TOOL 2c - TECHNOLOGY AND ENGINEERING

Narrow focus

MODULAR

This workshop can be used in a modular way; the presentation structure matches the facilitator guide enabling you to mix and match to create bespoke workshops.

TIME DURATION

The workshop is designed to be run over three to five days, depending on the learning outcomes and focus of the course that it is offered within.

AUDIENCE

The suggested audience for this workshop are design, engineering and computer science with previous knowledge and skills from smart textiles, wearables and/or digital manufacturing. The participants should work in groups due to a high focus on problem-based learning, to further enhance their collaborative and communication skills.

RESOURCES

Technology and engineering (narrow focus) presentation

GROUNDING EXERCISE & GROUP FORMATION

Arrange students into their groups/sitting together. You may want to consider a low risk ice breaker activity here to get the groups to feel at ease with one another. For example, two truths and a lie, crack a smile, would you rather, etc. Find more icebreaker activities here.

STAGE ONE: OVERVIEW

1. Introduction
Materials: presentation

1.1 Goal of the workshop
1.2 Introduction to fashion-tech
1.3 Overview of the field
1.4 Definition
1.5 Methodology

2. Analyse
Materials: A2 paper, pens, post-its

The importance and impact of technology and engineering in the development process -
- On the society
- On the economy
- On the environment
3. Define

Materials: paper, pens/pencils

3.1 Act out: use role-play to explore how it might be used and/or interacted with.
3.2 Discuss: ensure each member of the group is given opportunity to contribute
3.3 Map-out: illustrate a 'user journey' for the design idea

4.Share
Materials: timer, student design sheet

4.1 How to work with the technology?
4.2 What areas to explore further?

STAGE TWO: BASIC CONCEPTS

1. Introduction
Materials: presentation

1.1 Basic concepts for smart textiles, wearables and digital manufacturing (definition, evolution, functions, applications)

2. Brainstorm
Materials: paper, pens/pencils

2.1 Challenges and trade-offs
2.2 Overview and examples of typical challenges in the fashion-tech field

3. Analyse
Materials: paper, pens/pencils, internet access

4. Trouble-shooting
Materials: timer, paper, pens, post-its

STAGE THREE: PRACTICAL APPLICATIONS

1. Introduction
Materials: presentation

1.1 Introduce the students to practical applications through existing prototypes so they can experience them

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2. Research
Materials: refer to Tool 2 - Research methods

3. Materials & Equipment

3.1 Introduce the students to the materials and equipment available and encourage them to test and build prototypes based on a timeframe available

4. Testing
4.1 Encourage them to test and build prototypes based on a timeframe available

5. Share
5.1 Ask the students to reflect on their knowledge and skills gained
5.2 Reflect on the goal of the workshop

STAGE FOUR: PROBLEM-BASED LEARNING

1.Introduction
1.1 Present problem-based learning brief(s) to the students (look into Tool 5 – Problem-based learning for example briefs)
1.2 Fashion-tech methodology

2. Reflect
2.1 Reflect on the goal of the workshop
2.2 Reflect on the fashion-tech methodology

3. Plan

STAGE FIVE: FOCUSED RESEARCH
(look into Tool 2 – Research to complement the research activities in this workshop)

1. Overview
Materials: Research Presentation

2. Brainstorm
2.1 Research potential technologies that can be utilised for the concept, so that it can be industrially manufactured
2.2 How will that technology function, what materials, conditions it needs, its requirements?
2.3 What similar technologies already exist?

3. Analyse

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3.1 Is there a need for this technology in this form?
3.2 Can the user meet their needs without this technology or in some other form?

4. Share
4.1 Feedback from facilitator and peers

STAGE SIX: DESIGN DEVELOPMENT

1. Overview
1.1 Sketch (look into Tool 2 – Design to complement the sketching and design activities in this workshop)

2. Assess
2.1 How the choice of technology impacts the aesthetics of the product/concept
2.2 Present current progress to peers
2.3 Questions and feedback from the facilitator and peers

3. Analyse
3.1 Research
3.2 Overcome design issues with further research

4. Define
4.1 Decide technological specification
4.2 Decide on final technologies used to make the product so it can be manufacturing on a larger scale
4.3 Finalise the design of the product based on previous research and choice of technology, keeping in mind the users and what problem it tries to solve

5. Share
5.1 Presentations by groups