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The Efficiency of Blended Learning on Developing Hand Embroidery to Achieve Sustainable Development

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Abstract: *The current study aims to explore the efficiency of blended learning on developing hand embroidery. The participants were 62 students from the College of Education at Najran University. They were divided randomly into two groups (experimental and control), each group included 31students. Where the experimental group studied the "hand embroidery" course through the blended learning, and the control group studied the same course in the traditional way. A product evaluation card was used as a tool to achieve the objective of the study. The study found the effectiveness of blended learning in enhancing the students' skills in hand embroidery.*

Keywords: *Face-to-face learning; blended learning; e-learning; hand embroidery*

INTRODUCTION

Blended Learning can be defined as the method that combines the best characteristics of e-learning and face-to-face learning to design educational courses [1-4]. It thus builds a more effective learning experience for learners. The term integration of learning should not only refer to the mixture of training in learning methods (as it is often known) but to the systematic application and integration of learning, tools, performance support, collaboration, practice, and assessment to create a unified learning and performance environment, to find the right mix of learning components [5-9]. Among the reasons for using blended learning is that it includes an improved pedagogical method, easy access to knowledge, more interaction between learners, personal presence, and ease of revising the learning content. There are many studies that have examined blended learning, including a study conducted by Elfeky and Elbyaly [10]. In addition, Elfeky and Elbyaly [11] results showed that blended learning gave students a strong sense of group spirit more than the traditional method and fully e-learning. In addition, a study by Elfeky and Elbyaly [12] to survey students' opinion about the blended learning environment, and one of the most important results was to increase students' achievement, participation and enjoyment in the blended learning environment. In practice, blended learning is a fluid phrase that means different things to different people. It uses two or more distinct methods of training, which may include integrating classroom learning with online learning, integrating online learning with access to a trainer or faculty member, integrating simulations with structured lessons, and integrating management training with e-learning activities [13-18].

Creative is a process that begins with sensing problems and deficiencies, gaps in knowledge, missing elements and inconsistent things, identifying difficulties and searching for solutions, making guesses and formulating hypotheses about difficulties, testing these hypotheses, modifying them, then re-testing them and reaching the final results [19-22]. Creative Thinking is a special category of problem-solving

behavior that requires novelty in production and unity of process, which is the highest form of creative thinking [23-25]. Many studies dealt with creative thinking, including the study of Elfeky [26], Elbyaly and Elfeky [27]. One of the most important results of the study was that students with (medium and low) levels of creative thinking benefited from the high-tech media environment more than students with high levels, and this was reflected in the increasing degrees of innovation. Researchers deal with the definition of innovation usually from four angles, the characteristics of the creative person, the characteristics of the creative process, the specifications of the creative product, and then a description of the educational environment that helps innovation [28-30]. As for the creative person, the authors are almost unanimous that he loves researching the mysterious and the unknown, even if he traces a glimmer of hope, challenges the difficult and complex without boredom or boredom, and loves adventure without fear of the obstacles he may encounter [31]. All these characteristics make the creative person characterized by the ability to produce a very large number of ideas or solutions to a specific problem, and his view of the problem has multiple angles, which makes these ideas divergent and comprehensive for all aspects of the situation [32]. Often the creative person comes up with unfamiliar and new solutions or ideas that distinguish him from his peers [33]. As for the creative process, a mental process involves a kind of meditation or in-depth thinking about a problem or situation. In addition, it is characterized by divergent thinking in which the person weaves threads of his thinking around the details of the situation and connects them with the largest number of new associations [34]. That often lead to unusual ideas or solutions, and the creative mind is open, independent, flexible, curious, and intelligent as well, and is not attached to traditional habits of thinking, but rather tends to break them, and directs him in that unconscious processes that are governed by the pressures of the situation. As for the creative product, it must be recent, rare, uncommon, valuable, beautiful and usable [35-37]. As for the innovation environment, it should be characterized by flexibility that allows students to choose and discover alternative ways to solve problems, provides a high degree of excitement and motivation to encourage students to try without fear of error, and provides them with opportunities to interact with each other and with the teacher. Creative thinking is a refined process represented in the ability of the individual to produce the largest possible number of alternatives, solutions or ideas that are characterized by originality, flexibility, sensitivity to problems, reorganization, a sense of difference, calibration, rebellion against the old, and embracing positive values [38].

METHODOLOGY

The methodology of the study was to use the experimental approach (with quasi-experimental designs), in order to find out the impact of the independent variable (blended learning) on the dependent variable (hand embroidery skills), and as a result, the design shown in Table (1) was used using two groups (experimental and control).

Table (1): Study design

	Treatment	**Post-test**
Experimental Group	Blended learning	Product evaluation card
Control Group	Traditional way	

TOOL RESEARCH

A product evaluation card was prepared in order to measure the level of performance of the study sample in Handmade Embroidery Skills. The validity of the card by ensuring the soundness and clarity of the procedural wording of the card, and the possibility of observing performance through it. The stability of the product evaluation card was also calculated through the multiplicity of observers on the performance of one student, and then calculating the coefficient of agreement between their estimates using the Cooper equation.

This is done through the assistance of two female colleagues in the Department of Home Economics. This is after presenting the product evaluation card to them to learn about its content and instructions for its use. Then observe the performance of three of the students, and then calculate the agreement

coefficient of the three observers for each student separately. The following table shows the coefficient of agreement of observers on the performance of the three students. The average coefficient of agreement of the observers on the three female students was (88%), which means that the product evaluation card is stable to a degree that qualifies it to be applicable as a measurement tool.

RESULTS

To answer the study's main question, by extracting the arithmetic mean scores for the post application of the product evaluation card for the two study groups, in order to try to find out if there are statistically significant differences between the experimental and control groups due to the use of blended learning. Table (2) shows the results of the T. test to compare the average scores of hand embroidery skills for the two study groups.

Table (2): The difference between the mean scores of hand embroidery skills for the two study groups (experimental and control)

Group	M	SD	T. Ratio	Sig.
Experimental Group	31.6	5.341	5.9	.043
Control Group	25.3	6.275		

From the previous table, it is clear that the value of "t" for the difference between the mean scores of hand embroidery skills for the two study groups (experimental and control) amounted to (5.9). The average score of the experimental group students was (31.6). While the average score of the control group students was (25.3). Thus, we find that the value of "t" is statistically significant, and in such cases the statistical significance is directed in favor of the group with the highest average, which is the experimental group, as the arithmetic mean for it was (31.6) by an increase of (6.3) over the control group. This indicates that there is a statistically significant difference at the level (0.05) between the mean scores of the students of the experimental group (studied through blended learning) and the control group (studied in the traditional way) in hand embroidery skills in favor of the students of the experimental group.

DISCUSSION

The results related to the study question confirm the fact that the blended learning was effective in enhancing and developing the hand embroidery skills of the female students participating in the experimental group. The average scores of female students in the experimental group who studied via blended learning were higher than the average scores of their peers in the control group who learned through the traditional teaching method supported by educational videos provided in the classroom. In other words, this study demonstrates the benefit of blended learning in developing hand embroidery skills among participants in the experimental group. This is largely because a well-designed blended learning can help learners relate the task to the real world and create new meanings for them [39-41]. This result also confirms that blended learning is a very flexible tool that can be used in many educational environments and settings and for very different purposes if applied fully [42, 43]. The above findings are in line with previous studies in the context of traditional science learning [44, 45]. This is because the benefits and beneficial uses of blended learning are able to engage learners in learning processes and help improve their skills [46, 47].

RECOMMENDATIONS

- Training the teaching staff on the skills of using blended learning in the educational process.
- Using other various technical products to develop hand embroidery.

SUGGESTED RESEARCH

- Conducting similar research and studies at another educational stage, to confirm the success of using blended learning in other environments.
- Using augmented reality to conduct further research and studies to develop hand embroidery skills.

- Conducting studies to develop hand embroidery skills for detection using the virtual reality.

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