

The Influence Of Teaching Sustainable Development Goals Sdgs On Applied Arts Students (An Empirical Study)

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Abstract:

After the COVID-19 pandemic, people all around the world felt that we are living in one world and the thing who affects one, affects the other. Then the concentration on the Sustainable development goals SDGs in design, either on a local scale or on an international scale augmented. That is why the author decided during the SDGs week to take action by teaching the design thinking process application through the implementation of Sustainable Development Goals. Kindly check : <https://act4sdgs.org/profile/sarahmaherelhareth>

The chosen students were 54 students at the Higher institute of Applied Arts 5th settlement, Cairo, Egypt. During the period from 25-09-2021 to 09-10-2021. As a summer activity organized by the institute's administration ,lecturers and teacher assistants. The results were 7 group projects considering: education- food industry- entertainment. The common between projects was to achieve as much as possible SDGs and Maslow's hierarchy of needs. The details are shown in the research below.

Keywords: Design thinking- design process - Sustainable development Goals SDGs-Six Thinking Hats- Lateral Thinking.

Introduction :

As the summer activity during 2021 was at Septembre. The author decided to achieve it simultaneously with the act for SDGs week and document it in this paper.

It is a central issue and key instrument in the design field. The paper studied and discussed Sustainable Development Goals SDGs criteria and the effect of teaching SDGs to students and became at the heart of their understanding of design discipline and the effect of teaching SDGs to students.

Methodology:

Data for this study were collected using

1. Descriptive methodology (to describe lecture content, design thinking process, and sustainable development goals)

2. Empirical methodology. (through explaining the design thinking process and sustainable development goals to students and study their effects)

Aims:

To teach students how to apply (at least 3 goals)of Sustainable development goals and (at least 4 needs) of Maslow hierarchy of psychological needs on their designs.

Hypothesis:

- Teaching sustainable development goals to design students will make them choose unusual categories of people to design for (clients)
- Using unusual materials.
- Creating new purposes of design.

Literature review:

SDGs through students' applications.

Before talking about the effect of teaching SDGs to applied arts students, we should show:

- The lecture content they were taught.
- The characters of the sample of students and the survey questions.

The content of the Design Thinking methodology course

- Some types of thinking:
 1. Design Thinking
 - ❖ Discover
 - ❖ Define
 - ❖ Create Ideas
 - ❖ Prototype ideas.
 - ❖ Evaluate.

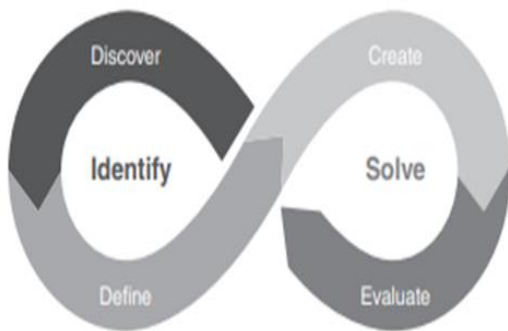


Fig 1, A framework of Design thinking (Luchs et al., 2015)

2. brainstorming

- ❖ The seven-card game, each member of the group writes an idea, and wraps the paper in seven minutes, each of his colleagues adds an idea, the result is 49 ideas in 7 minutes.

3. Six Thinking Hats

- ❖ White Hat, the facts. (information available, missing information)

- ❖ red hat, feelings (wishes and fears about design)
- ❖ yellow hat, optimism (list all potential positives that should be in the design)
- ❖ black hat, pessimism (list all potential negatives and how to avoid them in the design)
- ❖ green hat, innovation (All new and weird ideas related to design, no matter how weird or crazy they are)
- ❖ Blue Hat, Rationalism (summarizing all previous ideas, and deciding what will be implemented from them) (de Bono)

4. SWOT: Strengths - Weaknesses - Opportunities - Threats

5. First Principles Thinking:

- ❖ To disassemble things to its original components and relook, rethink and redesign the components to solve the problem in an unusual way and obtain a new design and using questioning techniques such as the 5 whys. (Kumar, 2022)

- Trend - Mega trend and Global mega trend.
- Sustainable Development Goals



Fig 2, sustainable development goals.

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- Circular economy.

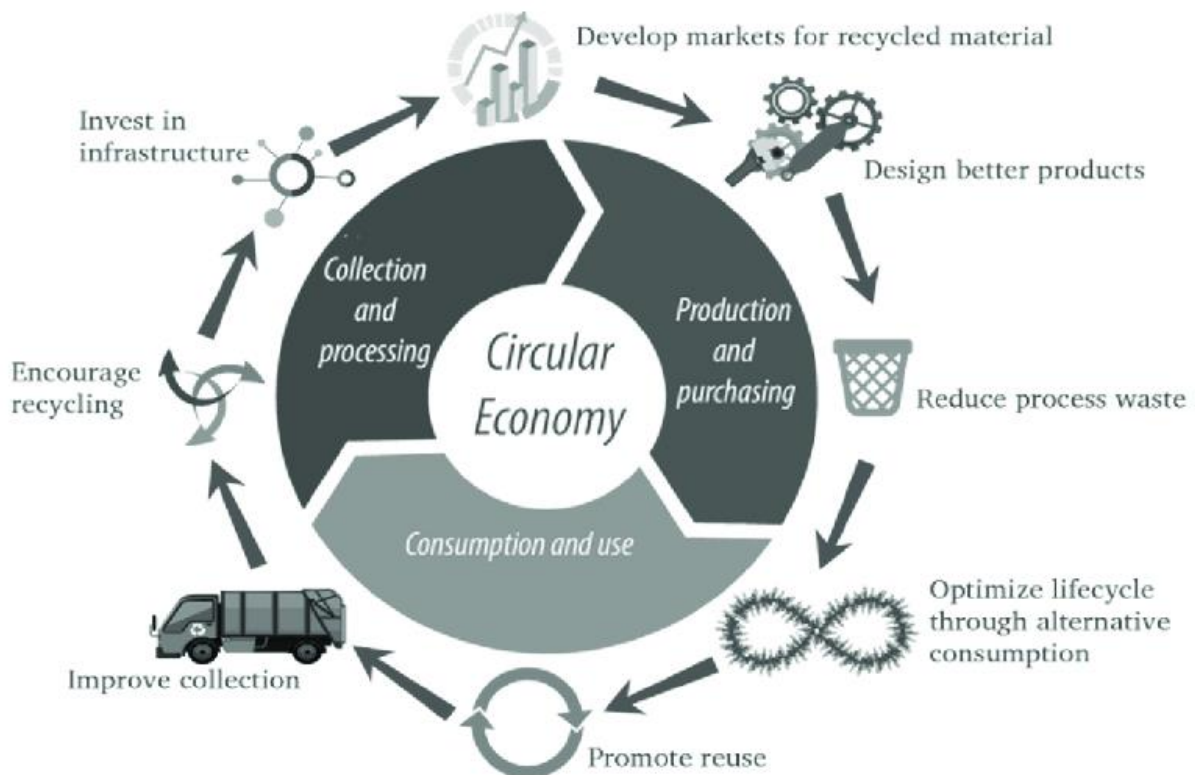


Fig 3, circular economy model.(Barbaritano et al., 2019)

- Maslow's hierarchy of psychological needs.

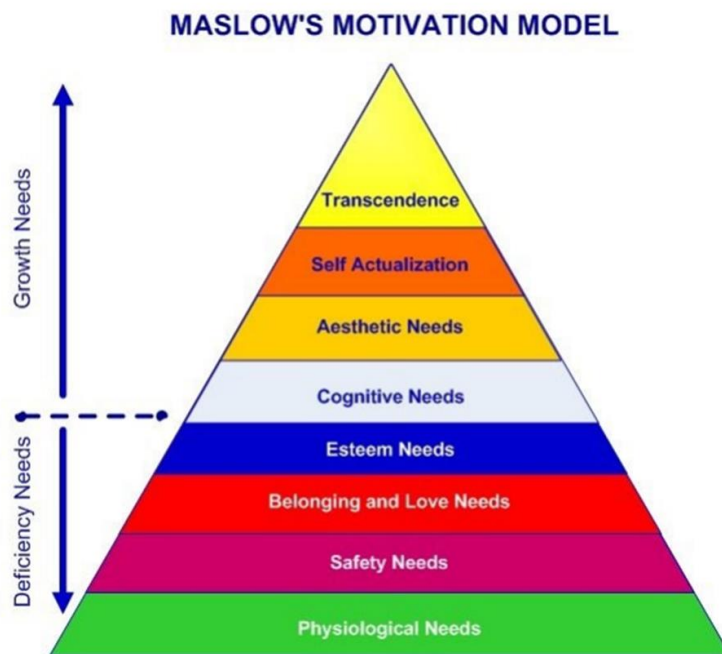


Fig 4, Maslow's motivation model (McLeod, 2018)

Results:

Application Project:

This workshop had a total duration of two weeks, one week for lectures and games, the second was for application. During the period between 25-09-2021 and 09-10-2021. There were seven groups who created seven projects, the author had chosen to show only two projects, as:

1. They achieved the most of Sustainable development goals.
2. They were directly related to education.

The first project:

Social learning school educational table[Kiddie Cloud]

Names of the achievers:

1. Nosiba Samy
2. Renad Abdel-Lateef.
3. Rawan Essam
4. Yomna Mohamed Hesham.
5. Nivine Tarek.
6. Mahmoud Senoussy.
7. Hoda Adel.

The design concept:

To create an educational table for the poorest schools.

- ❖ Cheap and produced from recycled materials.
- ❖ Low weight
- ❖ Easy knock down.
- ❖ Double faced desktop
- ❖ The first face contains one or more game(s) [maze for example]
- ❖ The second is a white glossy face to use as a white board.



Fig 5, The educational table, taken by Nosiba Samy

The achieved goals of SDGs:



Fig 4, the achieved goals in the first project.

Source:

<https://www.un.org/sites/un2.un.org/files/style/s/large-article-image-style-16-9/public/field/image/e-sdgs-poster-768x456.png?itok=8izxypZC>

The achieved needs of Maslow's hierarchy:

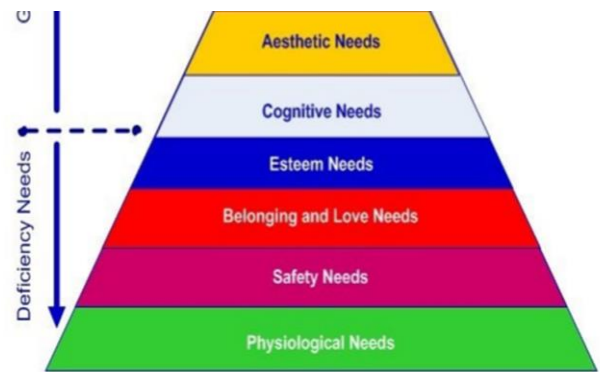


Fig 6, the achieved needs in the first project. (McLeod, 2018)

The Second project:

Learning website [Bareeq]

Names of the achievers:

1. Aalaa Bassam
2. Raghnaa Ashraf
3. Habiba Elwany
4. Abanoub Bassem
5. Ahmed Essam
6. Lina Ayman
7. Amira Ahmed.
8. Radwa AbdElRahman.

The design concept:

To create an educational website for either parents or students or teachers.

- ❖ To create an online learning platform [to be useful during periods like the pandemic]
- ❖ To help parents to track their children's educational path
- ❖ To make children learn through gaming.
- ❖ To save heritage and handcrafts.
- ❖ To develop students, parents and teacher's knowledge.
- ❖ To help either students or parents in the poorest areas to market their handcrafts.
- ❖ To provide handcrafts courses to save the heritage and decrease poverty.



Fig 7, The user interface of the website.

Source:

<https://sites.google.com/view/bareeq/%D8%A7%D9%84%D8%B5%D9%81%D8%AD%D8%A9-%D8%A7%D9%84%D8%B1%D8%A6%D9%8A%D8%B3%D9%8A%D8%A9?authuser=0>

The achieved goals of SDGs:



Fig 8, the achieved goals in the second project.

Source:

<https://www.un.org/sites/un2.un.org/files/style/s/large-article-image-style-16-9/public/field/image/e-sdgs-poster-768x456.png?itok=8izxypZC>

The achieved needs of Maslow’s hierarchy:

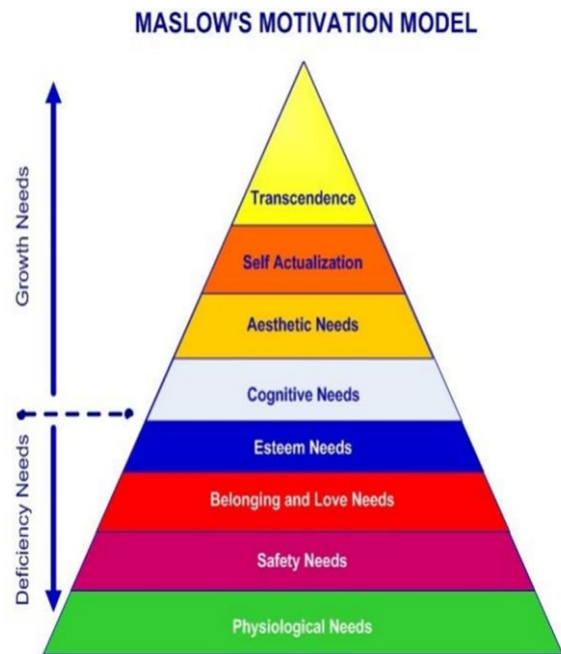


Fig 9, the achieved needs in the first project. (McLeod, 2018)

Conclusion:

1. The empirical study achieved its aims to encourage students to apply the SDGs in their design projects, based on psychological needs.
2. The implementation of SDGs had concentrated on new kinds of users (The poorest schools, the poorest parents). However, most designers used to think about the A and A+ classes.
3. Students created many solutions for local , regional and sometimes international social problems, through :Saving heritage using participatory websites.
4. It is recommended that professors and lecturers focus on teaching design students the psychology basics and motivate them to implement them in their projects.
5. To encourage st to discover new problems and new users, not only making new sketches for new designs.
6. To use the SDGs as a standard to evaluate designs.

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