

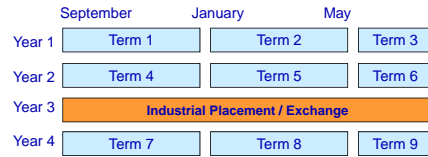
Teaching inclusive design

Practices at Brunel University

Dr Hua Dong
School of Engineering and Design, Brunel University

Context

Undergraduate (approx. 400 students)
3-Year 'Full-Time'
4-Year 'Sandwich' Course



Level 1 modules

Common modules:

Design Process
Graphic Communication 1
Design Modelling Workshop

BSc: Mechanics for Design
Electrical Technology

BA: Applications through Design
Creative Engineering Practice



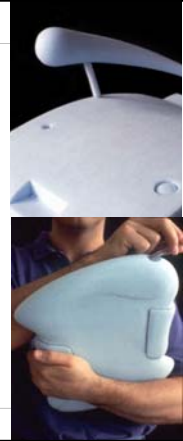
Level 2 modules

Common modules:

Design Process 2
Graphic Communication 2
Design for Manufacture 1

BSc: Electronics, Programming & Interfacing
Structures, Dynamics & mechanisms

BA: Applications Through Design 2
Systems Design



Level 3 modules

Common modules:

Major project
Innovation management

Options (3 other modules):
Environmentally Sensitive Design
Human Factors
Embedded Systems for Design
Graphics
Contextual Design



Postgraduate
2 MSc programmes (25)
2 MA programmes (120)

MA Design, Strategy & Innovation
MA Branding Strategy

MSc Integrated Product Design
MSc Human Centred Design



Topics for discussion

1. How to introduce the topic of Inclusive design?
2. What are the strategies of teaching inclusive design?
3. Is ethics an issue?

1. How to introduce the topic of Inclusive design?



Introduction to inclusive design

Inclusive design as a specific topic:

- Definition
- Terminology
- Contexts
- History
- User model
- Case studies
- Methods and tools

Incorporating inclusive design principles into project-based teaching:

- Personas
- Scenarios

Persona and scenario

Wildlife Photographer
Reptile Enthusiast

Name: Paul
Age: 52
Occupation: Retired leaver

When not on wilderness pursuits for deadly reptiles Paul enjoys watching his favourite television channel the Discovery Channel, he is particularly interested in watching anything which has to do with blood and guts or the survival of the fittest.

Paul is a retired business man who decided to become a wildlife photographer after a business investment paid huge dividends. Using this money Paul decided to become a wildlife photographer, travelling the world taking snap shots of animals in the wild. More specifically (SNAKES)

Paul hates anything which is made from animals, he is particularly appalled by the use of make skin or products such as belts, bags etc.

Paul has travelled several continents in the past, he has been to the Amazon rain forest, the Himalayas, the Arctic and the Antarctic. He has been to the most remote parts of the world and has taken some of the most beautiful photos of the world.

Pauls dream to travel the world and take images of animals in their natural environments is something Paul feels he still has to fully achieve, however with his handicap he feels it is a dream he cannot reach if he does not have an appropriate camera. Therefore he needs the camera to be able to take quick high quality images, suitable to be used with one hand and the quantity of high capacity storage, he would also want it to be able to be used in other environments other than when on expeditions.

Unfortunate event

Whilst on a tour in Texas Paul was accidentally bitten on a poisonous snake, due to the lack of medical support doctors were unable to find a suitable anti-venom, therefore it left doctors with no alternative but to amputate the leg where he was bitten. This accident has left Paul with no thumb on his right hand.

Following this incident Paul has not taken any pictures for the last two years, he feels that the 3.5 camera he used to use before is too difficult to use without a thumb.

He is no stranger to technology, whenever he returns from expeditions he downloads his many hundreds of images to his computer.

Demographic Applications

- A camera which takes pictures quickly and effectively.
- Something which is stylish for use in any environment.
- Hand-free.
- Limited number of buttons with simple functionality via 3D tracking camera.
- A strap to make it easier to hold the camera both one handed or 2 handed.

2. What are the strategies of teaching inclusive design?

- Simulation
- Involving people with disabilities
- Interdisciplinary collaboration
- 'In-house' case studies

Strategy: simulation

Guest lecture on impairment simulation

Consider:

- Hands-on tasks
- Ease of access of the simulation tool
- Dedicated tutorial
- Relevance

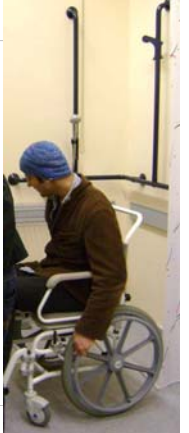


Strategy: simulation

Simulating environment

Consider:

- Introduction to equipment
- Capacity of the space
- Relevance
- Supervision




Strategy: involving people with disabilities

Vocational project (2007)

Consider:

- Incentives
- Back-up plan
- Accessible venue
- Time



Strategy: interdisciplinary collaboration

**HEA-funded project (2009):
Working with occupational therapists**

Consider:

- Timetabling
- Back-up plans
- Communication
- 'Highlights' of the project


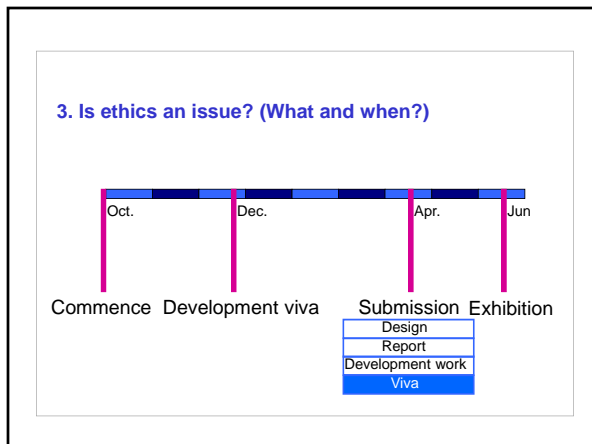


Strategy: developing case studies

**Pill-punch (2006):
An inclusive design (major project)**

Consider:

- Design process
- User research method
- Scope for improvement

- Observations:
- Effective learning is through use (e.g. simulation tools)
 - Students benefit from working with 'real' people
 - Interdisciplinary collaboration help students appreciate different viewpoints and develop communication skills
 - Inclusive design could start with a specific user group
 - Relevant case studies are effective in engaging students with inclusive design
 - Students love competitions, real-world design brief and involvement of external judges

Thank you for listening!

hua.dong@brunel.ac.uk
(0)1895 267254

