

## **HOW TO DESIGN AND DEVELOP LEARNING MATERIALS: THE TOTAL LEARNING EXPERIENCE MODEL**

**Dr Christo du Preez**

**Centre for Courseware Design and Development: Technikon SA**

### **Introduction**

As a distance education provider, Technikon SA designs, develops, reproduces and distributes learning materials to its learners who are scattered throughout South Africa and in other countries such as Namibia, Fiji, Burundi and Kenya.

During 1994 Technikon SA established the Centre for Courseware Design and Development (CCDD), mainly as a result of the changes in the political dispensation and transformation of the education system in the country. The CCDD has developed a system of designing and developing courseware that ensures a reader-friendly, interactive and learner-centred product. This is achieved by utilising a variety of learning strategies, learner motivation and self-assessment methods built into the courseware, as well as visual elements that make mastery of the content a delightful experience for the learner. These learning materials are in almost all cases print-based. The question can now be asked: Is this enough?

### **Contextualising the question**

Higher education in South Africa is going through a time of dramatic and fundamental changes and transformation. Educational institutions now have to deal with rapid, radical change linked to a growing need for a new generation of knowledge workers: people with much higher levels of relevant, applicable skills and knowledge, people capable of performing at their optimum under circumstances that are constantly changing at a great rate and in multi-cultural environments (Du Preez, 2001:12).

Internationally this can be seen in the shift away from the acquisition of basic academic knowledge (inward-directed), to an approach where the focus is on

knowledge, skills and attributes (outward-directed) that are required to bolster both productivity and the careers of graduates.

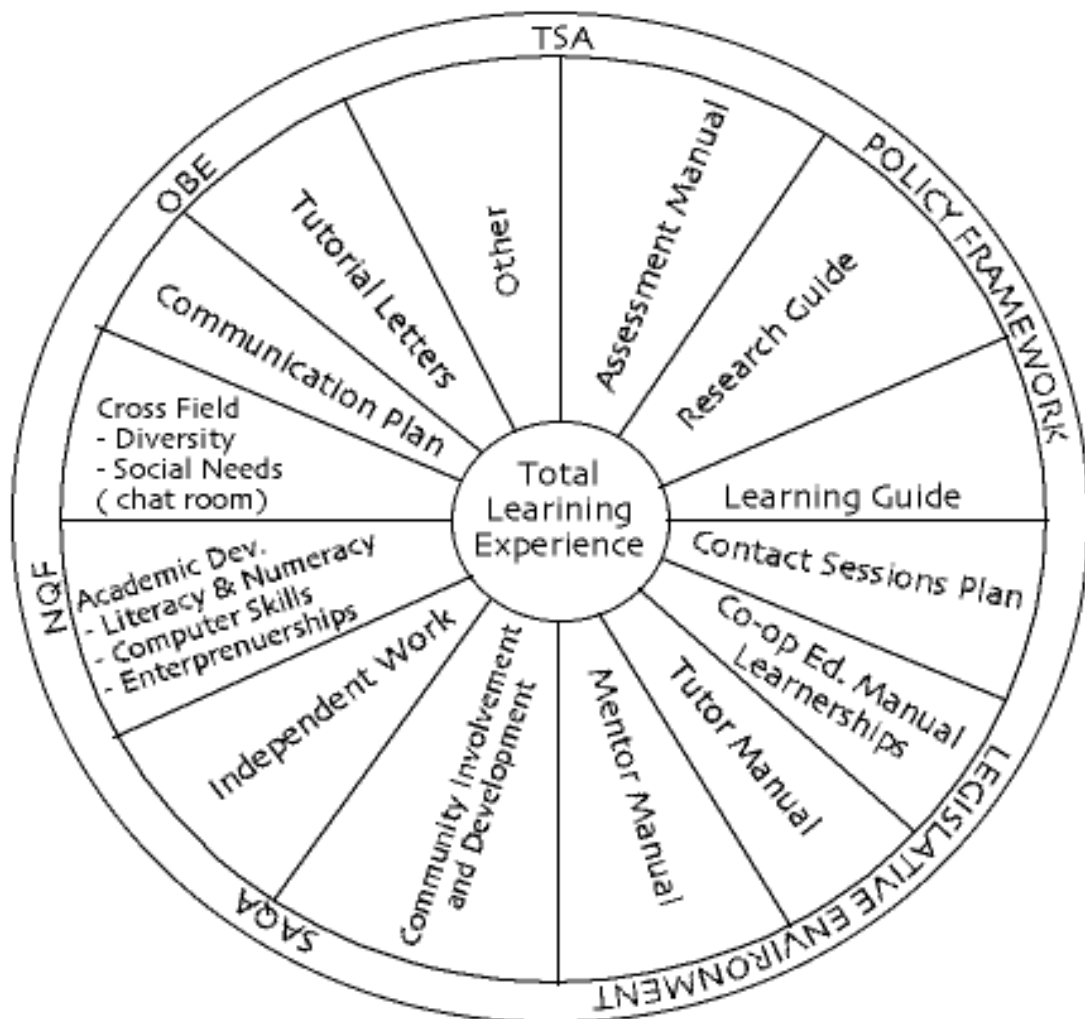
The impact of this shift can be seen in words such as ‘learner-centred’, ‘outcomes-based’, ‘computer-assisted learning’, ‘borderless education’, ‘seamless curricula’, ‘problem-based education’, ‘flexible learning’, ‘co-operative education’ and ‘regional co-operation’ that have become part of our general, everyday vocabulary.

Critical success factors now are the exploitation of knowledge, global communication and competitiveness, cross-cultural sensitivity, the management of relationships, entry to key networks and time zone flexibility (Du Preez, 2001:11).

At the CCDD we pride ourselves on our process of designing and developing learning guides. This process involves the instructional design phases of analysis, design, development and evaluation in the process of creating interactive learning guides (with the relevant role-players).

This model will indicate that more than interactive learning guides are needed to ensure that the learners achieve success once they have gained access. We refer to the total learning experience model, as developed by the Centre for Courseware Design and Development (CCDD).

### **Visual representation of the total learning experience model**



### **The model unpacked**

At the centre of the model is the notion that the total learning experience should contribute to the learner achieving success after gaining access.

Everything that impacts on this total learning experience should therefore be included right from the conceptualisation of the subject (instructional offering) or qualification (programme).

### **Regulating environment**

The total learning experience is guided by the legislative and regulatory environment. This environment regulating this model has been widely described and discussed by the National Standards Bodies (NSBs) and in documents such as the South African Qualifications Authority Act 58 of 1995, the Regulations of March 1998 (South Africa, 1998; SAQA, 1999) and the ILCDE model adopted by Technikon SA (Buitendacht, 1995:35-52).

### **Learning guides**

To ensure that all aspects of the course/module form an integrated whole and are all aimed, in a co-ordinated way, at achieving the purpose of the total learning experience, the design must be based on a thorough analysis and include plans for all the various aspects of the learning experience. This initial planning must take place before any contact with the learners and should include helping learners become acquainted with each other and the process, facilitation of the needs assessment activities and even how to engage learners in individual planning or evaluation functions (Brockett & Hiemstra, 1991:103).

The learning guides must be based on the instructional strategy that is compiled by the instructional designers during the analysis phase. The plans should also include

specifications for overall learner support and outline the tasks of the various role-players involved in the total learning experience, e.g. the learner, lecturer, tutor, mentor, line manager, assessor, peer, administrative department and, in the case of online courses, the ITC representative and support.

An appropriate educational theory or approach should be used to guide the teaching and learning. This approach is appropriate in terms of learner profile and principles of outcomes-based education. The sequence and structure of the guide (and the learning materials) are in line with this educational approach and teaching and learning strategy.

The guide is broken down into learning units with correctly formulated outcomes and assessment criteria for each unit. The units also contain activities that the learner is asked to engage in to achieve the outcomes of the unit (as well as any other tactic to facilitate learning in each unit). Graphics are included.

### **Assessment manual**

Assessment should be directed by an integrated assessment strategy. The outcomes of this strategy should be to:

- ensure that the assessment will be a valid instrument of the outcomes/module and of the learner's applied competence
- ensure that all elements of assessment (e.g. summative and formative) are integrated

To achieve these outcomes, the following needs to be done:

- Appropriate methods are selected to assess the various elements of the total learning experience (e.g. independent learning, research, contact sessions and workplace learning).
- The formative and summative weighting is specified and must be appropriate.
- All systems must be in place to manage and administer the assessment.
- For every assessment opportunity, who the assessors are, how assessment is scored and how feedback is given are specified.

- How the assessment plan and criteria will be communicated to the learners is specified.

### **Research guide**

This should guide learners not only in formal research appropriate for their level, but also to the action research needed that is included in the action learning. Here the aim is not only for the learners to learn from their own and each other's work, but also to improve it and to change situations and conditions (Zuber-Skerrit, 1991:81; McNiff, 1997:2-4).

### **Contact sessions**

Contact sessions should be utilised to the maximum benefit of the learner. These must be planned and incorporated in the design of the course and details of these sessions must be communicated to the learners when they register. There are different types of contact sessions and the learning facilitator can make use of any combination of them. They include (Technikon SA, 2000:88):

- ❑ briefing and debriefing sessions (where the scene for the course is set or constructive feedback is given)
- ❑ peer counselling (where learners are free to ask questions and ask peers to assist in finding the answer to problems; the tutor is available for consultation)
- ❑ occasional guest speakers (visiting experts conduct motivational talks on key themes of the learning programme – this could include a video conference)
- ❑ practical sessions (where learners do practical work under the guidance of an expert or observe the experts in how it is done)
- ❑ remedial sessions (in which formative assessment and remedial learning takes place for individuals or groups)
- ❑ end-stages assessment (where integrated assessment takes place and learners demonstrate what they have learned and still need to learn and are given feedback by tutors, more experienced learners or mentors)

## **Co-operative education and learnerships**

The World Association of Cooperative Education (1996) draws attention to its characteristics of integration and practice, when it defines co-operative education as follows:

*Cooperative education learning in the classroom with learning on the job. Students put their academic knowledge into action through relevant (and, usually, paid) work experiences with real world employers, then bring their on-the-job challenges and insights back to class for further analysis and reflection.*

The opportunity for integrating theory and practice must be provided in a very real way. This kind of integrative learning experience could be offered in collaboration with major employers and since technikons tend to differentiate themselves from universities by the practice of co-operative education, it should be a core part of any programme or instructional offering offered by a technikon.

## **Tutors and tutoring**

The role of the tutor in mediating learning, helping demistify difficult concepts and enabling learners to develop the multiple literacies (academic, information, technology and language) required for optimal gains from the learning experience is and will remain of paramount importance. Most learners have to access the learning experience through the barriers of poor schooling in the second or third language medium of instruction. Tutoring therefore does not only entail the mere facilitating of the learners' understanding of a particular instructional offering or subject and discipline, but also requires a deeper understanding of how learning takes place through these filters. It also requires great sensitivity as to how language poses a barrier to effective learning and a willingness from the tutor to move from a traditional focus on content to helping learners develop the critical skills and conceptual tools to equip them for the learning experience and achieving success (Technikon SA, 2000:iii). These requirements will obviously challenge learner advice, placement, electronic databases and tracking. These aspects need to be

addressed upfront for the learner to be informed and made to feel comfortable in the new learning experience.

## **Mentors**

If we accept mentoring as being the act of “*providing guidance, support and practical help through life crises or into stages of development*” (Whittaker and Cartwright, 2000:4), we can safely assume that in the process of learning there is a definite place for the mentor over and above the roles of lecturers, tutors and peers. The relationship between the mentor and the person being mentored always has numerous benefits for both parties (see Whittaker & Cartwright, 2000:5-17).

Important for the total learning experience is clear guidance on the following aspects of a formal mentorship programme: names, dates, location, current involvement, outcomes to be achieved, training received and reaction, different stages of mentoring, feedback to lecturer, support mechanisms, etc. Whittaker and Cartwright (2000:131-134) identify 11 key areas that need to be addressed for effective mentoring:

- ❑ Set objectives for the mentoring programme
- ❑ Plan the introduction of the programme
- ❑ Key roles
- ❑ The influencing strategy
- ❑ The influence of culture
- ❑ The matching process
- ❑ Training
- ❑ Administration
- ❑ Setting up support networks
- ❑ Monitoring and assessment of progress
- ❑ What can go wrong?

## **Community involvement and development**

It is often easier to work alone but the complexities of our society, scarce personnel and diminishing financial resources compel learners and communities to work together. Co-operation is the more effective option since it produces greater results



for the benefit of all role-players (Dean, Mark & Del Prete, 2000:147). There are, however, a number of barriers (such as competition for resources, a lack of ownership, different value systems, past negative experiences, red tape and legal jargon and a fear of failure) that need to be addressed. The following could be done to ensure success (Dean, Mark & Del Prete, 2000:153-154):

- ❑ Make a thorough assessment of the intended outcomes, responsibilities and activities by asking the questions what, why, who, when, etc. Each party must then prioritise these aspects.
- ❑ Identify those activities for which the community believes it is totally responsible, e.g. laws, community expectations, policies and traditions.
- ❑ Identify and meet with community leaders, organisations and institutions that appear to share similar goals, responsibilities, interests and activities.
- ❑ Collaborate to identify similar areas of concern and develop plans to co-operate, implement and evaluate the programmes and activities.
- ❑ Attempt to increase the scope of community involvement and specific activities.
- ❑ Continue to assess its progress in achieving the outcomes and assess community efforts.

### **Independent work**

A self-directed learner is one who takes responsibility for his/her own learning. For this to take place, the learner needs the following, according to Brokkect and Hiemstra (1991:108):

- ❑ Information on the topic and the use of media
- ❑ The availability of the lecturer and tutor as resources
- ❑ Assistance on assessing the learners' own needs
- ❑ Feedback on successive drafts
- ❑ Arrangements for contact sessions
- ❑ The willingness to work outside formal or group settings
- ❑ An attitude and approach to learning that fosters independence
- ❑ An opportunity to discuss, raise questions and become involved in small group activity to stimulate interest in the learning experience
- ❑ A managed learning process that includes activities such as continuous diagnosis of needs and feedback that fosters learner involvement

- A lecturer or tutor that serves as validator of learner accomplishment on an ongoing basis

### **Academic development, including literacy and numeracy, computer skills and entrepreneurship**

Where it is considered necessary to include elements of foundational learning (e.g. basic literacy and numeracy skills), the Academic Development Centre should be involved in the design. (This obviously calls for a complete and detailed learner profile.)

### **Cross-field, including diversity and social needs**

Integrated into the design of all learning materials should be how the 12 critical outcomes will be addressed. Important, however, is also how diversity will be accommodated and provision made for the social needs of the learners. These should also be integrated into the materials that are provided to the learner.

### **Communication plan**

The modes of delivery must be identified but communication is not limited to only a single mode. Hughes, Hewson and Nightingale (1997:5) as well as Maier et al. (1996:1-14), to mention but a few authors, clearly state that technology is increasingly becoming the most important method by which distance education is conducted. In the USA large sums of money have been invested in the implementation of technology-based forms of instruction and in South Africa tertiary institutions such as Rand Afrikaans University, Stellenbosch University and the University of Pretoria are actively implementing distance education modes of instruction at their institutions. The means of instruction they seem to prefer is technology-based instruction and, in particular, online instruction.

Two-way communication between the following parties should be planned and facilitated:

- ❑ Learner-learner
- ❑ Learner-lecturer
- ❑ Learner-tutor
- ❑ Learner-mentor
- ❑ Lecturer-tutor
- ❑ Lecturer-mentor
- ❑ Lecturer-exam department
- ❑ Lecturer-lab assistant
- ❑ Tutor-mentor
- ❑ Tutor-tutor
- ❑ Mentor-person being mentored
- ❑ Mentor-mentor

### **Tutorial letters**

Tutorial letters remain an important mode of communication in the total learning experience model, since they reach the majority of the distance education learners with updates and specific guidance. Guidelines for the “ideal” tutorial letter include the following (Langenhoven, 2002):

All tutorial letters that are longer than 10 pages should have a table of contents. This is especially important for a tutorial letter 1. The assumption is that learners probably read the letter linearly (from the beginning to end) the first time (or do they ever reach the end?). Later on, they only need to consult the sections of the tutorial letter that they consider relevant at that specific moment. Therefore, a table of contents with page numbers is very important.

Items that should be included in this first tutorial letter are, for example, a welcome note, information about enquiries and appointments (administrative and academic, as well as virtual campus), learning material, study groups, guidelines for answering the assignments, references, how to submit an assignment, due dates, evaluation of assignments, feedback, yearmark and examination (if applicable) and a conclusion.

**Other: Recognition of prior learning**

The concept of recognition of prior learning (RPL) is mostly understood by those in the area of adult education to mean the measurement of learning gained through experiences other than the formal courses at higher and tertiary institutions. In some contexts prior learning is taken to include all formal, non-formal and informal learning undertaken to date. [See the definitions given by the Human Sciences Research Council (1995:3) and the National Commission on Higher Education (1996:273)]. The White Paper on Higher Education also sees RPL as “an essential concept in the elaboration of the NQF” (Department of Education, 1997:21). It is therefore clear that the concept of recognising and accrediting what the learner already knows and can do will have a significant impact on what is included and developed in the total learning experience of the learner. This is irrespective of whether that learning has been acquired through unstructured learning, performance development, off-the-job assessment, or knowledge and skills that meet workplace needs but that have been gained through various other experiences (Moore, 2000:102).

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