A Medium and A Design Language

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Abstract

This article presents a case study experience in the use of one of the oldest media in communication in a distance education teaching situation. The case study was focussed on how subject experts in a distance education programme made the transition from writing text-based instructions, to audio-based instructions by observing the requirements of the language of the ear from writing stage, through editing, content review and studio recording. The mechanism on how (in our case) digital and analogue recordings complemented each other in the realisation of learners' final product is also revealed.

Abstrak

Artikel ini mempersembahkan suatu kajian kes pengalaman dalam menggunakan satu daripada media komunikasi yang tertua di dalam suatu situasi pengajaran secara jarak jauh. Fokus kajian kes ialah bagaimana pakar-pakar bidang dalam program pendidikan jarak jauh, membuat peralihan daripada menulis bahan pengajaran berasaskan teks ke instruksi berasaskan audio dengan memerhatikan keperluan bahasa tersebut daripada peringkat menulis, ke peringkat suntingan, ulasan kandungan dan rakaman audio. Mekanisme bagaimana (dalam kes kami) kedua-dua rakaman digital dan anolog melengkapi antara satu dengan yang lain dalam menghasilkan produk untuk para pelajar.

Introduction

This case study was based on 79 audio programmes in a diploma course for upgrading teachers, covering 13 subject areas. There were at least 43 academics that wrote and read the scripts in front of a studio microphone.

This article addresses the asynchronous form of support by way of audio instructions. The goal is reflected in the instructional efforts invested so that potential designers of instructions in this medium can benefit from such experiences. The author believes that different media carry along a language specific to them, although Clark (2001) would argue that media and attributes of media do not have unique effects on learning. The said language is not always obviously given a focus when writing down and presenting instructions. When this language is not part of the tools in the instruction design process, users and designers are denied an opportunity of exploiting the full instructional

potential of a medium. Thomas (2000) has described extensively planning, formats and production processes in audio. But this case study, goes beyond, the point made by Thompson (1996) that it is often a 'myth that the familiar is known'. In this case study academics discovered that the familiar audio tape used in our homes for entertainment was different from the instructional audio-tape used by distance education students.

Shepherd (2001), has used audio as part of a multimedia in the submission of students' assignments. Fevre et al. (2003) used audio to improve reading of text by poor readers. Hauck & Hampel (2004) described the application of audio in an Internet-based, real-time audio conferencing situation, at the UK Open University.

Audio is described by Langdon (1988) as a medium, second only to the printed paper in terms of distribution of messages. During the individualised learning movement, Postlethwait's AudioTutorial approach to learning at Perdue University adopted the instructor – recorded model (Brown et al., 1985) of recording instructions. This case study adopts a standard audio studio model of recording.

At the peak of its popularity in 1930s (Dahl, 1991) the radio was seen as a means to overcome distance and a source of a common message. But the appearance of television, embedded in it, all the features of the radio, saw some of the audience preferred radio for the television.

Even with the new technologies abundantly in use, the popularity of audio in communication remains high. Wilcox (2001) estimated that Americans spend 44% of their time each day listening to radio while spending 41% of their time watching TV and 10% reading newspapers. Our own survey among our students (Kabonoki, 2004) confirmed that radio is still the most accessible electronic medium.

Even in the current era of the Internet – based information distribution, the radio is being heard by computer addicts through the Internet. According to Vivian (2001, p. 146), 11,000 radio stations are on air in the USA and even small communities possess their own radio stations. But the use of radio for educational use is left to radio stations owned by colleges and institution.

Audio therefore cannot be ignored in teaching and designing learning materials while communities that seek education have this technology as part of their lives. Hence, its educational application and integration with newer media has been one of the motivating factors in this case study.

Asynchronous Nature of Audio Instructions

Like written study guides and other text materials, audio instructions, described here are used in asynchronous mode. The learner determines where, and when to learn with these instructions.

The decision to proceed with audio instructions was given further justification from our in-house surveys that showed that our distance education students had wide access to cassette players as indicated by the table below.

Question item	Yes
	%
9. Do you have a radio?	95.75
10. Do you have a radio cassette recorder?	86.17
11. Do you have a cell phone?	79.79
13. Do you have a BTC telephone?(land line)	55.85
14. Do you have a fax machine?	1.06
15. Do you have a television set	60.11
16. Do you have a video cassette recorder?	42.55
17. Do you have a computer?	1.06

Figure 1 Access to media by diploma students (N =188) in distance education programme, an Upgrading Course for Teachers.

One notes that technologies that communicate with audio dominate the arena in terms of access, for this category of students.

Our students were scattered widely in a vast county with little population. This meant that apart from the printed module, students would have to make long and costly journeys (where transport was available) before reaching an urban center to find a library or other learning resources. Secondly, the profile on our students showed that they were different from each another in terms of command of English language, experience in teaching, academic qualifications and age. The audio cassette instructions were designed with these differences in mind.

In our design model, writing and recording audio instructions took note of the following:

- The audio medium is transient and hence writers must take this into consideration.
  That audio complements the module by highlighting blocks of content rather than individual units of the module.

Instructions were learner centered. The audio tutor engaged the learner into doing some activity throughout the duration of material presentation.

It became necessary to organise a training workshop for audio script writers.

Training Script writers

Writers were selected from among academics that had either been involved in the writing of the printed module, or were tutoring students during residential sessions. This was important because the selected writer had at one point or another, been introduced to distance education and general characteristics of learners.

The training clarified the point that the audio instructions they were about to write would compliment and highlight issues in the module. To do this, writers needed to know that in indeed they were writing for a 'blind learner'. The choice of clear language was critical, because the learner could not see the instructor's non-verbal gestures. Writers were given a briefing on formats used in presenting audio messages and their importance as educationally relevant instructional strategies. A sample of an in-house audio script format was distributed and, studio-production terms such as sound effects and their meaning and application were explained.

The duration of each of our scripts was 20 minutes. A mock recording studio was set up during training and academics took turns to present a mock script that captured important issues in the training. The recordings were played back and participant discussed what they thought of their presentations. Many expressed concern of how they did not like their voices. This is a common comment from new presenters as they compared what they initially imagined they would sound like, with their actual recorded sound.

After this, writers identified their first program title, the objective(s) and the content that would be covered.

One and a half days later, in order to check progress, willing writers submitted their unfinished drafts for discussions. A common observable feature on initial audio scripts were:

Writers' inertia in changing over from print-based style of writing to writing an audio script. Initial scripts carried features such as headings, highlighted with bold, italics, and using dashes as shortened form of what was to be said. These symbols are suitable for a sighted person, but not a person using the hearing sense organ.

Difficulties in identifying relevant support visuals to support audio (e.g. maps, photographs, formulas and exercises etc) and synchronising the written script with the visuals. Those who made an attempt, described these support visuals before actually putting them down on paper. A real example demonstrates this 'Looking at FRAME P, which object would you say is nearest to you? Describe the object which looks nearer and then describe the object which seems to be the furthest away from you'.

In this example, the FRAME P did not accompany the script. But that was not the problem. The problem was that the presence of the object/diagram being described allow the writer to evolve the teaching language necessary to give the learner clear instructions to enable them do the task realistically.

After discussing the general weaknesses of a script in a plenary session, the script was returned to the writer. In general, our audio writing model saw the script go through the following editing stages before completion:

1. Editing for accuracy in content.
2. Editing for sequence, medium and teaching value of the script.
3. Editing to achieve the expected duration of the recorded programme.
4. Editing to be heard clearly on the loud speaker.

Editing for Accuracy in Content
Another subject expert, here called reviewer, in the same field scrutinises each script. The comments made at this stage are returned to the writer to take the necessary steps as requested by the reviewer. The script is then taken by the audio specialist to examine the same script with respect to the audio language.

Editing for sequence, medium and teaching value of the script
The key player here is the audio specialist. The objective is to make sure that the script is written in clear and conversational language, blended with audio formats with suitable examples. The use of examples, diagrams and good sequencing has been identified by Reigeluth (1983) as good instruction design strategies. Clark (2001) also notes that students need examples to connect new information in a learning task with information in their prior experience.

The orderly sequence is guided by the objectives spelt out by the writer. The audio specialist (the individual responsible for training writers and guides studio recording, as opposed to the term 'producer' used by Thomas, 2000) is at liberty to change the order of the objectives from the initial order established by the writer. The writer is informed of this change and an agreement between the two is reached.

At this stage, the audio specialist takes the following decisions:

> The type of sound effects that will be used.
> Types of dramatic scenes and how they will be recorded.
> Inclusion of any interviews and how they will be secured.
> Need for printed support materials to go with the recorded cassette.

The evaluation of these activities gives a clearer picture of the level of activity on the recording day.

Editing to achieve the expected duration of recorded programme
Many writers wrote more than what could go in a 20 minutes educational audio programme. When this happened, the audio specialist took decision as to what would be removed. This is not possible without understanding the content of the script. It is one of the reasons why editing an audio script may take up to two or more days. If in the process, visuals have also been identified, the suggestions are sent back to the writer together with the new version of the original script. The writer re-reads the script to confirm that the suggestions from the audio-media specialist have not distorted or changed the original meaning of the script. In almost all cases, writers did appreciate the suggested visuals.

It is worth noting that until the script is recorded, it is normally not possible to tell the exact duration. Exact duration depends on subject matter and the speed of the presenting academic. Langdon (1988) puts reading speed to 175 words a minute while McLeish (1999) puts it between 160-180 words a minute, and Clark (2001) puts it to 110-120 words per minute. A script of 11 pages double-spaced and font 12 had a final duration of 18 minutes and 22 minutes depending on the natural pace of the presenter and the subject matter. Mathematics scripts of the same number of pages went beyond the 22 minutes limit.

The best recording time of a 20 minutes programme was achieved in one hour. In one extreme case so far, we took five hours (from 9:00 hrs. – 15:00 hrs. with one lunch break).

Programmes designed to go on air require great discipline in timing. They should be exactly 20 minutes if the airtime slot given is 20 minutes. To be completely safe, it is wiser to have the programme duration about 19 minutes. This way, the danger of having a program cut shot when a technical problem surfaces within the broadcast station is minimised.

Distribution through recorded cassette tape, as opposed to distribution through central broadcast provides greater freedom because, for a C-90 audiotape, it is possible to record two programs of 22.5 minutes duration on one side of the audio tape.

Editing to be heard clearly on the loud speaker

Editing of an audio script ends only after it has been recorded and dubbed into a master cassette tape or some other media. Although a script in English could be written in very good grammar, it does not follow that the presenter will make it come out clearly when listened to from the speaker of the cassette player or headphones. A good audio specialist will suggest alternative wording during a recording so that the recorded material is heard clearly when played back. Words ending with 'd' or 't' followed by another word starting with 'd' or 't', 'th' and 'th' can be problematic when heard from the loud speaker. For example:

> The <u>said day</u> was found inconvenient.
> The supervisor found the <u>seventh theme</u> inappropriate.
> The <u>hot tea</u> created problems for the competitors.
> What do <u>theorists say</u>?

Possible suggestions to eliminate the problem would be:

> *The day in question was found inconvenient.*
> *The supervisor found theme number seven in appropriate.*

The audio specialist and the content expert often discussed such suggestions during recording. They were accepted if the original meaning of the script remained unchanged. Further alternatives were explored if they were found unsatisfactory. These steps were essential as part of enhancing the use of the language of the ear.

This aspect of editing has special implication in the policies regarding recorded tertiary level educational materials. As might be expected, one of the consequences of re-arranging and changing to alternative sentences, is the danger of giving the original content a different or distorted meaning. To avoid this, our production model required that the academic writer as opposed to engaging a professional presenter/broadcaster present tertiary level audio materials. The academic, in addition, is better off, presenting tertiary level content because of their ability to articulate the subject matter in accordance with the language of that subject.

Recording Studio

The sound recording studio was an environment many writers had never been to. During the first phase of programme production, out of the 11 lecturers who responded to a questionnaire in our internal survey indicated that none of them had participated in recording in a studio. Therefore we adopted a practice of taking the presenting lecturer on a tour of the studio itself each time there was a

recording. We explained sitting positions when presenting. We mention effect of noise, due to rustling paper. We advised them that once the recording was in progress, two things could happen:

> The control desk could call for a halt to recording. When this happened, the audio specialist would explain what was the reason for stopping. This often happened when the presentation did not sound conversational.

> If not sure of a sentence or its meaning, the presenter was advised to stop and read the paragraph all over again. The redundancy would be taken care of during editing or to stop and initiate a complete change on a paragraph. This would be discussed and agreed upon.

Each presenting lecturer would be asked to carry a pen into the recording studio. This became a must. It is due to the fact that the written and assumed conversation on the script was created on paper without a second person prompting and changing the direction of the conversation, as noted by Hildyard (1992). During recording, the writer is called upon to demonstrate how conversational the audio script is, unlike in the written module. As a result, there were many instances when changes were made on the script during recording. Some of the changes were major, others were minor. Any change agreed during recording must be inserted as agreed on the script right away. Even a full stop or a comma must be inserted directly where it is required. First-time presenters in the studio thought that they would remember a change when they reached where a change was to be made. The presenting lecturer discovered later that they just read what was not to be read.

These actions during recording, were a part of our strategy to making a greater use of the language of the ear. A language that makes learning process fall a victim in the presence of other competing sounds.

Recording can be agonising, prolonged and can fail altogether. The haste to finish a recording and vacate the studio, for another person to record, puts unbearable pressure on both the academic and the audio-media specialist because presenting academics are not professional presenters. They take longer to record a single script.

When digital audio recording equipment was acquired, and the new control desk took a totally different look from the conventional analogue studio set up, due to circumstances in the building, some of our older presenters were given a briefing on the new recording procedures.

Complimentary Roles of Analogue and Digital Recordings

Our audio recording studio measured 2m x 2.5m in area, with two microphones. The presenter's microphone was connected to digital workstation capable of recording and editing audio or video as required. Our experience with analogue studio recordings was that it was not unusual to have up to fifteen edits on a single page on a script and a total of more than 100 edits in a complete recording.

The vertical lines in figure 2, (digital recording) represent ten edits on a narration in an actual audio script. The management and control of recording has a higher precision.

In the new digital equipment, acquired by university specifically for distance education use, we found ourselves having no more than three edits in a single page, and sometimes, none at all. This was a plus in terms of time saved and quality of the recorded audio. The digital audio file was edited and transferred on to an open reel tape recorder (TASCAM BR20) from which we made a cassette master for mass dubbing and distribution to students. Our students in this Diploma course did not have personal digital play back equipment.
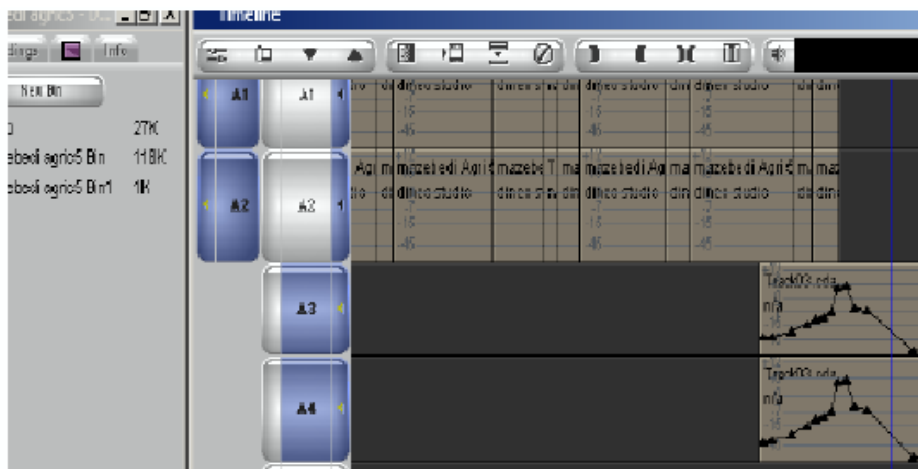
Figure 2   Lecturer's narration on tracks A1A2 and Effects and music on tracks A3A4.

Rapport in Writing Audio Scripts

In this case study, writers of audio scripts were drawn from university lecturers who also taught distance education students. Other writers were drawn from other tertiary level institutions of a lower status than a university but also taught the distance education students.

Three observations emerged in the process of writing:

1. That writers with whom the audio instructional specialist had established good rapport were more likely to honor writing commitment than those that he met only during the training workshop were.

2. University lectures wrote materials of higher quality resulting to less time lost from writing, reviewing, editing and recording.

3. Making telephone calls and writing emails to remind writers of the approaching deadlines for the submission of audio scripts had least impact. Work proceeded when the audio instructional specialist visited the lecturer in the office and talked over the matter.

Discussions and Conclusion

Writing of audio scripts in this Diploma course revealed that even though audio is a familiar medium in entertainment, the same is not true in an audio instruction design situation. Academics found writing for the ear a new experience. The perceived familiarity and ease with which we listen to recorded sounds, academics found reading in front of the studio microphone to be an exercise that demanded preparation and patience to acquire basic skills needed in making presentations in an audio studio.

Having gone through the process of writing and recording, and considering the amount of time and research work an audio script makes on the writer, one of the unresolved issues was whether the recorded audio script could be considered a form of publication.

As an indicator outside of this case study, that audio is not as familiar, are arguments such as those advanced by Trinkle (2004) to begin building a case for recognising, in the normal way, scholarly work that has been developed and transmitted in digital environments. Development of audio instructions fall into this category. This is an indication that we are not as yet, in the educational sense, familiar with audio and other media in general.

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