

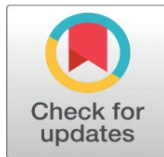
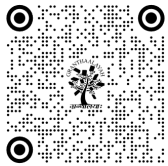


STUDENTS' ATTITUDES TOWARD SUSTAINABILITY IN THEIR DESIGN PERSPECTIVES

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ABSTRACT

In 2002, the United Nations designated the years 2004-2015 as the "Decade of Education for Sustainable Development," with the purpose of integrating education into social development that adheres to sustainable principles Chalkley B., Haigh, M. J., & Higgitt, D. (2010). The deficiency of attachment to one's garments and their disposal after a single usage have become the standard of the day. The fashion business adds to the burden on Earth's limited resources. Global warming has been progressively growing; it reached 1.2°C in 2022, and there is a strong risk of topping 1.5°C within ten years. According to Sustainable Development Report 2022, global carbon dioxide (CO₂) emissions reached a new high of 36.8 giga tones. The fashion sector accounts for 10% of all global carbon dioxide emissions. This industry accounts for 20% of industrial wastewater contamination Sachs, J. (2022). The Sustainable Development Goal (SDG) Index assesses 193 nations' progress toward sustainable goals. The Sustainable Development Goals are far off-track midway through the 2030 Agenda. The globe is also far from meeting Sustainable Development Goal 13 and the Paris Agreement's climate goals. This study seeks to investigate the attitudes and understanding of design students aged 18 to 25 regarding sustainability. A sustainability survey was done utilizing a questionnaire among 110 first-year students and 110 fourth-year students. A questionnaire survey was carried out using Google Forms. This study exposed that, despite spending three years more in college than first-year students, fourth-year students do not have a significantly greater understanding of sustainability.

Keywords: Fashion, Sustainability Awareness, Design Curriculum, Students Behavior, Youth Fashion and Environment

1. INTRODUCTION

Over the last few years, civilization has violated the earth in a various way to meet people's material needs and promote economic progress. Rising worries about climate change, population expansion, unequal economic development, and social inequities have highlighted the importance of raising sustainability consciousness.

In 1987, Sustainability was defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" by the United Nations Brundtland Commission in its report Our Common Future. Sustainability is a combination of principles and behaviors aimed at ensuring that

our current actions and decisions do not compromise the well-being and resources of future generations. The Brundtland Report emphasizes the interconnectedness of economic, environmental, and social concerns.

There are a total of 17 goals, each with specified targets and metrics to track progress. According to the United Nations (UN) Sustainability Report 2023, none of the SDGs are likely to be met globally, on average across all nations, by 2030. The globe is also far from meeting SDG 13 and the Paris Agreement's climate ambitions. Global warming has been progressively increasing; it will reach 1.2°C in 2022, with a very high risk of topping 1.5°C within ten years. In 2022, global carbon dioxide (CO₂) emissions reached a new high of 36.8 giga tones. The fashion industry accounts for 10% of all global carbon dioxide emissions. This industry accounts for 20% of industrial wastewater contamination Sachs, J.D., Lafortune, G., Fuller, G. & Drumm, E. (2023).

India's national development objectives are consistent with the UN's Sustainable Development Goals. India employs a variety of programs to implement a comprehensive approach for meeting the SDGs. Relevant Government of India policies and programs, such as the Swachh Bharat Mission (SBM), Beti Bachao Beti Padhao (BBBP), Pradhan Mantri Awas Yojana (PMAY), Pradhan Mantri Jan-Dhan Yojana (PMJDY), Deen Dayal Upadhyay Gramme Jyoti Yojana (DDUGJY), and Pradhan Mantri Ujjwala Yojana (PMUY), have significantly contributed to India's progress in the area of sustainable development.

It is vital that India and other emerging nations move toward sustainable development in directive to conserve the environment and natural resources for current and future generations. Climate change, resource depletion, e-waste, and various forms of pollution (air, water, and soil) are all major environmental challenges in India. Many reasons contribute to these environmental issues, including population increase, technological improvement, modern lifestyles, and the Industrial Revolution Kawaljit Kaur Batth (2020).

Fashion and associated industries contribute significantly to global employment creation and economic growth. Fashion is continuously changing, fueling the need to purchase new clothing on a regular basis. The unquenchable need to retain with the trends has led to overconsumption. Consumers buy 60% more clothes, wear them only a few times, and then trash them. As a result, the fashion industry adds to the burden on the Earth's limited resources.

In 2002, the United Nations designated the years 2004-2015 as the Education as the Sustainable Development Goal (SDG)" with the purpose of incorporating education into social development that adheres to sustainability principles. There are numerous approaches to achieving sustainability, including sustainable forestry and agriculture, funding, research and technology transfer, and sustainable production and consumption. These are all included in Agenda 21, the official Earth Summit declaration of 1992, which has 40 chapters. One approach to achieve sustainability is through education. Sustainable development cannot be achieved via education alone, but it cannot be accomplished without education and learning. Education has a significant influence on student attitudes Dixit M. (2023).

2. LITERATURE REVIEW

The term sustainability refers to the use of resources in a way that does not contribute to their depletion. Environmental sustainability is more clearly defined as society living in harmony with the natural environment. Universities have taken the lead in steering society toward a sustainable future as a consequence of

increasing concern about society's influence on the natural environment and the concept of universities as centers of social change (Wright 2002). Agenda 21, a framework for activities to contribute to global sustainability in the twenty-first century, was released by the United Nations in 1992. Local governments are encouraged to support local environmental, economic, and social sustainability programs. (United Nations Agenda 21. 1992) (7). In addition, the UN (2015) established 17 Sustainable Development Goals (SDG) to be achieved worldwide by the year 2030 (United Nations, 2015) National Education Policy 2020.

From an economic standpoint, sustainability can be explained as the protection of natural resources as a precondition for consistent economic growth. It is believed that markets would continue to erode and weaken "natural capital" rather than automatically preserving it (Asian Development Bank 2016). According to Harris, an environmentally sustainable system must have a stable resource base, invest in alternative resources, and minimize over-exploitation of both renewable and non-renewable resources (Harris J. M. 2003).

Environmental sustainability refers to the ability to meet present needs without jeopardizing future resource availability. This is accomplished by the deployment of appropriate practices and regulations that gradually conserve and protect the natural environment. Pollution reduction, biodiversity conservation, climate change mitigation, and responsible resource management are all essential elements.

Prioritizing the welfare of individuals and communities is a key component of social sustainability. It is about advocating for fairness, human rights, decent labor, and access to healthcare and education. Enhancing access to necessities like clean water, healthcare, and education, lowering inequality, upholding human rights, and guaranteeing that everyone has the chance to live happy, full lives are all important components of social sustainability. Other aspects of social sustainability include social capital, social interaction, collective groups, and networks of community or societal stability, the fulfillment of basic health and educational needs, and participatory democracy (United Nations).

One of the most crucial processes for a nation's success is education, thus it's critical that a country keep enhancing its educational programs and systems in light of the always-evolving times. The most effective means of achieving social and economic mobility is education (Manoj Dixit (2023)). Sustainable Development begins with education. SD is a higher-order social goal that challenges the growth ethics and increasing inequity of modern life. Education, especially Higher Education is a powerful policy instrument for social change (Girish Kumar (2021)). Societal behaviors and perceptions in any society are affected by a variety of factors such as the relationship with interests, commitments, beliefs, worldviews, emotions, language or culture, etc (Mercedes Varela-Losada (2015)).

The Government of India has taken several initiatives in this regard, The National Education Policy (NEP) 2020 emphasizes the importance of incorporating environmental awareness and sensitivity towards conservation and sustainable development into the school curriculum.

It has implemented various programs in its curriculum such as:

- 1) Many CBSE schools have accepted the Green School Programme, an effort that encourages schools to diminish their carbon footprint, endorse sustainability, and raise student environmental awareness.
- 2) To lower their carbon footprint and encourage renewable energy, many CBSE schools have installed solar panels.

- 3) CBSE schools have recycling programs in place to decrease waste and promote material reuse.

3. THE RELATIONSHIP BETWEEN NEP 2020 AND SDG 2030

The country's socioeconomic environment is ever-changing, necessitating an overall reform of the education system in order to accomplish the goals set by the UN. In order to focus on achieving SDGs by 2030 in India, a group was formed to draft the National Education Policy (NEP) 2020, led by K. Kasturirangan. The primary goal of NEP 2020 is to establish India as a "global knowledge superpower" through quality education, stimulating innovation, and cultivating a strong research culture.

By raising knowledge of sustainability, these programs can have a huge impact on the local community. Students who learn about sustainability in school frequently bring these practices back to their homes and communities, urging their family and friends to do the same. These actions influence in what way public involve with their communities, environments, and economies in turn, which in turn influences societal behavior in a particular community

Research Questions

- 1) Do 4th year students have a markedly better understanding of sustainability than the 1st year students?
- 2) What are the differences between 1st and 4th year students regarding attitudes, behavior, and shopping habits, that have an impact on sustainability?
- 3) Has design education helped the 4th year students in gaining a better understanding and knowledge about sustainability?

4. RESEARCH METHODOLOGY

To understand the level of considerate and consciousness of the students with reverence to sustainability, their behavior in day-to-day life, and their fashion choices regarding sustainability a survey was conducted among the 1st year design students and the 4th year design students studying at the National Institute of Fashion Technology, Mumbai and Daman during the month of November 2023 to March 2024. Students for the survey were selected based on convenience sampling. 110 responses were collected from 1st year design students in the Foundation Program and 110 were collected from 4th year design students from the departments of Accessory Design, Fashion Design, Textile Design, Knitwear Design, and Fashion Communication.

Questionnaire

The questions were developed by the authors based on the research questions. The same set of questions was given to both the 1st and 4th year-design students, as this would enable the authors to draw conclusions. Some of the questions were multiple-choice questions and some of them were "yes" and "no" questions. Question asking students if they have completed a General Elective or departmental Course related to sustainability was included only in the Survey form given to the 4th year students. Students in their 1st year would not have done such a course by the start of September month. The questionnaire consisted of 37 questions in total. The below table shows the broad topics under which the questions were developed.

Data Collection

Two Google Forms were used for circulating the questionnaire among the students. One form was made to be circulated among the 1st year students and another form for 4th year students. Researcher briefed students about the purpose of the survey in their respective classrooms. Students were instructed to fill out the form without referring to Google for correct answers. It was made clear that it was not a graded test and no one would be judging them based on their responses. Their answers and information would only use for research and academic purposes. The Google form was distributed among students in the class WhatsApp group.

Google Forms, an online application that enables information collection from users via survey, was used to evaluate the data. The tool then gathers the data and performs an automated analysis.

5. RESULTS AND DISCUSSION

89% of the 4th year students are in the age group of 20 to 23 years, 10% are 19 years, and 1% are 26 years. 93.6% of the first-year students are in the age group of 17 to 20 years and 5.45% are in the age group of 21 to 23 years. On average 85% of the respondents in the 1st and 4th year are Female. On average 51.22 % of respondents in the 1st and 4th year belong to families with yearly income under 8 lakhs, 19.9% belong to families with an annual income of 9 to 12 Lakhs, 8.18% belong to families with an annual income of 13 to 15 Lakhs, 8.62% belong to families with an annual income of 16 to 24 Lakhs and 12.72 % belong to families with an annual income above 25 Lakhs.

On average 48.1% of the respondents were first introduced to the topic of sustainability in middle school, 40.9% in high school, and 10.9% in college. It is noteworthy that at the school level, they only understood sustainability in terms of the three R's Reduce, Reuse, and Recycle. Moreover, at the school level, they related the three R's mostly in relation to household waste. Yet many of them did understand the connection between sustainability and buying and usage of clothes.

To avoid confusion for the respondents in the Foundation Program, the question related to the completion of a course related to sustainability was included only in the senior's Google form. And 45.5% of 4th year students have finished a course on sustainability as part of the other stream students.

Table 1

Table 1 Percentage of Students who have given Accurate response

Questions	1 st Year	4 th Year
Understanding the definition of Sustainability		
What according to you is Sustainability	86.4%	75%
Is sustainability only related to the environment	70.9%	78.2%
Sustainable energy can be defined as	62.7%	68.2%
Three key areas of Sustainability	49.1%	55.5%
Knowledge regarding Sustainability		
Are the concepts of Sustainability and climate change interrelated	66.4%	73.6%
What is the number of UN Sustainable goals	18.6%	19.1%
UN Sustainable goals are to be achieved by which year	22.7%	29.1%
Identify the greenhouse Gases	31.8%	38.2%
Do you believe the way we buy, use, and dispose of clothes has any relation with Sustainability?	93.6%	93.6%

Knowledge regarding Sustainable Fashion

What Fabric Uses the least amount of water in its production	21.8%	23.6%
Most amount of greenhouse gasses are released in which phase of a textile cycle	17.3%	14.5%
How much amount of water is utilized to produce a pair of jeans?	5.5%	5.5%
Which one of the following fabrics releases Micro Plastics during washing	70.9%	74.5%
What does greenwashing mean	40%	30.9%
World over what % of clothing is recycled	14.6%	16.4%
You can identify a sustainable fashion brand by	64.5%	79.1%

Understanding the Meaning of Sustainability

Even though 45.5% of the 4th year students have done a Sustainability course, it can be noted that in questions related to the topic of Understanding the definition of Sustainability, there is little difference in the proportion of accurate responses given by both the 1st year students and 4th year students. 1st year students are lagging by a small percentage. In fact, 86.4% of the 1st year students have given the correct answer to the question *What according to you is Sustainability?* whereas only 75% of the scholar's 4th year students have given the accurate response to the same question.

Knowledge regarding Sustainability

Regarding the questions related to the topic of Knowledge regarding Sustainability, there is not much difference in the percentage of accurate responses specified by the 1st year students and 4th year students. The fraction of accurate responses given by 1st year students and 4th year students to the question What is the number of UN Sustainable goals and UN Sustainable goals are to be achieved by which year is very low, 18.6% and 22.7% (1st year) 19.1% and 29.1% (4th year) respectively. Whereas both groups have got 93.6% for the question Do you believe the way we buy, use, and dispose of clothes has any relation with Sustainability? This data shows that even though they may not be good at remembering the numbers, they understand the relation between the usage of clothes and its impact on sustainability.

Knowledge regarding Sustainable Fashion

The topic of Knowledge regarding Sustainable Fashion consists of 7 questions. Students in both groups scored less in all questions except two questions. For the question, *Most amounts of greenhouse gasses are released in which phase of a textile cycle* only 14.5% 4th year students have got correct answers which is less than the 17.3% by 1st year students. For the question *How much amount of water is utilized to produce a pair of jeans?* Both the groups have got only 5.5% answers correct. For the question *What does greenwashing mean?* 4th year students have got only 30.9% correct answers. This shows that the depth of understanding related to various concepts related to sustainable fashion is lacking.

Shopping Habits

Analysis of questions related to the shopping habits of the students shows that on average 55% of Students in both groups mostly buy clothes because they require

new clothes, 35.4% buy because they want to follow the current trends, and 9.54% shop because there is a sale. When purchasing a garment, style, fabric quality, durability, price, Brand Image and Brand commitment to sustainability are the factors that influence both groups of students in the order mentioned. For the question *Which factor influences you the most while shopping?* 31.8% of 1st year students have chosen the option Brand's commitment to sustainability. And 26.4% of the 4th year students have chosen the option Brand's commitment to sustainability. But for the question *Name the brand you frequently buy from*, students from 1st year groups mentioned only H&M 21.8%, Myntra 13.6%, Max 10%, Urbanic 9.1%, Amazon 7.3%, Westside 7.3%, Lifestyle 6.4%, Forever21 4.5%, Only 4.5%, Zara 4.5% and Zudio 4.5%. and students from 4th year mentioned. Whereas the 4th year students mentioned only H&M 16.4%, Myntra 13.6%, Urbanic 14.5%, Westside 8.2%, Lifestyle 10%, Forever21 11.8%, Only 11.8%, Zara 10.9%. It shows that students are mostly shopping from fast fashion brands and some of them are not completely clear about sustainability and sustainable brands.

Table 2**Table 2 Percentage of Students who have selected YES as the answer for questions related to Attitude and Behavior**

Questions	1 st Year	4 th Year
Attitude and Behavior		
At home do you segregate wet and Dry waste? And give dry waste for recycling	62.7%	54.5%
Do you make it a practice to carry your reusable bags when you go for grocery or vegetable shopping?	83.6%	79.1%
Do you make it a point to switch off lights when you leave a room?	97.3%	91.8%
To protect the environment, are you okay with buying second-hand clothes online or offline?	57.3%	64.5%
Have you considered swapping clothes with friends and relatives?	80%	78.2%
Would you consider renting clothes instead of buying them for attending a wedding or any other function?	61.8%	60.9%
Have you ever repurposed a saree or a garment into a trendy useable garment or product?	82.7%	72.7%

Attitude and Behavior

Regarding attitude and behavior, it is interesting to note that 62.7% of the 1st year students and 54.5% of 4th year students are inclined towards segregating waste and giving dry waste for recycling. 83.6% of the 1st year students and 79.1% of the 4th year students make it a practice to carry their own reusable bags for shopping. 97.3% of the 1st year students and 91% of the 4th year students switch off the lights when leaving a room. These practices show that both 1st year and 4th year students have very good daily habits, which are essential for leading a sustainable life.

Maximum scholars from both clusters are positive and open to the idea of buying second-hand clothes online or offline, swapping clothes with friends and relatives, renting clothes, and repurposing old clothes. The majority are attached to their clothes and use them for a long time. Most of the student's behavior about the usage of clothes is pro-sustainability. However, they do lack a complete understanding of sustainability. Students who were surveyed showed that they shop from fast fashion brands, but some of them have said that they consider the brand's commitment of sustainability while buying. Survey results show that the 4th

year design students have not gained a better understanding of sustainability, considering the additional 3 years they have spent in the college. With greater emphasis on sustainable studies in the Design college curriculum, there is scope for students to become more aware and knowledgeable with regards to sustainability.

6. CONCLUSION

Increasing Global warming and climate change have made it necessary for us to relook at our combined efforts toward sustainability. Efforts being made the world done have not been enough to stall climate change. It is necessary to inculcate a strong educational foundation regarding sustainability among the youth. Because they are the future driving force of our country. Sustainability is taught to most of the students at the school level. Because of this the 1st year students were able to answer some questions related to Knowledge regarding Sustainability and Knowledge regarding Sustainable Fashion better than the 4th year students. Both groups displayed some confusion as to what exactly a sustainable brand is. More exposure to the concept of sustainability in each semester may be necessary to make students strong in the various aspects of sustainability. Today's design students are going to be design entrepreneurs and design leaders of the country. Students who have a good understanding of sustainability will lead the country towards sustainable development.

CONFLICT OF INTERESTS

None.

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None.

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