Yarn Graffiti in The Handicraft Experiential Learning to Improve Students’ Soft Skills and Attain Sustainability

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KEYWORDS:
Yarn Graffiti; Handicraft; Crochet; Experiential Learning; Soft Skills; Sustainability.

ABSTRACT:
This study investigates the role of experiential learning of handmade crochet for higher education students of the Home Economics Department, Faculty of Women, Ain Shams University, Cairo, Egypt. Learning through experience is built on increasing expertise to improve learning output, unlike traditional learning, where students are passive listeners, and lecturers oversee the process. The crochet experiential learning curriculum concluded with the “Handicrafts Festival,” where talented students used their learning outcomes and developed their soft skills by concentrating on their talents and creative thinking techniques. The festival lasted for three days, including practicing the art of yarn graffiti in the faculty’s yard and exhibiting students’ handicraft products. The crochet experiential learning curriculum was evaluated through three questionnaires: for students that accomplished studying the whole curriculum, for students who participated in the handicraft festival, and for the audience. Experiential learning changes students’ cognitive structure, attitudes, and skills since it is based on students’ intense ambition to succeed. The study showed that including yarn graffiti in the crochet experiential learning curriculum improved their communication and collaboration skills. Utilizing yarn leftovers, samples, and incomplete crochet projects in yarn graffiti configurations achieves sustainability. The study found that the students who participated in yarn graffiti got the most out of the crochet experiential learning curriculum. At the same time, it should focus more on studying the market requirements to meet consumers’ needs. Finally, the audience agreed that yarn graffiti brought joy to the faculty yard and inspired them to learn handicrafts.
1 Introduction
Teaching handicrafts must be seriously considered as it plays an essential part in the economic growth of countries (Yadav, et al., 2021). For this reason, the Home Economics Department in the Faculty of Women at Ain Shams University in Egypt pays significant consideration to teach students many skills through the practical study of several handicrafts. One of the most significant issues with the quality of our graduates is a lack of acquired soft skills. However, since the focus was on learning the handicraft without guiding the student on how to be an artisan entrepreneur, the students’ attempts were individual and not based on a genuine experience.

This study is based on previous work to teach young female students in the Faculty of Women how to crochet along a specially designed curriculum from the beginning to the advanced level in 32 hours (Abou Hashish, 2017). After the COVID-19 pandemic crisis, the author added online videos to every part of this curriculum for hybrid learning to concur with the studying situation (Abou Hashish, n.d.). These videos enabled them to learn effectively, study, practice, and apply the skill repeatedly until they mastered it. It combines theoretical learning – to build up their hard skills – and experiential learning by producing many products during the learning period, ranging from preliminary to advanced, requiring different hand skill levels. The modified curriculum is supposed to affect student performance by changing learning goals, material, and activities. Adaptability, appropriateness, design, self-instructional capability, usability, and validity are expected to impact curriculum performance. (Segares, 2021).

The researchers applied the modified curriculum to students between 18-22 years old for the previous academic year. It was accompanied by an event held at the Women’s Faculty named Handicrafts Festival, where talented students were encouraged to use their knowledge, expertise, and innovative thinking to explore their potential. The festival was held for three days, including practicing the art of yarn graffiti in the faculty’s yard and an exhibition for selling students’ handmade products.

2 Objectives
The objectives of this study can be summarized as follows:
- To study how students benefit and interact with the crochet experiential learning curriculum and its impact on the practical outcomes.
- To determine the role of integrating yarn graffiti art in motivating students to learn crochet.
- To assess the role of incorporating yarn graffiti art into experiential crochet learning in developing students’ soft skills.
- To achieve sustainability by using yarn leftovers, crocheted samples, and incompleted projects made during the learning process.
- To explore the audience’s reactions to yarn graffiti art and the quality of students’ handmade products.
- Collect feedback reactions to improve the curriculum for optimal outcomes in the future.

3 Theoretical Framework
Soft skills are essential to any practical curriculum (Lepeley, et al., 2021). The term “soft skills” refers to a person’s inherent abilities, which may be developed to their maximum potential. It complements hard skills, forming part of a person’s intelligence quotient. It is how people interact with others and themselves. Developing soft skills can positively impact individuals’ income (Najiah, et al., 2021).

Soft skills are not new; they come before hard cognitive skills (Lepeley, et al., 2021). People are born with soft skills or can learn through different means and experiences at any age (Conry-Murray, 2019). Some students have well-developed soft skills such as belief, independence, individualism, optimism, success-oriented, persistence and fortitude, strong determination, hard effort, energy, initiative, risk-taking, and challenge. They should be leaders, get along with people, accept suggestions and constructive criticism, and be innovative, creative, adaptable, versatile, and future-focused. Thus, soft skills need real-world experience.

Soft skills are essential to academics and should be balanced with hard skills. (Naufalin, et al., 2016). It includes communication, emotion, language, group, ethics, morality, etiquette, and spiritual abilities. Having these soft skills allows a person to get along with others. The attributes of soft skills are all necessary for the operation of hard skills and how to use them in education (Elfindri, et al., 2010). Student-centered learning based on reasoning skills and experiential learning is needed to maximize learning.

David Kolb created the Experiential Learning Theory (ELT) in the 1980s. This model stresses comprehensive learning (Kolb, 2015). The term “experiential learning” was used by Kolb to describe a method of education in which new information is gained via the process of “transforming” previous
According to Kolb’s hypothesis, new experiences stimulate the learner’s cognitive processes, resulting in new ideas (McLeod, 2017). Experiential learning focuses on the experience, making it different from other learning theories (Naufalin, et al., 2016). The term “experiential” is used to differentiate between cognitive and behavioral learning theories. Learning through experience involves changing expertise to increase learning output and critically applying new concepts to solve problems (Suminar, et al., 2021). This model’s objective was to influence students in three different ways: first, by altering the students’ cognitive structure; second, by adjusting the students’ attitudes; and third, by expanding the capabilities that students already had. If one of these elements were absent, the other two would not work. Experiential learning involves formulating an action, testing it, assessing the consequences, receiving feedback, and redefining it based on understood and followed principles. Experiential learning mainly concerns the deep desire of students themselves to succeed in education. The chosen learning objectives and techniques are also a source of motivation. If students have a strong desire to achieve, they may take more responsibility for their learning habits and be more adept at managing them. The experiential learning model allowed students to choose the objective of their experience, the abilities they wished to acquire, and how they made sense of what they had encountered, counter to traditional learning.

To motivate students to learn through experience, the researchers organized an event in The Faculty of Women’s yard in agreement and coordination with the faculty administration. This event is the curriculum’s last activity, where they practice yarn graffiti in public. Yarn graffiti is a form of street art that includes covering objects with crochet or knitted pieces to beautify public places (Wang, 2022) and reminiscing about a time before machines (Castro, 2019). Figure 1 shows examples of yarn graffiti around the world. This type of art is entirely based on creativity (Goggin, 2015) by adding a new visual and aesthetical perception to urban places (Corina, n.d.). Yarn graffiti is known as yarn bombing, storming, guerrilla knitting, and urban knitting (Pavko-Čuden, 2017). Magda Sayeg started the yarn graffiti movement in Houston, Texas, in 2005 (Sayeg, 2015). Since then, yarn graffiti has grown globally via sharing images on the internet, where crafters share, view, and debate their work with thousands of others (Macbeth & Barber, 2015). This art became a yearly day of celebration on 11 June (Kumar, 2022).
The author’s previous yarn graffiti activism featured yarn bombing in Egypt to promote handicrafts, show their beauty, and be a part of everyday life. It was her first step in investigating how to employ yarn bombing in Egypt and to benefit from it (Abou Hashish, 2019). The current study incorporates yarn graffiti into the experiential learning model to develop soft skills, build relationships, exchange experiences, develop a general sense of aesthetics, and attain sustainability.

The concept of sustainability may often be easily accommodated through crafts (Houghton, 2018). Sustainability means transforming materials into other things with new meanings (Vachhani, 2013). In this work, the handicraft festival promotes sustainability. It makes a zero-waste handicraft learning experience by reusing yarn leftovers and crocheted samples produced during learning in yarn graffiti activations by making attractive configurations to decorate objects in the urban place in an eco-friendly way. It is neither permanent nor harmful and is simple to remove without leaving any lasting damage (Tapper & Zucker, 2011) (McGovern, 2019).

The significance of the Handicraft Festival is demonstrated by the following: First, evaluating the quality of the experiential learning outputs after the incorporation of the online videos. Second, developing students’ soft skills by practicing yarn graffiti art or selling their products. Third, achieving the principle of sustainability by incorporating yarn leftover and crochet samples that have been produced during learning into yarn graffiti aesthetic formations. Fourth, allowing students to discover their entrepreneurial abilities.

4 Methodology

The study follows the experimental, analytical method; it investigates the significance of experiential learning in sustainability-related higher education in the Clothing and Textiles program and evaluates various teaching and learning activities. The evaluation tool in this study was in the form of three rubric assessments; for the students that accomplished the whole educational curriculum, for the students who participated in the Yarn Graffiti activism and the exhibition, and for the audience who visited the festival. Finally, the data collected from the evaluation forms were analyzed and discussed.

The study was conducted in two phases: the learning phase and the soft skills enhancement phase.

4.1 Phase I: Learning Phase

The learning phase was designed according to Kolb’s ELT through a learning cycle shown in Figure 2. This phase was applied to 40 students; it provided essential information for learning fundamental crochet techniques and practicing by performing initial training samples. The researchers reevaluated these samples for debugging and implementation errors. Then the students improve their experiences by doing preliminary projects followed by observation to detect understanding gaps and handle implementation difficulties. Finally, using experience-based education to implement advanced commercial products using a wide variety of yarns available in the Egyptian market, such as acrylic, cotton, wool, bamboo, polyester, and blended yarns.

![Figure 2: The study’s phase I design (The learning cycle)](image)

4.2 Phase II: Soft Skills Enhancement

In this phase, the researchers chose 23 talented students from the learning phase group, according to their performance in the learning phase, to improve their soft skills through participation in the yarn graffiti activism and to sell their handmade products at the Handicrafts Festival exhibition.

It was necessary to obtain a permit from the administration of the Faculty of Women to allow practicing Yarn Graffiti art in the faculty’s yard and to allocate a suitable place for holding an exhibition for displaying and selling students’ handicraft products. After obtaining the required permissions, the students measured the target objects in the yard that would be covered and decorated with yarn graffiti to generate distinctive patterns. Figure 3 shows the students measuring the target objects: trees, light poles, pergolas, and benches.
The students started collecting the materials that would be utilized in Yarn Graffiti, such as the yarn leftovers, the crochet samples produced while they were learning, and the incomplete crochet projects. They inspired their designs by online yarn graffiti artists who shared their work globally (Meissner & Fitzpatrick, 2017). Figure 4 shows some yarn graffiti designs made by assembling crochet samples to cover trees in the faculty’s yard in aesthetic formations. Figure 5 shows how yarn leftovers made colorful crochet fabric pieces to cover benches. Also, they used yarn leftovers to make tassels, flowers, and curly spirals to decorate trees, poles, and pergolas. Larger crochet pieces of the incomplete crochet projects have been assembled to cover trees by joining them together, considering the consistency of the mixed colors, as shown in figure 6. Simultaneously, an exhibition was held to display and sell the students’ handmade crochet products, as shown in figure 7.
5 Results and Discussion

This study used a rubric questionnaire (Google Forms) and interviews for evaluation on three main axes:

- First axis: Students who accomplished the whole curriculum (includes eight topics).
- Second axis: Students who participated in the Yarn Graffiti activism and the exhibition (includes ten topics).
- Third axis: The audience (includes eight topics).

The responses to each topic in the three questionnaires were rated according to Likert’s five-point scale as follows: strongly disagree (one degree), disagree (two degrees), neither agree nor disagree (three degrees), agree (four degrees), and strongly agree (five degrees). The first evaluation was conducted on 40 students who had completed the curriculum. Students were given eight topics about the program and their learning experiences. Table 1 shows the student’s responses to the eight topics of the first axis of evaluation.

Figure 8 shows the percentages of the questionnaire topics on the first axis. Students’ responses on topic 4 had a higher score than the other topics on the first axis, which highlights the effectiveness of hybrid education for the curriculum and the importance of the modification made by the researchers after the COVID-19 pandemic crisis. While topic 7 has the lowest score, this indicates a deficiency in the curriculum content respecting market needs perception.

Figure 9 shows the standard deviation of the questionnaire topics on the first axis. Topic 4 has the lowest average of the total standard deviations of the responses, which is statistically significant and reflects a remarkable consensus on the efficacy of integrating online videos into the curriculum.

Table 1: The mean, standard deviation, and percentages for the first axis of evaluation

<table>
<thead>
<tr>
<th>Topics</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Percentage (%)</th>
<th>Sorting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The objectives of the curriculum are clear and stated.</td>
<td>4.78</td>
<td>0.42</td>
<td>95.5</td>
<td>2</td>
</tr>
<tr>
<td>2. The content of the curriculum is suitable for the time given.</td>
<td>4.58</td>
<td>0.59</td>
<td>91.5</td>
<td>7</td>
</tr>
<tr>
<td>3. The curriculum was taught in a clear and organized way.</td>
<td>4.78</td>
<td>0.42</td>
<td>95.5</td>
<td>3</td>
</tr>
<tr>
<td>4. The recorded videos facilitate the practicing of the different skills.</td>
<td>4.93</td>
<td>0.27</td>
<td>98.5</td>
<td>1</td>
</tr>
<tr>
<td>5. The curriculum develops creativity and a sense of beauty.</td>
<td>4.75</td>
<td>0.49</td>
<td>95</td>
<td>4</td>
</tr>
<tr>
<td>6. The curriculum provides new practical and professional skills.</td>
<td>4.60</td>
<td>0.59</td>
<td>92</td>
<td>6</td>
</tr>
<tr>
<td>7. The curriculum helps to understand what the market needs.</td>
<td>4.40</td>
<td>0.67</td>
<td>88</td>
<td>8</td>
</tr>
<tr>
<td>8. The curriculum helps to start a small business.</td>
<td>4.73</td>
<td>0.55</td>
<td>94.5</td>
<td>5</td>
</tr>
</tbody>
</table>

Figure 6: Yarn graffiti designs with incomplete projects

Figure 7: The exhibition of students’ handicrafts products
The second evaluation was conducted on 23 students who participated in the Yarn Graffiti activism and the exhibition. They answered ten topics related to their impression of yarn graffiti and selling their handmade products in the exhibition. Table 2 shows students’ responses to the topics on the second axis of evaluation.

Figure 10 shows the average percentages of responses on topics for the second axis. There is considerable agreement on topics 3 and 6, reflecting the effect of yarn graffiti activism in developing handicraft skills and improving students’ soft skills. Topic 8 has the lowest average percentage, which means that the exhibition was insufficient to understand the market requirements and the consumers’ needs.

Figure 11 shows that topics 3 and 6 have the lowest average standard deviation, which had a statistical significance on students’ consensus on the effect of participation in both yarn graffiti and the exhibition in improving their soft skills. In contrast, opinions differed about the exhibition’s role in helping them understand the market and consumer needs.

Table 2: The mean, standard deviation, and percentages for the second axis of evaluation

<table>
<thead>
<tr>
<th>Topics</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Percentage (%)</th>
<th>Sorting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yarn graffiti make use of yarn leftovers.</td>
<td>4.87</td>
<td>0.34</td>
<td>97.39</td>
<td>3</td>
</tr>
<tr>
<td>2. Yarn Graffiti makes use of training samples and unfinished projects.</td>
<td>4.87</td>
<td>0.34</td>
<td>97.39</td>
<td>4</td>
</tr>
<tr>
<td>3. Yarn graffiti develops the handicraft skills</td>
<td>4.96</td>
<td>0.21</td>
<td>99.13</td>
<td>1</td>
</tr>
<tr>
<td>4. Yarn graffiti encourages people to learn handicrafts (crochet).</td>
<td>4.83</td>
<td>0.39</td>
<td>96.52</td>
<td>6</td>
</tr>
<tr>
<td>5. Yarn graffiti improves aesthetics, art, and color coordination.</td>
<td>4.87</td>
<td>0.34</td>
<td>97.39</td>
<td>5</td>
</tr>
<tr>
<td>6. Yarn graffiti improves communication and teamwork.</td>
<td>4.96</td>
<td>0.21</td>
<td>99.13</td>
<td>2</td>
</tr>
<tr>
<td>7. The exhibition provided students with audience-communication abilities.</td>
<td>4.70</td>
<td>0.47</td>
<td>93.91</td>
<td>9</td>
</tr>
<tr>
<td>8. The exhibition helps to understand market and customer demands.</td>
<td>4.65</td>
<td>0.49</td>
<td>93.04</td>
<td>10</td>
</tr>
<tr>
<td>9. The exhibition encourages students to start a small business.</td>
<td>4.74</td>
<td>0.45</td>
<td>94.78</td>
<td>8</td>
</tr>
<tr>
<td>10. The exhibition highlights students’ strengths and weaknesses.</td>
<td>4.78</td>
<td>0.42</td>
<td>95.65</td>
<td>7</td>
</tr>
</tbody>
</table>
The third evaluation was conducted on 62 people of the audience who visited the handicrafts festival, including yarn graffiti activism and the students’ exhibition for handmade products in the Faculty of Women’s yard. The data collected from audiences were through Google Forms and interviews during the festival. They answered eight topics about their impression of the art of yarn graffiti and their opinion about the exhibits of crocheted handicraft products. Table 3 shows the audiences’ responses to the topics on the third axis of evaluation.

Figure 12 shows that the audience strongly agreed with topic two, that yarn graffiti made the faculty’s yard more enjoyable. At the same time, they agree less with the quality of the finishing of the handmade products. Figure 13 shows the standard deviation average of the topics on the third axis of evaluation. Topic 2 has the lowest standard deviation average, and that statistical significance reflects the consensus of opinions about the role of yarn graffiti in spreading joy and happiness in the place. Topic 4 has the highest standard deviation average, which would be statistically significant for differing opinions about participating in this art.

<table>
<thead>
<tr>
<th>Topics</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Percentage (%)</th>
<th>Sorting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I had never heard of yarn graffiti before the festival.</td>
<td>4.71</td>
<td>0.58</td>
<td>94.19</td>
<td>3</td>
</tr>
<tr>
<td>2. Yarn Graffiti made the faculty’s yard more delightful.</td>
<td>4.97</td>
<td>0.18</td>
<td>99.35</td>
<td>1</td>
</tr>
<tr>
<td>3. Yarn Graffiti encouraged me to learn handicrafts.</td>
<td>4.74</td>
<td>0.57</td>
<td>94.84</td>
<td>2</td>
</tr>
<tr>
<td>4. I could engage in this art if given the opportunity.</td>
<td>4.61</td>
<td>0.64</td>
<td>92.26</td>
<td>6</td>
</tr>
<tr>
<td>5. The offered products are innovative and practical.</td>
<td>4.69</td>
<td>0.46</td>
<td>93.87</td>
<td>4</td>
</tr>
<tr>
<td>6. The offered products are well-finished.</td>
<td>4.55</td>
<td>0.50</td>
<td>90.97</td>
<td>8</td>
</tr>
<tr>
<td>7. The offered products are of suitable materials and high quality.</td>
<td>4.63</td>
<td>0.55</td>
<td>92.58</td>
<td>5</td>
</tr>
<tr>
<td>8. The products offered are reasonably priced.</td>
<td>4.60</td>
<td>0.56</td>
<td>91.94</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 4 shows the values of the three evaluation axes for mean, standard deviation, and percentage. The percentages average for the second axis achieves a higher acceptance rate than the two others, as shown in figure 14. Moreover, the lower standard deviation value for the second axis – relative to the rest of the questionnaire axes – reflects the consensus of the students who participated in the handicraft festival about the influential role of yarn graffiti practicing and the exhibition in developing their skills.

<table>
<thead>
<tr>
<th>Axes</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.69</td>
<td>0.50</td>
<td>93.81</td>
</tr>
<tr>
<td>2</td>
<td>4.82</td>
<td>0.37</td>
<td>96.43</td>
</tr>
<tr>
<td>3</td>
<td>4.69</td>
<td>0.51</td>
<td>93.75</td>
</tr>
</tbody>
</table>
6 Conclusions
In this study, experiential learning of the crochet handicraft curriculum uses hybrid education to help students practice different skills more than once and achieve better educational results. The study proved that the inclusion of yarn graffiti within the objectives of the crochet experiential learning curriculum significantly motivated students to learn by practicing their handicrafts in public places. As a result, yarn graffiti improved their soft skills of communication and teamworking. Moreover, using yarn leftovers, training samples, and incomplete crochet projects in yarn graffiti configurations achieves sustainability. At the same time, the exhibition of students’ hand-crocheted products revealed their strengths and weaknesses to improve their performance and boost their confidence and self-esteem. Therefore, students who participated in yarn graffiti and the handicraft festival exhibition gained the most from the crochet experiential learning curriculum. The study also revealed that the exhibition was insufficient for students to study the market and consumers’ needs; that may be due to the limited space in the faculty, the exhibition’s insufficient duration, the type of visitors, or because it was their first experience. On the other hand, it is necessary to focus on the curriculum’s market research component so students can satisfy market and customer needs. Finally, the audience agreed that yarn graffiti spread joy and happiness in the faculty’s yard and encouraged them to learn handicrafts.

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