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While computer technology opens up new possibilities as a delivery mechanism it is also a medium in itself and presents production challenges in terms of how its powers can be creatively harnessed. In this context education content is just another variant of media production, with the student in the role of audience/user. Application of media production techniques in audio, video and print provides the opportunity to increase the appeal of educational materials by applying to them what media producers have learnt about the strengths of radio, television and online media as communication vehicles. This paper describes a research project which used an audio documentary as a learning tool in an online unit to see to what extent production techniques of audience capture enhanced the learning experience.

The higher education sector has been overwhelmed by the potential that new technology brings to the learning experience. The technology has three strengths:

1. it takes learning out of the confines of a campus-based environment;
2. through interactivity it breaks down the tyranny of distance and makes possible the establishment of novel teaching and learning mechanisms;
3. it provides scope for applying sophisticated screen and audio production techniques to the learning experience itself.

However, as Cunningham et al. point out, 'there is a good deal more to borderless higher education than "delivery of content"' (2000: 129). While computer technology opens up new possibilities as a delivery mechanism it is also a medium in itself and presents production challenges in terms of how its powers can be creatively harnessed. In this context education content is just another variant of media production, with the student in the role of audience/user. Application of media production techniques in audio, video and print provides the opportunity to increase the appeal of educational materials by applying to them what media producers have learnt about the strengths of radio, television and online media as communication vehicles.

As White et al. note in relation to video in learning, the association with relaxation "may contribute to a low-anxiety learning context." (2000: 168). They also note however that there has been little work done into the way the media product is used "with no teacher present to control the medium" (ibid).   In this context the student is not just learner but audience and this raises the issue of whether approaching the learner as audience can offer an alternative insight into the learner's engagement with online media. This paper describes the use of an audio documentary as a learning tool and the challenges that emerged from attempting to capture the elusive learner/audience.

Methodology

The research team from Murdoch University and the Australian Broadcasting Corporation were involved in a partnership devising a new post-graduate qualification in media management to improve the training of broadcast managers. They decided to use this as an opportunity to activate their combined expertise in media management, media production and educational pedagogies to test the effectiveness of different learning options in the online environment. With the support of an Australia Research Council Linkage grant the researchers looked at online learning not only as an educational and pedagogical experience but also as a media experience. The aim was to approach students not just as learners but as media audiences and to see whether production techniques of audience capture enhanced the learning experience.

The researchers used the action/reflection spiral developed by McNiff (1988:27) and further elaborated by Coghlan and Brannick (2001, cited in Nunes & MacPherson 2003:431) whereby results from earlier stages of the project are fed into later stages in a cycle of diagnosing/planning action/taking action/evaluating action. They also used a participative research model, defined by MacPherson & Nunes as involving:

a systematic process in which educationalists act deliberately on the basis of self-criticism and analysis of recordings, reflections and feedback from all stakeholders in the learning activities, theorising about practice and finally developing solutions, strategies and new questions, questions which in turn need to be tested through renewed action. (2004:9)

The researchers used multiple forms of data-collection and analysis combining complementary qualitative and quantitative approaches, in accordance with what Kemmis and McTaggart have described as "symposium research". The aim of the audio documentary experiment was to gain an insight into students' use and experiences of an audio documentary as a learning tool. For this a qualitative approach was adopted using semi-structured interviews with students on completion of the unit where the focus was on learners' expectations, learning styles, ways of using materials provided, and difficulties encountered. Results would be fed into future iterations of the unit.

Research Context

The student cohort in this case was a group of broadcast managers currently working in industry who would be doing the course as part of their ongoing professional development. They were recruited from the ranks of senior journalists and regional and metropolitan program directors in the ABC. While they had had years of media experience the course was either their first experience of learning at the tertiary level, or marked a return to academia many years after completing a first degree. Data from questionnaires administered in the units already undertaken had shown one the biggest challenge for them was mastery of the research and writing skills required at this level (Maor & Volet 2005). Even when they had years of experience in journalism, they found it daunting and intimidating to make the leap to a more rigorous form of enquiry and analysis. They experienced difficulties coping with the dense language and academic jargon of the theory textbooks.

The Media Formatting and Programming unit they were about to undertake focused on the strategic planning process as it applies to format and program design. The students were required to examine and analyse the context for the media planning process; to develop an understanding of strategic planning in relation to the review, renewal and assessment cycle in station format development; and to apply their knowledge in a format-planning exercise to be undertaken at their own workplace.

Nunes and McPherson stress the importance, especially in continuing professional distance education, of "portraying authentic learning activities" which "are situated in real world contexts" (2003:434). It was decided to craft the new unit in such a way as to have media professionals talking to media professionals, in order for the learning to be peer-centred and firmly based in an industry context with which the cohort could easily identify. The purpose of the documentary was to use real-life practice as the starting point, opening the way to reflexive theorizing at a later stage.

The launch of the unit coincided with a unique occurrence in the Perth radio market with the arrival of a new player, *Nova*, into an environment that had been stable for nearly 20 years. This delivered a perfect case study to illustrate media formatting in action as all the music stations rushed to redefine and secure their place in the

expanded market. This became the subject of an audio documentary, *"Birth of a Station",* and companion website which would be used as key learning tools in the unit.

The Media Product

As long ago as 1977 Wilbur Schramm bemoaned the fact that researchers into instructional media had focused on macro questions – Can the media teach? What is the best medium (1977: 14) instead of the micro questions which might "identify the unique strengths and weaknesses of a given medium for a given purpose, trying to maximise the learning from a particular medium and thus considering how it is used and how it can be used best" (1977:36). By the mid-1990s Jonassen et al. summed up the main lesson drawn from years of experiments with media in learning: "Media are not responsible for learning; learners are" (1994:38). According to them, in this context the media "are more than mere vehicles; they are resource enabling tools which if selected properly can enhance cognitive processing and affect learning efficiencies" (ibid:37). The discussion therefore "should focus less on media attributes vs. instructional methods and more on the role of media in supporting, not controlling the learning process." (ibid: 31).

In relation to the online learning environment MacPherson and Nunes also see the appropriate focus as the micro rather than the macro: "an online learning application is specifically produced to address a particular educational need, and is thus limited to the solution of the problems arising from that need" (2004:60).

This research project therefore did not have grandiose aspirations to identify a potential 'killer application' for audio in online learning, but rather aimed to test whether, in the context of one unit delivered to a particular cohort, the use of audio helped or hindered the learning experience.

Media Effects

There is a long history of research examining how humans select and process information (for background on audience research see Abercrombie and Longhurst 1998, Ang 1991, Moores 1993, Nightingale 1996). As summarized by Potter the main elements of audience appeal include a preference for concrete over abstract information and for the specific over the general (1998:48). In other words we like stories, and we prefer stories that focus on the individual rather than society at large.   As Potter notes, this is one of the main ways we come to understand the world around us:

> We make sense of information by attempting to arrange elements into "stories." ...the more knowledge we have in a particular area, the easier it will be to process new information and the more likely that it will be remembered. In addition, facts that can be organized by well-known schemas will be more tightly connected in memory than facts that cannot be so well organized. (ibid:71)

Potter goes on to describe the elements that encourage engagement with the media. Realism is one factor:

> … we are more likely to have stronger emotional reactions when we are exposed to realistic narratives in realistic settings. Realistic elements draw us more strongly into the narrative by reminding us of our real lives and actual experiences. Thus the narrative will resonate more with our personal experience. This serves to engage our remembrance and imagination to a higher degree … (ibid:99)

> Identification with the story subjects is another factor: "… we will have a stronger emotional reaction with narratives that feature characters with whom we can identify" (ibid).

When Potter describes the role of personal motivation in defining our engagement with media his words could apply just as easily to a successful learning experience:

> When you are exposed to the media, you are continually forming impressions. This impression formation is guided by your goals for the exposure. If you don't have any clear goals, you have little psychological involvement, and your impressions are very superficial. When you do have clear goals, you become more involved during an exposure session, and you expend more mental energy in processing the images and encoding them into more elaborate knowledge structures (ibid:57).

The act of media production is a collaboration between producer and audience. Done properly the producer will give the appropriate cues for the audience to be guided to retrieve the intended message, as Potter explains:

> The task of interpreting emotions well from media messages requires us to be able to read the verbal and nonverbal cues from characters, the situational cues, and then properly coordinate the interpretation of both sets of cues (ibid:99).

Kozma talks about instructional design in a similar way:

> the designed object is the first turn in a conversation between the designer and the intended users. The design itself does not emerge until the users interact with it - take their turns in the conversation. The emergent design will be influenced by the goals, beliefs, and knowledge of the users, as well as the intentions of the designer, as embedded in the designed object. … From this perspective, the task of the designer is to use the capabilities of the medium to create objects that generate interesting and effective conversations - ones that influence learning (1994: 17).

If storytelling is a powerful tool for learning, media production techniques can harness storytelling skills so as to get a predictable reaction from the target audience. With the use of appropriate techniques, the learner/audience can be guided towards specific pedagogical outcomes.

The Medium

According to Jonassen et al., designers of media in education must "through the selection of specific learning inputs capitalize on the strengths and weaknesses of

the various information processing sub-system [sic] to facilitate the most efficient construction of knowledge" (1994:32). However, different media have different properties and Ullmer notes the importance of ensuring that, to adapt the words of Marshall McLuhan, the medium suits the message (1994: 23). In this research project the audio documentary was selected as a vehicle for the following educational function:

- To provide an alternative to the lecture. Exposure to real people is difficult in distance learning and the standard lecture format, which at best can be delivered as an hour-long audio or video recording of a talking head, is a challenge for any distance learner. The researchers designed the unit without lectures, using the documentary as a way of exposing the students to real people.
- To provide a narrative line for the theory. Laurillard comments on the difficulties students have in lectures and in text-based learning keeping track of the intellectual line of argument (2002: 46). The documentary translates theory into a story format where characters and situations may be more easily retained.
- To provide a user-friendly introduction to theory. The documentary would provide an alternative access point to the key theoretical concepts by illustrating them in terms of real-world practice.

Why audio? While appearing to be forever the poor relation of vision, sound is nevertheless a powerful medium in its own right. What Laurillard says about television and film is no less true for the audio format:

> "Television (and film...) is peculiarly able to convey a way of experiencing the world. It provides a vicarious experience through dynamic sound and vision, and uses a number of technical devices to manipulate that experience" (2002:99).

Just as film and television have a range of recording and editing devices to focus the viewer's attention, so does audio use sound, voice, music and even silence to transport listeners to another world.   Audio has technical advantages too, being less expensive to produce and easier to deliver, especially given the ongoing problems in relation both to access and delivery in the online environment (the problems of online delivery to non-traditional students summarised by Miller & Lu [2003] are corroborated in this project – see Maor & Volet, 2005).

The new computer age has made it possible to counteract some of the traditional disadvantages of audio while activating its strengths. One major achievement of computer technology has been the capacity to capture the evanescent, to preserve audio content so it can be retained and retrieved at will, not just once but over and over again. This has freed audiences from the constraints of the live broadcast schedule and has broadened the capacity for audio content to be appropriated for a conscious learning experience. The problems with group listening are overcome by delivery of audio in a one-on-one context with control devolving to the individual student. This opens up the prospect of self-paced learning where the student can progress at their own speed, with as much time for re-listening and reflection as they need.

The new technology has also transformed the way we can access audio content, replacing the time-consuming trawling through a cassette with a one-click track-finding function that allows the student to go quickly to any particular segment of the

audio piece. The capacity to enhance audio with multi-media add-ons such as web links, relevant readings, primary source material and interview transcripts gives the student the capacity to access the material in a variety of ways to suit their learning style.

The Production Process

As Wicks notes in relation to conventional media production:

> the literature does not suggest that people are always active processors of media content. Rather, factors such as message structure (i.e., use of graphics, color, pacing, music, etc.) and message content (i.e., program type or genre) as well as viewing motivation can stimulate active processing (2001:107)

The educational media producer needs to go even further:

> …if the narrative presentational media are to move beyond the limits of the solemnly silent, uninterrogatable [sic] text to meet the demands of the learning process, then they have to structure the narrative to engage the learner in reflecting and articulating at the discursive level, and in playing some vicarious part in adapting and acting at the experiential level. (Laurillard 2002:92)

The producers of the audio documentary faced two major challenges: not only did they have to capture their audience's attention but they also had to encourage them to engage critically with the material.

The preparation of any media product follows a defined sequence (Phillips & Lindgren 2006:87-107; Starkey 2004:33-57; McLeish, R. 2005:264-75). Consideration is given firstly to the target audience to ensure the product is tailored to their age, interests, and lifestyle. Secondly consideration is given to the format – where and how will the audience access the media product, and what aspects of the format will impact on the structure and approach. Thirdly, consideration is given to how the story will be told – what will be the plotline? Who will be the talent? How will the story be crafted – what enhancements will be included to create a flowing, easy-to-listen to package that will retain interest all the way through. When the product is intended as a learning tool, attention also needs to be given to a fourth element, the enhancements that will direct the student towards specified outcomes.

These four elements will now be discussed in turn as they applied to the audio documentary project.

1. **Audience**. The audio documentary was targeting a specific audience of broadcast professionals.

2. **Format**. Since it was going to be part of the unit website it would not have the time constraints imposed by a broadcasting schedule, though consideration had to be given to what would be a comfortable listening experience. A two-hour listening session would be much more demanding than one lasting thirty minutes. Duration would be determined by how long it would take to tell a compelling story that would hold attention from beginning to end. The final product lasted half an hour. Since the documentary was also a learning vehicle,

format considerations also encompassed what other materials could be used to provide opportunities for reflection and analysis to encourage specific learning outcomes which could be applied later in the course (see below).

3. **Storyline**. The story of the advent of the new *Nova* station had intrinsic dramatic appeal, dealing with success and failure in the cut-throat radio market – a classic example of Potter's "realistic narratives in realistic settings" referred to earlier (1998: 99). The talents were the program directors from the major music stations. They were interviewed at the start of the year detailing their reaction to the new arrival, and describing the actions they planned to take to secure their market position. They were interviewed halfway through the year to reflect on how far their tactics had succeeded or failed. The documentary showed media formatting and planning in action in the real world, illustrating the range of practical strategic responses to market threats. It brought to life through vivid example the theoretical concepts the students would learn later as they replicated a similar exercise in their own environment.

The documentary had a purpose beyond the simple telling of a tale: it also had to deliver information supporting the learning objectives of the unit. The interviews with the talents had to be carefully structured to ensure delivery of specific information on station content and format, branding and imaging, market position, and tactics for dealing with the new competitor.

Like the program directors, the student cohort of program-makers were people whose careers depended on their ability to create successful radio product. Bearing out what Potter notes as our propensity to have "a stronger emotional reaction with narratives that feature characters with whom we can identify" (ibid:.99), the students would be able to identify with the drama of the program directors' situation as they withstood the monthly torment of the ratings reports which charted their stations' rises and falls.

The documentary used three sound sources: the interviews with the program directors, the narrator who ensured continuity in the storyline, and station jingles. This introduced variety and prevented the sound from becoming too monotonous. The narrator kept the storyline moving, while the jingles introduced an element of real radio sound from the stations themselves which conveyed the flavour of the different broadcasting services. By this means the documentary was broken into easily digestible sections, with regular resting spots to give the audience time to reflect.

4. **Enhancements**. While the documentary used storytelling to deliver information in an entertaining way, without additional enhancements it would be limited to offering "only descriptions of the teacher's conception, with no opportunity for iteration through the remaining learning activities" (Laurillard 2002:92). Bundled into the documentary, dressed up in the narrated experiences of the program directors, were theoretical precepts which normally would require an entire textbook to cover. The students needed to be encouraged to theorise around the story to ensure they understood the processes that were in play and could derive certain principles from them which they would later have to apply to their own practice.

The documentary was therefore enhanced by a companion website which consisting of relevant data to help the students understand the case study presented including

interview transcripts, station profiles, ratings data, readings. Students would be required to apply this knowledge to an industry-based formatting exercise to be conducted in their own stations under the supervision of their workplace supervisors. The aim here wasn't to provide "inert concepts" but "situated knowledge" helping the students to "carry out the authentic activities of the subject expert."(Laurillard 2002:15). By this means the students would be able "to make sense of the theoretical in terms of the practical, and vice versa."(ibid:48). It also exemplified the cognitive apprenticeship model seeking "to aid the learner in the construction of knowledge by embedding 'the learning of skills and knowledge in their social and functional context'" (Jonassen et al.1994:35, citing Collins et al. 1989).

Students' Experience

In the first iteration of the unit the documentary was available via the website. The students were directed to the documentary as a listening exercise in the first week and were provided with a list of questions to help them reflect on what the story revealed about the formatting and programming process. It was hoped that this would compensate for the evanescent nature of media messages by helping students lock in information they would need for their own project. However, this was not an assessed piece of work. The documentary was well received by the professional cohort, eliciting feed back such as:

> **AU4**: I'm very passionate about the subject matter and I thought the content was great – finding I was putting practice into theory whereas some of the other students were doing it the other way around.

> **AU7**: The content's really relevant – I could use the content almost immediately at work. I used the CDRom – it was useful, another way of learning.

However, access had been erratic: firewalls impeded the reception of the audio stream on the students' computers (this despite their working in a media environment themselves!) and of the eight students only five reported accessing the documentary. While the content proved useful in helping them with their own projects, no one reported using the questions as a learning tool. As Laurillard predicted, without full integration of such exercises into the teaching,

> Students …see them as peripheral to the real teaching, and invest in them less effort than they otherwise would. The only real test of any learning material is its use under normal course conditions. This means it must be integrated with other methods, the teacher must build on the work done and follow it through, and most important, the work students do with ICT media must be assessed (2002:205).

As a non-assessed piece of work the exercise was seen as an optional extra, rather than an essential task.

In the second iteration of the unit, the documentary was also provided in CD format making it accessible in multiple locations. This not only gave the student added flexibility, but also bypassed any potential technical problems concerning the delivery of audio via remote computer access. The listening exercise was made an assessed piece of work, bolstered by a reading which consisted of an academic paper

co-written by two members of the research team which provided an overview of *Nova's* first year (Phillips & Guilfoyle 2004).   In this second cohort comprising nine students not only did all of them access the audio, but they also listened to it more than once, with an average of five listening sessions. Students also accessed the website, with its additional audio interviews, links, transcripts, and the *Nova* paper.

The students responded well to the documentary format which they thought was well suited to people in industry:

> **AU9**: I think the documentary project that was set was perfect for people in the industry because you understood industry terms and industry speak and it was interesting because we all want to know how an audience reacts and we have an insatiable appetite to know, and to try and examine that was exciting.

> **AU11**: It was quite an interesting insight into how they went about their core business and how much they rely on that sort of hard data to do with surveys, and then go out and physically ring people and get that sort of core information through, and that sort of affects what they do on a day to day basis. I found that very enlightening.

They highlighted the importance of good storytelling:

> **AU10**: It's like any really good radio. If you've got somebody that is a really good storyteller they are going to capture your imagination and you are just going to sit there riveted listening to what they have to say. So if they've got a good story to tell that's really really good.

The format made it possible to share the experience of their peers:

> **AU13**: I knew where they were coming from and I could get myself inside their heads and work out why they were thinking that or why they were going in that direction because they are all professionals doing their own thing.

It helped them make the transition into academic learning:

> **AU9** : You're not quite sure where it is all going to go, and the academic speak and the need to write academically for people in the industry who have been out of uni or may never have been to uni is really daunting. The documentary project was a good way to ease radio people into that unit – I thought it was perfect.

> **AU11**: I just found it refreshing from a stock standard "read 3 chapters of whatever book", I found it very good in that sense, and the fact that it was a question-and-interview piece with the people.

The CD format lent itself to repeat listening:

> **AU9**: As soon as I got the CD I put it into the CD player in my car and wherever I drove I listened to it over and over again. And that was the best way for me to do it. And then I uploaded it so that I could play it back into this unit here that we have at work, and then I cross-referenced with the online transcripts because there was a lot of material in the transcripts that wasn't in the CD.

The questions helped them focus on the theory:

> **AU12**: All the reading material did help clarify concepts. It broadened your look on things so you could sit there and just listen to just the documentary or listen to just the interviews but by having a broad range of material you are able to broaden your ideas and get a better idea and also develop your own ideas from what they were actually saying. If I listened to the actual listening material first without looking at the questions and getting a better understanding of the written material I don't think I would have understood straight away. I needed some orientation into where it was coming from.

However there was a downside: for some the audio format made the exercise too much like work:

> **AU13**: The only problem that I had with it was – this is very much about me and what I do – is that I spend so much of my day listening to CDs – air checks from people who send me stuff – I associate listening to CDs as work. I found it a psychological disadvantage that it was actually a CD, even though there was nothing wrong with the CD.

Because of the association with a work-based activity occasionally the students would find themselves diverted into a professional critique:

> **AU10**: Sometimes I found myself sort of listening to how they were saying something rather than to what they were saying.

As far as the learning was concerned the documentary provided the broadcasters with a genuine insight into how their market competitors operated which informed their own workplace projects:

> **AU10**: My own project was looking at my Drive program. Part of it was working out the position that our Drive program occupies in the market and the responses that people have towards it. Now I can do that from my perspective and I can do it from my listeners' perspective and I can do it from the Anderson McNair [sic] perspective, but the perspective that I don't have is that of the other program directors in this market. So it was interesting trying to put myself into their heads - I think that was the sort of insight that the documentary gave me.

The documentary also compensated for the disembodied nature of the online experience:

> **AU10**: You could do the course without the documentary, but I think that sometimes these things don't have a dynamic to them and when you are doing it remotely there isn't the lecturer's voice. You know how sometimes somebody says something and it just hooks your imagination and you get this loop happening in your head? You can have that with a lecturer and you can have that with any type of speaker, and without that I guess it probably would have been a little bit flat because there was no aural hook to it. It's the aural hook – it's pretty important sometimes.

Listening for learning nevertheless required a gear change:

AU11: I suppose I just sort of listened to it without taking any notes or anything else in the first instance, it was just as you do in a radio sense - just sort of listen along. … and I found the second time I listened I was able to absorb a lot more and that's when I sat down and actually took notes and made little comments as I went through … the second time was much more intense.

Conclusion

There has been a lot of debate on the cost/benefit issues around media in learning. There are two aspects to this: first, the teacher's perspective in relation to whether the learning outcomes are enough to justify the expense of production (see Clark 1994, Kozma 1994, Jonassen et al. 1994); and second, the learner's perspective in terms of whether "the costs (i.e. study time spent) would be met by the perceived benefits of responding" (Kirkwood 2003: 169). The challenge in this project was to cover both bases: to ensure the media product gave the student access to unique information which was relevant to the unit; and to make this information appealing enough to attract and hold attention in such a way as to deliver an assessable learning outcome.

The study demonstrated how professional backgrounds and individual learning styles impacted on the students' reactions to the audio documentary. While it was easy enough to be entertained by it, learning from it required something more. Here audio has obvious limitations compared to other media. By its very nature it is invisible, and for its intellectual content to be harnessed there needs to be, as one student noted, a change of gear - students need to be stimulated to go beyond passive listening to active processing and subsequent application. The addition of an obligatory linked exercise meant the students couldn't stop at mere surface engagement but had to draw some lessons about programming and formatting from the program directors' experiences. The workplace-based formatting/programming exercise they conducted in their own stations put them in a situation where they had to put theory into practice.

The challenges of offering online learning to professional cohorts have been summarised by Maor and Volet (2005). Their situative analysis of this same ABC cohort highlighted as major educational issues for the development of professional online learning:

> "the significance of congruence between online study features and professional learners' characteristics" and "the need for course developers to further enhance their technological and pedagogical capacity in the area of professional online learning."

The experiment of using a professional quality audio documentary to enhance the learning experience of media professionals tried to address these issues with some success. From the students' feedback it seems that approaching the learners as listeners did ease the transition into academic study for a cohort of industry professionals; it did help to overcome the disembodied nature of online learning; and it did expose the students to a real-life environment where they could learn about theory through practice. For the course developers, the experiment revealed both the advantages and disadvantages of using media for learning online and demonstrated

that, no matter how evolved the technological environment, the key challenge for producers remains that of knowing their audience.

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