Appendix C: Artefact study – research proposal

Proposal for research workshop: "artefact mini-roundabout"

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Introduction

This paper outlines a one-day workshop for design students which explores methods of generating design ideas using a variety of different media. It takes place within a Technical Roundabout in which students are introduced to new techniques such as working with the lathe, enamelling, colouring and printing on aluminium, and working with plastics.

Research context

The research of which this study is part aims, by re-examining ways in which designers work with physical design representations, to inform the provision of virtual design representations within a digital design environment for 3D design and modelling.

Designer-makers, while producing contemporary design, exhibit a process based around traditional working methods. Although unique to each maker, its characteristic attributes of a highly integrated process, and a dynamic and vital interaction with materials, make it a useful starting point in the search for a new paradigm for digital design environments. Of particular interest is the way many designer-makers employ this dynamic interaction with materials to advance the design idea, including 'doodling', 3D 'sketches', maquettes, models, prototypes etc. This offers a qualitatively different perspective to the design-by-drawing approach. If this sensibility is to be brought to the 3D digital domain, the nature of this interaction with 3D 'artefacts', and its relationship to other elements of the designer's overall process, needs to be understood. The example of the designer-maker indicates that individual designers use different strategies, and that the ability to move back and forth between a variety of 2D and 3D representations, allowing designers to select their own preferred working method, is fundamental to the process.

The research is based on the observation that, while some designers develop their ideas using sketching, others choose to work with three-dimensional materials in the conceptual stages of design, or use a combination of both. Designer-makers interviewed in an earlier study by the researcher exhibited processes ranging from design-then-make, to design-through-make, to make-as-design. It is believed that the use of 2D and 3D techniques may indicate two quite different working strategies, and that to take full advantage of the sensibility of working with materials into digital design systems, these must be investigated more fully.

In this research, the term 'artefact' is used to denote the physical manifestations of the designer's process, including sketches, models, etc. It is used in the sense of physical evidence of that process, but it is recognised that the role of the artefact is not just as a (partial) record of the designer's intent, but as a participant in the process. Recent research into the role of sketching in conceptual design describes the sketch, not only as a form of external memory, but as "a physical setting where design thoughts are constructed on the fly" i.e. designing occurs as the result of the act of creating and working with external artefacts. The term 'artefact' will not only be used to denote those physical representations that the designer creates, but may also include other material external to the designer with which they work.

This research takes as its reference Donald Schön's description of design as "reflective conversation with the materials of a design situation", where "designing is an interaction of making and seeing, doing and discovering". He emphasises, "the designer designs not only with the mind but with the body and senses". His view of each designer creating their own 'design world' stresses the constructive nature of designing: "designers share with all human beings an ability to construct - via perception, appreciation, language and active manipulation - the worlds in which they function". This design world represents each designer's unique appreciation of the design situation: "given a stock of available materials, different designers often select different objects, and even appreciate the "same" objects in different ways, in terms of different meanings, features, elements, reflections and groupings, all of which enter into characteristically different design worlds".

The focus of this research is the relationship between an individual designer and the artefacts that they choose to use in their design process. The types of artefacts a designer uses, and the way they use them, is intimately bound up with their 'chosen' design strategy. One of the main aims of the research is to investigate the use of different strategies; to explore their relation to, for example, a designer's skills, knowledge, preferences, area of work, brief, and intellectual style; and to understand how these manifest themselves. The exploration of differences in strategy is used as a means of highlighting the characteristics of the artefacts that support each strategy, the particular interest in this research being 3D artefacts.

DRAFT : for discussion

The current phase of the research is the development of a suite of observational and empirical studies to address different aspects of this relationship between designer, artefacts and strategy.

Research objectives

This workshop represents an exploratory study, both to observe the ways in three different 'types' of artefact - words, mark making, and materials - are used by participants in the generation of design ideas, and to evaluate the suitability of the methods used to collect the data.

The research objectives of the workshop are therefore:
- to collect information on the variety of ways in which participants use each of the three artefact types to generate ideas
- to identify the particular characteristics of the artefacts which are being used
- to look for differences in approach between participants
- to gain insight into the relative 'success' or otherwise of each method for each participant, with any indications as to why this might be
- to assess the suitability of the methods used to collect the data.

Learning objectives

This workshop takes the stance that if you understand what you are doing and why, if you can gain insight into how you work and learn what works best for you, you can begin to do it better. Each designer is unique, with their own combination of skills, knowledge, intellectual style and preferences. Part of learning to design well is the process of learning how best to communicate with yourself through the artefacts that you create and work with.

The learning objectives are therefore:
- to offer possible alternatives to the sketching/drawing approach for generating design ideas
- to encourage participants to explore a variety of methods other than they might normally use
- to help participants begin to have a better awareness of themselves and the design processes that work for them
- to increase participants' appreciation that, in a sense, design can't be taught, it must be learned.

If appropriate, a short seminar can be given at a later date, describing initial findings from the study.

Data collection

The primary method will be field observations made by the researcher, in conjunction with a photographic record of the workshop, including participants at work, and the artefacts they produce.

In addition, it is proposed to hold a short seminar at the end of the day, to review the work, and discuss the participants' experiences of each method. This will be recorded on audio tape.

A feedback form will be given to each participant at the end of the day, in which they can record their assessment of the workshop.

Consent to participate

Each participant will be asked to sign a short 'informed consent' form which will explain the purpose of the research, what their role will be, and ask for their consent for their work and comments to be recorded for the purposes of research. It will explain how this information will be used, and how their confidentiality will be ensured. It will recognise that while the workshops are included in the academic programme, and that they are expected to participate for this reason, they are free to withdraw permission for their work to be included in the research record at any time. Copies of the signed forms will be provided to the participants.

Workshop format

The aim of the workshop is to provide a series of short, intensive workouts exploring the potential of three different types of artefact - words, mark making, and materials - to act as 'catalysts' in the generation of design ideas.

At the beginning of the day, a brief introduction will be given, outlining the background to the research, the objectives for the day, and the activities which will be undertaken. A short roundup seminar will be held at the end of the day, when participants can review the work, and discuss their experiences of each activity.

The three 'workouts' will follow a common pattern. It is envisaged that each session will have time allotted for trying out techniques, followed by a time when the techniques are used to address a short brief (for guidance only).

MMcL 18 December 2000

DRAFT : for discussion

The first session will explore methods of generating design ideas without reliance on drawing or materials, through the potential of words. It will investigate not only the descriptive and evocative qualities of words, but also their physical properties - sound, shape and rhythm - and their relationship to one another.

The second session will explore the expressive potential of a variety techniques of mark making, including printing and drawing with implements other than conventional pen/pencil etc., and how immediate, responsive, versatile and serendipitous techniques such as these can enhance a designer's creative thinking.

The third session will explore how a "dialogue with materials" might be used in the generation of design ideas. A selection of materials will be provided and participants will be encouraged to consider their role as content, as a means of exploring and investigating ideas, and as a medium.

It is envisaged that the roundup session will include discussion on ways in which these three activities might complement one another.

The proposed timetable for the day is:

9:30	Introduction
9:45	Artefact 1 - words
11:15	(coffee)
11:30	Artefact 2 - mark making
1:00	(lunch)
2:00	Artefact 3 - materials
3:30	(coffee)
4:00	Viewing of work / roundup seminar

Facilities/Materials

The workshop will require a studio space with access to water and electricity supply.

Most of the materials will be supplied, but the participants will be notified in advance of any items which they will need to bring.

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Appendix D: Artefact study - introductory handout

S&J Third Year Technical Roundabout

Artefact "mini-roundabout"

Introduction

Design has been described as "reflective conversation with the materials of a design situation", where "designing is an interaction of making and seeing, doing and discovering" and where "the designer designs not only with the mind but with the body and senses"[1]. In other words, design occurs through the doing of it: as the result of creating and working with external 'artefacts' - sketches, models, notes, experimental 'bits' etc. - which become participants in our designing.

Each designer is different, with a unique set of skills, knowledge, preferences, and working style. It follows that the act of designing is personal - it involves learning how best to communicate with yourself through the artefacts you create and work with. For example, some designers develop their ideas using sketching, while others may choose to work with materials, or use a combination of techniques.

In this workshop we will try out a variety of alternative methods for generating design ideas. The main aim is to explore each method for techniques which may be useful to you, rather than necessarily coming up with great ideas (but if it happens, don't worry!). By reflecting on what you do, you can gain insight into how you work, and learn what works best for you.

Workshop format

This one day workshop consists of short, intensive workouts exploring the potential of three different types of artefact - words, mark making, and materials - to act as 'catalysts' in the generation of design ideas.

Each workout will have time allotted for trying out techniques, followed by a time when the techniques are used to address a short brief (for focus only).

Words During this session we will explore methods of generating design ideas without reliance on drawing or materials, through the potential of words. We will investigate not only the descriptive and evocative qualities of words, but also their physical properties - sound, shape and rhythm.

Mark Making Here we will explore the expressive potential of a variety of techniques of mark making, including printing and drawing with implements other than conventional pen/pencil etc., and how immediate, responsive, versatile and serendipitous techniques such as these can enhance creative thinking.

Materials   Finally, we will explore how a "dialogue with materials" might be used in the generation of design ideas. A selection of materials will be provided and we will consider their role as content, as a means of exploring and investigating ideas, and as a medium.

A short roundup seminar will be held at the end of the day, when we will review the work, and discuss participants' experiences of each activity.

Timetable

9:30	Introduction
9:45	Workout 1 - words
11:15	(coffee)
11:30	Workout 2 - mark making
1:00	(lunch)
2:00	Workout 3 - materials
3:30	(coffee)
4:00	Viewing of work / roundup seminar

What to bring/leave behind

All that you are asked to bring is an open mind and a willingness to explore. Source and working materials for the workshop will be provided on the day, but you are welcome to bring all or any of: your favourite writing implement; a piece of text that you like; a few things that you think might make interesting marks; an object that you find intriguing. I will bring scissors, knives, glue etc., but it's always useful to have more.

Inhibitions should be left behind, as should good clothes...

Mairghread McLundie
January 2001

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[1] Schon, D.A., *Designing as Reflective Conversation with the Materials of a Design Situation.* Research In Engineering Design, 1992. **3**: p. 131-147.

Appendix E: Artefact study - workshop plan

(time)   **Artefact 'Mini-roundabout' - plan**

(15)   Introduction

9:30   Who I am and what I'm doing…

Schon's ideas about designing as reflective conversation with the materials, i.e. we design through creating and working with 'artefacts', the external representations e.g. sketches, models, that designers use - in a sense what's left behind after the designer's gone, but they're active participants in the process, not just a record of what we do. We see more than we intended in what we do, and so move on.

Each designer is different - different skills, interests, working style. Findings from previous designers I looked at - design-then-make, design-through-make, make-as-design. How we design is personal - so it follows that we must find out how best to 'converse' with ourselves through the artefacts we create and work with.

Worthwhile trying different approaches, to see what's good for you - also good to have different techniques available, to unjam your brain!

Explain about consent form, and ask students to sign

Prompts:
- don't feel restricted to working as you normally would - break out and try new things
- you've looked at brainstorming with Jack - this workshop is also about helping ideas flow, by exploring different ways of working
- this workshop is about communicating with yourself to generate ideas, not producing things to present ideas to other people
- I can suggest some techniques, but try other things - see what works for you!

(90)   Words

9:45   Introduction
- words are powerful, and can be seductive - they can be used to illuminate, or make things obscure - they can be practical, playful, spiritual, hurtful, harmful, healing... - you can conjure with them and play with them
- a picture may be worth a thousand words, but the reverse can be true, too - think of the experience of reading a book then seeing the film
- words can be symbols, signs - they can encapsulate a whole set of associations
- words are not only descriptive and evocative, but also have physical properties - sound, shape, rhythm - think of handwriting - very personal, and can indicate mood
- words are not just groups of letters - when we write we express things by emphasizing e.g. underlining - idea of using 'emoticons', e.g. smiley faces, in e-mails

Prompts:
- build up a sensory/emotional image of the thing, and how you feel about it
- explore not only the descriptive and evocative qualities of words, but also their physical qualities - shape, sound, rhythm
- try different pens, sizes, writing styles - play with the words, their place on the page, their grouping
- your original words may suggest other words - could build up a network of associations
- work quickly to capture first impressions

Please respond using words to:
9:50   · an object that interests you
10:05   · an experience - eating a cake/cakes or fruit
10:20   · a person or animal that is significant to you
10:35   · a piece of text from the sheets provided

10:50   Using only words, generate design ideas for an object to be worn to celebrate a special personality (i.e. human, animal), place or event in your life. (You can use words both to generate ideas, and to represent the actual piece)

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(90)   Mark Making

11:30   Introduction
- I spent some time in EWT before moving to S&J - they have some different approaches to drawing, and that was where I learned about mark-making
- in S&J, the emphasis in drawing can be on line and form, so sometimes it's useful to try different techniques - mark making is often used to explore surface and texture, but not only useful for that
- it can be a very expressive, quick and responsive way of working
- can use it for representing objects, generating visual images, capturing feelings & impressions, looking at textures, etc.
- having less control, or a different level of control can free you up - it helps me when I get stuck sometimes. Also, marks can be interpreted in different ways, which is useful

Prompts

11:35   Explore a variety of techniques to make marks

Please respond using marks to:
11:55 · an object - suggest using a number of different techniques
12:10 · an object that you can touch / smell, but not see
12:25 · a piece of text / words from earlier workout

12:40   Using only marks, generate design ideas for an object to be worn [if you like, to celebrate a special personality (i.e. human, animal), place or event in your life]. (You can use marks both to generate ideas, and to represent the actual piece)

(90)   Materials

2:00   Introduction
- designers use materials in a wide variety of ways: as 'content', to explore ideas, and as a medium
- benefits include: it's there in front of you to work with; it responds to what you do, not always in the way you expect; you can see the object in 3D in front of you; can use your hands and making skills to work with it…
- one designer's idea of a "living sketchbook"
- in my own experience, ideas often came to me when I was messing about with bits of stuff - especially useful if I wasn't having much joy with sketching, or couldn't get ideas out
- example of 'artefact' box: developed through a series of card 'sketches'; don't think I would have come up with that idea through drawing alone; but, is very dependent on the fact that I made it in card

Prompts

2:05   Exploring a variety of techniques and types of material, make some objects that appeal to you

Please respond using materials to:
2:25 · an object
2:40 · a piece of text / words from earlier workout
2:55 · one of your mark-making outcomes

3:10   Using only materials, generate design ideas for an object to be worn [if you like, to celebrate a special personality (i.e. human, animal), place or event in your life]. (You can use materials both to generate ideas, and to represent the actual piece)

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Appendix F: Artefact study - workshop exercises

This table lists the time allowed for each exercise in each of the four workshops (for workshops 2 to 4, specific times were allocated; these are indicated in column 2, with the actual times taken in each workshop in columns 3 to 5).

Artefact 'Mini-roundabout' – workshop outline	W/s 1 (mins)	w/s 2-4 times	W/s 2 (mins)	W/s 3 (mins)	W/s 4 (mins)
Words					
Please respond using words to:					
· an object that interests you	20	**15**	12	15	18
· an experience - eating a cake/cakes or fruit	15	**15**	11	15	15
· a person or animal that is significant to you	10	**15**	19	15	15
· a piece of text from the sheets provided	13	**15**	12	15	15
Using only words, generate design ideas for an object to be worn to celebrate a special personality (i.e. human, animal), place or event in your life. (You can use words both to generate ideas, and to represent the actual piece)	17	**25**	23	25	20
Mark Making					
Explore a variety of techniques to make marks	30	**20**	17	20	25
Please respond using marks to:					
· an object - suggest using a number of different techniques	20	**15**	15	15	15
· an object that you can touch, but not see	n/a	**15**	13	15	13
· a piece of text / words from earlier workout	12	**15**	15	14	12
Using only marks, generate design ideas for an object to be worn [if you like, to celebrate a special personality (i.e. human, animal), place or event in your life]. (You can use marks both to generate ideas, and to represent the actual piece)	23	**20**	20	16	20
Materials					
Exploring a variety of techniques and types of material, make some objects that appeal to you	30	**20**	22	23	20
Please respond using materials to:					
· an object	15	**15**	15	14	14
· a piece of text / words from earlier workout	10	**15**	14	14	11
· one of your mark-making outcomes	10	**15**	10	14	10
Using only materials, generate design ideas for an object to be worn [if you like, to celebrate a special personality (i.e. human, animal), place or event in your life]. (You can use materials both to generate ideas, and to represent the actual piece)	15	**20**	20	20	15

Appendix G: Artefact study - excerpts from texts

Willows whiten, aspens quiver,
Little breezes dusk and shiver
Through the wave that runs for ever
By the island in the river
      Flowing down to Camelot.
Four grey walls, and four grey towers,
Overlook a space of flowers,
And the silent isle imbowers
      The Lady of Shalott

      From **The Lady of Shalott**, Tennyson

Had I the heavens' embroidered cloths,
Enwrought with golden and silver light,
The blue and the dim and the dark cloths
of night and light and the half light,
I would spread the cloths under your feet:
But I, being poor, have only my dreams;
I have spread my dreams under your feet;
Tread softly because you tread on my dreams.

      He Wishes for the Cloths of Heaven, W.B. Yeats

Our revels now are ended. These our actors,
As I foretold you, were all spirits and
Are melted into air, into thin air:
And, like the baseless fabric of this vision,
The cloud-capp'd towers, the gorgeous palaces,
The solemn temples, the great globe itself,
Yea, all of which it inherit, shall dissolve
And, like this insubstantial pageant faded,
Leave not a rack behind. We are such stuff
As dreams are made on, and our little life
Is rounded with a sleep.

      From **The Tempest,** William Shakespeare

I have a vision of the Songlines stretching across the
continents and ages; that wherever men have trodden they
have left a trail of song; and that these trails must reach back, in
time and space, to an isolated pocket in the African savannah,
were the First man shouted the opening stanza of the World
Song, "I am!"

      Bruce Chatwin, from **The Songlines**

Waterbarge

Your voice.
It makes a space I can step into
where there is room for me.
It is a journey which holds me,
like the arms of trees.
They bend, they shift slightly
with the weight, they rock
a little, to accommodate
the fingertips, pressing space
to mould the shapes of words.
When I heard your voice
I knew it was a boat
I could step into; there was
space for me to stretch
my limbs and words; not sink,
but float, on this slow
and gentle barge.

      Morelle Smith

Lying on the Earth

The way the wind
fits the grass it blows across
my body
fits this earth. I lay my long
length down its slope. The grass
contains the sweetness
of the last rain, and below this
the odor of
humus - roots stems leaves blossoms
transforming themselves, going
all the way
down
to where the Cretaceous
keeps the imprint of the first
flowers. At my back
the stars,
my coordinates. I have found
my position, and tonight my hand
has the milky stench
of a cradle. I have
never been happier than I am
at this moment, held in this
lap, somewhere
between the first and final thought.

      Marilyn Krysl

Winter Solstice

While others go gathering
Christmas trees
I bring dead-of-winter flowers
to a black vase
on this snow-white table.

They were golden rod
but the stalks are brown
and brittle, with paler sprays
of minute pompoms
furred for frosty nights

and tansy, with crisp curls
of charred leaves
and shelf-like seeds
packed on boot-button heads
matt and dark as ash buds.

The longest night descends
and winter-sized spiders
trickle from their flimsy canopy
like falling stars
but dark, on brightness

      Valerie Thornton

Appendix H: Artefact study - categories of difference

1. **words**
   Comments:
   Please note that comments that are exercise- or section-specific will be found in the analysis tree in a 'Comments' space under the appropriate 'main' space

   1.1 variations in response
   Comments:
   By this I mean variations between one student's responses to the different exercises, e.g. if there was a noticeable difference in the way they tackled a particular exercise, or if they found one exercise in the section particularly difficult.

     1.1.1 approach
       variations in approach
     1.1.2 difficulty/ease
       1.1.2.1 difficulty/uncomfortable
         changes in response due to difficulty or feeling uncomfortable
       1.1.2.2 ease/comfort
         changes in response due to ease or feeling comfortable

   1.2 'content' of words wrt source
     1.2.1 generative
     1.2.2 responsive
     Comments:
     For example, the person's emotional response to the source - things about them, rather than things about it. (Maybe not the best way of putting it! - but referring to internal things rather than external
     1.2.3 descriptive
       1.2.3.1 evocative
       1.2.3.2 functional
       1.2.3.3 associative

   1.3 'concrete'
     1.3.1 sound/rhythm
     1.3.2 visual
     1.3.3 words as 'material'

   1.4 placement of words
     1.4.1 organisational
     1.4.2 visual/pictorial
     1.4.3 'structural'

   1.5 role of materials
   Comments:
   This category has to do with the extent to which the materials used are in the 'background' or the 'foreground' of the piece
     1.5.1 incidental
     Comments:
     In the sense that the materials do not play any particular role in the finished piece, other than as a 'background' for the words, in a sense.
     1.5.2 visual
     1.5.3 evocative?
     Comments:
     By this I mean like where one of the students had chosen the materials because they were like the source object, and said that in some ways her words were responding more to the materials than the object itself. Would 'substitute' be a better way of putting it? Am trying to distinguish between where people used the materials because it has attributes of the source object, and where it has other symbolism, e.g. using red paper for 'love', or blue material because blue has good associations
     1.5.4 emphasis
     Comments:
     Could be materials added, or modified e.g. where the paper has been torn, or otherwise 'worked on'
     1.5.5 symbolic
     Comments:
     For example, red material chosen for its associations with Valentines Day
     1.5.6 integral to piece

   1.6 types of 'writing'
     1.6.1 single words
     1.6.2 short phrases
     1.6.3 narrative
     Comments:
     Might be 'finished' narrative, or like longer phrases, sort of 'stream of consciousness' thing

   1.7 embellishment of words
     1.7.1 colour
       1.7.1.1 categorisation
       Comments:
       For example, where different colours are used to distinguish between different groups of words - could also be linked to association e.g. emotion, but in this case it is more to do with 'straight' use of colour
       1.7.1.2 association
       Comments:
       For example, the use of purple to suggest emotion
     1.7.2 emphasis
     1.7.3 visually expressive
     1.7.4 symbols

   1.8 comments about using
     1.8.1 positive
     Positive comments about using words…
     1.8.2 negative
     Negative comments about using words…
     1.8.3 general
     General comments about using words…
     1.8.4 familiarity
       1.8.4.1 familiar
       Comments about familiarity with using words… familiar techniques
       1.8.4.2 non-familiar
       Comments about being unfamiliar with using words… unfamiliarity

2.

markmaking

2.1 variations in response
2.1.1 approach
2.1.2 difficulty/ease
2.1.2.1 difficulty/uncomfortable
changes in response due to difficulty or feeling uncomfortable
2.1.2.2 ease/comfortable
changes in response due to ease or feeling comfortable

2.2 'content' of marks
Comments:
To do with what people are responding to in the source material
2.2.1 generative
2.2.2 responsive
2.2.3 descriptive
2.2.3.1 visual
2.2.3.2 evocative
2.2.3.3 associative

2.3 (words category – 'concrete')
2.4 (words category – 'placement of words')
2.5 role of materials
2.5.1 incidental
2.5.2 visual
2.5.3 evocative
Comments:
Am trying to distinguish between where people used the materials because it has attributes of the source object, and where it has other symbolism, e.g. using blue material because blue has good associations
2.5.4 symbolic
2.5.5 integral to piece

2.6 types of marks
2.6.1 linear
2.6.2 patterns
2.6.3 textures

2.7 (words category – 'embellishment of words')
2.8 comments about using
2.8.1 positive
Positive comments about using markmaking…
2.8.2 negative
Negative comments about using markmaking…
2.8.3 general
General comments about using markmaking…
2.8.4 familiarity
2.8.4.1 familiar
2.8.4.2 non-familiar

2.9 representational extent
Comments:
Whereas 'content of marks' takes to do with what people are responding to in the source, this is concerned with the extent to which the marks used are literal or abstract, illustrative or evocative.
For example, in some student's exercises, the response is almost like traditional representational drawing, or design drawing
2.9.1 illustrative (like drawing)
2.9.2 convey/evoke
2.9.3 associative
2.9.4 symbolic
2.9.5 marks
2.9.6 abstract
2.9.7 literal

2.10 adaptation of marks
2.10.1 use as exist
2.10.2 calligraphic

2.11 use of colour
2.11.1 representational
2.11.2 symbolic
2.11.3 aesthetic
2.11.4 other

2.12 techniques
2.12.1 printing, dragging, rolling
2.12.2 drawing/painting
2.12.3 unusual use of 'traditional' tools
2.12.4 unusual tools
2.12.5 unusual methods

2.13 marks
2.13.1 single
2.13.2 combination

2.14 use of media
2.14.1 'traditional'
2.14.2 unusual
2.14.3 visual
2.14.4 material
Comments:
By this I mean that media were used e.g. for their 'shininess' in response to the shininess of the source object

2.15 control v. chance
2.16 'explorations'
2.16.1 single
2.16.2 multiple

3. **materials**

3.1 variations in response
3.1.1 approach
3.1.2 difficulty/ease
3.1.2.1 difficulty/uncomfortable
3.1.2.2 ease/comfortable

3.2 characteristics responded to
Comments:
The characteristics in the source object that are being responded to.
But remember that source objects can be text, objects, markmaking...
3.2.1 shape
3.2.2 form
3.2.3 structure
3.2.4 texture/tactile
3.2.5 function
3.2.6 colour
3.2.7 literal
3.2.8 abstract
3.2.9 associative
3.2.10 responsive
3.2.11 evocative
3.2.12 visual
3.2.13 material
3.2.14 physical

3.3 (words category – 'concrete')
3.4 (words category – 'placement of words')
3.5 (words and markmaking categories – 'role of materials')
3.6 (words and markmaking categories – 'types of …')
3.7 (words category – 'embellishment of words')

3.8 comments about using
3.8.1 positive
Positive comments about using materials...
3.8.2 negative
Negative comments about using materials...
3.8.3 general
General comments about using materials...
3.8.4 familiar
3.8.4.1 familiar
Comments about familiarity with using materials...
familiar techniques
3.8.4.2 non-familiar
Comments about being unfamiliar with using materials...

3.9 representational extent
3.9.1 illustrative (like a model)
3.9.2 associative
3.9.3 convey/evoke
3.9.4 symbolic
3.9.5 metaphorical
3.9.6 abstract
3.9.7 literal
3.9.8 3D interpretation

3.10 adaptation of materials
3.10.1 used 'as is'
3.10.2 tailored to suit

3.11 techniques
3.11.1 penetration
3.11.2 joining
3.11.3 threading
3.11.4 colouring
3.11.5 applying
3.11.6 carving/breaking
3.11.7 scoring/cutting
3.11.8 burning
3.11.9 wrapping
3.11.10 knotting
3.11.11 tying
3.11.12 enclosing
3.11.13 stuffing/padding
3.11.14 binding/sewing
3.11.15 gluing

3.12 control/opportunism
3.13 use of colour
3.13.1 inherent in material
3.13.2 applied
3.13.3 representational
3.13.4 symbolic
3.13.5 aesthetic

3.14 creation of object
3.14.1 assembly
3.14.2 construction
3.14.3 modelling/addition
3.14.4 'taking away'

3.15 use of text or symbols
3.16 extent response due to materials
Comments:
By this I mean the extent to which the artefact created responds to the source object in question, and how much is due to the creative 'content' of the materials themselves.

3.17 main feature of artefact
3.17.1 functional
3.17.2 recognisable thing
Comments:
e.g. 'sock puppet' or 'doll'
3.17.3 symbolic
3.17.4 aesthetic
3.17.5 visual
3.17.6 structural
3.17.7 form
3.17.8 evocative
3.17.9 technique
3.17.10 material

3.18 driver
3.18.1 idea
3.18.2 material
3.18.2.1 associative
Comments:
Thinking about materials making student think of Independence Day spaceship, and so building idea around that.

3.19 design objects
3.19.1 object as 'design'
3.19.2 object as 'finished piece'

3.20 choice of material
3.20.1 associative
3.20.2 preference
Comments:
Where someone says they chose a material because they like circles, or liked the paper
3.20.3 material/functional
3.20.4 visual/aesthetic
3.20.5 evocative
3.20.6 symbolic

3.21 links to previous artefacts
Comment:
Perhaps this should go into the actual exercise sections...
3.21.1 techniques
3.21.2 materials
3.21.3 artefacts
3.21.4 visual
3.21.5 ideas
3.21.6 consistency throughout
Comments:
...of technique, style, materials

3.22 aspects of materials used
Comments:
What aspects of the materials are being used in the creation of the artefact (linked to 'characteristics responded to', 'extent response due to materials', 'main feature of artefact created' and 'response')
3.22.1 colour
3.22.2 texture
3.22.3 physical
3.22.4 unconventional
Comments:
e.g. the use of glue to create texture
3.22.5 form
3.22.6 structure
3.22.7 visual
3.22.8 material
3.22.9 symbolic
3.22.10 associative
3.22.11 evocative

4. approach to source
   Comments:
   This section is to do with how the person responded to the source.
   For example, in the 'text' exercise in the worlds section, some people 'dissected' the poems in a sense, going through them line by line, and seeing what their associations were. Other people dealt much more with how it made them feel, and that was the emphasis of their response.
   This is probably linked to the section dealing with the 'content' of the words, for example
   4.1 subjective
      Comments:
      By this I mean that the person's response concerned their feelings about the poem, rather than necessarily the 'surface' content of the poem itself.
      Similar in the markmaking, where the response was to qualities other than the visual or tactile?
   4.2 objective
      Comments:
      By this I mean that the person's response concerned the 'subject matter' of the poem itself

5. preferences
   5.1 words
   5.2 markmaking
   5.3 materials
   5.4 none

6. visualisation
   6.1 'internal'
   6.2 'external'

7. links to design
   Comments:
   By this I mean things that people said about their normal design processes, also how their approach to the exercises in this workshop related or didn't relate to their normal design processes.
   7.1 general comments
   7.2 similar
   7.3 different

8. differences in 'media'
   Comments:
   By this I mean the type of comments like using words is much more explicit that drawing, type thing