

# BROADENING ASSESSMENT CRITERIA AND STUDENT AWARENESS

Julian LINDLEY and Richard ADAMS  
University of Hertfordshire, United Kingdom

## ABSTRACT

We all know the need for society and designers to create a balanced or sustainable future. That is to meet demands of all stakeholders, whether they fall into the economic arena, environmental concerns or a cultural or social need. Just as no two design projects are alike no two projects meet the same sustainable criteria. There are tools and strategies available to designers to both develop and assess 'eco designs' which in themselves are different from the bigger picture of sustainability. However there is a tendency, particularly amongst students, to see main stream commercial design as different from eco-design. This is coupled by governments and the media reducing sustainability to purely material use and climate change. Sustainability is still seen as a 'bolt on' rather than an integral part of design. Every project will have some level of sustainable consequence. There is a need for designers to take responsibility and both understand and control the impact of their work. Moreover design briefs need to be analysed, questioned and agendas prioritised through a sustainable lens. There is a need for a better framework than the traditional Venn diagram to outline what sustainable design is in relation to practical work.

This paper explores ways in which students can contextualise work and understand the implications and aspirations inherent in briefs. Working visually, through a collection of diagrams, they balance the demands of stakeholders and gain an insight into what is both necessary and possible within design projects.

*Keywords: Assessment, sustainability, reflection*

## 1 INTRODUCTION

The driver for the project was an observation that students learn about the three systems of sustainability but rarely get the opportunity to unpick what this means in a holistic sense in relation to the practicalities of individual projects. Conventionally, the three systems are represented by a Venn diagram.

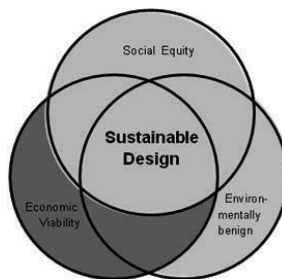


Figure 1. Venn Diagram of Sustainability [1]

*Sustainable Design is environmentally benign, economically viable and socially equitable [1]*

This diagram implies that equal weighting is given to each of the three systems. Although correct in representing the fundamental principles of sustainability, in circumstances, the three systems have differing impacts or values. Consequently, a re-interpretation of the diagram needs to consider a better

mapping of priorities within a design project. This paper outlines proposals to help students understand how their Final Major Projects (FMP) address sustainable issues and as an extension to reflect on the value of their own skills and inputs. While much work both qualitative and quantitative has been done specifically in connection with the ecological evaluation (Lids Wheel, LCA examples can be found in [2]), little has been done to weight the three systems within a single project. This paper is not about setting projects but how to make students aware of feasible sustainable objectives within a particular design project. This is achieved by the use of diagrams to help students reflect on what can be achieved, prior to a design project, and what has been achieved on completion of a design project. It is not always necessary to give equal value for example, to material use and economic value. In association with this observation many designers now acknowledge that to make the necessary ecological adjustments requires not just an analysis of material flows but behaviour or perception chances and these lie within a social or cultural system.

*If sustainability is the most challenging wicked problem of the current era, then participation in design, as a means to effect deep, transformative, socio-political change seems essential [3]*

Product design students are usually good with their understanding of these implications but do not connect them to ecological benefits, nor are they strong in quantitative assessment. Designers and students primarily work intuitively; creatively rather than quantitatively.

The aim of the work was to facilitate a framework for students to reflect and contextualise the consequences of their design propositions.

## **2 OBJECTIVES**

The initial starting point for the investigation concentrated on students reflecting on their FMP, in relation to sustainability. However it quickly became apparent that to achieve this, students also needed to understand their own interests and skills. The objectives were to equip students to:

- Articulate the value of their work.
- Understand how their work addressed sustainable issues.
- Understand what broader issues beyond a design specification had been addressed.
- Reflect on the merits of their personal input and skills.
- Understand economic, ecological and social systems possibilities within design.
- Understand their own skills and contribution within design.
- Create a hierarchy of objectives within a design process.
- Use diagrams to gauge the value and success of a design proposition.

## **3 INITIAL STUDENT INVOLVEMENT**

The intention was to keep the work simple, rather than over complex and word driven. As much of the work within Product Design is qualitative in nature, the aim was to create a framework allowing students to work quickly, intuitively and qualitatively (rather than a quantitative approach). The criteria were that it should:

- Be simple for students to engage with.
- Require a visual approach to displaying information.
- Reflect upon the FMP.
- Make the approach relevant to students own work.

The investigation was conducted with Final Year Product Design Students. As part of the FMP submission students had to complete a project report. In addition to this (the Report was a long standing requirement of the Module) students were asked to reflect and compile four Venn diagrams to include:

Diagram 1: Social-Economic- Ecological

Diagram 2: Narrative-Presentation-Research

Diagram 3: Product-Service-System

Diagram 4: Issues-Lifestyles-Brand

With each diagram, students had to enlarge or shrink the circle to match their perception of what had been achieved. To accompany this they also outlined the key attributes of the project which matched the field's title and justified the weighting which they gave by adjusting the sizes of the fields. The diagrams were first used in the 2010-2011 Academic Year. The idea of using four Venn diagrams rather than single conventional triptych of Sustainability was to expand student's awareness of the

application of product design or design thinking. Solutions to many issues lie beyond the generation of just a physical artifact (Diagrams 1, 3 & 4) but are now considered within the remit of a product designer. This is in line with the observations of many designers including Ann Thorpe who comments on how design can help shift away from excessive consumption patterns.

*In this discussion “social value” generally refers to “wider non-financial impacts of programs, organizations and interventions, including the well-being of individuals and communities, social capital and the environment” [4].*

However she acknowledges that we have not got mechanisms in place to evaluate design responses away from the conventional profit agendas:

*Clearly there are challenges in terms of how we develop metrics at the project scale, topped by the challenge of how projects “add up” at the societal level. Not only are we short of the measurement tools we need, but we also have to avoid traps [5].*

Diagram 2, Narrative-Presentation-Research, (see Fig 2) is included to allow students to consider which aspects of the design methodology have been important to them.

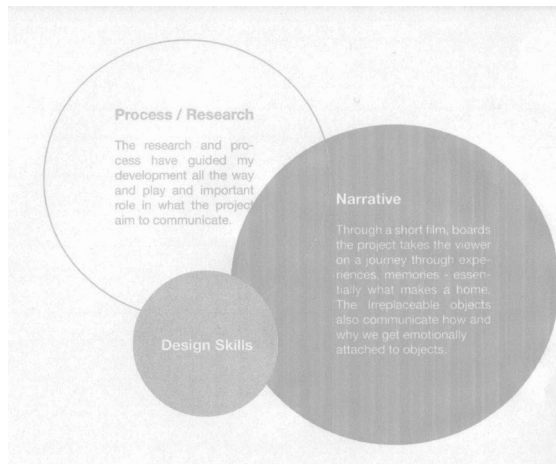


Figure 2. Example of complete Diagram 2 Process-Narrative-Skills Diagram

It is an attempt to move the parameters by which success is measured from a linear gauge, such as market demand or profitability, to a fluid and adaptable approach taking into account a range of stakeholders.

*A stakeholder is any person or organization that will have an effect on, and/or be affected by the design project [6].*

### 3.1 Evaluation

The exercise started as an attempt to qualify the projects from a sustainable viewpoint in a quick, easily accessible and visual format. What is interesting is that not only has this worked but the students supplemented the diagrams with further text to support the new balances and also attempted to explain other aspects of their projects in a similar visual format. This has been successful in that all students responded well with positive comments in feedback. This reflective exercise made students think about their projects in a different way and gave them the confidence to talk about their work from differing perspectives, using the diagrams as references. After two years of use, the question was raised as to whether similar diagrams would be valuable at the outset of the FMP in determining goals and understanding personal objectives and strengths.

## 4 EXPANSION OF PROJECT TO INCLUDE SELF ANALYSIS (PRE DESIGN BRIEF)

After two years of using the diagrams as a reflection tool, it was observed that getting students to rationalise design in this way could have a benefit when beginning a project. As an extension to the project in the 2012-2013 Academic Year, diagrams were used with students prior to deciding on an

appropriate FMP. The FMP is a self initiated project and as such students are advised to pick projects which align with both their skills and interests. Students were tasked to produce a Rationale Document (existing task) which outlined (amongst other requirements) their objectives and career aspirations. Diagrams were included with the purpose of:

- Helping students to think about their personal objectives and skills.
- Help in the selection of an appropriate theme for a project.
- Broadening awareness of design as a problem identification and solving activity rather than a purely a skill.
- Connecting the aspirations within a brief to the outcomes of the design project.
- Aligning skills and interests to project types and feasible outcomes.

In this instance the value of the diagrams was to help students think about and understand where their priorities lay within the broad spectrum of Product Design.

In this first trial four diagram types were used in which students had to qualify their own skills and interests on visual charts.

Diagram 5: Likes/Dislikes Chart

Diagram 6: Skills–issues-object Venn diagram

Diagram 7: Product & Service/System Axis against Skills & Issues axis

Diagram 8: Object Value & Concept Proposition axis against Function & lifestyle/Brand axis

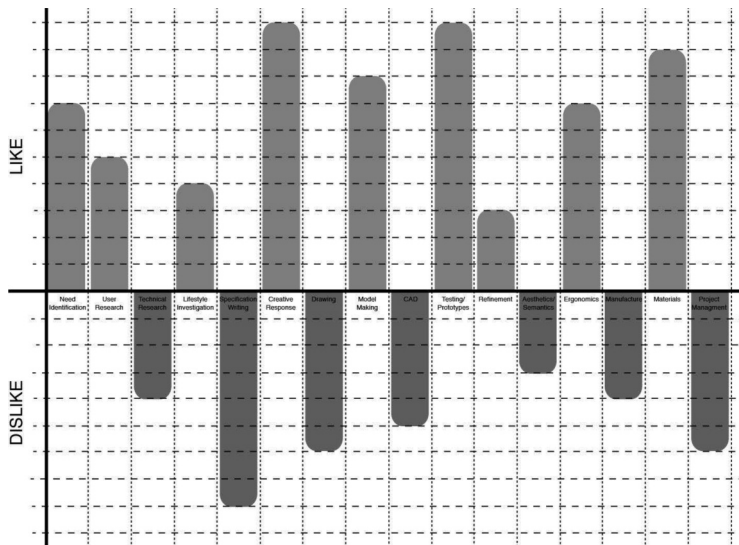


Figure 3. Example of Diagram 5, Like-Dislike Bar Chart

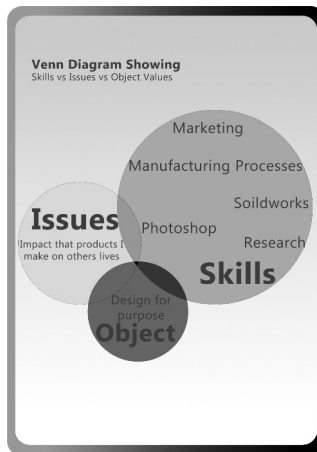


Figure 4. Example of Diagram 6, Skills-Issues-Object Venn Diagram

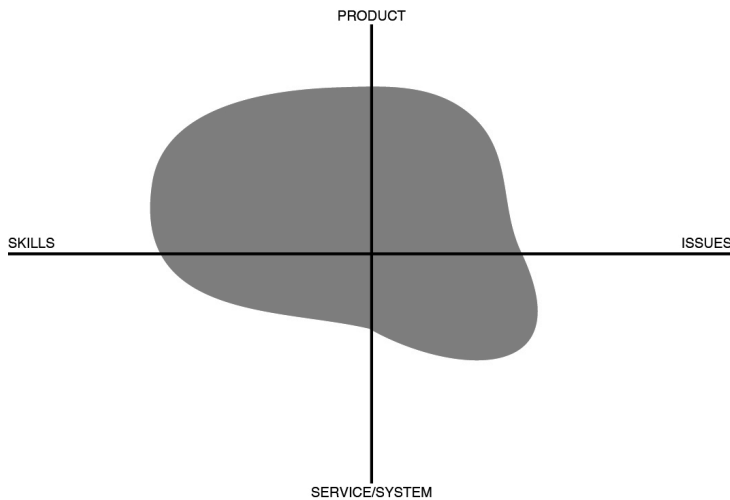


Figure 5. Example of Diagram 7, Product & Service/System Axis against Skills & Issues Axis

#### 4.1 Evaluation

Students were asked to complete a short questionnaire about the use of diagrams. Although qualitative in nature and analysis, it did indicate that some of the ambitions had been achieved. It also highlighted issues which needed either clarification or further analysis. Essentially all students found the diagrams useful in understanding themselves but less so in selecting their FMP.

Table 1. Compilation of Questionnaire Results

<i>Did you find the diagrams useful?</i>	<i>Yes</i>	<i>No</i>
<i>In selecting a Design Brief</i>	9	14
<i>Understanding what you liked about design</i>	21	2
<i>Did you find the diagrams helped you think about :</i>	<i>Yes</i>	<i>No</i>

<i>Your Final Major Project</i>	8	15
<i>Your own interest in design</i>	23	0

This was also reflected in the fact that Diagram 1 was universally liked (only one student did not rate it first on a question ranking the diagrams in order of usefulness). This could be interpreted as either a lack of prior learning which under-pins the contextual diagrams, i.e an understanding of issues within design and a need for a balance between the ‘drivers’ for design. It should be noted that two groups of design students completed the diagrams and different prior learning may have influenced their approach.

## 5 FURTHER WORK

The project is a work in progress. The initial findings and results are encouraging and meet many of the objectives. However, there are aspects of the diagrams use which are less understood by the students. Consequently further work needs to be conducted to improve the connection between practice and reflection. The main thrust for the development is to rationalise the diagrams to:

- Gain consistency and connection between the initial and reflective diagrams.
- Include greater coverage of issues and aspects of design.
- Clarify differences between personal and project objectives (the diagrams are valuable for both).
- Add variety to the types of diagrams used.
- Produce a better method of gathering feedback which can be quantitatively analysed.
- Take prior learning into account prior learning on instruction into the use of diagrams and their evaluation

The work started three years ago with just the reflective diagrams and only this year (Academic Year 2012-3) included diagrams at the start of the Major Project. Each step has assisted in placing work within the sustainability context as well as helping students understand how their skills work within this framework. This understanding should assist graduates finding opportunities within the creative industries. It is also an objective to make young designers realise the contribution they can make to a sustainable future and how to do this appropriately. Another interesting possibility is to use the diagrams to classify the projects in the public exhibitions on graduation. This will give the public an insight into what has been achieved within each FMP.

An interesting spin-off possibility is to use the diagrams across a range of disciplines within the School of Creative Arts to raise awareness of sustainability, taking the sustainable diagrams and utilising them at the end of student projects as part of the self evaluation process within assessment.

## REFERENCES

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