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Creation of the P.I.E.
Foundation — 'providing
interactive education'. An
online blended learning project
designing elearning experiences for
level 2 graphic design students
within a school of art and design.

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Nottingham Trent University



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- **Two parts**

This talk is in two parts, firstly, it deals with what is the PIE foundation giving a project as an example and secondly, highlighting further project work evaluating out of the initial project.



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So, what is



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the P.I.E. Foundation?





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Providing Interactive Education



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- **What is P.I.E.?**

The P.I.E. Foundation © is a collaborative initiative set up by staff and industry on the graphic design programme in The Nottingham Trent University School of Art and Design. The P.I.E. Foundation sets out providing interactive education (P.I.E.) within an art and design environment. The 'foundation' sets out to provide 'interactive educational experiences' both online and offline to students and staff. It aims to offer alternative approaches to teaching, devising relevant learning experiences manifesting themselves in numerous ways. The foundation intends to take education 'out of the box' and create work, which is 'external'.

The P.I.E. Foundation © Joe F McCullagh 2003



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• What is P.I.E.?

This offers a new mindset for the school in developing collaborative programme independent school resources/spaces/concepts that offers a truly interdisciplinary approach sitting outside the respective disciplines and modular framework. At the heart of the foundation is collaboration and the sharing of experiences and importantly the contextualising of oneself within society.

The intention is for students and staff to take ownership for their learning and also gives greater flexibility to diverse needs. This all encourages the autonomous and reflective learner.





- **What is P.I.E.?**

A short edited film diary by two students on the graphic design programme.

The diary is an example of a P.I.E. Foundation project. The diary highlights the broad nature of what the P.I.E. Foundation is about: addressing student lifestyle, changing student study patterns, new relationships between the student and the university, dynamics, intellectual curiosity, utilisation of new technologies, inspiration, addressing alternative methods of research, varied experiences and most of all enjoyment.





- What is P.I.E.?

"I had a pub meal in mind, something quick and simple. There's a phrase for it, isn't there?"

"A pie and a pint?"

"That's the one." John McNeil, SPY GAME

Pie: any crust with something in it. Samuel Johnson
<http://www.outlawcook.com/Page0120.html>





- A context

I would like to concentrate today on one project. The 'slice of pie' being an **online project for level 2 students in graphic design**. It includes lectures, exercises, theory, handouts, tasks, case studies all on the subject of introducing interactive media utilising elearning. This has revolutionised my way of delivery.

The project can be found at:

<http://homepage.ntlworld.com/joseph.mccullagh/index.html> and also via the university virtual learning portal.

The student work from the project can be found at:

<http://design.lsz.ntu.ac.uk/>





- **A context**

The reason for a new radical delivery method was that I felt that previous delivery methods were not appropriate and achievable. They were also becoming tired. I evidenced this by running focus groups with the previous year students who gave me useful feedback, which was built into this P.I.E. project. This project also built upon other projects based on investigating elearning.





• Background to the project

Multilinear learning

Students live in a multimodal society interfacing with digital forms of media, such as mobile phones, interactive computer games that beg for their attention. The world, it could be argued, is moving to a place of non-sequential interaction. A culture of clicking and browsing; the infobyte culture; where information is less than three clicks away; 'the clicking culture.' How can we utilize elearning that acknowledges this non-sequential multimodal world and yet still develop the deep learner? Is there a relationship between a multi-linear society, and the notion of a new multi-linear learner? The answer we feel is yes!



...The real context

What is 'multilinear' learning, does it exist?



We need to find out how and why students access different types of learning and assess this in relation to elearning. How in education are we responding to such modes of address? In the second half of this talk we look at addressing the 'multimodal learner' with specific reference to the kinaesthetic learner and subsequently learning through the activity of 'doing'.

By investigating forms of interactive elearning, can in turn new modes of learning emerge?



...The real context

Points of reference



I hear and I forget
I see and I remember
I do and I understand
Chinese proverb

'Adults learn best when they do not have to rely on memorising, but can learn through activity at their own pace with material that seems relevant and uses their own experiences.'

Jennifer Rogers, Teaching Adults



...The real context

Points of reference



Learning is clearly aided when activity is built into learning. This is why elearning can be such a useful tool for learning. Particularly if it takes place in a studio based practical based educational culture, such as art and design.



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...The real context

Points of reference



Diana Laurillard has discussed four models of learning in her work, which could be applied to elearning. See also work by Lee, Armitage, Groves and Stephens. The models are learning through:

- 1 acquisition
- 2 discussion
- 3 discovery
- 4 guided discovery



...The real context

Points of reference



She has argued that the traditional model of teaching, 'learning through acquisition', is suited to the lecture, video, broadcast and publication of lecture notes on the web. The second model 'learning through discussion, is usually face to face but cmc can replicate this to a certain degree. The third, 'learning through discovery', is via the lab, field trip or computer aided simulation. However, the fourth model, 'learning through guided discovery', can bring all the benefits of cmc teaching to the fore.



Too much talk.

**I am still feeling hungry, lunch not quite nourishing enough.
Give me some P.I.E.**



I would like to show you the P.I.E. project previously discussed for level 2 graphic design students that highlights what we are trying to achieve in elearning on the graphic design programme. The project introduces interactive media to 92 students and takes place over a period of 5 weeks including assessment. A student team project of no more than 3 students in a group. The project is an example of a blended integrated teaching model consisting of workshops, exercises, lectures, staff examples, case studies etc predominantly delivered through the web.

<http://homepage.ntlworld.com/joseph.mccullagh/index.html> and also via the university virtual learning portal.



Evaluations from the graphic design interactive— 'piece of pie'



Elearning:

Collaborative. Elearning should encourage a collaborative approach amongst partners in order to take in a wider range of learning/teaching styles. It should celebrate our teaching styles. We should utilise our pool of learning and teaching expertise to work together.

Empowering for the student. What type of user interaction should take place to develop a deep learner? How should we foster interaction? Fostering interaction is a key challenge.



Evaluations from the graphic design interactive— 'piece of pie'



Elearning:

Immersive. We need to fully understand 'play' so that we can deliver more immersive environments. Elearning should engage the student proactively not passively. Avoid 'shovelware' consisting of stockpiles of poor information without any supporting structure. Content alone is not enough, support is necessary.



Evaluations from the graphic design interactive— 'piece of pie'



Elearning:

Pace. Pace is important, address differing skill level, speed of learning. Understand that the learner learns at their own pace; try to understand student lifestyle; ensure it is widely accessible and can be tailored to individual needs; address the growing international student population.

Signposting. Elearning needs to be developed and positively embedded by staff. It needs clear signposting for the student in regards to its importance. Make participation compulsory?



Evaluations from the graphic design interactive— 'piece of pie'



Elearning:

Control. Students enjoy technology when they are in control. They prefer to add to something that they have created. They enjoy collaborative experiences, they like to show and discuss what they have achieved.

Expression. Students can use elearning to positively express themselves beyond the sometimes daunting size of group classes.

Access. Internet not accessible to all, utilise other formats such as CD to browse offline.



Evaluations from the graphic design interactive— 'piece of pie'



eLearning:

Tools. Develop appropriate sets of tools and design structures that are appropriate for a specific audience and understand learner needs.

Interspace. Structuring information is key. I want to encourage deep learning and not surface but how? I am interested in creating a suitable 'interspace' for learning. I have tried online discussion groups but they have failed, why, because they need a facilitator and something useful to talk about.





- **Part two—further work**

The resulting project work from this PIE project led to **‘Designing an interactive e-learning course, which focuses on the autonomous learner and the multimodal learner within art and design’.**

How could we use elearning and what would be appropriate to foster the autonomous learner and learning by doing within art and design?



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- **Part two—further work**

The subject was to take the raw material from the PIE project and create an interactive web based distance learning module on the subject of ‘an introduction to interactive media’. This would appeal to any student wishing to gain an understanding of how to design interactive media.

We do not have time to fully discuss the evaluation of this project but please contact us for further information.



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- Part two—further work

Guiding theories included:

Most important things cannot be taught but must be discovered and appropriate for oneself.

Schon, D. 1987. Educating the reflective practitioner. San Francisco: London: Jossey-Bass, p92.

The main characteristic of autonomy as an approach to learning is that students take some significant responsibility for their own learning over and above responding to instruction.

Boud, D. 1981. Developing student autonomy. Kogan Page, p23.



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- Part two—further work

Guiding theories included:

To do is to be

Rousseau

(some say Voltaire)

Fletcher, A. 2001. The art of looking sideways. London: Phaidon Press, p34.

To be is to do

Sartre

Fletcher, A. 2001. The art of looking sideways. London: Phaidon Press, p34.

'Do be do be do!

Frank Sinatra

Fletcher, A. 2001. The art of looking sideways. London: Phaidon Press, p34.





• Part two—further work

We designed the work creating pedagogical and design frameworks particularly tailoring research to the kinaesthetic learner. The relevant associated theories that informed this project are concerned with:

- the autonomous learner (Boud/Schon)
- learning styles (Fleming)
- multimodal learning (kinaesthetic)
- metacognition (Flavell)
- mnemonics
- motivation factors for learning (Maslow)
- a 'constructivist' approach was taken
- cognitive processes for learning before technology processes
- Bloom's Taxonomy of learning applied to a technological taxonomy





- Part two—further work

We attempted to synthesise the design and learning specifications within the instructional design.

Guiding principles:

Students **don't** learn in a **meaningful** way directly from the use of technology

The role of technology in learning is **indirect**.

Learning is the result of **thinking**.

Therefore the role of technology is to **direct & foster thinking**.

adapted from: <http://education.ed.pacificu.edu/aacu/workshop/reconcept2B.html>

Jonassen, D., Peck, K., and Wilson, B. 2000. Learning With Technolog: A Constructivist Perspective. Merrill:

Upper Saddle, NJ

Splash screen



ecourse introduction to
INTERACTIVE MEDIA

Why should I do
this ecourse?

LOGIN

PASSWORD

Please **register** to enter the
ecourse.

To do this course your browser will
need to have **Flash Player**
installed. If you can see the moving
images above your browser
already has Flash Player installed.
Mac users will also need
Quicktime Player installed.



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Providing Interactive Education

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Introduction screen



ecourse introduction to
INTERACTIVE MEDIA 1 2 3 4 5 6 7 8 9

The ecourse consists of:

- * a schedule
- * 6 classes
- * a project
- * an ejournal

A project has been devised for you to work on which directly engages your learning to your our own lives: '**Rereading the city**'. This project can be used to test out your learning and enable you to interact on and off the screen. Please make sure that you read the project brief before you start the classes. It is available on the main menu.

INTRODUCTION [show menu]

CLASS 1 2 3 4 5 6 < >



Help screen



ecourse introduction to
INTERACTIVE MEDIA 1 2 3 4 5 6 7 8 9

HELP

The navigation bar is located in the bottom of the screen. It consists of a class menu, which takes you straight into the class you select; and a main menu, which has the links to introduction, the project brief, the schedule, the ejournal, help, PIE and logout. To see the main menu click on "show menu".

*** "I don't know what to do!"**

If you need any technical help on how to use this ecourse, there is further information in the help page. You can get there by simply clicking on "help" in the main menu.

If you wish to see the help page now, you can do so by clicking [here](#).

INTRODUCTION	PROJECT BRIEF	SCHEDULE	EJOURNAL	HELP	PIE	LOGOUT	[hide menu]
INTRODUCTION							
CLASS	1	2	3	4	5	6	< >



E-journal screen



This is an overview of your ejournal. To check details please select one of the below.

COURSE STATUS
Registered to 55 per 12/01/04
Number of sessions: 04
Courses completed: 03
Points: 00
Total time spent: 03 hrs

Details
Address 1: 10.00pm to 01.00am 12/01/04
Address 2: 10.00pm to 10.00pm 12/01/04
Address 3: 10.00pm to 10.00pm 12/01/04
Address 4: 0.00pm to 0.00pm 12/01/04

Your uploaded files
You have no files uploaded to your account. Please use the file manager below to upload your work.

What is Interactivity?
The concept of using the internet as an approach to learning is based on the idea of using the computer to create an interactive learning environment. This involves the use of multimedia and interactive tools to create a learning environment that is more engaging and effective than traditional learning methods.

Case Study
This is a detailed description of a case study.

Feasibility

Estimate	Analysis
Conclusion	Recommendation

INTRODUCTION PROJECT BRIEF SCHEDULE EJOURNAL HELP PIE LOGOUT [hide menu]

SCHEDULE

CLASS	1	2	3	4	5	6	<	>
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'Class 1' screen



ecourse introduction to
INTERACTIVE MEDIA 1 2 3 4 5 6 7 8 9 10 11 12 13

CLASS 1
Internet history overview
and interactive structures



*** Main topics**

- **eactivity**: what is interactivity?,
- **comment**,
- **a brief history of the internet**,
- **case study**: internet as a different medium from other forms of media,
- **eactivity**: structures on the web,
- **check your learning**.

To start this class please click in the advance button on the menu below.

Internet history overview and interactive structures [show menu]

CLASS 1 2 3 4 5 6 < >



Class screen example



ecourse introduction to
INTERACTIVE MEDIA 1 2 3 4 5 6 7 8 9 10 11 12 13

What are your initial responses to this short film clip? If we consider 'interactivity' how does interactivity manifest itself in the film clip?

*Click on 'save' to send this to your ejournal.
You will be able to access it any time from the main menu ejournal link.*

A video player showing a color calibration chart with various color patches and numerical values. The chart includes patches for 'Pr Yellow', 'Pr Magenta', and 'Pr Cyan'. The video player controls at the bottom show a play button and navigation arrows.

Internet history overview and interactive structures

[show menu]

CLASS 1 2 3 4 5 6

< >



'E-activity' screen example from class 1



course introduction to INTERACTIVE MEDIA

1 2 3 4 5 6 7 8 9 10 11 12 13

EACTIVITY

Drag and drop the words to match the media with the respective image.

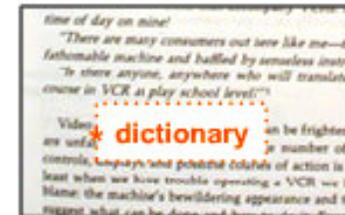
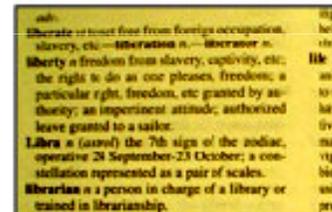
dictionary

magazine

website

literature book

check Click on check! to get the answers.



Internet history overview and interactive structures

[show menu]

CLASS 1 2 3 4 5 6

< >



'Schedule' example



ecourse introduction to
INTERACTIVE MEDIA

SCHEDULE

CLASSES

1	2	3	4	5	6

Select one of the classes to find out more.

STATUS

<input type="text"/>	<input type="text"/>	class not taken
<input type="text"/>	<input type="text"/>	class in progress
<input type="text"/>	<input type="text"/>	class finished

Please use this online 'smart' schedule to organise your learning. **It tracks your progress** highlighting which parts of the ecourse you have accomplished.

It will automatically save your current status before you logout so that the next time you login you will be able to catch up from where you left.

INTRODUCTION PROJECT BRIEF SCHEDULE EJOURNAL HELP PIE LOGOUT [hide menu]

SCHEDULE

CLASS	1	2	3	4	5	6	<	>
-------	---	---	---	---	---	---	---	---



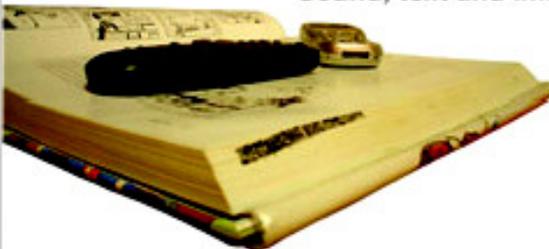
'Comment' screen example from class 1



ecourse introduction to
INTERACTIVE MEDIA 1 2 3 4 5 6 7 8 9 10 11 12 13

Interactive media is the combination of a whole host of everyday communication elements:

Sound, text and image.



Media such as books, radio and television, has previously delivered all of these.

Now, you are in a powerful position to combine these elements in a single source.

The exciting aspect is how you combine and communicate with this media to deliver new ways of communicating.

Internet history overview and interactive structures [show menu]

CLASS 1 2 3 4 5 6 < >



'Comment' screen example from class 1



ecourse introduction to
INTERACTIVE MEDIA 1 2 3 4 5 6 7 8 9 10 11 12 13

BRIEF HISTORY OF THE WEB

1930's 1940's 1950's *1960's 1970's 1980's 1990's 2000's

1960's 1 2 3 4 5 6

Throughout the 1960s and 1970s Douglas Englebart developed an elaborate hypermedia groupware system called NLS (oNLine System) to facilitate digital libraries and storage and retrieval of electronic documents

using hypertext. This was the first successful implementation of hypertext. NLS used a new device to facilitate computer interaction...the mouse.



Internet history overview and interactive structures [show menu]

CLASS 1 2 3 4 5 6 < >



'Case study' screen example from class 1



CASE STUDY

Ask yourself the question **why is the internet different from other forms of media?** Surf on the internet and select two sites that you feel exemplify this difference. Save print screens of both and list down your findings.

Click on 'upload' to send the files to the ejournal.

Check the issues you consider relevant.

- Narration
- Interactivity
- Empowerment
- Presentation of information
- Readability
- Mappings
- Hypertext
- Structure
- Visual experience

Click on 'save' to send this to your ejournal.

Internet history overview and interactive structures

[show menu]

CLASS 1 2 3 4 5 6

< >



'Check your learning' screen example



ecourse introduction to

INTERACTIVE MEDIA

1 2 3 4 5 6 7 8 9 10 11 12 13

CHECK YOUR LEARNING

Go back to the project brief.

Now take some time to reflect on what you have learned and think about how you can apply it in your project.

It might be a good idea to get a sketch book and start making notes. You can also save your findings/responses in the ejournal.

Here are some thoughts...

- * How interactive do you want your project to be?
- * What kinds of interaction can you use?
- * Start collecting text, sound and images related to your theme and upload them into your ejournal.
- * How can you combine these elements?

After you have done that, you will be ready to start the next class!

Internet history overview and interactive structures

[show menu]

CLASS 1 2 3 4 5 6

<

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• Part two—further work

Evaluations

In answering the question at an evaluative focus group. How about elearning generally in the future. What kind of form do you think it will take?

Massive! I think it definitely is an investment for the student's future.

I think because of space/pace and time a lot of classes in the future will become 'elearn' based.

I hope it will take a more playful form. It has to be more interesting than a lecture or a book for a student to choose it.

'I think it will be very popular in the future'.





many thanks

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The School of Art and Design

Nottingham Trent University 2005



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