

Jack Koumi

# Converting a MOOC into an online Degree Course: Intended Enhancements through Transformative Influences

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**Abstract.** In 2019, I taught a 10-week online Course for students of a University BA degree. The Course was a conversion of my 4-week 2017 MOOC (Massive Open Online Course), *What and How to teach with Video*. The content, expounded with 12 videos, consisted of two fields: *Potent Pedagogic Roles for Video* and *Pedagogic Video Design Principles*. Both fields were somewhat curtailed, but updated versions, of the coverage of my Design Framework for Instructional Video – (Koumi, 2006, 2009). Unlike most of the MOOC participants, the University students were already multimedia savvy and their grades would count towards their degree. Hence the pedagogy of the MOOC Course was modified to accommodate the sophistication and commitment of the students. For example, the number of open-ended Quizzes was increased from 6 to 13. Many more such transformations were implemented in successive re-runs of the Course, including enhancements of my Design Framework (the Course Content). These were influenced by many types of students' reactions and by my own self-reflection. However, the effect of these transformations on learning is unconvincing. Speculative reasons are discussed, but I would welcome reappraisal from two cohorts of readers: firstly from practitioners concerning the pedagogic transformations of the University Course and, secondly, from appraisers of my Design Framework for Instructional Video, as reflected in the University Course Content.

**Keywords:** MOOC converted into BA Course, Potent Pedagogic Roles for Video, Pedagogic Video Design Principles

## 1 Introduction

From January to March 2019, I ran a 10-week online Course, *Achieving the Pedagogic Potential of Video*, to 34 University BA students. The Course was a conversion of my 4-week MOOC, *What and How to teach with Video*, run in 2017 with 410 participants.

The MOOC, funded by the European Union, is described in the following website, which contains the Course outline, on video, and a fuller description in print.

[https://platform.europeanmoocs.eu/course\\_what\\_and\\_how\\_to\\_teach\\_with\\_vid](https://platform.europeanmoocs.eu/course_what_and_how_to_teach_with_vid)

The MOOC included three hours of video, covering four weekly Lessons.

Lesson 1, *Potent Pedagogic Roles for Video* and Lesson 2, *Pedagogic Video Design Principles*, were simplified versions of the video parts of the book, Koumi (2006, 2009). There were six open-ended Quizzes, tackled as Assignments by individual students, with feedback and discussion with the Tutors.

In Lessons 3 and 4, students in small groups composed a Screenplay for a 5-8 minute video using the concepts learned in Lessons 1 and 2. Each screenplay was reviewed by peers, leading to Draft 2, which received teacher-feedback.

This paper focusses on the transformations made in the conversion of the MOOC into the University Course and in successive re-runs of that Course. In particular, transformations occurred in

- the Course's Pedagogy
- the Course Content (my Design Framework for Instructional Video)
- formative evaluations of students' work

Discussed in each case, will be what precisely **influenced** the transformation. The influence of students' behaviour included both their intelligent insights and

\* Corresponding author: Jack Koumi, Professor, 49 Bilton Road, Rugby, CV22 7AN, UK. Email: [jack.koumi@btinternet.com](mailto:jack.koumi@btinternet.com)

their misinterpretations; also their complaints, their diligence, and even their occasional inactivity. But there were many other influences, including data analytics, self-reflection of my design thinking, and my errors of judgement.

The Course has been run a total of 8 times. After 4 runs, the Course was renamed, *Scriptwriting for Effective Instructional Video*. A 9th run is underway and a 10th run is under construction. Details of the transformations in runs 2 to 9 will be presented later.

### 1.1 The major transformations of the MOOC into the first run of the University Course

Much of the MOOC *content* was migrated unchanged to the first University Course. However, the content was *presented* differently, i.e. the pedagogy was transformed, for the University students.

This was essential due to the greater multimedia expertise of the University students, who, unlike most of the MOOC participants, were already multimedia savvy and would devote greater commitment to the Course because their grades would count towards their degree.

In order to describe transformations made in the 1st and subsequent runs, it is necessary to describe the Course in sufficient detail to make sense of these transformations.

## 2 The four Lessons in the first University Course

Lessons 1 and 2 are simplified versions of the extended coverage in the video parts of Koumi (2006/9, Parts I and II). A more compact discussion of these ideas can be found in sections 3.1 and 3.2 of Koumi (2015).

### 2.1 Lesson 1. Potent Pedagogic Roles for Video: weeks 1-3

Lesson 1 (L1), with five videos, uses 43 clips from existing instructional videos, to exemplify 33 potent Teaching/Learning Roles in four domains, as in Fig. 1. The Roles are techniques and teaching functions whereby video can achieve many learning objectives more effectively than static, silent media.

Domains 1 and 2 contain the Techniques, while Domains 3 and 4 contain Teaching Functions.

During the first video, [KOUMI L1 U1 Potent Pedagogic Roles Four Domains on Vimeo](#), clips from existing instructional videos exemplified one Role from each of the four Domains in Fig. 1. In the last half of the video, the four categories are explained more fully, as noted in the Table of Contents (TOC) for the video, in Table 1 below.

The time-codes in the TOC enabled the University students to access any desired video segment.

After each video, there were teacher-moderated Quizzes/forums.

A handout amplified the 33 Roles and identified the distinctive presentational attributes of video underlying the Cognition and Experiences domains of Fig. 1. The handout is omitted here, for simplicity, but a similar amplification is in Koumi (2025a).

### 2.2 Lesson 2. Pedagogic Video Design Principles: weeks 4-6

Lesson 2 (L2) includes 6 videos, with 39 clips that illustrate 30 Design Principles in 8 categories (Fig. 2). After each video, graded open-ended Quizzes are discussed.

A handout amplifies the 30 Principles. This is omitted here, for simplicity, but a similar amplification is in Koumi (2025b).

The six highlights in Fig.2 occurred successively, when each design principle was discussed. The University students were enabled to access the video segment when each highlight occurred by referring to the time-codes in the Table of Contents for L2 U1 – Table 2 below.

### 2.3 Lessons 3 and 4. Graded Screenwriting Project, weeks 7-10

A 3-minute video in Lesson 3 instructs seven 4-person groups and two 3-person groups to write a screenplay in a Proforma that includes: [Target Audience](#) , [Complementary Resources](#) , [Design Structure](#) , [Learning Objectives](#) , [Rationale for using Video](#) , [Storyboard](#).

A 40-second video in Lesson 4 instructs the groups to collaborate in “super-groups” of three groups each. This occurs in **Week 8**, when each group will evaluate the Draft 1 screenplay Proformas of the other two groups. In **week 9** each group produces Draft 2 of the Proforma. In **week 10** the teacher evaluates the nine Draft 2 Proformas, annotating each with suggestions for improvement.

| WHAT to Teach: Potent Pedagogic Roles for Video                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                        |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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Figure 1: Screenshot from the end of the first video (L1U1): the 33 Potent Pedagogic Roles

Table 1. L1 U1 Table of Contents, *Potent Pedagogic Roles: Four Domains*. 15:38 (4 clips)

| Time Code | Domain                                                          | #   | Pedagogic Role              | Video Clip                                             |
|-----------|-----------------------------------------------------------------|-----|-----------------------------|--------------------------------------------------------|
| 00:00     | Cognition                                                       | 1.3 | visual analogy              | Homunculus: misshapen features accord with sensitivity |
| 01:43     | Experiences                                                     | 2.2 | extreme close-up            | Door lock viewpoint                                    |
| 02:50     | Affective                                                       | 3.2 | motivate a strategy         | Reformed Convicts                                      |
| 07:36     | Skills                                                          | 4.7 | demonstrate technical skill | Laboratory tube flamed                                 |
| 08:15     | The four Domains explained more fully – and their relationships |     |                             |                                                        |
| 14:38     | Units 2, 3 introduced. Expanded version of the 33 Roles         |     |                             |                                                        |

## 3 Transformations that Enhanced the MOOC into the University Course

### 3.1 Transformations driven by the University students' greater multimedia sophistication and commitment

The University Course, being a BA degree Course warranted a longer duration, 10 weeks, which was 2½ times that of the MOOC.

The six Open-Ended Quizzes/Forums in Lessons 1 and 2 warranted augmentation because of the greater

multimedia sophistication of the University students and their greater commitment due to the grading counting towards their degrees. Hence, the six Quizzes were augmented with another seven Quizzes. The greater academic depth of the 13 graded Quizzes will be explained later.

### 3.2 Tables of Contents for Lesson 1 (5 videos) and Lesson 2 (6 videos)

The University Course's Tables of Contents (TOCs) provide an overview of each video, with time-codes enabling

Table 2. Pedagogic screenwriting principles for designing each chapter

|                                                                                                                                                                                                                             |                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. HOOK</b> (a. capture b. retain)<br>a Shock / surprise / delight<br>b Suspense, entertain, <b>amaze/appetise</b>                                                                                                       | <b>5. SENSITISE</b><br><b>a Priming</b><br>b Reassure / build confidence<br>c Personalise the teacher<br><b>d Music style &amp; timing by design</b><br><b>e Consistent style</b> |
| <b>2. SIGNPOST</b> (what's coming)<br>a Set the scene<br>b Signpost: what's coming later<br>c Chapter Heading: what's next?<br>d Heads-up: what to look out for                                                             | <b>6. ELUCIDATE</b><br>a Vary tempo to indicate syntax<br>b Enhance legibility/audibility<br>c. Maximise Cognitive Clarity<br>d Control pace, depth, breadth                      |
| <b>3. STIMULATE COGNITIVE ENGAGEMENT</b><br>a Pose questions<br>b Encourage prediction<br><b>c Students' personal relevance</b>                                                                                             | <b>7. REINFORCE</b><br>a Repetition (with a new angle)<br>b Re-exemplify<br>c Words-image synergy<br>d Compare / Contrast                                                         |
| <b>4. ENABLE CONSTRUCTIVE LEARNING</b><br>a Words NOT DUPLICATING pictures<br>b Visual metaphor<br>c Scaffold construction of knowledge<br>d Let students see the context<br><b>e Concretise / Activate their knowledge</b> | <b>8. CONSOLIDATE</b><br>a Recapitulate<br>b Summarise key features<br>c Integrate associated materials                                                                           |

Figure 2: Screenshot of Lesson 2's first video [L2 U1 The 8 categories of the Design Principles](#)Table 2. L2U1 Table of Contents. *The 8 categories of the Design Principles*. 12:20. 5 clips

| Time Code   | #                                                               | Design Principles                                                                                      | Video Clip                                      |
|-------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 00:00-02:00 |                                                                 | Introduction                                                                                           | 2D diagram, homunculus, Table 2                 |
| 00:00-03:40 | 1b<br>4e<br>3c                                                  | engross, stimulate appetite<br>concretise, activate existing knowledge<br>students' personal relevance | Homunculus (preceded by 2D diagram)             |
| 03:40       | 5d<br>5a                                                        | appropriate style of music<br>priming                                                                  | homunculus from Lesson 1, introduced with music |
| 04:35       | 5a                                                              | Priming                                                                                                | 2D diagram introducing homunculus               |
| 04:58       | 3c                                                              | students' personal relevance                                                                           | "what do you or I <b>experience</b> ?"          |
| 05:49       | 5d<br>5e                                                        | appropriate timing for music<br>consistent style                                                       | familiar music over final credits               |
| 07:14       | In the <b>final 5 minutes</b> , Table 2 is explained more fully |                                                                                                        |                                                 |

targeted review of the video segments. Table 1, above, is the section for L1U1 and Table 2, above, is the section for L2U1.

In the MOOC, the TOC for each video appeared immediately below the video window. An advantage in the University Course is that the TOC covers all 5 videos of Lesson 1, hence providing an overview of the structure of the Lesson. Similarly for the TOC for Lesson 2 (all 6 videos).

### 3.3 An Index for the 33 Pedagogic Roles and one for the 30 Design Principles

The INDEX in the University Course (not present in the MOOC) is a document enabling navigation to the coverage

of each Pedagogic Role of Fig. 1. Table 3 shows the entry for Role 1.2, *Animated Diagrams*. It identifies the time-codes in three videos ([L1 U2](#) , [L1 U3](#) , [L1 U4](#)) where clips exemplify that Role.

The INDEX for Fig. 2's 30 Design Principles similarly enables navigating the video's coverage of each Principle.

### 3.4 The increased number of Quizzes (from 6 to 13) and their greater depth required scaffolding in later runs

Here is one of the extra Quizzes, at the end of Lesson 1, plus students' answers and my responses.



**Table 3.** The section of the INDEX for Role 1.2. animated diagrams

|       |       |                                     |                                          |
|-------|-------|-------------------------------------|------------------------------------------|
| L1 U2 | 02:18 | animation                           | chemical transmission: synaptic junction |
|       | 03:21 | Animation                           | blood pressure measurement               |
|       | 05:26 | simple animations                   | hierarchy in rhesus monkeys              |
|       | 08:33 | animation sharing teacher's imagery | monkeys' triangular relationships        |
| L1 U3 | 02:57 | Animation                           | a fermenter in a factory                 |
|       | 03:42 | animation (diagram build-up)        | Biology Brain and Behaviour              |
|       | 14:05 | Animation                           | croupe, animation, drinking straw        |
| L1 U4 | 06:17 | Animation                           | why we see rainbows                      |

Discuss the 33 Pedagogic Roles in Table 1 of the Handout for Lesson 1.

In particular, can you suggest further *Pedagogic Roles* for video?

Students submitted many supplements to the Roles in Fig. 1, but most of them were Design Principles (Fig. 2), not Pedagogic Roles. This continued for the first five Runs of the Course: students continued to submit Design Principles, purporting them to be extra Pedagogic Roles. Hence from the 6<sup>th</sup> Run, I added a Preview of Lesson 2, which contained the Design Principles.

### 3.5 Some MOOC's Quizzes were enhanced in later University Course Runs

Here is the MOOC version of Quiz #3, followed by my posting of the two Answers.

Q. Which TWO Roles in Table 1 overlap with Table 2's Design Principle 7d, **compare/contrast**? Justify each answer with one or two sentences.

A(1) **1.6 juxtaposition** because showing different phenomena in quick succession enables viewers to compare and contrast them.

A(2) **1.1 composite image** (especially split screen): it invites the viewer to compare the components.

An enhancement in the 4<sup>th</sup> Run of the Course: the new Quiz asked for a third Pedagogic Role, prompted by two students who answered, "metaphor" in the 3<sup>rd</sup> Run, the third Answer being:

A(3) **1.3 visual representation/analogy/metaphor** because this representation has to be mentally compared with the thing that was being represented.

### 3.6 Interactions with students served to refine Pedagogic Role definitions

In addition to suggesting answers to the Quizzes, as above, I posted comments on the merits of students own

answers, hence refining the definition of some Pedagogic Roles. The comments below refer to the Quiz in section 3.5.

Some students nominated Role **1.4 illustrating concepts with real examples**. However, Role **1.4** only supplies a **real instance** of the concept. That instance (that real example) is **not being compared** with the concept, rather it **illustrates** the concept with a **concrete instance** of the concept.

Comments such as these were often added in successive Runs of the Course, as each new cohort of students contributed interesting answers that varied from my suggested answers.

### 3.7 Correcting my muddled Design Thinking

In the wording of Quiz #3 (section 3.4), "Which Cognitions Role **overlaps** with Table 2's Design Principle 7d?" the vague term, "overlaps" can be interpreted in diverse ways. In the 5<sup>th</sup> Course onwards, the wording was changed to the more explicit form, "Which Cognitions Role **can be used to achieve** Table 2's Design Principle 7d?"

This sloppy error in my wording was a significant confusion in my design thinking.

## 4 Lessons learned from the first offering of the University Course

### 4.1 Student behaviour influencing change of Grading of Forums and Screenplays

The 13 graded forums (tackled by individual students) carried a grade of 3% per post. The remaining 58% was awarded to the final drafts of the Screenplay Proformas, which were completed collaboratively in small student-groups.

However, these totals were changed in the 2<sup>nd</sup> Run of the Course. This is because some Quizzes were more

difficult than others. Some merited a grade of 4 or 6 and others of 2.

More crucially, the marks were changed for the final Screenwriting Project (carried out in small groups). This was in response to complaints, by some groups in the first University Course, that some of their members were being “carried” by their groupmates. Therefore, in order to diminish this possibility, the total mark for previous forums was increased to 55 instead of 42, which left 13 fewer marks (45) for the final Project. In response to further such complaints in the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> Runs, the project’s marks were lowered again, to 40, in the 5<sup>th</sup> Run. The average grades for successive final drafts will be discussed in section 6.

## 4.2 Student inputs prompting CONTENT enhancement in the Course Reruns

The presentational attributes in Fig. 3, below, enable the techniques in domains 1 and 2, Cognitions and Experiences, in Fig. 1.

There was no coloured font in the University students’ version of the Attributes. The colouring here is in order to inform readers when and why the modifications occurred, as follows.

- **14 and 16, *audio-track enhancement* and *teacher personalisation*** were added in the 1<sup>st</sup> Run. This was to identify the provenance of two modifications of the Pedagogic Roles, 1.8 and

2.6 (Fig. 4). Those modifications were prompted by students who nominated a new Role, *audio-track reinforcement*, when tasked with submitting YouTube videos that exemplified Roles.

- **15, *non-verbal*** in the 3<sup>rd</sup> Run, influenced by students suggesting this additional skills item
- **5, *processes and situations*** in the 4<sup>th</sup> Run, influenced by my self-reflection during the 3<sup>rd</sup> Run that *processes* and *situations* feature in many Roles, such as 1.6 juxtaposition of contrasting situations, 1.2 animated diagrams exploring processes, 2.10 staged events
- **17, *video pause*** was added in the 7<sup>th</sup> Run; influenced by the need for an Attributes provenance for Role 2.8, *resource material for extended scrutiny* (Fig. 4).
- **Items, 3, 7 and 18 were augmented** in the 7<sup>th</sup> Run, influenced by the need to reinforce the new Roles in Fig. 4.
- **6, *microscopy overhead shots***, was also added in the 7<sup>th</sup> Run, influenced by the need to buttress the wider description of Role 2.2, viewpoints, in Fig. 4.

## 4.3 Students’ interpretations of Pedagogic Roles, prompting Course enhancements

In the 2<sup>nd</sup> Run, some students correctly suggested *non-verbal communication*, as an additional Skills category. Hence, in the 3<sup>rd</sup> Run, Role 4.5 *verbal* skill (Fig. 1) was

1. moving images with synchronous location sound
2. real-time or slow motion
3. real-life or diagrammatic (including animated diagrams)
4. real or dramatised behaviour
5. *processes and situations* (actual or representational)
6. extreme close-ups, *microscopy, overhead shots*
7. chronological sequence (timeline) and pacing of *behaviour*
8. visual metaphor
9. specially constructed physical models to represent objects or concepts
10. camera moves, zooms and framing
11. customised lighting to ‘sculpture’ objects: hence bring out their three-dimensionality
12. shot transitions (including editing to condense time)
13. composite images, e.g. split-screen, superimposed text, highlighting, green screen
14. *audio-track enhancement/reinforcement, e.g. sound effects, tone of voice, music;*  
NOTE that this excludes narration, which comes under item 16
15. *non-verbal communication: facial expression, gestures, body language, tone of voice*
16. *personalisation and activities of people, including the narrating teacher*
17. *video pause and replay – enabling extended scrutiny*
18. varying format, e.g. a segment in studio, then location, interspersed with animation (see the Appendix for an extensive list of Video Formats derived from Table 1)

**Figure 3:** Video’s Presentational Attributes. Coloured items were absent in the MOOC but were appended incrementally in successive Runs of the University Course

| Table 1. Potent Pedagogic Roles: Techniques and Teaching Functions that Facilitate Learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Facilitating COGNITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2. Providing realistic/amplified EXPERIENCES otherwise inaccessible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1 <b>composite images</b> e.g. split screen, highlight, superimpose text or images, green screen<br>2 <b>animated diagrams with narration</b><br>3 <b>visual representation / analogy / metaphor</b><br>4 <b>illustrating concepts</b> with real examples<br>5 <b>modelling</b> a process by judicious simplification<br>6 <b>juxtaposition</b> of situations, one after another<br>7 <b>condensing time</b> by editing real life<br>8 <b>audio-track reinforcement</b><br>9 <b>narrative (storytelling) power</b> – pedagogic blend of images, audio, commentary, text, pace |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1 <b>movement</b> with location sounds<br>2 <b>viewpoints</b> e.g. aerial, extreme CU, POV<br>3 <b>places</b> e.g. dangerous / overseas locations<br>4 <b>3D</b> by crisp lighting & moving object or camera<br>5 <b>slow motion / fast (time-lapse) motion</b><br>6 <b>people/animals in action</b> and interaction<br>7 <b>chronological sequence</b> & pacing of behaviour<br>8 <b>resource material</b> for extended scrutiny<br>9 <b>one-off/rare events/resources</b> plus archive film<br>10 <b>staged events</b> e.g. enactments, experiments |
| activation<br>resolve<br>motivation<br><br>attitudes<br>emotions<br>feelings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3. Nurturing AFFECTIVE characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4. Demonstrating SKILLS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1 <b>galvanize / spur into action</b> , provoke viewers to get up and do things<br>2 <b>motivate a strategy</b> by showing its success<br>3 <b>stimulate appetite to learn more</b> , e.g. reveal the fascination of the subject<br>4 <b>change attitudes/appreciations</b> , e.g. engender empathy, moral reflection<br>5 <b>alleviate learner's isolation</b> by showing / hearing the teacher or peers<br>6 <b>reassure, encourage self-efficacy</b><br>7 <b>authenticate academic abstractions</b> by providing empirical confirmation<br>8 <b>create sense of importance</b> e.g. acclaimed presenter/ interviewee makes a strong case | 1 <b>manual/craft</b> : making learning aids, cookery, joinery, painting, designing<br>2 <b>agility</b> : dance, gymnastics, athletics<br>3 <b>reasoning</b> : problem solving, planning, brainstorming<br>4 <b>interpersonal</b> : counselling, teamwork, interviewing, classroom teaching<br>5 <b>linguistic/expressive</b> : language, singing, oration, authoring, non-verbal<br>6 <b>studying</b> : researching, collaborative learning, exam strategy, metacognition<br>7 <b>technical</b> : laboratory, mechanics, nursing, IT / Digital       |
| Red font identifies six amendments to the wording of the first video, discussed below:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Role 1.8 was missing from the video; now included to match attribute 14 of Fig. 1 (Fig. 3 above)                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| In Role 1.9, the new wording indicates that <i>narrative</i> means <b>storytelling</b> , NOT <i>narration</i> . Also, that the story is a <b>pedagogically</b> designed <b>screenplay</b> (images, commentary etc)                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Role 2.6 originally concerned only <i>interaction</i> but now includes <b>action by individuals</b> , including any individual discussing the content, as in item 16 of Fig. 1 (Fig. 3 above).                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| In Role 2.7, <b>of behaviour</b> refers to the behaviour of objects, animals or natural processes that are studied in the video. The Role does NOT concern the pacing or sequencing of the video itself.                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Role 4.5 was originally entitled “verbal”.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| In Role 4.6, <b>metacognition</b> means: self-assessment, self-explanation, reflect on one's thinking.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

Figure 4: The Pedagogic Roles, as worded in the 9<sup>th</sup> Run, with discussion of six amendments

changed so that *non-verbal* skills were featured, as shown in Fig. 4.

Some early Forums asked students to submit YouTube videos that exemplified Pedagogic Roles described in Lesson 1 of the Course (Fig. 1). However, there were misinterpretations of what constituted a pedagogic Role. Many students misinterpreted *narrative power*, thinking it derived solely from *synchronous narration*. Hence, Role 1.8 was modified in the 2<sup>nd</sup> Run to read, **narrative (storytelling) power** through pedagogic design of visuals, audio, commentary. The addition of (*story-telling*) and the use of *commentary* instead of *narration* inhibited most students from equating *narrative* with *narration*.

Some students submitted videos involving *audio-track reinforcement* (item 14 of Fig. 3) So, in the 4<sup>th</sup> Run, “audio” was added to Fig. 1’s Role 1.8, *Narrative Power*, now 1.9 in Fig. 4. Also influenced, in the 5<sup>th</sup> Run, the new 1.8, audio-track reinforcement, was added to the Pedagogic Roles (Fig. 4).

Another misinterpretation occurred in Domain 2, for the Role 2.7, **chronological sequence and pacing**. Some students thought this referred to the video’s sequencing and pacing of ideas. This is actually the purpose of Design Principle 6d (Fig. 2), which they would meet in Lesson 2. In contrast, Role 2.7 refers to the behaviour of objects or people that cannot be depicted by static media, such as the

slow sagging of semi-molten metal or the pacing of a child's speech in a video about speech development. To clarify this, the wording was changed in the 5<sup>th</sup> Run, to read *chronological sequence and pacing of behaviour* (Fig. 4).

#### 4.4 Most amendments from the 1<sup>st</sup> to the 9<sup>th</sup> Run, were purposely not highlighted in Fig. 4

The Pedagogic Roles were further modified in successive Runs of the Course. Fig. 4. the version for the 9<sup>th</sup> Run, includes 21 modifications to the MOOC's wording of Table 1 (in Fig. 1). All 21 modifications are meant to clarify the wording. Hence, they are meant to enhance learning, prompted sometimes by students' contributions and sometimes by my self-reflection.

However, notice only 6 of these 21 are itemised with red font and explained underneath the Table in Fig. 4. Here are four of the items which were amended from Fig. 1 to Fig. 4, but were not coloured red.

- 1.2 animated diagrams **with narration**, instead of **exploring processes**
- 2.5 **fast (time-lapse) motion** instead of **fast motion**
- 3.4 the term, **moral reflection**, was appended
- 4.7 **IT/Digital** was added to Fig 1's wording

The reason for my **not** highlighting 15 of the modifications is explained as follows.

Whether or not the 21 amendments were highlighted, I fully expected that many students would misinterpret some Roles, as noted in section 4.3. Here's another example.

A misinterpretation occurred in Domain 3 (Nurturing Affective Characteristics) for the Role 3.3 *stimulate appetite to learn*, (Fig. 1). This Role intends to effect a change, **after** watching the video, in the viewers' motivations, such as, *stimulate appetite to learn science*. A few students, in the MOOC and in the first four University Courses, incorrectly considered it to achieve a change in the viewer's feelings towards the video, such as, *stimulate appetite to learn from this video*. This is actually the purpose of Design Principle 1b (Fig. 2), which they would meet in Lesson 2. To forestall this misinterpretation, the wording of Role 3.3 was modified in the 5<sup>th</sup> Run, to read, *stimulate appetite to learn more*. However, the red colour was removed in the 6<sup>th</sup> Run, and its significance was not discussed.

It might be argued that Fig. 4's wording is overdone, since many students don't concentrate on excessive/complex wording but rather skim over it. However, as mentioned above, I chose **not** to highlight 15 of the 21

modified phrases. This was in order to reduce the complexity of the wording.

If my not highlighting the 15 modifications caused students to make mistakes in a graded Forum (as indeed happened for Role 3.3 after the highlight of the word "more" was removed in the 6<sup>th</sup> Run), I could correct the mistakes in my Forum posts. I reasoned that my corrections would be memorable, whereas extra wording would cause students to skim the wording, thus defeating the object of clarification.

This reasoning accords with research by Kapur (2014), in a study of University students learning a new Mathematics concept. Students who solved problems before being taught the concept and its procedures were better able to transfer to novel problems than students who were taught the concept and procedures before solving problems. The reasoning also accords with a general notion that when students make mistakes, they have found the task challenging. Yet students' self-confidence will increase (which will help their later accomplishments) through experiencing challenging tasks, rather than trivial activities, as Driscoll (2000, p329) reasons.

#### 4.5 Enhancements of the Design Principles

In the 9<sup>th</sup> Run of the Course, Table 2 contains 34 Design Principles (Fig. 5), 4 more than the 30 in the MOOC and in the first 4 Runs of the University Course (Fig. 1). The extra principles were added incrementally from the 5<sup>th</sup> Run, as follows.

- The 1<sup>st</sup> extra principle, added in the 5<sup>th</sup> Run, was **7e Key-word text**. The rationale is in Fig. 5.
- The 2nd extra principle, added in the 7<sup>th</sup> Run, was: **4f Pause narration: for viewers to contemplate the action** (Fig. 5). This was prompted by my own self-reflection.
- The final two extra principles, added in the 8<sup>th</sup> Run, were **5f Conform to Video Grammar** and **6e Indicate where to look**. These were motivated by imperfections in Draft 2 screenplays.

#### 4.6 Lessons learned from the final project, the Screenplay Proforma

As noted in section 2.3, the final Screenwriting project was undertaken collaboratively in small groups. There were repeated errors by most groups for two of the sections, Complementary Resources and Storyboard.



| Table 2. Pedagogic screenwriting principles for designing each chapter                                                                                                                                                                                                                             |                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Hook</b> (a. capture b. retain interest)<br>a. Shock / surprise / delight<br>b. Suspense, entertain, engross / appetise                                                                                                                                                                      | <b>5. Sensitise / Avoid Distractions</b><br>a. Priming<br>b. Reassure / build confidence<br>c. Personalise the teacher<br>d. Music style & timing by design<br>e. Consistent style<br><b>f. Conform to Video Grammar</b> |
| <b>2. Signpost</b> (what's coming)<br>a. Set the scene<br>b. Signpost: what's coming later<br>c. Chapter Heading: what's next?<br>d. Look out for specific items coming next                                                                                                                       | <b>6. Elucidate</b><br>a. Vary tempo to indicate syntax<br>b. Enhance legibility/audibility<br>c. Maximise Cognitive Clarity<br>d. Control pace, depth, breadth<br><b>e. Indicate where to look</b>                      |
| <b>3. Stimulate Cognitive Engagement</b><br>a. Pose questions, pause<br>b. Encourage prediction<br>c. Students' personal relevance                                                                                                                                                                 | <b>7. Reinforce</b><br>a. Repetition (with a new angle)<br>b. Re-exemplify<br>c. Words-image synergy<br>d. Compare / Contrast<br><b>e. Key-Word Text</b>                                                                 |
| <b>4. Enable Constructive Learning</b><br>a. Words NOT DUPLICATING pictures<br>b. Analogy and Metaphor<br>c. Scaffold construction of knowledge<br>d. Let students see the context<br>e. Concretise / Activate their knowledge<br><b>f. Pause narration: for viewers to contemplate the action</b> | <b>8. Consolidate</b><br>a. Recapitulate<br>b. Summarise key features<br>c. Integrate associated materials                                                                                                               |
| Red font identifies four amendments to the wording in the videos, discussed below.                                                                                                                                                                                                                 |                                                                                                                                                                                                                          |
| <b>4f. Pause narration: for viewers to contemplate the action.</b> Also incorporated in several other Principles, e.g. 6a, 6d (6a example in footnote p.3 of the Handout)                                                                                                                          |                                                                                                                                                                                                                          |
| <b>5f. Conform to Video Grammar</b> (e.g. do not cut when the camera is moving or zooming)                                                                                                                                                                                                         |                                                                                                                                                                                                                          |
| <b>6e. Indicate where to look</b> (e.g. flash an item), previously an <i>extra</i> on p.7 of the Handout                                                                                                                                                                                           |                                                                                                                                                                                                                          |
| <b>7e. Key-Word Text</b> (on-screen text reproducing key words of the narration). This can anchor attention and alleviate auditory-memory (Koumi, 2006/2009, p170)                                                                                                                                 |                                                                                                                                                                                                                          |

Figure 5: The Design Principles, 9<sup>th</sup> Run, with discussion of four amendments

In many of the Storyboards, durations of listed shots were underestimated. After the 2<sup>nd</sup> Course, the Proforma was modified to include the following advice on estimating shot durations.

To estimate the duration of each shot:

1. time the narration,
2. add the duration of non-narrated sequences
3. add 10% to LOOSEN your video (Principle 6d)

In the first 5 Runs of the Course, under Complementary Resources, most student groups did not append essential complementary documents to the proforma. Hence, rather belatedly from the 6<sup>th</sup> Run, the following note was added.

If any of the above materials are essential for the learning objectives, you need to compose them **and append the documents at the end.**

Additionally, all such issues were addressed through my annotations of groups' Proformas. The annotations were intended as *formative evaluation*.

## 4.7 Tightening some deadlines and extending others

Another enhancement of the Course re-runs was the correction of a slackness in the Course. The early Quizzes, which warranted only a few hours' work, had a two-week deadline. Consequently students were not immediately fired up, as evidenced by early inactivity gleaned from data analytics. The due date was reduced to one week from the 3<sup>rd</sup> run.

Conversely, in the 9<sup>th</sup> run, Draft 2 of the Scriptwriting project, previously allotted week 9, is now given two weeks, 9 and 10. This change was influenced by

**Table 4.** Transformations and what influenced them

| Transformation, from MOOC to the University Course and then to successive Course runs                             | Influenced by                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Course Presentation: modifications of the pedagogy of the Course                                                  | A University Degree Course, rather than non-accredited MOOC<br>Graded posts would affect students' Degree.<br>Students' misinterpretations.<br>Students' inactivity, through data analytics.<br>Complaints that groupmates failed to carry their weight<br>Interactions with students' assignments. |
| Course Content: enhancements of my Design Framework for Instructional Video (adapted from my book, Koumi, 2006/9) | Students' thoughtful suggestions.<br>Students' misinterpretations.<br>Self-reflection of my own sloppy thinking.<br>Interactions with students' assignments.                                                                                                                                        |
| Formative evaluation of students' work.                                                                           | Students' misinterpretations.<br>Students' thoughtful, but not quite correct assignments.<br>Students' mistakes, due to my concealing content modifications.<br>Interactions with students' assignments.                                                                                            |

**Table 5.** Final Exam Grades of the University student groups in the eight runs of the Course

| Course                                                                    | 1            | 2            | 3            | 4            | 5            | 6            | 7            | 8            |
|---------------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Students                                                                  | 34           | 27           | 35           | 37           | 35           | 34           | 63           | 53           |
| Final Exam: average Scores for the groupwork Screenplay Proforma (Fig. 9) |              |              |              |              |              |              |              |              |
| Scores                                                                    | 47.47/58     | 32.74/45     | 33.40/45     | 33.06/45     | 30/40        | 31.19/40     | 31.04/40     | 31.21/40     |
| %                                                                         | <b>81.84</b> | <b>72.76</b> | <b>74.22</b> | <b>73.47</b> | <b>75.00</b> | <b>77.98</b> | <b>77.60</b> | <b>78.03</b> |

students' complaining that groupwork requires extra time for collaboration, unlike the individually tackled Quizzes of weeks 1 to 6. The complaint is reasonable, considering the difficulties of collaborating online and the frustration of having to wait for responses in such asynchronous study.

## 5 Conclusion

In the process of moving from a MOOC to an Online Course, then successive Course re-runs, the diverse Influences that led to three types of Transformations are summarised in Table 4. All three types were influenced by my interactions with students' assignments, but there were several more diverse influences.

## 6 The grades for the Final Exam were disappointing

Table 4 documents the successive refinements of my University Course presentation and content and my feedback to students' Quiz answers. I therefore expected that this would yield an upward trend in students' learning through successive Course runs.

However, the successive transformations did NOT result in a substantial learning improvement trend. The average Final Exam grades for the Screenwriting Project are given in Table 5.

Groups in the 1<sup>st</sup> Course scored highest. Perhaps the newly offered Course (the first screenwriting Course) attracted an enthusiastic and diligent cohort of students. Thereafter, performance dropped, although there were slight successive improvements in subsequent Course runs. However, low student numbers and a myriad of contextual factors make the small incremental improvement of doubtful significance.

Nevertheless, a speculative reason for the lack of improvement is as follows. The successive transformations of content, rendering the Course more complex, may have counteracted the improved pedagogy: the incrementally transformed presentation and improved teacher feedback as the Course progressed.

## 7 Take-Aways for other researchers and practitioners plus an invitation to critique

Many of the enhancements above, were prompted by the University students' posts. This was heartening. For

decades, I had sought constructive criticism to refine my models of pedagogic video design, but previous audiences had little time, inclination or expertise. But at long last, in various runs of the University Course, the inputs of the University students informed my thinking in nuanced, positive ways, as in the augmentations of attributes in Fig. 3 and the modifications in Fig. 4.

However, I expect I can receive even deeper appraisal from readers of this paper.

For practitioners running Courses on educational technology, you have seen the influences motivating successive transformations of my Course. I hope you are motivated to interrogate similar influences. Or are my transformations too numerous/complex?

For readers who follow my multimedia design publications, I made several successive transformations to the Course Content, that is, to my own Design Framework for Instructional Video (Koumi, 2006/9). What is your appraisal of these?

I will study any readers' appraisals and also persist with my design practice research in subsequent Univer-

sity Course runs, aspiring to improve student learning, my own learning and the pedagogic quality of the Course.

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