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Experiential learning in 3D Technologies:
A presentation of reflective student narratives

University funded teaching & learning research project. Part 1:
Research Teaching Nexus:


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taylor2@hud.ac.uk

Senior Lecturer
Fashion & Textiles
School of Art, Design & Architecture
University Of Huddersfield
ABSTRACT:

The focus is to present the final phase of a University teaching and learning funded research project.

‘Experiential learning of 3D digital technologies: A presentation of reflective student narratives.’

The aim of the session is to share my experiences of doing practitioner research in art and design education and the importance of being open to the emergence of being and things.

A research practitioner approach is introduced through which to explore the value of 3D digital technologies for Textiles/Surface Art & Design courses.

This collection of research data presents recorded phenomena about how a small group of final year BA (Hons) Surface Design with Fashion & Interior students, experienced beginning new directions in practice using 3D technologies for the first time.

A student-focused collection of documented data: video narrative, virtual and physical learning materials, artefacts, prototypes, and experiences have been gathered through a series of workshops and exhibitions and will be presented and reflected upon during the session.
Shereen Ahmed: BA(Hons) Surface Design with Fashion & Interiors graduate 2011.

What product development technologies are coming in the future?

What's the future of rapid prototyping and 3D printing?
Research questions to be explored during the T&L project are:

• What value can 3D CG software and hardware add to conventional/traditional methods of Fashion, Textiles, Surface Design and what evidence exists to support their use in concept and production of the future?

• What pedagogies and approaches are needed to make the use of 3D technologies most effective in practice and what evidence exists to support such approaches in Art & Design practice?

• What innovative learning methods or tools can be developed to support the effective, engaging and transformative application of 3D Technologies in Fashion & Textiles and the School of ADA?
EXPLORE
EXPERIENCE
EMERGENCE
EXHIBIT
EXPLORE
EXPERIENCE
EMERGENCE
EXHIBIT
Exploratory phase photographic data recorded of BA (Hons) Textile Design, Surface Design & Textile Craft student’s art and design practice and examples of close by contextual and conceptual references displayed in and around the Textiles subject area studios.
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<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Ramsden Workshop RW1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-4</td>
<td>learning 4-5: reflective</td>
<td>T1 CAD</td>
<td>T1 CAD</td>
<td>T1 CAD</td>
<td>7/8/9 Feb.</td>
</tr>
<tr>
<td>2.00 - 2.15</td>
<td>Briefing on 3D workshop for 3D /Tutorials</td>
<td>3D demo</td>
<td>3D sample development</td>
<td>3D RP print files - samples(RW) RW workshop</td>
<td></td>
</tr>
<tr>
<td>2.15 - 3.00</td>
<td>3D demo /Tutorials</td>
<td>3D demo</td>
<td>3D sample development</td>
<td>3D RP print files - samples(RW) RW workshop</td>
<td></td>
</tr>
<tr>
<td>3.10 - 4.00</td>
<td>3D demo /Tutorials</td>
<td>3D Sample development</td>
<td>3D Sample</td>
<td>3D RP print files - samples(RW) RW workshop</td>
<td></td>
</tr>
<tr>
<td>4.00 - 5.00</td>
<td>Record/reflect on Learning and 3D practice/material</td>
<td>Record/reflect on Learning and 3D practice/material</td>
<td>Record/reflect on Learning and 3D practice/material</td>
<td>3D RP print files - samples(RW)</td>
<td></td>
</tr>
<tr>
<td>WEEK 1-3 2hours max:</td>
<td>Individual 3D learning development</td>
<td>Individual 3D learning development</td>
<td>Individual 3D learning development</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Your 3D thinking notes and ideas, sketches etc. are essential research data which will be gathered with your consent for use at the 3D show and future research publication.
- Please bring a dedicated notebook for recording your 3D thinking notes and ideas, sketches etc..
- Please bring concept sketches and 3D reference images of sample ideas to workshop. These reflective notebooks will support your Individual 3D learning development time in week 1-3.
- Please bring your headphones to each CAD workshop as you will need to listen to video learning tutorials in week 1-3. Check (before Friday) that your headphones fit into IMAC sockets in T1 CAD.
Andrew has invited you to contribute to the blog

Extraordinary-3D-Materials Testing Station
http://extraordinary-3d-materials.blogspot.com/

To join this blog as an author, accept the invitation by signing in with your Google Account below.

Do you not have a Google Account? Create your account now

Username (Email) 
Required field must not be blank

Password 
Required field must not be blank

Remember Me? 
This is not recommended for shared computers!

ACCEPT INVITATION
DATA COLLECTION SPACE:

STUDENT AUTHORED RESEARCH BLOG

http://extraordinary-3d-materials.blogspot.co.uk/
Vicky Kelly BA(Hons) Surface Design with Fashion & Interiors graduate 2011.

http://surfacedesigner.wix.com/victoriakelly
http://www.surfacedesignshow.com/
Sinead McGreevy: BA(Hons) Surface Design with Fashion & Interiors graduate 2011.

As part of a research within the university I learnt how to use 3Ds Max to create a Rapid Prototype exhibited at the Surface Design Show '11. Please click this text to access the blog associated with this project.
Really inspired by the work of Keith Tyson called ‘Fractal Dice’, Tyson’s forms and shape would seem to lend themselves brilliantly to 3ds Maxx.

Pixel Nation: Design concept 3
Michelle Tickle: BA(Hons) Surface Design with Fashion & Interiors graduate 2011.
Michelle Tickle: BA(Hons) Surface Design with Fashion & Interiors graduate 2011.

Isobel Smith - BA(Hons) Surface Design with Fashion & Interiors graduate 2012. Laser cut acrylic geometric sculpture for the body: Exhibited at Surface Design Show 2011 and Graduate showcase 2011, School of Art, Design & Architecture, University Of Huddersfield.
http://izzymeister.wix.com/surface-designer#!bio
Isobel Smith - BA(Hons) Surface Design with Fashion & Interiors graduate 2012. Laser cut acrylic geometric sculpture for the body:
Exhibited at Surface Design Show 2011 and Graduate showcase 2011, School of Art, Design & Architecture, University Of Huddersfield.
http://izzymeister.wix.com/surface-designer#!bio
Danielle Riley: BA(Hons) Surface Design with Fashion & Interiors graduate 2012.


THE PROCESS

FINISHED FABRICS
DIGITAL PRINTING
TESTING
PHOTOSHOP
MUDBOX
3DS MAX
POLYMORPH
HAND MODELING
Danielle Riley: BA(Hons) Surface Design with Fashion & Interiors graduate 2012.

3D concept modelling - digital sculpture software & digital 3d print design repeat for Interior & Fashion: Exhibited at Graduate showcase School of Art, Design & Architecture, University Of Huddersfield.

www.wix.com/danielriley1/engineered-vision
EXPLORING
EXPERIENCING
EMERGENCE
EXHIBIT
University of Huddersfield BA(Hons) Surface Design for Fashion & Interiors stand at *Surface Design Show 2011*: Exhibiting the Extra-ordinary Materials Testing Station
University of Huddersfield BA(Hons) Surface Design for Fashion & Interiors stand at Surface Design Show 2011: Exhibiting the Extra-ordinary Materials Testing Station
University of Huddersfield BA(Hons) Surface Design for Fashion & Interiors stand at Surface Design Show 2011: 3D Material Prototypes exhibited on LED light sheet.

http://www.ledlightsheet.co.uk/  http://extraordinary-3d-materials.blogspot.co.uk/
Material research criteria:

Isobel Smith - BA(Hons) Surface Design with Fashion & Interiors graduate 2012.
Laser cut acrylic geometric sculpture for the body:
Exhibited at Surface Design Show 2011 and Graduate showcase 2011, School of Art, Design & Architecture, University Of Huddersfield. http://izzymeister.wix.com/surface-designer#bio

- **Prototype Dimensions:**
  - 120 x 120 x 25mm

- **Material:**
  - 3D Rapid Prototyping, ABS

- **Key Features:**
  - Inspiration from the designer Hussein Chalayan and Origami structures
  - Tools used in 3DS MAX – *Shapes-Pyramid, Array, spacing, bend, twist*

- **Research References:**

- **Typical Application:**
  - Fashion- extreme body piece, either used as a shoulder piece or an oversized broach. Inspired by origami and radical 3D designers such as Gareth Pugh and Hussein Chalayan.
Research practitioner material artefact: 3D modelling and Rapid Prototype by Researcher. Andrew Taylor.
Shereen Ahmed: BA[Hons] Surface Design with fashion & Interiors graduate 2011.
Exhibited at School of Art Design & Architecture, Graduate Exhibition, June 2011, @ University of Huddersfield,
http://shereenahmed.wix.com/mainpage http://extraordinary-3d-materials.blogspot.co.uk/
3D Materials Concepts & Visual Research Methodology:

A selected collection of BA(Hons) Surface Design student’s 3D material samples, products, & reflective practitioner research experiences.

Exhibited at
‘Living in a Material World’ - Researcher’s Night, 2011 @ University of Huddersfield, UK.
PART 2: University T&L Learning funded research project.

‘Experiencing 3D digital concepts, design and pattern construction’
A. Taylor, Dr. E.Unver, Barry Armstrong, Daniel Hughes, Argyroulla Argyrou, Geoff Ward, Alison Agnew

Abstract
The research paper documents the creative potential and integrated methods developed through using 3D digital sculpting, modelling and pattern design software for both Costume and Fashion design practitioners. This collaborative research was generated by 3D digital design researchers and educational industry technologists and attempts to explore and extend conceptual thinking and practice at the boundaries of Fashion and Costume.

The paper presents a series of experiential trans-disciplinary practice based experiments that record the approaches of the researcher’s experiences using 3D software to explore and test digital drawing tools, to draft and cut 2D or 3D patterns from digitally sculpted materials and bodies. This paper also contributes to industry methodologies; developing new methods for extracting accurate 2D patterns from 3D digital sculpted objects in collaboration with Assyst Bullmer using 3D pattern design software provided by Optitex.
This final slide is to say a big thank you for being interested in the research, and for insight, demos, support, photography, encouragement and being there:

TALI (University of Huddersfield Teaching & Learning Institute)
Dr. Ertu Unver: MA 3D Digital Design.
Jo Harris: BA(Hons) Surface Design with Fashion & Interiors Course Leader & MA Textiles Course Leader
Linda Lewis: Design Resource Co-ordinator