Designs for learning about film spectatorship

ABSTRACT

Learning about narrative and spectatorship in film studies lends itself to active forms of learning. This paper reports on the participatory development between film studies and learning design of an activity called *Director's Cut*. A class of 250 undergraduate students created their own film sequence applying their understandings of genre, screenwriting and editing in order to manipulate how film spectators relate to screen characters. The model of expansive learning provides a frame for understanding an emergent, developmental design and learning process. Adaptive design is included so as to refer to the incorporation of prior knowledge from related projects as well as changes made during designing and through use. Key aspects of the interface, interaction design and students' comments on the use of it are included. We argue that there are links to be made between approaches to participatory design and 'designs for learning' rather than learning designs as templates for compliance. We close by discussing the continued evolution of the activity design, some wider issues for designing for learning, and ways of adapting related interfaces so as to be able to mediate the work online.

Andrew Morrison
InterMedia, University of Oslo
andrew.morrison@intermedia.uio.no
Andrew Deacon
Centre for Educational Technology, University of Cape Town, South Africa
adeacon@ched.uct.ac.za
Jane Stadler
Centre for Film and Media Studies, University of Cape Town, South Africa
jstadler@humanities.uct.ac.za

WHO'S THERE?

Figure 1: One of several opening video clips that a student 'director' might select in the learning activity *Director's Cut*

Introduction

The image above is the opening still from a video clip in a computer-based activity designed to support university students' learning about film narrative and spectatorship. This activity, called *Director's Cut*, supports learning in a film theory course by exposing students to production processes that they are typically unaware of as viewers of the final product of film making. Awareness of these production processes is valued by educators in developing students' understandings of filmic conventions and theory. The activity takes the genre of *film noir* and considers how a film editor's decisions impact on spectatorship. Through the activity we aimed to provide resources or affordances for student action in a large class setting with restrictive access constraints.

As a collaborative and participatory design process, *Director's Cut* drew on earlier work between lecturers in Centre for Film and Media Studies (CFMS) [8] and the Centre for Educational Technology (CET) [7], both at the University of Cape Town (UCT), South Africa. The activity was collaboratively designed and implemented by a film lecturer and learning designer. Developmentally and analytically, this work is linked to a wider research project between the University of Oslo and the UCT called ICT-UCT. The project investigates how Humanities staff might further their competencies in using Information Communication Technologies (ICTs) at UCT in their teaching and research [18] and how a small and robust community of practice might be fostered [43, 44] through participation between subject lecturers and learning designers.

The general role of the CET is to develop and research the situated and integrated roles of ICTs in the changing landscapes of higher education in post-apartheid South Africa [9, 10]. In *Director's Cut* we aimed to pursue these aims geared towards providing situated learning resources for students. Here designing for learning is also about transformation, a concept we take up later in relation to the model of Expansive Learning [12,13] drawn from a cultural historical Activity Theory perspective [14].

Director's Cut may be viewed as an example not only of collaborative design and redesign through use but also as a resource - both as process and product - for other educators who are motivated to develop and appoint ICTs in their teaching and related research. For students of film and media, *Director's Cut* provides exposure to a simulated film editing tool as part of an introduction to film theory and prior to their possible use of more formal software in higher level courses and subsequent workplaces. *Director's Cut* is then, also an example of learning about compositional concepts and tools in film editing as learning through design in-the-making.

We see emergence and adaptive design [30] as central to such design learning processes and the products which are generated. The evolutionary character of adaptive design is more about enabling than controlling, with attention more to service than product, an where incompleteness is a present quality. Adaptation needs to be suited to purpose and it is achieved via use in which designers and users collaborate. We present *Director's Cut*, therefore, as an instance of the shared, exploratory character of making transdisciplinary and participatory designs. We report on *Director's Cut* as an educational design case in terms of the model of expansive learning and we link this to perspectives on participatory and adaptive design.

In-the-making

Developing a digital 'environment' for undergraduate students' learning about film editing and spectatorship involves intersecting design processes and choices. Some of these were informed by earlier experimentation in making digital learning resources and activities suited to the local setting [39] but informed by international trends and principles [29]; these experiments and their uses provided a situated backdrop for adapting prior approaches for *Director's Cut*.

This learning activity has been used by many students and tutors in actual coursework. In terms of redesign processes now underway, we point to several comments selected from scores of summative course evaluations by students. As with the earlier locally developed learning activities for different subject disciplines, student comments are a very real and serious part of not just tweaking but making substantial improvements to the work which is now underway.

The paper incorporates screengrabs from parts of the activity. We use these to frame the mode of reporting in relation to aspects of film editing. The paper was written across continents using shared online tools to facilitate discussion, real-time process drafts and revisions. We see these experiments in our own composing processes as in key with those that involve students in the uptake of ICTs in their own productive and critical learning.

Not to place design processes and products at the centre of these institutional innovations with learning technologies is to reduce the implementation of ICTs to a set of unexamined technical specifications. It is also to throw ICTs at students and to perpetuate divisions between them and their teachers, rather than to promote degrees of reciprocity between us in designs for learning in-the-making through participation and investigations into multiliteracies [20]. In this sense, our focus on expansive learning may also be seen as being about situated cognition. Rogoff [34] argues that we may observe this according to three planes: participatory appropriation, guided participation, and apprenticeship. In *Director's Cut* students new to film studies enter into a first level activity about learning about film composition and spectatorship. The activity provides them with guided participation through a mediating artifact presented in a digital interface together with face to face discussion with tutors and one another. Attention to more detailed 'apprenticeship' follows in later years. However, at

this early stage in learning about film, the course lecturer makes explicit links between her theory classes and this mediated activity as practice and as a mode of hypermediated design in the Humanities [30].

IN FOCUS

Expansive learning

The Finnish educational researcher Engeström [12] has developed a model of Expansive Learning which is built on staged cycles of transformation [13, 15, 16]. These are framed in a socio-cultural approach to learning via Activity Theory (after Bakhtin and Vygotsky in particular). In an activity system a number of elements interact with one another to produce outcomes which then meet those from other systems and so on. The core elements of an activity system are: tools and signs, a subject and rules, community, division of labour, and mediating artifacts.

For Engeström, learning concerns 'processes of becoming' that are not necessarily set in stone nor fully known ahead of their shaping. Emergence is therefore central to ways in which new cultural forms of activity are generated. This approach asserts that intersecting activity systems may result in additional outcomes and realisations. Awareness and analyses of these depend on attention to historicity, contradictions in the systems, deviations, and negotiations between them. Multiple intersecting activity systems complicate but also may enrich outcomes. The concept of the mediating artifact is especially useful in placing focus on the role in our case of a specifically designed digital learning 'tool'. We refer to these core concepts in the various sections below.

Engeström's model of expansive learning is based on cycles of transformation which may be summarised as: 1) questioning practices, 2) analysing existing practices, 3) jointly building new models, concepts and artifacts for new practices, 4) analysing and discussing models, concepts and artifacts, 5) implementing these, 6) reflecting on and evaluating process, and 7) consolidating new practices. The overall outcome is the genesis of new modes of activity which transcend prior ones.

Outline of paper

In this paper we draw on Engeström's stages 1-3 as part of a participatory design process investigating where current teaching practices could be improved and making digital resources for learning. Some aspects are covered in this section, 'In Focus', and others below under the headings 'Design Negotiations', 'Who's Where?', 'Interface & Visual Sequencing', and 'Voiceover & Looping'. Stages 4 and 5 are presented under the header 'Wideshot from the Director' describing how the mediating artifact was embodied through coding for use in specific lab and support settings and how it was used by students. Assessment, issues of understanding multimodal discourse, students' comments and overall reflections and redesign processes are covered in the sections entitled 'Rewind' (stage 6). The final section of the paper is called 'Rough Cut'. It refers to consolidating new practices under Emgeström's stage 7. This title is used to highlight that shaping and re-shaping the actual learning activity and drawing on new insights from use as part of an ongoing, iterative and participatory design process.

Theory and practice in film and media studies

Attention to genre has long been central to film making as well as the newer interdisciplinary and generally analytical field of film and media studies. In little more than a century we have come to watch and understand genre from the outdoor projections of biblical epics with plagues of frogs to simultaneous multi-perspective narratives on split cinema

screens. In contrast to the making of genre conventions and their innovation through film production, film studies has tended to lean towards textual analysis of film genre and subsequently audiences' readings of moving image.

Until fairly recently, when the advent of cheaper digital technologies changed relations between media theory and practice, many university film and media programmes taught genre in traditional pedagogical modes. This included students attending lectures and seminars then being assessed on their written assignments. A division between theory and practice (as oppositional activity systems and modes of producing on one hand 'texts' and the other analysis) was asserted with craft separated from analysis by scholars.

Pedagogically and epistemologically, learning through production is potentially rich, but it does not necessarily lead to practically oriented modes of learning becoming accepted part of university teaching. Film and media studies provides a key site for the careful, creative uptake of digital tools in learning in higher education where the focus is on mediation and not simply skills mastery. Learning through production in media studies [3] has been heralded as part of an emerging new multiliteracy in schools in the past decade 'Film language' as applied by film theorists has of borrowed from film makers, such as Eisenstein, who have toggled between the two.

Learning about film and its conventions may now be built through short productions which draw on features of new digital tools as Manovich has argued [26]. The CFMS offers courses which allow students to choose the extent to which they place production or analysis at the core of their studies. This too provides an interesting setting for designing activities early on in the programme of studies that point to features of a genre and the componential arrangement of editing film. Learning how to read and to 'write' film through digital tools as multimedia education [4] provides 'methods and metaphors' as Coyne argues [6], for understanding a range of textual and intersubjective designs in 'a digital age'.

In *Director's Cut*, participatory and adaptive design came together from two sides. There was interest to involve students in learning through their own editing of a film genre sequence that could be linked back to the analysis of film genres. This could be achieved via a participatory design approach in conjunction with educational designers. In terms of Engeström's term historicity, there was also motivation to relate knowledge, some programming and a mode of development from previous computer supported learning in the frame of adaptive design. However, designing always involves constraints and these were considerable in trying to develop an activity for use by a large class. We report therefore on a much more bounded set of parameters than for innovations in learning about film carried out with smaller classes. Mazur, for example, in a distance learning case, demonstrates the potential of cinematic techniques in building co-presence between teachers and students across the web [27].

Identifying design goals and processes

Jane Stadler was looking to develop an activity that would provide students with an appreciation of film editing processes she saw as valuable in mediating their understandings of concepts taught in her film theory course [17]. From past experience she saw students required more practice in applying abstract film concepts before their final examination. She intended that students would learn about narrative and spectatorship while being asked to express their own creativity.

Discussions took place with CET (Andrew Deacon) about a collaborative venture into applying ICTs in the learning not just teaching of film. However, at the outset, this was first about the openness of a teacher of film towards a participatory

design process which would extend the pedagogy of her course towards designing and supporting a student-oriented learning activity. Such collaboration further reflects CET's emerging role as supporting ways in which subject staff may include ICTs in *designing for learning*. The primary organisational need was to be able to collaboratively develop an activity that could be used by a large class. The activity would also need to function with a minimum of technical support. Educationally, the activity would need to provide enough room for creative uptake of digital editing tools and principles by students while also asking them to relate concepts taught on the course to their own production. In framing the design, implementation and evaluation of this activity, we have drawn on two main conceptual 'scripts'. It is to these that we now turn.

CONCEPTUAL SCRIPTS

Intersections

Taken together with Expansive Learning, Participatory Design and Interaction/interface design provide conceptual 'scripts' for tracing an educational and mediated design process and the roles learning designers, subject lecturers and students may have in shaping learning which is emergent and exploratory.

Participatory design

The model of Expansive Learning helps to account for processes of designing an activity for learning, not a learning activity based on performing fixed, synonymous actions. Educators design affordances through collaboration shaped in the frame of participatory design with different capacities and competencies at play in shared goals and linked processes.

Participatory design has a legacy in Computer Supported Collaborative Work (CSCW) as well as roots in development oriented participatory communication. At the level of work, the collaboration between subject lecturer and learning designer is a process of constant negotiation and redefinition, at times resulting in close adherence and agreement, at times divergent views or understandings of one another's perspectives or direction. Participatory Design brought an important focus to process and person in design studies [2], a field previously dominated by engineering and product design paradigms and metaphors. Links are increasingly being made about participatory relations between humans and mediating tools in the fields of CSCW and Computer Supported Collaborative Learning (CSCL). In both these fields there is a strong relationship between participation, practice and information systems design [21].

However, seldom do media researchers appear in these domains; where learning design research often stays in educational conferences, learning about media through production is not typically part of media studies research. Papers relating to art, design and learning via technologies reporting on work from K3 in Malmö, Sweden, provide valuable cases for film and media studies [26]. This paper makes links between these approaches and also places weight on designing a mediating artifact relating to principles of digital film editing. In various learning arenas, the views, uptake and reflections of students are included as important components in the evaluation and redesign of ICTs.

Interface design

This attention to the designing of underlying information architectures and related systems is essential to the formation of structures and processes that allow for activities of learning to be realised on screen and by students. However, this is only possible because of the development of the mediating artifact of the interface [14] which enables 'thoughtful interaction' through design [24].

Interfaces may appear simple or seem to be unimportant when they facilitate the remediation of content and a variety of user activities. However, effective interfaces are often pared down from more elaborate choices and positionings. Typically, they are patterned and spatialised so as to build and allow for layers of relations and transversals by users with various needs. In recent years, through software such as *Flash* or *Authorware*, many user interfaces have come to include dynamic elements [36] included in one environment.

In the specific educational setting referred to here, it was not financially, pedagogically or technically possible to use commercially published film editing software. Multiple-user site licences were beyond our small budget; software tools in the hands of individual students could not be easily linked to educational activities and an environment geared towards reflection; installing, managing and monitoring commercial software with a large class (unlike those smaller ones in many film schools) was not feasible. In *Director's Cut* the aim was to develop an interface to allow 250 students easy and rapid access to a locally specified activity with minimal training in its use. Time was invested in programming and joint task design rather than an elaborate visual interface design or securing unlikely wider network access. This points to the important relationship between interface and interaction design as designing for integrated communication based on an underlying information system.

SOME DESIGN NEGOTIATIONS

Figure 2: Screengrab of *Director's Cut*. The View/edit guide top left says 'Click on a clip icon to view information on the clip. To play the clip, click on the clip itself. The clip scripts with a light background can be edited. Sometimes feedback on your script is shown on the far right.'

A fine balance

As is the case in many design arenas and the 'translations' and negotiations between them [11, 37], the challenge in large introductory courses, such as the one here, is striking a balance between exposing students to the theoretical view as well as some of the more practical skills needed so that these may be seen as complementary activity systems. This is more than balancing the time invested between these; it is also the timing and structuring of the curriculum interventions with ICTs [35]. Traditionally, universities have taught the theory, but increasingly the expectation is for a more balanced curriculum in which theory and practice are intertwined. With limited time and resources, providing students access to professional equipment is not always practical. This poses sets of compromises and demands both for content specialists and for learning designers.

What is needed is a conceptual design framework allowing the educator to develop, change and situate their teaching activities within wider, emerging and participatory approaches to learning as socio-culturally constructed. Educators require 'multimodal' tools that are sufficiently flexible to scaffold learning tasks, hide potentially confusing aspects and provide intrinsic feedback. Recent literature on multimodal discourse in an information age [20] with its focus on discourse modes and media may be extended to cover the integration of interaction, content and information systems design processes [43, 44]. In designing this activity we have been motivated to get inside multimodal learning design and to develop what Activity

Theory labels a mediating artifact, here one that emulates a commercial digital film editing suite a film director might use.

On film editing tools

Director's Cut is a microworld-like learning environment in which students can experience practical issues in film editing, develop short sequences and reflect on them. Creating learning environments for students to work with video in our computer laboratories is challenging, despite comparatively well established ways of distributing and editing text and images suited to our limited bandwidth and constraints on access. Regarding video editing, there are as yet no tools that are equivalents to the ubiquitous word processor which can be used by both professionals and novice users. Professional video editing tools tend to be feature rich; they present stark interfaces that already assume the user knows what to do. Simpler, commercial software is often not flexible in what users can do, such as easily edit within an already edited clip.

'Backstory'

In the process of developing *Director's Cut*, several earlier collaborative design projects between CFMS and CET provided a common space for discussion and ongoing design. The earlier projects centred on learning about media and popular culture [38,39]. They adopted a similar participatory design approach to developing interfaces and underlying systems in support of educational needs. For the sake of economy, we refer to only two of these here. They both happen to have been developed in *Authorware*, an application for developing interactive learning activities.

In *NewsFrames* the focus was on learning about the major components of newspaper front page layout and discovering how linguistic choices 'frame' reader's interpretations of news reports. This involved students building connections between creating a headline, selecting a lead photo and writing its caption. *NewsBreaks* [39] is concerned with the 'manufacturing' of TV news through editing and scriptwriting that shares much of the functionality of *Director's Cut*. This investigation of using video editing in *NewsBreaks* demonstrated two aspects that shaped the *Director's Cut* design: the educational value and technical feasibility of getting students to write scripts to pictures and to sequence clips to construct new meanings.

WHO'S WHERE?

Figure 3: Screengrab of some of the video clips provided in *Director's Cut*. Students choose between the different shot scales and camera angles provided, noting how each impacts on the way spectators relate to characters.

Film narrative

Director's Cut runs in Jane Stadler's Film Narrative course (FAM201S). The course investigates the process of film narration from screenwriting to an 'auteur' approach to film studies that considers film authorship in terms of a director's 'signature style'. It examines the relationship between meaning, form, ideology and narrative structure and explores the influence of the socio-cultural context and the conditions of production and reception on storytelling and meaning making. Students are introduced to a range of theories of narration and spectatorship, and are required to develop critical skills that enable them to analyse genre, national cinemas, and character engagement. Learning about how the audience is positioned within screen space by means of techniques such as camera

angle, point of view, subjective imagery and voice-over narration is fundamental to understanding how character engagement is facilitated. Reinforcing this understanding through practical and creative application of the key concepts emerged as the central learning objective in the *Director's Cut* design.

Film Noir

The well defined genre of *film noir* – with its murky murders, rough talking detectives and *femme fatales* – was chosen for its established film narrative conventions. Students were introduced to this genre in lectures and tutorials and to a variety of critical, cultural, feminist and contemporary criticism relating to it. For the clips in *Director's Cut*, Jane Stadler hired past students to act, shoot and edit the video clips using her shot list. This involved filming from multiple angles, points of view and different shot scales to provide the choices for students to construct a sequence. In shooting our own footage, students had a visual identification with the material as it was known to be locally constructed.

INTERFACE & VISUAL SEQUENCING

Figure 4: Screengrab illustrating how clips are sequenced on the filmstrip timeline. The accompanying guide says 'To create a sequence, drag a clip onto the filmstrip timeline in the order you want it to play'

Interface

The paper is illustrated by close-ups of different parts of interface students use to create their sequence. These parts are all visible in one screen (Figure 6) but the utility of each only becomes apparent to students in the process of developing and editing their sequence. The interface was designed to make it appear relatively simple to create a sequence; in reality using the clips to tell an interesting story involves considerable effort. The activity is therefore designed to help students through a threshold with software, not so much in terms of control over its functionalities, but at a more conceptual level about the relations between editing principles and styles and tools.

We introduce *Director's Cut* to students in a computer laboratory. This allows us to demonstrate and explain how to use the tool, without having to provide exhaustive online help, and additionally to answer conceptual problems that cannot be anticipated. Often the first question asked was whether they could write a spoof film noir sequence, seemingly because the task of creating a sequence seemed at first so straightforward. We agreed to this if they could demonstrate fluency with the genre, but for most students this proved too challenging because spoofs require a masterful, self-reflexive understanding and manipulation of generic conventions. Our first concern is for students to demonstrate fluency with conventions after which in later courses their creativity comes into play in more open-ended tasks.

Sequencing

At the start of the activity, students need to familiarise themselves with the available footage and try out various plot lines. *Director's Cut* has 26 clips as icons arranged in a working area of the screen (Figure 4). A student can click on a clip icon to select it. Once selected, the clip's caption is displayed and it can be played or voiceover dialogue can be added in a textbox. Clips can be dragged onto and arranged on the timeline to construct a sequence for playing in order. In reality there are a very large number of feasible permutations and no two students came up with identical sequences. There are clips for flash-backs and other ways of playing with time in the narrative in addition to choices of shots shot scale, point of view and angle.

We justified limiting the range of options open to students for sequencing clips by telling students they were producing a rough edit. They could indicate any additional editing information, such as suggested in- and out- point or transitions, as notes in their script as a director might do. We asked students to imagine that the reason why their film had many alternative shots was to keep the climax of their film a 'secret' from the press. They as director now had the task to tell the story, adding explanatory voice-over narration and applying what they knew of film narrative, editing, spectatorship and genre.

From a learning design perspective, such scenarios are important in offering a concise and convincing explanation of both the expectations for and limitations of the tool while not unnecessarily stifling creativity or individuality. During the design negotiations devising the location of our editing process in the broader film making process was very valuable as it helped defined the interface functionality and film language we used. Being able to align the learning and interface design around the scenario in this way emerged as the key insight in developing *Director's Cut*.

Information system design

It is comparatively simple to write code to re-order clips, representing a basic edit. It is much more difficult, for example, to include transitions, in- and out-points or add music that fades during dialogue. As noted above, we restricted ourselves to the simple re-ordering of clips cast as a rough edit.

From an informatics perspective, good design encompasses the choice of appropriate data structures [13]. There must be a correspondence between operations on the data structures and those users perform. In *Director's Cut* the drag-and-drop editing operations for adding, deleting or moving a clip then involves simply adding and deleting elements from the ordered list. These data structures became important additional mediating artifacts around which we could negotiate the content, functionality and particularly the plausible constraints on the 'rough-edit' scenario. A simple example was that the clip sequencing functionality could be demonstrated using other edited clips, prior shooting and editing the film noir footage. We had used students to shoot footage who had had difficulty imagining how it would be used, as in our scenario we assume clips are partly edited rather than being the raw footage one would work with in early stages of a film editing process.

Accessing the data structures representing a student's sequence allow us to check, using simple condition-action rules, for violations of cinematographic conventions by inspecting which clips and in what order they were placed. This is used to display automated feedback on the interface when a 'convention violation' is detected. Our approach represents a novel aspect of the learning design which we used to detect jump-cuts, crossing-the-line-of-action and when the dialogue scripted by students is too long based on the length of the clip (the rule of thumb is one cannot speak more than three words

per second). It is feasible to check such rules, as in our case the length and content of clips are known in advance.

The activity also has reminders of common conventions for voiceovers (see Figure 5) and a detailed glossary. In designing these interfaces it was important to have an appropriate tone, personality or 'voice' for the feedback and online help. This could not be that of a frustrated educator but rather ended up something akin to a fastidious assistant film editor. Students were told they could occasionally ignore some of the feedback but then they would have to justify this. Collectively these modes of feedback opened up conversations between students and tutors, offering a language and mediating artifacts that focused on the film editing issues rather than learning negotiations initiated by vague questions such as 'is my thing ok?'

The rule checking also helped mediate the learning objectives. The rules capture the conventions we remind students about while they are constructing their sequence and thus the final assessment did not reward compliance but rather focused on what we considered more valued aspects. No automated feedback was then given on aspects that were assessed or that students should realise for themselves.

VOICEOVER & LOOPING

Figure 5: Screengrab of voiceover function in *Director's Cut*, illustrating how students can apply their screenwriting skills to add psychological complexity and motivation to characterisation.

Recording sound

Having created a sequence, the next challenging aspect for many students is writing voiceovers and imagining how audiences would interpret these. The voiceover text is entered into a textbox (Figure 2) for the associated clips and displayed when the sequence in played. Many students were uncertain about the application of scriptwriting conventions, which is a skill developed by practice and is what the exercise broadly offers.

The interface was adapted after the first day to give an example of the abbreviations used for voiceovers and dialogue as otherwise many students appeared not know how to begin (Figure 5), despite having received lectures, examples, and readings on screenwriting. Students generally spent an hour or more developing their draft sequence and script before continuing to the next phases of the exercise.

Linking terms and editing moves

Students are also required to name their film, outline the back-story to the sequence, identify the dominant point of view of the clips chosen and provide an explanation of their own sequence using terms drawn from film theory. They were asked to discuss the impact they intended their sequence to have on a film spectator, particularly in terms of character engagement. We received a number of comments from students, who after getting feedback or in typing in their explanation of their editing approach, realised inconsistencies and contradictions between what they did and what they intended.

Additionally, there are five multiple-choice questions that require students to play a clip randomly assigned to them and identify how particular film theorists would have characterised the clip. The articles discussing the film theorists' ideas are included in the course reader. Essentially the outcome of this activity is confirming whether students have done their readings and can understand and apply the theoretical terminology used in the academic articles. The intention is to underscore the relevance of film theory to creative praxis.

WIDESHOT FROM THE 'DIRECTOR'

A 'Storyboard Loader'

When closing *Director's Cut*, the sequence and responses are stored in a central database. This allows students to return to where they left off at a later stage. Once finished, students open the 'Storyboard Loader', a *Microsoft Word* document that queries the database, marks the multiple-choice questions, extracts their saved work and formats this in a storyboard layout. It includes frames from the sequence alongside their script. A formatted paragraph with all the written responses is inserted at the end.

From past experience we knew that it was important to have a print-out of each student's sequence, voiceover script and responses to questions. This makes it easier for tutors in writing feedback, provides a record of completion and can be used in students' portfolios. However, we remained unsure of what form this print-out should take, having only a rough idea of the range of student responses. We could not think of a filmmaking term for such a storyboard a director might create while doing rough edits. We had originally imagined this could be presented as a magazine article with pre-publicity for the film and featuring an interview with the 'director' about story concept and views on film narrative and spectatorship.

Through the design negotiations it became clear that there would be fewer opportunities to provide feedback and support learning at this stage. We could not anticipate the style of students' written responses and so adopted a relatively straightforward formatting of the document. This allows final text edits, such as correcting spelling, before printing and handing-in for assessment. As a tutor observed, it might be inappropriate to give the solutions to the multiple-choice questions or canned feedback on the print-out as then copying would be too easy for students.

The choices of projecting the storyboard print-out as functional rather than part of the film making microworld only gained clarity as students began producing sequences. The 'Storyboard Loader' thus evolved after a few students had completed the task through improving the layout and behaviours that had confused some of these students. We argued that is was exposing students to the mode or representation used in assessment which should not be hidden but rather made explicit.

'The whole picture'

The CFMS students come from a diversity of backgrounds and exposure to digital media and more specifically actual use of digital media tools. There is, then, variation in their own metamedia literacy [23]. What was surprising for us as educators was that few students were highly taken with the interface in Figures 6; however, we did witness a student literally jumping for joy seeing her script being transformed into a *Microsoft Word* document. From her remarks broadcast entertainment channels, as alternate activity systems, had prepared her for the types of interfaces depicted in the figures but not the information processing. Students often have no firsthand experience of such processing as an educational event since they typically have only ever witnessed the workings of an educational organisation and typically not seen it in terms of

multimodal discourse production, nor on screen. We are investigating ways in which samples of good and weak work can be included in a small video based interface so that further analysis and discussion may lead in to a follow up script and critical writing exercise. We discuss this in the final section.

REWIND

On assessment

Part of negotiating both the design and feedback on use and performance concerning a digitally mediated learning activity is to find a suitable means of assessment. *Director's Cut* served as a capstone exercise, and contributed 10% of the total course assessment. The assessed aspects demanded students spend on average 3 hours in the computer laboratories, excluding their preparation time. This is comparatively time efficient for each of the 250 participants, allowing rapid progress from the start with many tedious tasks being automated. Many students remarked on this aspect, often claiming it was the first such experience at university.

Jane Stadler prepared an assessment schema, having consulted the other participants involved in the design and drawing on what had worked in earlier related projects. The assessment was a 50% split between the editing (sequence and writing voiceovers) and answers to questions (open and multiple choice questions).

A one-page set of guidelines was prepared for tutors that we subsequently adapted based on tutor feedback after completion of the assessment cycle. Changes to the feedback rules and questions presented to students can be made in the setup stored in the database. This allows evolutionary changes to the task and assessment to be made largely independently of the *Director's Cut* application.

Co-directing design problems

The challenge in large introductory courses is to strike an appropriate balance between what the lecturer or students would like to do and what is feasible using the available time and infrastructure. With limited time and resources, providing students access to professional equipment is not always practical. Creating learning environments for students to work with video in our computer laboratories remains challenging,

Before, during and after a particular activity, the role of learning designers is to assess the limitations and feasibility of doing the activity via the available technology. Often lecturers are concerned by the prospect of 'co-directing' if this is insufficiently well negotiated with the learning designer in the role of information systems specialist. For the learning designer, this negotiation may also be delicate when the subject specialist is neither able to program nor match his or her intentions and re-conceptualisation of the task with possible, technical design and re-design.

On multimodality

In recent years the notion of multimodality, that is a mix of discourse modes and media types and their intersections in and through use, has become influential in understanding the changing nature of literacy and learning [40, 11]. *Director's Cut* presented students with a multimodal interface: with still and moving image, sound, graphic elements and typography. It emulated film editing software. Had we tried to support large numbers of students, unfamiliar with more elaborate editing tools of professionals, many would certainly not have succeeded in grappling with the film theory issues in the time available.

The multimodal nature of presentation and feedback through the lecture, tutors and automated feedback is an interesting

dynamic. Automated feedback is of course very limited, but is effective in reminding students of conventions and constraints we consider important. Alongside this machine-generated response as part of the mediating artifact, tutors are available in introductory lab sessions to discuss deeper questions and provide students with opportunities to voice their individual concerns. An example of this is the writing style or cinematic conventions that could be broken to create a specific effect. This provided students with a sense of the voicedness Engeström includes in his approach to expansive learning, here about contradictions and breaks in the student's own production which needed to be described and discussed to that their own 'mark' could be inscribed in their sequence.

User perspectives

Participatory design has importantly encompassed the views of users of design artifacts and systems; it has also listened to how people experience processes. As a whole, this placed audiences, users and participants within design as designing, that is as communication in the making.

In this section we refer to a selection of satisfied and critical comments from students. We do so to connect to the later suggestions of what might be changed in the activity itself but also carried through to other parts of the curriculum. Several students expressed frustration with being constrained by the choice and length of clips. This restricted the dialogue they wished to write. This is the type of challenge we had intended create and the pressures this placed on students is reflected in their comments:

> *There were too many short clips - thus hampering being able to add to the story (as one is unable to properly add in dialogue or voice over).*

A significant number of students evolved sensible ways to use short and cleaver dialogue voiceovers. Overall most students were very enthusiastic about the activity as providing an alternative to essays and that it demonstrated innovation:

> *I think this was a really creative exercise. Essays get very boring as the only means of assessment and this exercise was both practical and analytical. I think the time and effort spent making this programme is appreciated, and shows a sense of innovation.*

At a more macro level, one student wrote:

> *This exercise has been quite a learning experience. It has shown me that the real storytelling in film happens in the editing.*

As this excerpt suggests, the story is not yet 'wrapped' for many students: they go on to a 3rd year course with smaller building blocks than the ones given here in the clips. Actual editing requires intimate knowledge of the material and time and familiarity.

The Film Narrative course includes mainstream Film Studies students who mainly study film theory and analysis, as well as 24 students who are enrolled in quota-restricted screen production courses. At the time they did the *Director's Cut* exercise, the Production students were also learning how to use professional editing software. A few students in the CFMS Production Stream tended to express frustration with the constraints imposed on composing and editing their sequences:

> *I did enjoy the exercise. However, I suppose because I am in Production, I was frustrated by the lack of freedom. I would have liked to chop some of the clips, add some sound and really get the feel and timing right.*

Interestingly the tutors remarked that these Production students where not the ones producing the best work in applying the theoretical understandings. Students who accepted the boundaries on the task remarked on the impact the feedback had on their work. A representative comment is:

> *I thought that this was a very fun exercise, especially for those of us who are not doing the production skills program. It was the first time that I have ever edited anything and the program is helpful and informative. I especially appreciated the comments from the computer with regards to our clip choices - it made me think about what I was trying to say and how best to say it.*

Such comments are to be factored into the redesign process.

ROUGH EDIT

Figure 6: Screengrab of overall interface and sub-sections in *Director's Cut*

This section has four main parts in which we draw together several aspects of the paper as does Figure 6 above showing the overall interface of *Director's Cut* from which the earlier images were cropped. The parts are: 1) Re-directing design, covering changes to the activity 2) Observations on designs for learning, abstracted from the case presented, 3) Mediating the activity online, with suggestions on how student sequences, reflections and evaluations might be linked, and 4) a final reflection called Designing adaptively.

Re-directing design

The metaphor of a 'director's cut' of a film is useful in describing how a design vision in an educational setting is privileged over the details of final production or distribution values familiar to commercial developers. Students look for the lecturer's voice in these designs and are willing to tolerate some aspects which are not fully functional.

From past experiences, it takes several runs before we have confidence in the learning and system designs. *Director's Cut* benefited by drawing on earlier projects allowing us to avoid pitfalls. Aspects that will change in 2005 include explaining the task better to Production students in particular, ensuring and that there is an equitable distribution of marks across all the assessed components. We would like to try adding in- and out-points for clips. While this is conceptually easy to support, the performance on often slow computers may result in the playing of sequences being very jumpy.

More support is also needed to help tutors visualise the final sequence. In the early stages, some tutors were frustrated as they did not know the clips as well as students came to know them. We would also like to create a version of students' sequences that could be added to a digital portfolio as we discuss below.

Observations on designs for learning

Learning design appears simple and obvious when one sees successful cases. In practice these designs do not simply emerge but represent cumulative experiences. In this paper we have tried to provide some answers to the questions Engeström asks about processes and participants in learning. His model of Expansive Learning has stages akin to iterative and emergent design processes in which negotiations between partners evolve and need to be worked out as contradictions and potentials are or must be made apparent for new plateaux to be arrived at. This is to cast collaboration between subject and learning specialists as an ongoing dialogue which needs awareness of one another's disciplinary and interdisciplinary backgrounds and approaches.

A central concern in the application of technology in educational activities [28] is whether we are succeeding in making ICT-pedagogy a credible and viable complement to face-to-face education. Unpacking this highlights questions as to whether educators are being empowered to develop appropriate learning materials and whether there is broader adoption of languages and tools supporting these development processes and the assessment of student learning. Staff development processes tend to achieve effective transfer to practice when they integrate conceptual scaffolding and experiential learning [44, 45]. The model which is being piloted at UCT includes both online and face to face interaction within and beyond laboratory-based sessions.

The processes of designing *Director's Cut* did not create major disruptions in terms of an Expansive Learning approach, nor did the intersection of the designer's primary disciplinary homes result in any meaningful contradictions of views or suggested solutions between the designers. In part this is because we could learn from experiences in earlier projects where such issues arose. Additionally, focusing on praxis activities in a theory course seems to through up fewer contractions than if the activity aimed to teach the core theory for example. However, the learning esigner did need to explain technical limits to the design outcomes to the film educator. Similarly, the film educator needed to clarify her pedagogical and content goals for an activity through which students could generate an edit of their own and see that this was possible to achieve quickly.

The principles of polyvocality and transformation in Expansive Learning may be realised through a redesign process in which students' views and experiences help recontextualise the design for learning for other students, or for the shaping of other learning activities. This is to see designing for learning as a part of an ongoing activity itself in which knowledge is shaped through negotiation, use and dialogue, not didactic delivery. Expansive Learning and Participatory Design capture many familiar aspects of our learning design that have not always been foregrounded in how educators work together. In a university context, focusing on theory and processes, as we did in *Director's Cut,* makes designs easier to negotiate than if the focus had been the equivalent of a textbook presenting content and with many dependencies on prior content. It is important to identify appropriate mediating artifacts that do not depend on content being transferred but rather focus on learning design as a workflow that technology facilitates while educators continue to play an active face-to-face role.

Mediating the activity online

Resnick's work exploring massively parallel microworlds demonstrates how patterns emerge for students to learn from in systems governed by simple sets of rules [17]. In the same way we wanted each of the 250 students to create a unique film sequence but be able to recognise and share common ideas and appreciate how others have used the identical building blocks differently. Given the number of students and possible permutations of sequences, we are faced with the question of how to provide access for students to varying examples from

the class. Bandwidth restrictions also limit the volume and accessibility of material we can place on the web.

We are now designing an online interface which allows for the presentation of selected sequences of varying quality from students productions in *Director's Cut*. This would provide students with material to discuss above and beyond their own small sequences in the form of a portfolio. It would also provide future students with examples with which to compare their own products. One such interface is the *BallectroWeb* [1, 36] which was designed with three tracks of text relating to the same video material. The existing interface in *Flash* and the underlying XML coding allows for substitution of content as well as an HTML section to contextualise a project. In making this suggestion, we also see our collaboration as designing for learning that moves beyond one campus, one project and indeed one learning activity.

Designing adaptively

Projects in university contexts, such as *Director's Cut*, demand we work in very flexible ways. They run for very short stretches on an annual basis and do not generate an income stream. Yet they are rich in adaptation to established and to emerging needs and demands. We cannot afford to over-engineer our software but nor can we design-away system failures without sacrificing valued aspects of the learning design. There is a fragility inherent in the ICT infrastructure of UCT which often requires fixes to work around problems. Yet, this can equally well be applied to limits in our understandings of student learning needs, which also demand managing what cannot be anticipated.

While we were fortunate not to experience persistent delivery or learning problems with *Director's Cut*, there were technical problems but generally students were surprisingly understanding. Such difficulties can be powerful factors influencing negotiations between lecturers and learning designers by limiting the scope of learning activities educators are willing to attempt.

Director's Cut has served as an influential demonstration of what can be accomplished through collaborative design in a local context. Ultimately the most stimulating aspect of the project for us as educational co-designers has been in the making of designs for learning that succeeded beyond our expectations and stimulated many fruitful debates among students. That some of the students are likely to go on to be tutors on the course extends their own transformative experience to ongoing cycles of expansive learning with new students. At UCT, the case also provides a thoroughly tried example of Expansive Learning and its disciplinary and institutional characteristics for other staff in our joint project into building a small community of practice among Humanities lecturers through support from CET and its learning designers.

A Participatory Design approach, with a focus on process, might also be used to motivate for students' voices in the redesign of a mediating artifact. Here, we see a parallel between 'voice' and learning about spectatorship. Providing students with some of the details of the design of *Director's Cut* may suggest how they too might pay attention to their own various film productions as mediated via digital technologies. We hope that the best short examples from *Director's Cut* will be presented online as a shared resource accompanied by notes of our own about the designing of the activity. This would further demonstrate that learning to shape and critique genres, composition, editing and spectatorship in film are all ongoing, participatory and adaptive designs in-the-making.

REFERENCES

1. *BallectroWeb*: www.intermedia.uio.no/ballectro/. For the multimodal interface and video documentation, see the section labelled Documentation.

2. Bratteteig, T. *Making Change. Dealing with relations between design and use*, Dr. Philos dissertation, Department of Informatics, University of Oslo, (2003). PDF available: http://heim.ifi.uio.no/~tone/Publications/

3. Buckingham, D. & Sefton-Green, J. Making Media: Practical Production in Media Education. London: English & Media Centre. (1995).

4. Buckingham, D. & Sefton-Green, J. Multimedia education: media literacy in the age of digital culture. In Kubey, R. (Ed.) *Media Literacy in the Information Age*. New Brunswick: Transaction Publishers (1997). 285-305.

5. Bødker, S. Through the interface: a human activity approach to user interface design. Hillsdale NY: Lawrence Erlbaum, (1990).

6. Coyne, R. Designing Information Technology in the Postmodern Age: from method to metaphor. Cambridge MA: MIT Press. (1997).

7. CET: http://www.cet.uct.ac.za/

8. CFMS: http://www.cfms.uct.ac.za/

9. Czerniewicz, L. Cape of Storms or Cape of Good Hope? Educational technology in a changing environment. *British Journal of Educational Technology*, 35, 2 (2004), 145-158.

10. Czerniewicz, L. & Ngambi, D. Students use of computers in UCT's 'walk-in' laboratories. *British Journal of Educational Technology* 35, 2 (2004), 241-246.

11. Downton, P. *Design Research*. Melbourne: RMIT University Press, (2003).

12. Engeström, Y. Learning by Expanding: an activity theoretical approach to developmental research. Helsinki: Orienta-Konsultit, (1987).

13. Engeström, Y. Expansive Learning at Work: toward an activity theoretical reconceptualization. *Journal of Education and Work*, 14, 1, (2001). 133-156.

14. Engeström, Y., Miettenen, R. & Punamäki, R. (Eds). Perspectives on Activity Theory. Cambridge: CUP, (1999).

15. Engeström, Y. Activity theory and individual and social transformation. In Engeström, Y., Miettenen, R. & Punamäki, R. (Eds). Perspectives on Activity Theory. Cambridge: CUP, (1999). 19-38.

16. Engeström, Y. Innovative learning in work teams: analysing cycles of knowledge creation and practice. In Engeström, Y., Miettenen, R. & Punamäki, R. (Eds). Perspectives on Activity Theory. Cambridge: CUP, (1999). 377-404.

17. Film Narrative course description: http://www.cfms.uct.ac.za/courses/fam201s/

18. ICT-UCT project website: http://www.intermedia.uio.no//projects/research/ict-uct_en.html

19. InterMedia: http://www.intermedia.uio.no/index_en.html

20. Kress, G. *Literacy in the New Media Age*. London: Routledge. (2003).

21. Kuhn, S. & Winograd, T. 'Profile: participatory design'. In Winograd, T. (Ed.) Bringing Design to Software. New York: ACM Press / Addison-Wesley (1996). 290-294.

22. Laurel, B. *Design Research*. Cambridge, MA: MIT Press, (2004).

23. Lemke, J. Metamedia literacy: transforming meanings and media. In Reinking, D., McKenna, M., Labbo, L. & Kieffer, R. (Eds) Handbook of Literacy and Technology: transformations in a post-typographic world. Mahwah NJ: Lawrence Erlbaum. (1998). 283-301.

24. Löwgren, J. & Stolterman, E. Thoughtful interaction design: A design perspective on information technology. Cambridge, MA: MIT Press, (2004).

25. Malmborg. L. The role of art and design in it-education at the digital Bauhaus. DAC Conference Proceedings. Melbourne 2003. At: http://www.fineartforum.org/Backissues/Vol_17/faf_v17_n08/reviews/reviews_index.html

26. Manovich, L. The Language of New Media. Cambridge MAS: The MIT Press. (2002).

27. Mazur, J. Applying insights from film theory and cinematic technique to create a sense of community and participation in a distributed video environment. Journal of Computer Mediated Communication, 5, 4 (2002). At: http://www.ascusc.org/jcmc/vol5/issue4/mazur.htm

28. McGettrick, A, Boyle, R, Ibbett, R, Lloyd, J, Lovegrove, G, & Mander, K. Grand challenges in computing: education – a summary. *The Computer Journal*, 48, 1 (2005), 42-48.

29. Moran, T. Everyday adaptive design. Plenary lecture. *Designing Interactive Systems 2002*. The British Museum London. 25-28 June. (2002). At: http://www.sigchi.org/dis2002/

30. Murray, J. The god in the machine: design principles for digital resources in the Humanities. Plenary address Conference on The Future of the Humanities in the Digital Age 26 September 1998 University of Bergen Norway (via teleconference). (1998). Slides available at: http://web.mit.edu/jhmurray/www/futHum/sld001.htm

31. New London Group. A pedagogy of multiliteracies: designing social futures. In Cope, B. & Kalantzis, M. (Eds) Multiliteracies: literacy learning and the design of social futures. London: Routledge. (2000). 9-37.

32. Peterson, M. 1998 'Creating hypermedia learning environments: guidelines for designers'. *Computer Asssted Language Learning*. 11: 2. 115-124.

33. Resnick, M. *Turtles, Termites, and Traffic Jams: Explorations in Massively Parallel Microworlds*. Cambridge, MA: MIT Press, (1994).

34. Rogoff, B. Observing sociocultural activity on three planes: participatory appropriation, guided participation, and apprenticeship. In Wertsch J., Del Río, P. & Alvarez, A. (Eds) Sociocultural Studies of Mind. Cambridge: Cambridge University Press Cambridge. (1995). 139-164.

35. Sinclair, M., Aldred, S. & Smith, R. Facilitating the collaborative design of flexible learning materials: Investigating the synthesis of content and multimedia knowledge and expertise. *Australian Journal of Educational Technology*. 18, 3 (2002), 293-307. At: http://www.ascilite.org.au/ajet/ajet18/sinclair.html

36. Skjulstad, S. & Morrison, A. Movement in the interface. *Computers and Composition*, (in press 2005).

37. Stuedahl, D. *Negotiations and Persuasions – Knowledge Building Across Knowledge Traditions in the Design of new ICTs* (in Norwegian). Ph.D thesis. Oslo: University of Oslo, (2004).

38. Van der Vliet, E. Making Do: the Edusoap Project as Constructionism in Practice. *In Proceedings of the Multimedia Education Group Colloquium*, University of Cape Town, (2002), 470-486.

39. Van der Vliet, E., Deacon, A. Media rich, resource poor: practical work in an impractical environment. *British Journal of Educational Technology* 35, 2 (2004), 213-222.

40. Van der Vliet, E., Walton, M. & Anderson, P.. "TV is our nanny": Multimodality and Filmic Literacy. *In Proceedings of the Multimedia Education Group Colloquium*, University of Cape Town (2002), 362-387.

41. Walton, M. Identity, Learning, and User Networks in a Multi-User Online World. *Presented at the 4th Annual World Wide Web Conference*, (2002), University of Stellenbosch Business School. At: http://www.usb.sun.ac.za/www2002/

42. Walton, M. & Archer, A. The Web and information literacy: scaffolding the use of web sources in a project-based curriculum. British Journal of Educational Technology, 35, 2 (2004), 173-186.

43. Walton, M. & Vukovic, V. Cultures, literacies, and the web. Dimensions of the information scent. Interactions, March/April (2003), 56-64.

44. Wenger, E. *Communities of Practice: learning, meaning, and identity*. Cambridge: Cambridge University Press, (1998).

45. Wenger, E., McDermott, R. & Snyder, W. *Cultivating communities of practice: a guide to managing knowledge.* Cambridge, MA: Harvard Business School Press (2002)