semantics-based/1702