The Effectiveness of the Flipped Learning Strategy in pattern making and grading of women's clothing Using Gemini CAD System

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Abstract:
The world is witnessing a new era characterized by progress and development in various fields. This development includes the garment industry, which has developed rapidly using all the modern innovations of contemporary techniques and high technology. One of the most important phases of using technology and modern techniques is the stage of pattern making and grading. Not only pattern-making is considered to be a highly crucial stage in the production and the execution of clothes, but also the backbone of the entire clothing industry and a significant determinant of the success of the product. The revolutionary development of the computer, the Internet, and informatics hasn’t only changed the outcome of education but it has also abolished the old concepts and methods that were implemented in the entire education system, introducing the importance of upgrading the teaching methods by using technology. Several strategies have emerged based on the use of modern technology in the educational process, most notably the so-called reverse learning or flipped classroom. Flipped Learning is considered as a technical solution to solve traditional learning problems and to develop thinking skills among students. The problem of the research is portrayed in assessing the effectiveness of the Flipped learning strategy on developing the cognitive acquisition of knowledge and skillful performance in making and grading basic patterns of clothing using the Gemini program. Questions: 1- What is the impact of the Flipped learning strategy on the cognitive acquisition of knowledge associated with the skill of making and grading basic patterns using the Gemini program? 2- What is the impact of using the Flipped learning strategy on the technical performance associated with the skill of making and grading of female students of clothing and textile? 3- What are the students' opinions about the Flipped learning strategy and its use in basic patterns making for garments? Objectives: This research aims to: 1) measure the effectiveness of the Flipped strategy in learning to draw and grade basic patterns using a program of Gemini in terms of cognitive achievement, skill performance, and Students' opinions about using the Flipped learning strategy in learning to make and grade basic patterns. Research Methodology: The research follows an experimental method where it is necessary to measure the effect of independent variables on dependent variables. Besides, it uses a descriptive approach in order to create a theoretical framework. It also analyses secondary data from previous studies related to the research problem and its variables. Results: 1 – there is an increase in the level of knowledge acquisition of the experimental group in the making and the grading of patterns using the Gemini program as a result of the implementation of the Flipped strategy. 2 – There is an increase in the experimental group students’ performance associated with skills related to the construction, the making and the grading of patterns using the Gemini program as a result of the implementation of the flipped learning strategy. 3-Positive response from students towards the implementation of flipped learning in the making and grading of patterns using Gemini program. Keywords: Flipped Learning, grading, Patterns, Gemini CAD System