

The House that Strauss Built

D.I.Y. in Cyberspace: Bejeaned Student Bricoleurs.

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ABSTRACT

Information and Communication Technologies present students with a toolbox. They use the tools to construct artefacts from a range of sources and inputs. The end product - a frozen point in a shifting panorama of possibilities - asserts their identity. These post-modern magpies use skills and concepts to combine source materials that meet the needs imposed by their teachers and tutors. The surface gloss confuses and dazzles: what is original? Where are the sources? Which (if any) is attributed?

Can their teachers do it anyway?

Introduction

Surveys of student computer use undertaken over the past four yearsⁱ have shown students using Information Technology tools to undertake tasks across the whole of their education. The current drive to embed Key Skills in a wider curriculum is likely to encompass more than post-16 and vocational students.

Surveys of teacher competence in the use and application of Information Technology during the same period have highlighted a growing disparity between students and their teachersⁱⁱ. Where teaching in Information Technology takes place much of it focuses on exercises which are assessed on the basis of how well the student has fulfilled the expectations of the teacher and the assignment. The outcome is often a set of imperfectly-learned routines with limited transfer possibilities.

Interviews with students, however, indicate that their starting points for work are what they already know, and what is available for their use. The instructional paradigm, which holds that the learner is introduced to a new program, practises the skills and then applies them in a relevant task, is not that which students apply to their own Information Technology uses.

What is happening is that students apply programs to the task in hand, and try to learn the routines as they go along. The use of the tool becomes shaped by the outcome. It is the practice of 'do-it-yourself', in which items are taken 'off the shelf' and used in whatever way the constructor sees fit.

The Toolbox

"...a bricoleur is someone who works with his hands and uses devious means compared to those of a craftsman... (he) has nothing else at (his) disposal. ... The bricoleur is adept at performing a large number of diverse tasks... the rules of his game are always to make do with 'whatever is at hand'. (Levi Strauss, 1962ⁱⁱⁱ)

The toolboxes with which students work can be found at home, at a friend's and in educational establishments. The ubiquitous personal computer: as long as it has a 3.5-inch disk drive, it can be used to achieve part of whatever task is in progress. A collection of

floppy disks will store all of the parts that have been done: the artefact will be assembled in whatever space offers the best facilities.

The diversity of information technology provision in educational institutions is a by-product of the speed of technical change and of the continuous consumption predicated by built-in obsolescence. The same pattern can be found amongst individuals: what was state-of-the-art six months ago is no longer marketed. The cutting edge of technology slices the market into as many segments as there are owners, many of whom imagined that their purchases would have the same life span as their washing machine. Old 286 machines can be used to create and edit text and data: a 386 will be used for that, and more. 486 computers serve as workhorses, whilst the serious work is done on the fastest machines with the biggest memory. Scanners and digital cameras vacuum up all the bits that are needed. And then there's the Internet - preferably with connection charges paid by the students' institution.

The Tools

...the engineer works by means of concepts and the 'bricoleur' by means of signs. (Ibid)^{iv}

Students work with whatever are to hand. These range from basic integrated Works packages installed on educational networks, through those, like Lotus SmartSuite or Corel WordPerfect Suite, bundled (for market share) with machines sold into the domestic market, to the latest incarnation of Microsoft's Office. Enterprising individuals download freeware or beta versions of programs from the Internet. DIP programs, publishing packages and presentation software are all available, to be picked up and used when they are needed.

Students work with Wizards to short-cut the learning curve. Auto-content and templates provide ideas and suggestions, which can be accepted or rejected when they have been previewed. Success with one piece of work encourages further experimentation: what is learned is the speed with which things can be learned.

What remains to be done is to knit together all of the work created by these tools. Students learn how to save and import in various file formats. Having done so, they pass that

knowledge on to others. Work is copied from one application and pasted into another. All these are done in the teeth of rapidly approaching deadlines: writing, creating and editing are simultaneous. As each part of the edifice is put into place it is saved: if it doesn't look right, or if the structure topples, then the UNDO command restores the status quo. In this way, numbers of pieces can be tried out, considered and modified before the deadline arrives and the work is submitted.

The Materials

...he 'speaks' not only with things...but also through the medium of things: giving an account of his personality and life by the choices he makes between the limited possibilities." (Ibid.)

This Do-It-Yourself approach affords equality to all materials. Student-generated text is no more privileged a discourse than text downloaded from the Internet, saved from a CD-ROM or scanned from other text sources. Images taken from clip art collections are modified at will and used in conjunction with others scanned from books, magazines and photographs or grabbed by video capture. The Web is seen as an infinite resource of images and code as well as information. These materials, then, are seemingly endless: the needs of the task, the tools to hand, the knowledge pool and the time available are the only constraints.

The Artefacts

"We have already noticed the connection between...the activities of the...bricoleur and the modus operandi of the jazz musician. ...This art, - an art of signifiers, not signifieds, can be said to be truly modern..." (Hawkes, 1977)^{vi}

One example that illustrates the dilemma which this causes was a Geography assignment which was set at Boston Spa Comprehensive School for Year 9 students. This required them to research and write a paper on earthquakes. Responses varied from handwritten explanations drawn from a range of textbooks with appropriate hand-drawn coloured diagrams, through bald summaries of lesson notes, to work resourced from, and produced through, ICT. The most imaginative example of the latter category was produced by a student who utilised diagrams from *Encarta* entries, saved a sequence of images from the video clips as individual frames and chose text sample to illustrate the process. These were

then copied and pasted into a document and presented as his own work. His written contribution was a series of headings and an explanatory commentary.

This assignment produced a number of responses from teachers. Many thought that the report somehow short-changed the educational process. The student admitted that the report had been completed in half an hour. Many students had spent weeks on their reports, struggling to share library books and produce neat work. Nevertheless, in cognitive terms the student with a home PC and *Encarta* had achieved what the assignment intended.

Presentation software provides enhanced opportunities for students to embed headings and explanatory commentary in a format that uses images and effects to communicate. The postmodern collagistes cut and paste images into the presentation framework and thread their message through the medium.

Web pages produced by students use a similar approach: page design is based on that produced by others: source code for images and effects is copied and pasted into the students own sites. Hosts such as GeoCities distribute free utilities to encourage web site construction.

The Problems

The post-modern positioning and conditioning of students, accessing, copying and swapping a range of media, extends to the work that they do. They regard the artefact they produce for assessment as their product: they have designed and created it. In essence, it is a post-copywrite product. In their world, what are the ethics of ownership? What are intellectual property rights in the Information Age? What is plagiarism?

In an ideal world there would be time, resources and expertise enough to ensure that the educational process empowered all of our students equally. What we see, however, is that in this Information Age those with access to the economic and cultural capital which computers represent are privileged.

"I got my first computer when I was five. I've had lots since then. I always use them." (Year 12 GNVQ Student, Boston Spa Comprehensive School)

These students envisage any tasks which they are set in terms of the resources and routines which they will use. The proportion of their week in which computers are used is considerably greater than most of their teachers. Apart from access during timetabled lessons, students have access before school, at break, during lunch-times and after school. When they go home to work many of them switch on their computer. (Year 7: 47% Year 10: 62%; Year 12/13: 72%)^{vii}. It is only to be expected that their proficiency should be more extensive.

We should acknowledge the starting position of many students and develop a range of strategies. Information seeking and handling skills should be taught as an integral part of the curriculum from the earliest age. Schools and teachers must address the issue of those students who do not have access to a home PC. A policy of positive discrimination may be needed. It may be necessary to re-define our expectations of coursework in order that no group of students is disadvantaged: neither those from non-digital households, nor those who are electronic magpies

Students must be taught the attribution and ethical use of materials. Plagiarism of a textbook is easier for a teacher to identify than that of a plethora of electronic information. Those students who have CD-ROMs and an Internet connection at home have access to an unlimited source of information which teachers cannot control.

The progress of these cyborgs from the classroom into higher education raises questions about the nature of authenticity and originality of their work. If we as teachers fail to address these issues at an early enough stage in the educational process there will be two inevitable consequences:

- more ammunition will be handed to critics of the expansion of higher education;
- those students whose understanding and use of computers is limited by their lack of access will be further marginalised.

Why Can't Their Teachers Do It?

Research undertaken at Boston Spa Comprehensive School and the University of Huddersfield suggests that a significant number of students (almost 60%^{viii}) use computers at home for a range of applications. And what of their teachers? When they completed the same surveys, 43 per cent of staff respondents said they had access to a PC at home. However, while all of the students who had a PC at home used it for work, this was not the case with their teachers. Fewer than 25 per cent of them actually used their PCs at home. The primary use for those who did was "typing". This is reflected in the curricular uses of computers.

Leeds sample: Staff curricular computer use								
W/P	D/B	Charts	S/S	CAL	DTP	Internet	CD-ROM	CAL L
62% (72)	27% (31)	22% (26)	21% (24)	13% (15)	8.6% (10)	7% (8)	6% (7)	3% (4)

It seems that the skills gap between many students and their teachers is wide - and is still widening. There are a number of reasons for this - lack of time, the cost of computers that need updating regularly, and a residual belief that work produced on computers is too easy and that learning ought to be hard work. The net result, however, is that many curricular computer tasks set by teachers focus on low-level skills. Teachers overwhelmingly see the impact of computers on students' work in transactional terms.

"A good touch of PowerPoint is the ability to change the style of the slide through colour and patterns, this is just a part of the factors that make PowerPoint look so professional and give the students an excellent way to present their work." (Year 13 GNVQ student, Boston Spa Comprehensive School)

When students bring their own skills into the classroom teachers often lack the background knowledge to effectively evaluate their work. The students use templates and pre-set

formats because they are quick, easy and effective. These are used as a support for the content, yet in many cases McLuhan's aphorism, that the Media is the Message, prevails.

Students have many of the skills necessary to make programs work together: they explore the Internet, collect information, make use of free e-mail and web page facilities offered by providers such as GeoCities, RocketMail and others, and learn the ever-changing routines as they go along.

"I found learning PowerPoint to be quite easy and the more you use it the more you learn. At first I could only input words but after using it a few times I could use graphs and images as well as text.

Because the slides are in colour it keeps the attention longer than boring black and white slides. Images can be transferred easily into the presentation and with the easy access to the Internet relevant images can be put on to the slides which would make them more interesting for learning." (Year 12 student, Boston Spa Comprehensive School)

It is the development of a cognitive framework within which they can operate that is a more important imperative for teachers than trying to use disparate and aging educational facilities to teach operator competence.

Bricoleurs in Cyberspace

The French term for the process of 'bricolage' - is the same as that for a do-it-yourself store, a builders' merchant or the act of constructing an artefact in this way. In 'The Savage Mind' (1962) Levi Strauss used the term 'Bricolage' to describe the way in which the non-literate, non-technical mind of 'primitive' man responds to the world around him. The process involves a 'science of the concrete' which is carefully and precisely ordered, classified and structured by means of its own logic. The structures are 'made up', and are ad-hoc responses to an environment. They establish homologies and analogies between the ordering of nature and that of society, and 'explain' the world and make it able to be lived in. The bricoleur constructs the 'messages' whereby 'nature' and 'culture' are caused to mirror each other. Levi Strauss saw bricolage as a way in which pre-scientific societies constructed a belief system which explained their world.

Papert (1980)^{ix} used the concept of bricolage in relation to the concept of 'chunking', a process in which knowledge is broken into 'mind-size bites', which enables new knowledge

and understanding to be constructed from it. His thesis was that the use of previously learned strategies - specifically LOGO routines - could be used as a tool by children in concept formation.

Levi Strauss' explanation of bricolage and the bricoleur offers an insight that is, perhaps, more applicable to our students.

The process used by students, then, is one of working from the specific (the assignment or task that must be completed) to the general (learning from that experience to apply to future experiences). The signs by which they work are those of the Graphical User Interface, with its buttons, toolbars, the ability to undo and print preview work in progress. The 'devious means' which they use involve templates and wizards, making do with 'whatever is at hand'. Their work gives an account of their lives in a world where allusion, reference and quotation seems the only possibility.

What do you do when you have to learn and those who should teach you don't know?

The conventional model of stages of learning (Bruner (1968)^x, Piaget (1958)^{xi}) posits three main stages through which the learner must pass - sensori-motor, concrete and iconic - before anything significant can be produced. Much of what passes for pedagogy in schools is based on this. The education system itself, with its primary - secondary - tertiary divides, and the ways in which educational resources are allocated, provides the material base for this superstructure.

Learners with access to computers have established a different material base. The speed and capability of machines, with their 'Point and Click' ostensiveness and templates and wizards, have put control of the learning curve in the hands of the users.

To the thesis of Stages of Learning there is now an antithesis: There Are No Mistakes. Use Edit: Undo; Edit: Clear; Exit: Don't Save.

The material base of computer access supports its own superstructure with twin supports. The Answer Is Out There: information access through the use of CD-ROMs and the Internet;

information handling through cutting and pasting, downloading. This Is Me: the creation of artefacts as self-expression; the do-it-yourself of little bricoleurs. No longer do young learners have to endure the artefacts of what Jonathan Miller referred to as the 'yoghurt-pot culture of school'.

The synthesis must be that learning is seen as experiential, observational and a semiotic experience. The question of content, contentious when what has been done is not worth learning, must not be subverted by electronic form.

Geert Lovink sounds a warning from Amsterdam. His description 'data dandy' describes those who are "...concerned with...the accumulation of as many immaterial ornaments as possible..." (Lovink 1995)^{xii}, where digital style triumphs over substance.

Or is the substance inseparable from the style?

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...the engineer works by means of concepts and the 'bricoleur' by means of signs.

...he 'speaks' not only with things... but also through the medium of things: giving an account of his personality and life by the choices he makes between the limited possibilities." (Levi Strauss)

"We have already noticed the connection between... the activities of the... bricoleur and the modus operandi of the jazz musician. ... This art, - an art of signifiers, not signifieds, can be said to be truly modern..." (Hawkes)

Our Post-Modern Bricoleurs in Cyberspace.

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ⁱ Cuthell, J. (1997) *Patterns of Computer Ownership* Computer Education. Issue 86 Computer Education Group

ⁱⁱ Cuthell, J. (1998) *What Teachers Think About IT*. Computer Education. Issue 88 Computer Education Group

ⁱⁱⁱ Levi Strauss, C. (1962) *The Savage Mind*. Oxford University Press Oxford (Page 17)

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- iv Ibid (Page 19)
- v Ibid. (page 20)
- vi Hawkes, T. (1977) *Structuralism and Semiotics* Methuen London (Page 121)
- vii Cuthell, J. (1998) *Thumbs Up for the Digital Kids?* MirandaNet
- viii Cuthell, J. Unpublished surveys, 1995-98. See also: *Patterns of Computer Ownership* Computer Education. Issue 86 Computer Education Group; *Thumbs Up for the Digital Kids?*
- ix Papert, S. (1980) *Mindstorms Children, Computers and Powerful Ideas* Brighton The Harvester Press
- x Bruner, J.S. (1966) *Towards a Theory of Instruction*. Cambridge. MIT Press
- xi Inhelder, B.; Piaget, J. (1958) *The Growth of Logical Thinking from Childhood to Adolescence*. London. Routledge & Kegan Paul.
- xii Lovink, G. (1995) *The Media Gesture of Data Dandyism* CTHEORY Theory, Technology and Culture Concordia, California