

The influences of upscaling furniture towards tomorrows sustainable: A case study at Universiti Malaysia Kelantan.

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Abstract. This research delves into the sustainability practices, at Universiti Malaysia Kelantan by investigating the impact of implementing student-led furniture upcycling projects within university premises to address sustainability concerns effectively. The study meticulously explores the benefits and challenges associated with student driven initiatives for upcycling and enhancing furniture in education institutions. A significant amount of furniture labeled as beyond repair, in universities is frequently discarded unnecessarily. Upon examination though it becomes evident that numerous items exhibit slight imperfections which present a golden opportunity, for refurbishment or transformation into state of the art products. The research conducted in this study employed methodologies such as observations and interviews in addition to a survey targeting university faculty members and students along with members of the local recycling community. The primary objective is to discover approaches that leverage the creativity and ingenuity, in student projects. The study aims to enhance the university communitys dedication to responsibility and ignite a future by refurbishing furniture that seems neglected.

1 Introduction

In years higher education has placed an emphasis, on sustainability with universities incorporating environmental responsibility into their academic programs day to day activities and community engagement efforts. An aspect that often goes unnoticed in this movement is the disposal of furniture. Many universities dispose of furniture that could be repaired and reused leading to harm and unnecessary waste in landfills. One institution leading the way in practices is Universiti Malaysia Kelantan (UMK) which has the opportunity to tackle this issue by initiating projects that involve students, in upcycling furniture. UMKs efforts are, in line with their goal of minimizing waste and promoting practices while providing students with valuable hands-on learning experiences to enhance their creative and technical abilities.

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Encouraging students to identify and refurbish discarded furniture not helps reduce waste and save money but also supports resource conservation and encourages a campus culture, at UMK. The main goal of this study is to explore the possibility and advantages of expanding furniture production through projects led by students in order to assess the economic benefits while also pinpointing hurdles like logistical challenges and regulatory issues that may arise during the process. Ultimately the research aims to foster a culture of creativity and environmental responsibility, within the university community encouraging endeavors towards embracing practices, in higher education.

2 Literature review

2.1 Sustainability in higher education

In years and, across the globe universities have been embracing sustainability practices to show their commitment to promoting eco actions in both planning and day to day activities [1]. This commitment involves efforts like earning certifications for buildings saving energy reducing waste and offering sustainable transportation choices [2]. Universities play a role, as champions of sustainability by educating upcoming generations on how to care for the environment [3]. In this context reusing and revamping become aspects of handling waste. Universities can reduce waste. Support an economy by creatively repurposing furniture instead of sending it to landfills. This method highlights the importance of fixing, repurposing and reinventing items to prolong their usefulness thus conserving resources and lessening impact [4, 5].

2.2 Student-led initiatives

Student driven sustainability efforts have shown success, in advancing sustainability within university settings by showcasing the positive outcomes of student-led projects in making significant strides toward sustainability goals on campus grounds [6]. An excellent illustration of this is the spirit displayed by students who have effectively decreased waste output on campus through the implementation of recycling and compost initiatives [7]. These instances serve as evidence of how student ingenuity and forward thinking play a role, in promoting eco friendly practices. Students offer perspectives and innovative solutions to issues while inspiring campus communities to embrace sustainable habits through their energy and creativity. Through participation, in projects students acquire vital abilities and a strong dedication to promoting sustainability empowering them to become impactful catalysts, for positive transformation [7].

2.3 Furniture upcycling

Revitalizing furniture through entails giving unwanted pieces a fresh lease of life by making them functional and visually appealing once again [8]. The methods and approaches employed in furniture are encompass tasks such, as repainting surfaces, reupholstering cushions and reinventing parts to craft novel designs [8]. This artistic endeavor not prolongs the usefulness of furniture [9]. Also diminishes the demand, for new materials hence bolstering environmental sustainability [10]. The ecological advantages of upcycling are substantial as it curbs waste generation preserves resources [11]. Mitigates the carbon footprint linked to producing and transporting furniture. From a standpoint upcycling presents a cost saving opportunity by cutting down on the costs associated with buying furniture and managing waste disposal. Moreover, it has the potential to make money by

selling goods [11]. By incorporating furniture upcycling initiatives, within university environments schools could benefit from the financial perks while offering students hands on learning opportunities and encouraging a mindset of creativity and eco friendliness [12].

3 Methodology

3.1 Research design

This research project used a research method to investigate the possibilities and obstacles faced in student-led furniture upcycling initiatives, at Universiti Malaysia Kelantan (UMK). By conducting observations and interviews as administering surveys to a wide range of participants that included university faculty and students alike; the goal was to gather a deep understanding of furniture handling techniques and innovative upcycling methods, within the institutions guidelines. Initial observations of how furnitures being disposed of revealed some inefficiencies at play here. Interviews held with individuals including staff members and students delved into the potential for upcycling projects and examined the advantages and obstacles associated with them. Surveys were handed out to an university audience to gauge their enthusiasm, for practices and pinpoint any obstacles hindering their participation. Thematic analysis was employed to scrutinize the data gathered which helped in pinpoint the recurring themes and trends to our research goals. The analysis simplified information into main themes that provided an, in depth insight into the viability of upcycling and its possible positive impacts on the environment and economy at UMK while also highlighting the cultural move, towards sustainability that such initiatives could promote.

4 Results

4.1 Findings from observations

The findings showed that the way furniture is currently disposed of, at UMK results in a lot of furniture being thrown away as irreparable when it could be fixed or reused with repairs and improvements instead of being overlooked due to small flaws or imperfections in appearance. This situation brings to light a flaw, in the universitys waste management practices where valuable resources are not being utilized effectively and are instead going to waste without being repurposed or recycled into something useful. It highlighted the importance of updating or developing an evaluation system to accurately evaluate and oversee the condition of furniture and its potential, for renovation. Introducing a modified assessment criteria could enhance decision making procedures by identifying furniture that can be repaired and utilized efficiently to support sustainability initiatives. A summarized overview of the findings is presented in Table 1 with a focus on the identified challenges and their impacts as the advantages associated with implementing an updated evaluation approach, for managing furniture at UMK.

Table 1. Summarizes the findings from our observations. Discusses the problems noted along, with their consequences and the advantages of adopting an updated system, for overseeing furniture management at UMK.

No.	Observation results.	Details.	Implications.
1.	Current practices.	Furniture deemed irreparable is being discarded, despite many items being functional or repairable.	Valuable resources are wasted rather than being repurposed or upcycled.
2.	Identified repairable furniture.	A substantial number of furniture pieces identified as repairable due to minor flaws or aesthetic imperfections.	Potential for significant reduction in waste and increased resource utilization.
3.	Gap highlighted.	Existing waste management system fails to recognize and manage repairable furniture effectively.	Necessity for a more efficient system to assess furniture condition and potential for refurbishment.
4.	Need for new rubric system.	Current system does not adequately assess the condition and potential of furniture for refurbishment.	A new or updated rubric is required to improve assessment and decision-making processes.
5.	Proposed benefit of revised rubric.	Enhanced ability to identify and utilize repairable furniture, leading to improved sustainability efforts.	Better management of furniture resources, reduction in waste, and support for sustainability goals.

4.2 Insights from interviews

Table 2. Summarizes the points discussed in the interviews; showcasing the excitement, about upcycling efforts while also addressing the difficulties encountered and suggesting solutions to tackle these challenges.

No.	Interview results.	Details.	Implications.
1.	University staff.	Acknowledged the potential benefits of upcycling but expressed concerns about logistical challenges.	Challenges include lack of space and tools for refurbishment.
2.	Educators and students.	Showed enthusiasm for upcycling projects and suggested creative solutions.	Proposed solutions include integrating refurbishment into academic curricula and establishing dedicated workshop spaces.
3.	Proposed solutions.	Integrate refurbishment into academic curricula and establish dedicated workshop spaces.	These solutions could address logistical challenges and facilitate hands-on learning and project execution.
4.	Overall insights.	Enthusiasm for upcycling is present, but logistical and practical obstacles need addressing.	Identifying and addressing these obstacles is crucial for implementing effective upcycling initiatives at UMK.

Interviews, with employees and students offered perspectives on the concept of repurposing furniture at the university level. The university staff acknowledged the aspects of repurposing. Also raised concerns about practical issues like limited space and resources, for renovation work. Educators and students— those focused on design—showed excitement for repurposing initiatives and put forth innovative ideas to overcome these obstacles. Their

suggestions included incorporating renovation projects into course syllabi and creating workshop areas to support hands on learning and project implementation. The findings highlighted the interest, in. The challenges involved in carrying out successful furniture upcycling projects at UMK University College. Table 2 outlines the points gathered from interviews regarding the excitement, for upcycling efforts the difficulties encountered. Potential solutions to address these challenges.

4.3 Survey results

The survey findings among the university community showed an outlook, on sustainability and repurposing items for reuse purposes such as projects garnered significant interest among participants indicating a shared community enthusiasm for environmental endeavors. Moreover, the surveys highlighted obstacles to engagement like the necessity for insights into the advantages of upcycling and chances to participate in such initiatives. In summary the data revealed an eagerness, within the university community to adopt furniture upcycling as a component of their overarching dedication to sustainability efforts. Table 3 summarizes the discoveries from the survey by showcasing the views, on sustainability and upcycling activities as well as the enthusiasm for participation along, with the obstacles that were recognized.

Table 3. Summarizes the views on sustainability and repurposing materials well as the enthusiasm, for taking part and the challenges that were pinpointed.

No.	Survey results	Details.	Implications.
1.	Community attitude towards sustainability.	Positive attitude towards sustainability and upcycling.	Indicates strong support for environmental initiatives within the university community.
2.	Interest in upcycling projects.	A majority of respondents expressed interest in participating in upcycling projects.	Reflects a strong desire to engage in sustainability efforts through upcycling.
3.	Barriers to participation.	Identified barriers include the need for more information about the benefits of upcycling and potential involvement opportunities.	Highlights the need for increased awareness and clear communication regarding upcycling initiatives.
4.	Overall readiness.	Data indicated a readiness within the university community to embrace furniture upcycling as part of a broader commitment to sustainability.	Suggests that with proper support and information, the community is likely to actively engage in upcycling efforts.

5 Discussion and conclusion

5.1 Benefits of furniture upscaling

The advantages of repurposing furniture were significant, from both educational perspectives. Concerning the environments impact; repurposing reduced waste and saved resources by prolonging the lifespan of furniture that would have otherwise been thrown away—a practice that contributed to lessening the impact linked to creating and getting rid of furniture. In terms of education; repurposing projects provided benefits such as fostering

skills and boosting creativity, in students. Through participating in repair projects students not only acquired important technical skills but also developed creative problem solving capabilities that supported sustainability objectives.

5.2 Challenges and barriers

Numerous obstacles and challenges surfaced during the execution of upcycling endeavors. Significant logistical hurdles arose due, to space and resources required for refurbishment efforts. These limitations hindered the ability to undertake projects on a scale that could truly make a difference. Moreover, there were barriers with certain personnel, educators and students displaying doubts regarding the worth and longevity of upcycled furnishings. Addressing these viewpoints was vital to garner backing and approval, for upcycling ventures.

5.3 Recommendations

In order to tackle these obstacles and get the most out of upcycling efforts being made suggests with some ideas, for improvement. Incorporating projects into university courses could give students structured chances to take part in these endeavors while gaining skills. Creating suggestions, for furniture management, at UMK could help formalize and back upcycling initiatives to ensure they become a part of university operations.

5.4 Summary

The research emphasized the impact that student-led upcycling initiatives could have on promoting sustainability, at UMK university campus by showcasing their capacity to minimize waste and preserve resources while providing enriching opportunities. The significance of nurturing an environment within the campus community was highlighted as a catalyst for encouraging engagement and involvement, in sustainability endeavors.

5.5 Future research

In the coming years researchers should concentrate on examining the lasting effects of upcycling initiatives, on the sustainability of universities studying how these projects influence waste disposal methods and natural resource preservation in the run. Moreover, exploring the incorporation of cutting edge technologies, like AI powered design software, 3D printing and digital manufacturing may provide understanding into how technology can improve the effectiveness, innovation and expandability of upcycling endeavors. Including universities and regions, in the research would offer a comprehensive view of how furniture upcycling projects can be effective and scalable, across different areas and communities.

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