

Writing Self-Instructional Materials for Distance Learners: An Introspective Study

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Abstract:

Writing self-instructional materials for distance learners has become a priority for most open and distant learning institutions. The need for quality learning materials has become even more pressing as students with weaker grades, poor language proficiency, lack of access to reference materials and the internet seek tertiary education opportunities. At the same time, institutions need to ensure that the standard of knowledge, skills and attitudes of a discipline transmitted are not compromised.

The paper presents the reflections of the writer having written several self-instructional materials for both undergraduate and graduate programmes in education. The findings of the introspective study provide insights that may be adopted and adapted in meeting the needs of distance learners of varying backgrounds and of varying disciplines. Besides that, the writer has used these insights in training potential writers of self-instructional materials adopting a metacognitive approach in which the thought processes of the writer during the writing process are made explicit through think aloud protocols.

Key Words: *self-instructional materials, distance learners, metacognitive, introspection, training writers.*

Introduction

Printed material continues to be a significant and important aspect of teaching media in distant education. It provides the nucleus or engine that drives face-to-face interaction, online synchronous and asynchronous discussion, organisation of assignments and assessment (Phillips, Ahmed & Kaur, 2005). Self-instructional materials cater to distant learners who will not be in regular contact with teachers and subject matter specialists who design the courses. Hence, they rely very heavily on specially prepared teaching-learning materials which have been structured in such a way that learners can do most, if not all, their learning from the materials alone. As pointed out by Rowntree (1997), “the materials must carry out all the functions a teacher or trainer would carry out in the conventional situation – guiding, motivating, intriguing, expounding, explaining, provoking, reminding, asking questions, discussing alternative answers, appraising each learner’s progress, giving appropriate remedial or enrichment help...and so on” (p.11).

Hence, writing self-instructional materials has become the core business of most distant learning institutions. The need for quality learning materials has become even more pressing as students with weaker grades and poor language proficiency in English seek tertiary education opportunities. The situation is further exasperated with students who lack access to good reference materials and the internet. At the same time, educational institutions are concerned with ensuring that the standard of knowledge and skills transmitted are not compromised.

The paper first presents the findings of an introspective study conducted by the author while writing a self-instructional material for the graduate programme in education. This is followed by an examination of how the author used these

reflections in training potential writers (deemed to be novices) of self-instructional materials adopting a metacognitive approach in which the thought processes of the author (deemed the expert) are made explicit through think aloud protocols.

Introspection as a Research Method

Introspection is the process whereby one looks within oneself to know one's ideas and feelings. It is being self-conscious, aware, thoughtful, having ideas and knowing what they are and being able to report accordingly (Gould, 1996). Wallendorf and Brucks, (1993) identified several types of introspection based on the level of closeness or intimacy between the researcher and introspector. On one extreme, the *researcher is the sole introspector* in the study relying extensively or even exclusively on the researcher's experiences as data. *Guided introspection* is when individuals other than the researcher are asked to introspect or think aloud about themselves and their actions. Interactive introspection is when the researcher assists others in their introspections but the object of the study is the emergent experiences of both parties.

For purposes of this study, the first type of introspection method is adopted in which the author's self-introspection is documented. The aim of this study is to twofold. First is to make explicit or bring to the surface the thought processes of the writing process. To retrieve these thought processes, which would normally fizzle off, an effort was made to verbalise and document them. As stated by Weick (1993); "How do I know what I've done until I tell aloud what I did?" or in this case "...until I write down what I did". Second, is to mentally model these thought processes when training others interested in writing self-instructional materials for various subject areas.

Methodology

I was assigned the task of writing a self-instructional module on *Foundations, Principles and Theory of Curriculum* for the Masters of Education programme which was to be 200 pages long. I was provided with a description of the course, objectives of the course and a listing of the ten chapters. That's all. The moment I began the writing process, I kept a journal of everything I thought and decided to do throughout the writing process which took about three months. The notes were coded according to the following five categories: Approaching the task, Course description, Selection of content, Sequence of content, Alignment with objectives, Learning to learn, Learning activities and Writing style.

Findings

a) Approaching the Task

- How do I start? I had never written a self- instructional material and had never received any training to do so. I had written three secondary school geography textbooks and wondered whether the experience would help.
- I am so attuned to writing in Malay and having to write in English did raise some doubts. I had the habit of 'thinking' in Malay as I perused reference material and tended to translate material and imagined how it would sound like in Malay.
- Initially, I thought that writing in English would be a breeze as most available reference materials were in English. Though it may be true, I had to keep

reminding myself that a self-instructional material is different from a reference book.

b) Course Description and Objectives

Began with examining the table of contents and found it a bit confusing, especially with regards to sequencing of the topics which was not cohesive. I was given instructions that one could only change about 20% of the original course description because it had already been approved by the accreditation agency. Realising that the students should be given priority and presentation of course content should reflect the discipline, I decided to make drastic changes ignoring the condition stipulated earlier.

- The objectives were rewritten because they were not clear and did not reflect the course. I focused on what students should know, 'the must know' concepts. i.e. must know *knowledge*. After the course I want them to be able to tell me what is curriculum, explain the factors influencing curriculum, describe the curriculum development process, discuss issues and trends related to curriculum development.
- Besides that what *skills* do I want to develop. For example; the skills (or steps) of developing a curriculum, being able to make predictions of the future, being able to critically evaluate and discuss curriculum issues.

c) Selection of content

I discovered three books on curriculum planning and development from the library which was closely related to what was required.. I was most excited at the prospect of having available texts that fitted well with the course description and list of chapters. Later I noticed that the contents of the three books was very much biased towards America. Constant reference was made to the American education system, the American political system and American history. The authors assumed that readers of their books have prior knowledge about America. The learning package I am preparing is aimed not only at the Malaysian students but also international students when the programme is marketed outside Malaysia.

I asked myself, what is meant by an *international audience*. Education is an applied discipline and anyone learning the basic concepts and principles of any course in education should be able to apply them in their own country. So students taking this course on 'curriculum' should be able to apply the generic knowledge and skills in their respective educational system.

This is where my belief in constructivism prevailed. We talk so much about making content relevant to the daily lives of students and that they should be presented within authentic situations but make no effort to translate it in the courses we teach. I decided that I will make reference to many different education systems (Indonesia, Britain, Japan, South Africa and so forth) to illustrate 'curriculum' concepts and principles, even though it meant more work and time as I will have to search for such case studies which are not readily available.

d) Sequencing of content

Based on the revised course description, I sequenced the 10 chapters in the form of a flow chart to show students at the beginning of each chapter, how the chapter he or she is going to read is related to the rest of the chapters. I was confused with three terms, namely; *curriculum development*, *curriculum planning*, and *curriculum design*. If I am confused, what more with my students. The books and

numerous articles that I referred to did not provide a clear answer on the issue. After extensive reading, I decided to treat ‘curriculum development’ as a process beginning with ‘curriculum planning’, ‘curriculum design’ and so forth. So I had to redraw the flow-chart while still keeping the 10 chapters. Wow! what a relief. Everything began to fall in place.

The mind map provided an overview for the 10 chapters which facilitated the writing process. Instead of writing sequentially, I wrote in parallel, switching between chapters. I found this technique useful because it kept me in touch with all the chapters together and I could detect overlapping ideas, inadequate treatment of topics and it also reduced boredom.

I decided to adopt a “tutorial-in-print” approach (Horton, 2000)? Why? I felt the approach is more appropriate for most students who would be ‘coming back to school’ after a long period. The approach is deductive in which concepts and principles are presented followed by examples and illustrations. The tutorial-in-print is also more appropriate for mastery of content that is relatively new. In terms of the types of sequence, the following three were used depending on the topic or content: chronological (eg. the development of the American education system); causal sequence following a chain of cause-and-effect from first cause to final effect; problem-centred (eg. students are asked to decide which curriculum design was appropriate for the information age and why).

I sieved through newspapers and found stories which could form an advance organiser for each chapter. For example, the PM’s call for the private sector to be consulted when developing the curriculum would be excellent for Chapter 2 on Philosophy questioning the issue of “useful knowledge” to be taught in secondary schools and universities.

e) Alignment with Learning Outcomes

An important feature of self-instructional materials is need to align learning outcomes, content and assessment. This posed a problem whether this alignment will restrict the achievement of higher order learning outcomes. I guess if I want students to engage in higher order thinking, I will have to stipulate it as objectives and assess it accordingly. Similarly, the activities planned in the module, i.e. the kinds of interaction I want the student to have with the material in the module has to be carefully designed and closely aligned with the objectives.

I still wrestle with two paradigms. The first is about the main criticism of learning outcomes which are rather behaviouristic and restrictive of the kinds of learning desired. On the other hand, constructivism calls for the construction of knowledge and development of thinking skills. It is impossible to predetermine all the learning outcomes that will emanate. The module is supposed to be self-instructional, in which the student can rely on the material for all requirements such as answering questions posed, doing the activities and even answering examination questions.

What about the 3 assignments I have planned? These are tutor marked assignments (TMA). Do they need extra material such as chapters for textbook or articles? If they do, where do they get them? I could select material from the digital library, What if they cannot access the web? Could I download the relevant material and include them in the module? What about copyright issues? Could I download them to a CD-ROM? What’s is the policy on providing CD-ROM together with the module? I keep thinking about the module being used by students who do have efficient internet access. I am also toying with the idea of making available short video-clips in which I will discuss selected aspects of the course and make it available

on the web or in CD-ROMs. For example: introduction to the module with regards to its organisation, how students should use the module? assessment issues which will be of concern to students.

f) Learning to Learn

1. The literature on module writing frequently emphasises the need to consider the learning style of the distance learner. How is the module writer to consider the variety of learning styles? I am struggling with selecting and organising the content; let alone cater to the numerous learning styles of the student whom I may never meet.
2. However, I stumbled on this idea (may not necessarily be new). The library is full of books addressing ‘College Reading Strategies’ also known as “Content Areas Reading”. These are texts and in many American universities have become compulsory courses for year 1 undergraduates to learn how to read their textbooks. General strategies are taught which students are expected to apply when reading textbooks in their respective disciplines. They are actually ‘reading comprehension strategies’
3. Wow! I thought to myself, why not work backwards. Identify the strategies used by successful readers and design the module towards helping students understand what they are reading. For example, ‘context clues’ help readers understand difficult words. Why not write in such a way so that students are able to pick up these context clues quickly when they come across difficult words and phrases.

g) Learning Activities

Learning activities play an important role in enhancing the interactivity of self-instructional materials. I did not quite agree with the existing types of learning activities used which included: THINK, YOUR IDEA, EXERCISE and so forth. As a writer, I found them to be confusing and difficult to differentiate. Managed to access self-instructional materials from Open University Hong Kong and Open University. I decided to restrict the learning activities to two types, namely; Self-Test and Activity (Phillips, Ahmed, Kaur, 2005).

Self-Test – this activity was introduced at strategic points in the text to enable learners to monitor their understanding of foundational knowledge and integration, i.e. the key information (facts, terms, concepts, principles) important for students to understand and remember in each chapter. The Self-Test questions were aimed at enhancing the mathemagenic behaviours (Rothkopf, 1970) of learners or processing behaviours that give birth to learning. Questions direct intent and search while reading a piece of text. Three types of adjunct questions were introduced (Pearson and Johnson, 1978).

- *Text-explicit questions* or factual recall questions tested key information students had to understand and remember and the answers are right there on the page. For example, ‘*What is the hidden curriculum?*’
- *Text-implicit questions* required learners do some sort of inferencing and ‘read between the lines’. For example, ‘*Why do you think the Taba model is called the grass-roots model?*’

- Script-based questions required learners to use their prior knowledge or schema to answer the questions. For example, ‘*Give specific examples of constructivism in your classroom*’.

Text-implicit and script-based questions encouraged learners to make connections among ideas within the chapter and connections with their experiences in the workplace (i.e. integration).

Activity – these are learning activities in which learners: go beyond memorisation, bring in their own experience and examples, use the ideas in the material and apply them in their work or personal life, learn by doing, reflect on their own thoughts and feelings. They are presented with real-world situations in the area of curriculum design and development (i.e. application of concepts). Case studies in curriculum design, curriculum implementation and curriculum evaluation are introduced at relevant sections in the text in which learners analyse and evaluate (critical thinking), suggest solutions (creative thinking), solve problems and make decisions. The aim of these learning activities is to provide opportunities for students to use the conceptual tools of the discipline in authentic situations and through collaborative interaction (face-to-face and online) socially construct knowledge. For example, ‘*To what extent are constructivist principles practiced in our classrooms*’?

f) Writing Style

Finally, with regard to writing style the literature proposes that a conversational style is most appropriate. Initially, I had some difficulty being conversational having been accustomed to academic writing for journals and research reports. However, I started to imagine the learners were right there in front of me and I was talking to them. I even said aloud (as though I was giving a lecture) what I wanted to write and this made my writing more conversational and plain-speaking.

“I” and “we” was used and every effort was made to welcome readers. I adhered closely to Einstein’s well-know adage, “Simplify but do not make it simple” by cutting out surplus words, defining new terms, focusing on concrete words, keeping paragraphs short and so forth. I made it a point to explain difficult concept and principles with examples and non-examples. This not only enhanced learning, it also clarified some of the misconceptions readers have with certain concepts and principles.

Relying on my hobby being art, I made an attempt to “think pictures” or “think graphics”. Wherever possible, I reduced solid prose into graphic organisers, tables, lists, cartoons, maps, photographs and so forth. This is where the writer needs to have an in-depth appreciation of the content and be able to think graphics. Many of the graphics were “invented” by me with the aim of illustrating, explaining, and describing to facilitate learning. For example, to illustrate a process a flow-chart was employed and to show listing, bullets were used. Cartoons were used to amuse and touch on the lighter of the subject without trivialising, of course.

TRAINING WRITERS OF SELF-INSTRUCTIONAL MATERIALS

After writing this self-instructional materials on *Foundations, Principles and Theory of Curriculum*, I wrote another four learning packages for the Masters of Education programme. Based on this accumulated experience, I was involved in training prospective writers of self-instructional materials both for the undergraduate and graduate programmes. Instead of prescribing to writers the do’s and don’ts of writing, a metacognitive approach was adopted in training. Metacognition refers to

the knowledge and control people have over their thinking and learning activities (Flavell, 1979); it involves “thinking about thinking”.

The metacognitive approach proposed is an alternative to the prescriptive approach in training in which I modelled the thought processes of the writing process (Wilensky and Phillips, 1995).

Step 1: EXPLANATION BY THE TRAINER

- introduce a skill
- show examples and non-examples
- use exercises to practice the skill

Step 2: MODELLING BY THE TRAINER

- ‘think aloud’ of the modelling process by the trainer/expert
 - identification of problem
 - initiation of strategies
 - trainer provides cues and prompts if there is a lack of understanding

Step 1: Explanation

The Trainer/Expert decides which skill that is to be taught, lists the steps to follow when executing the skill, why it is important and when writers will need to use it. Examples of such skills are, selection of content, making text structure explicit, designing learning activities and so forth. The trainer emphasises that writing a self-instructional material is a problem solving task that requires a line of reasoning or a way of thinking.

For example, in learning how to use context clues in writing, the teacher explains how the semantic and syntactic structures of text may provide clues in understanding difficult words or phrases. The trainer lists the types of contextual aids that may be used by the writer such as; definition, linked synonyms, examples, modifiers, restatements, contrast and cause-effect. The trainer describes the reasoning process and presents several examples and non-examples that can be used by writers when explaining the process. It should be evident that the technique of using context clues is mostly an inferential process that requires the student to see an explicit or implicit relationship between an unfamiliar word and its context or to connect what the student already knows with the unknown term.

Step 2: Modelling by the Trainer / Expert

Besides merely explaining the comprehension, the trainer seen as the expert models the reasoning process involved. The trainer “thinks out loud” stating WHEN and HOW the reasoning process should be used. The trainer reads a passage to the writers, does self-questioning and describes how he developed context clues in his writing. During this whole process the trainer thinks aloud the mental processes

each step of the way. The trainer provides a model of the thinking process by stating what is going on inside his head (Phillips, 1992). The trainer is assumed to be the 'expert writer' while the potential writer is the novice. Writers hear firsthand how the expert went about writing the self-instructional material.

For example, the trainer shows a page from a self-instructional material and model the decisions made with regards to writing that page. Why a diagram was used? Why bullets were used? What was the cartoon used? Why was there a need to rephrase the sentence? and many such examples.

Conclusion

This study was prompted by the realisation that the accumulated tacit knowledge of experts are often not shared with novices when learning a skill. Textbooks and training manuals tend to be prescriptive in what should be done. Even when the tacit knowledge of experts are made explicit in printed material, they tend to be prescriptive and presented in steps which may not necessarily be the way experts think. There are many "mini-decisions" made by experts in executing a skill which are not made explicit in training materials and textbooks. Hence, metacognitive modelling in which the expert "thinks aloud" his or her thought processes when executing a skill presents to novices many of the "mini-decisions" which are seldom documented.

However, the expert should be conscious of his or her thought processes and the many "mini-decisions" employed. The introspective study enabled the expert to be conscious of his thought processes and recording it helped him appreciate the intricacies of the writing process which he may not have realised. The findings enabled the expert to share his thought processes and heuristics employed when training others.

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