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CREATIVE GIFT WORKSHOP AS A PLATFORM FOR ENTREPRENEURAL EMPOWERMENT

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Julaila Abdul Rahman^{1*}, Mazlina Mansor², Raja Intan Suhaylah Raja Abdul Rahman³, Sharifah Tahirah Syed Kamaruzaman⁴, Nurlelawati Ab.Jalil⁵, Sharifah Mazlina Syed Khuzzan⁶

1* Department of Applied Arts & Design, Kulliyyah of Architecture & Environmental Design, julailarahman@iium.edu.my ² Department of Landscape Architecture, Kulliyyah of Architecture& Environmental Design, IIUM, mmazlina@iium.edu.my ³ Department of Applied Arts & Design, Kulliyyah of Architecture & Environmental Design, rajasuhaylah@iium.edu.my ⁴ Department of Applied Arts & Design, Kulliyyah of Architecture & Environmental Design, sharifahtahirah@iium.edu.my ⁵ Department of Applied Arts & Design, Kulliyyah of Architecture & Environmental Design, nurlelawati@iium.edu.my ⁶ Department of Quantity Surveying, Kulliyyah of Architecture & Environmental Design, smazlina@iium.edu.my

*Corresponding author: Julaila Abdul Rahman Corresponding author's email: julailarahman@iium.edu.my

ABSTRACT

This study adopted a practice-based qualitative approach to explore creative gift-making as a platform for skill development and entrepreneurial empowerment. The problem addressed is the lack of structured, hands-on platforms that embed entrepreneurial values within university students' learning experiences. A total of 22 undergraduate students from different kulliyyahs at IIUM Gombak, Selangor, participated in a creative gifting workshop focusing on chocolate and flower arrangements in gift boxes. The objectives were: (1) to document the step-bystep process of creative gift-making, (2) to evaluate students' achievement and progress throughout the activity, and (3) to identify students' feedback and reflections. The research employed three methods: 1) photo documentation of each stage, 2) trainer-led observation and 3) a student feedback survey. The triangulated method provided a holistic understanding of the workshop's effectiveness in enhancing technical skills, creativity, and entrepreneurial readiness through practice-based learning. This study demonstrates the potential of creative gifting workshops as a replicable model for entrepreneurship education and student empowerment in higher learning institutions.

Keywords: Creative gifting, gift arrangement, entrepreneurship, Practice-based learning

1.0 INTRODUCTION

The gifting industry has evolved beyond mere transactions, becoming a medium of personal expression, creativity, and social connection. Globally, it continues to grow, particularly in personalized and experiential gifts, as consumers increasingly value products with meaning and emotional depth (Deloitte, 2021). This trend has created opportunities for SMEs to differentiate themselves through handcrafted, non-mass-produced items.

In Malaysia and Southeast Asia, creative gifting is especially prominent during religious, festive, and cultural occasions, serving as a sustainable source of income for youth, homemakers, and local communities (Rahim & Aziz, 2020). Bouquet-making that combines chocolates, flowers, and ribbons exemplifies this trend, allowing entrepreneurs to start with low capital investment while offering flexibility in design and pricing.

Despite this potential, the sector faces significant gaps in structured training and entrepreneurial guidance. Many aspiring creators rely on fragmented online resources that lack systematic instruction in design, technique, and pricing (Ali, 2019). As a result, individuals often struggle to progress from hobby-level crafting to producing professional-quality products suitable for competitive markets.

To address these challenges, this study explores the role of creative gifting workshops as a platform for skill development, creativity enhancement, and entrepreneurial empowerment among undergraduate students. By combining hands-on practice, guided instruction, and structured evaluation, the study aims to assess how such workshops can help participants acquire practical skills, build confidence, and recognize the commercial potential of their creative work. The findings are intended to provide insights into effective pedagogical approaches for fostering entrepreneurship in the creative gifting sector.

2.0 LITERATURE REVIEW

2.1 Craft and Creative Entrepreneurship

Craft-based entrepreneurship has been recognized as a viable pathway for individuals to enter business with relatively low capital investment. Handmade products, such as creative gifts, provide opportunities for income generation while enabling personal expression and innovation (Hung, 2023). Unlike large- scale industries, craft businesses emphasize small-batch production, unique designs, and personalization, which enhance market appeal (Luckman, 2015; Fillis, 2011). Studies also suggest that craft entrepreneurs succeed when creativity is effectively merged with entrepreneurial strategies that balance passion with profit (Ratten, 2025; Noyes & Bakshi, 2022). In this regard, creative gift-making—such as chocolate and flower arrangements—offers scalable products that range from basic to premium levels, making it suitable for both small ventures and wider commercial opportunities. Craft entrepreneurship thus generates both economic and cultural value, while contributing to sustainable livelihoods.

2.2 Arts and Design Education for Entrepreneurial Skills

Arts and design education plays a critical role in equipping students with both creative and entrepreneurial competencies. Practice-based learning models allow learners to gain technical proficiency while cultivating confidence, problem- solving, and innovation skills (Asim & Yasin, 2023; Rae, 2006). Universities have increasingly embraced project-based approaches, where students engage in hands-on activities that mirror real-world challenges (Thompson & Kwong, 2016; Ahmad, 2013). Within this context, craft-based workshops, such as creative gift-making, provide platforms for students to experiment with aesthetics while acquiring marketable skills (Bridgstock, 2013). These experiences bridge the gap between academic training and entrepreneurial readiness by fostering reflective learning, peer collaboration, and applied creativity. Consequently, embedding entrepreneurship into arts and design curricula promotes holistic student development beyond technical mastery.

2.3 Creative Crafts in the Digital and Social Media Ecosystem

The digital era has transformed the landscape of craft-based entrepreneurship, enabling artisans and students to showcase their products with minimal costs. Social media platforms such as Instagram, TikTok, and Shopee provide visibility for creative products, creating opportunities for micro-enterprises to reach wider audiences (SpringerLink, 2020; Zhao & Collier, 2016). In particular, creative industries benefit from digital marketing tools that allow personalization, rapid feedback, and community engagement (Liao & Wang, 2021; Kannan & Li, 2017). For youth entrepreneurs in Malaysia, this integration has been essential for sustaining small-scale ventures such as handmade gifts and chocolate flower arrangements (Barnes, 2020). Digital ecosystems therefore extend the commercial viability of creative crafts while fostering innovation and identity within online communities.

2.4 Entrepreneurship and Student Development in Malaysian Universities

Malaysian universities have increasingly embedded entrepreneurship into student life, recognizing its importance for employability and future readiness. Numerous initiatives, including workshops, bazaars, and cultural events, provide students with opportunities to design, market, and sell creative products (Ahmad &

Buchanan, 2015; Hashim & Morshidi, 2012). Research shows that these co-curricular platforms foster resilience, adaptability, and innovation by encouraging students to practice leadership, teamwork, and communication skills (Ismail et al., 2018; Othman & Othman, 2019). At institutions such as IIUM, entrepreneurship education has been linked to stronger entrepreneurial intentions and business readiness (Ibrahim & Mas'ud, 2016). Creative gift-making workshops can therefore be positioned as part of this ecosystem, equipping students with transferable skills that align with the national agenda of nurturing young entrepreneurs.

3.0 METHODOLOGY

This study adopted a practice-based qualitative approach to explore creative gift-making as a means of skill development and entrepreneurial empowerment. A total of 22 undergraduate students from different kulliyyahs participated in a hands-on workshop focused on chocolate and flower bouquet making. The activity guided participants through a step-by-step process including material preparation, construction, finishing, and packaging. Each stage was systematically photo-documented to capture techniques and provide a visual record for analysis and instructional purposes.

To evaluate learning outcomes, a dual-assessment strategy was employed. First, trainer observation was conducted using a structured checklist to assess whether students demonstrated technical proficiency, creative capability, and the ability to follow instructions. These areas were evaluated because they are essential for turning craft-making into a small business: technical skills affect product quality, creativity adds uniqueness, and following instructions ensures students can efficiently learn the techniques needed to produce items that meet basic commercial standards.

Second, participant evaluation was carried out through surveys and informal reflections, allowing students to share their perceptions of skill acquisition, challenges experienced, and their interest in exploring the commercial potential of creative gift-making, as well as their entrepreneurial readiness, including confidence in potentially starting a small business. These surveys and reflections were included to capture students' personal perspectives on learning and entrepreneurial potential, which cannot be fully observed by the trainer. They provide valuable insight into students' confidence, motivation, perceived challenges, and readiness to apply the skills in real-world business contexts. Combining this with trainer observation offers a more complete understanding of both skill development and entrepreneurial empowerment.

This triangulated method—combining photo documentation, trainer assessment, and participant feedback—provided a holistic understanding of the workshop's effectiveness in enhancing technical skills, creativity, entrepreneurial readiness, and value-based learning.

4.0 RESULTS

4.1 Hands-on Workshop Process

The workshop was designed as a structured, practice-based activity where participants engaged in learning through direct making. The process was divided into four key stages, each focusing on specific technical and creative aspects of bouquet construction. This structured approach not only ensured systematic skill acquisition but also enabled the trainer to observe participants' craftsmanship, creativity, and potential for entrepreneurial application. The four stages included: (1) preparation of materials, (2) preparation of bouquet parts, (3) arrangement of bouquet, and (4) finishing and presentation.





Fig. 1: Basic materials and tools for creative gift

4.2 Preparation of Materials

The first stage of the workshop focused on preparing all necessary tools and materials before beginning the hands-on activity. Students were provided with chocolates, fresh or artificial flowers, cotton wrapping paper for filler, gift boxes, ribbons, and decorative accessories. Basic tools such as scissors, cutters, wire cutters, sellotape and its dispenser, hot glue guns, and balloon pumps/straws were also introduced. This preparation stage emphasized safety and efficiency: participants were guided to pre-cut ribbons, test glue guns, and organize items in functional groups for mounting and arrangement purposes. Photographs were taken to document the layout of materials and the initial readiness of workstations, serving both as a visual record and instructional reference. (figure 1)



Fig. 2: Mounted materials and activities for preparation of bouquet parts

4.3 Preparation of Bouquet Parts

Following the material setup, students proceeded to prepare the individual components of the bouquet. This stage was designed to build modular parts that could later be combined into a cohesive arrangement. Chocolates were mounted onto wooden sticks using hot glue, after which the exposed sections were wrapped neatly with sellotape to improve stability and appearance. Artificial flowers, including soap flowers, were also mounted onto sticks and grouped together, ensuring uniform length for ease of arrangement. Cotton wrap paper filler were similarly prepared on sticks to be inserted as supportive elements around the main bouquet. Ribbons were pre-tied into bows or loops to facilitate quicker assembly. Balloons were inflated to uniform sizes and attached securely to holders, not only to create better volume within the arrangement but also to add a sense of fun and cheer for the end-user. Photographic documentation of this stage captured the mounting and bundling process, emphasizing the importance of neatness, stability, and consistency in part preparation, which directly influences the final presentation quality. (figure 2)



Fig. 3: Chocolate & Flower Bouquet in Box – arrangement process. a) focal centre, b) filler, C) finishes

4.4 Arrangement of Materials for Bouquet Presentation

After preparing the bouquet components, participants assembled the bouquet, applying both technical and creative skills. They first established a focal center— typically a balloon, flowers, or cluster of chocolates— around which other elements were arranged in a spiral or radial form. Emphasis was placed on visual balance, height variation, and stability, with students encouraged to step back and assess their designs from multiple angles. Filler materials were inserted strategically to create depth and conceal stems or glue points. Trainers observed students' choices of color, symmetry, and spatial arrangement, noting instances of originality as well as areas where bouquets appeared cluttered or unbalanced. Photographs captured the progression from core structure to near-final forms, providing a visual reference for process and outcome evaluation. (Figure 3)

Photographs captured this stage in progression—from the establishment of the core focal structure to near-final compositions—providing a visual record of decision-making processes and serving as reference material for both instructional and evaluative purposes.

4.5 Finishing for the bouquet gift

The final stage focused on finishing touches and quality checks to complete the bouquet. Students added ribbons, cards, and other decorative details to enhance the overall presentation. Trainers guided them to review proportions, check for exposed glue points, and ensure structural stability. This stage also encouraged participants to reflect on their work, comparing their results with peers' arrangements and professional references. Photographs of the finished products captured the full transition from preparation to completed bouquet, serving as evidence of learning outcomes. (figure 3)

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5.0 RESULT AND FINDINGS FROM TRAINER-LED OBSERVATION

5.1 Technical Proficiency and Process Discipline

The trainer's evaluation revealed that students demonstrated foundational technical proficiency with average scores ranging from 3.0–3.2. Strengths were noted in tool handling and basic arrangement skills, which shows that participants could follow the demonstrated steps. However, weaknesses were observed in ribbon tying (2.7) and achieving cohesive, balanced arrangements (3.0). In terms of process discipline, students scored moderately (3.1–3.4), showing that they were able to follow instructions and manage their time, though improvements are needed in neatness and finishing quality. (Table 1)

Table 1: Result from the trainer observation on participant performance

Category	Skill / Indicator	Mean Rating (N=22)	Trainer Observation
A. Technical Proficiency	Grasp of basic arrangement	3.2	Most students understood basic bouquet setup, but final layouts were inconsistent.
	Jointing chocolates/flowers with sticks	3.0	Students managed the jointing process, though some items lacked stability.
	Use of hand tools: glue gun	3.1	Tools were used safely, but finishing was uneven.
	Use of hand tools: balloon blower	3.4	Generally handled correctly, giving cheerful volume effect.
	Wrapping an d packaging skills	3.0	Wrapping was functional but lacked polish for premium appeal.
	Ribbon making	2.7	Ribbon tying was weak, reducing product aesthetics.
	Overall cohesive arrangement	3.0	Products looked acceptable but lacked visual balance.
B. Creativity	Color combination & harmony	3.8	Students showed strong sense of color and coordination.
	Attempting unique styles	3.2	Few experimented; m o s t followed standard patterns.
	Creative outcome of final product	3.0	Outcomes were satisfactory but not innovative.
	Balance and stability	3.0	Some arrangements appeared lopsided.
C. Following Instructions	Step-by-step adherence	3.4	Majority followed trainer guidance accurately.
	Time management	3.1	Most completed tasks on time, though some rushed.
	Neatness and visual appeal	3.0	Products were neat but lacked "market-ready" finish.

5.2 Creativity and Entrepreneurial Readiness

Creativity scores reflected stronger abilities in color coordination (3.8), suggesting an aesthetic sensibility. However, originality and innovation were rated lower (3.0–3.2), indicating that students were more comfortable replicating demonstrated designs than creating unique styles. From an entrepreneurial perspective, this shows a gap in product differentiation and value-adding skills. (Table 1)

5.3 Findings from Trainer Observation

The trainer's evaluation, conducted through a structured checklist, highlighted that students demonstrated basic technical proficiency but required further refinement in execution. Most participants managed tool handling and simple arrangements effectively, yet weaknesses were observed in ribbon tying and achieving balanced, cohesive bouquets, indicating areas for skill improvement. In terms of creativity, students showed strength in colour coordination, reflecting an understanding of aesthetics, but were less confident in producing

original or innovative designs, consistent with the assessment of creative capability in the methodology. Instruction-following and time management were generally satisfactory, showing that participants effectively absorbed the tips and techniques provided by the trainer, which is different from simply following online videos. This also demonstrates that participants successfully developed basic bouquet-making skills that can already be sold or used. However, limitations in finishing and presentation quality reduced the professional appearance of the products, suggesting that further practice is needed to achieve commercially competitive standards. Overall, these findings indicate that while students possess functional baseline skills, additional training in detailing, finishing, and creative innovation is necessary to further enhance technical competence and entrepreneurial readiness, as outlined in the dual-assessment methodology.

6.0 RESULT AND FINDINGS FROM THE STUDENTS' FEEDBACK SURVEY

Table 2: Students Feedback Survey Result

Category	Skill / Indicator	Mean Rating (N=22)	Students feedback
Skill Development	Confidence in handling materials and tools	4.3	Most students felt confident using scissors, glue guns, and balloons safely
	Ability to follow step-by-step instructions	4.2	Students followed instructions well, though some had timing issues
	Wrapping an d arrangement skills	4.3	Students rated themselves positively in wrapping and arranging
	Improvement of technical skills after workshop	4.4	Most agreed their skills improved significantly
	Overall skill development	4.3	Majority felt they gained useful technical skills
Creativity &	Freedom to explore new designs	4.5	Students enjoye d experimenting with colors and layout
Enjoyment	Enjoyment of the activity	4.6	Nearly all students reported high enjoyment
	Sense of achievement in final product	4.5	Students were proud of theiroutcomes despite imperfections
	Perceived creativity growth	4.4	Most felt more creative after the workshop
	Confidence in pricing and selling	3.8	Students felt less confident in setting product prices
Entrepreneurial Readiness	Ability to identify product value	4.0	Students recognized potential market value of their work
	Interest in pursuing as side business	4.1	Students expresse d moderate interest in entrepreneurship

6.1 Skill Development

The survey results show that students gained considerable improvement in technical aspects such as tool handling (M = 4.2), step-by-step wrapping (M = 4.3), and arrangement skills (M = 4.4). This indicates that the workshop successfully enhanced their craftsmanship and ability to execute structured design tasks. The high ratings suggest that most participants were confident in applying the techniques introduced during the training session. Students also mentioned that practicing with real materials helped them understand balance, stability, and finishing quality more effectively. (Table 2)

6.2 Creativity, Enjoyment, and Entrepreneurial Readiness

On the creative side, students rated their ability to express originality at (M = 4.1), while their enjoyment of the activity scored the highest (M = 4.6). A strong sense of achievement was also reported (M = 4.5), reflecting the satisfaction they felt upon completing their bouquets. However, when asked about entrepreneurial aspects, the responses were slightly lower: confidence in product value (M = 3.8) and interest in selling (M = 4.1). These results suggest that while students appreciated the hands-on creativity and enjoyed the process, they were less certain about translating these skills into marketable products. (Table 2)

6.3 Findings from Student Survey

The student survey results revealed that the workshop effectively supported skill development, especially in understanding step-by-step procedures and handling materials confidently. Students also expressed high levels of enjoyment and creativity, appreciating the freedom to explore different designs and colour combinations. Although the skill itself is not highly technical or difficult—and many students found it fun and easy to learn—this did not fully translate into inspiration to start a business.

While the activity sparked curiosity about entrepreneurship, students still felt uncertain about turning the skill into an actual commercial venture. This highlights a gap in entrepreneurial readiness. Overall, the findings suggest that although the workshop successfully enhanced technical learning and creative engagement, additional support in entrepreneurial mentoring, business exposure, basic budgeting, and product refinement is needed for students to confidently pursue gift-making as a sustainable business opportunity.

7.0 DISCUSSION AND CONCLUSION

This study explored the role of creative gifting workshops in fostering technical, creative, and entrepreneurial skills among undergraduate students. The hands-on activity of chocolate and flower arrangement in a gift box provided participants with a structured yet engaging platform to learn material preparation, arrangement techniques, finishing methods, and basic packaging. Using photo documentation, trainer observation, and student surveys, the workshop outcomes were holistically assessed.

The findings revealed that students successfully acquired baseline technical skills and demonstrated creativity, particularly in colour coordination and design arrangement. All participants were able to complete a bouquet, highlighting that basic bouquet-making skills are highly learnable, and the hands-on guidance effectively transmitted the trainer's tips and techniques. However, challenges in finishing, ribbon tying, and product presentation limited the professional and commercial readiness of their work. While students reported high enjoyment, creativity, and confidence in producing the items, their confidence in turning these skills into an entrepreneurial venture remained moderate, reflecting a gap in business readiness.

Beyond technical and creative learning, students developed valuable soft skills such as teamwork, patience, discipline, and appreciation for hands-on experiential learning. The activity also increased awareness of entrepreneurial possibilities, including cost management, market opportunities, and the importance of quality finishing and packaging.

Overall, the workshop proved effective as a practice-based platform for skill development and entrepreneurial empowerment, enabling students to quickly acquire practical skills while building confidence and creative

capacity. To enhance its impact, future workshops should include entrepreneurial mentoring, market exposure, basic business training, and advanced guidance in finishing and product refinement. These enhancements would better prepare students not only to enjoy the creative process but also to translate their skills into sustainable and commercially viable business opportunities.

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REFERENCES

- Ahmad, S. Z. (2013). The need for inclusion of entrepreneurship education in Malaysia lower and higher learning institutions. Education + Training, 55(2), 191–203. https://doi.org/10.1108/00400911311304823
- Ahmad, S. Z., & Buchanan, F. R. (2015). Entrepreneurship education in Malaysian universities. Tertiary Education and Management, 21(4), 349–366. https://doi.org/10.1080/13583883.2015.1104474
- Asim, M., & Yasin, S. (2023). Visual arts education and entrepreneurship in handicraft arts: A systematic literature review. International Journal of Academic Research in Progressive Education and Development, 12(2), 22–36.
- Barnes, L. (2020). Social commerce in Malaysia: Crafting, selling and sustaining through digital platforms. Journal of Asian Business and Economic Studies, 27(3), 295–
- 310. https://doi.org/10.1108/JABES-01-2020-0003
- Bridgstock, R. (2013). Not a dirty word: Arts entrepreneurship and higher education. Arts and Humanities in Higher Education, 12(2-3), 122–137. https://doi.org/10.1177/1474022212465725
- Fillis, I. (2011). The evolution and development of arts marketing. Arts Marketing: An International Journal, 1(1), 11–25. https://doi.org/10.1108/20442081111129837
- Hashim, Y., & Morshidi, S. (2012). Entrepreneurial initiatives in Malaysian higher education: Enhancing graduate employability. Journal of Higher Education Policy and Management, 34(3), 237–248. https://doi.org/10.1080/1360080X.2012.662740
- Hung, S. C. (2023). Entrepreneurship factors among craft artists: A qualitative study. Online Science Publishing Journal of Business Studies Quarterly, 14(2), 101–115.
- Ibrahim, N., & Mas'ud, A. (2016). Entrepreneurial intention among Nigerian and Malaysian university students: A comparative study. International Journal of Business and Management, 11(11), 83–98. https://doi.org/10.5539/ijbm.v11n11p83
- Kannan, P. K., & Li, H. (2017). Digital marketing: A framework, review, and research agenda. International Journal of Research in Marketing, 34(1), 22–45. https://doi.org/10.1016/j.ijresmar.2016.11.006
- Liao, S., & Wang, H. (2021). Digital innovation and entrepreneurship in the creative industries. Technological Forecasting and Social Change, 166, 120644. https://doi.org/10.1016/j.techfore.2021.120644
- Luckman, S. (2015). Craft and the creative economy. Palgrave Macmillan.
- Noyes, C., & Bakshi, H. (2022). Creative entrepreneurship: Models, strategies and policy implications. Creative Industries Journal, 15(1), 1–18. https://doi.org/10.1080/17510694.2022.2037694
- Othman, N., & Othman, N. H. (2019). Higher education institutions and entrepreneurship education: Malaysia perspective. International Journal of Academic Research in Business and Social Sciences, 9(5), 951–963. https://doi.org/10.6007/IJARBSS/v9-i5/6015
- Rae, D. (2006). Entrepreneurial learning: Conceptual frameworks and applications. Technovation, 26(3), 318–330. https://doi.org/10.1016/j.technovation.2004.10.007
- Ratten, V. (2025). Craft entrepreneurship: Opportunities, challenges, and future directions. Journal of Enterprising Communities, 19(1), 45–60. https://doi.org/10.1108/JEC-2025-0005
- SpringerLink. (2020). Creative craft and design microenterprise: Social media, identity and women artisans. Small Business Economics, 55(2), 317–332. https://doi.org/10.1007/s11187-019-00234-5
- Thompson, P., & Kwong, C. (2016). Compulsory entrepreneurship education: Does it work? International Journal of Entrepreneurial Behavior & Research, 22(1), 4–18. https://doi.org/10.1108/IJEBR-09-2013-0155
- Zhao, F., & Collier, A. (2016). Digital ecosystems in the creative industries: Value co- creation and innovation. International Journal of Information Management, 36(6), 1247–1259. https://doi.org/10.1016/j.ijinfomgt.2016.09.002.