AKEPT
HIGHER EDUCATION LEADERSHIP ACADEMY
MINISTRY OF HIGHER EDUCATION MALAYSIA

e-Learning
Training of Trainers Module
Intermediate Level
e-Learning
Training of Trainers Module
Intermediate Level

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2012
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# Module Objective & Curriculum Mapping

Participants should be able to:

i. develop and evaluate contents related to e-learning, and
ii. train others in the applications of e-learning at the university level.

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<thead>
<tr>
<th>Learning Outcomes (LO)</th>
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<th>Assessment Methods</th>
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• Learning Domains  
• Instructional Design Models | • Lecture + Q & A  
• Video presentation  
• Video reflection  
• Identification of various ID models  
• Group Wiki (compare & contrast various ID models)  
• Online voting | • Assessment of group presentation  
• Reflection portfolio  
• Online forum- Proboards  
• Online quizzes  
• Assessment of Wiki Reflection | F2F 4  
SDL 6 |
| **LO2:** Identify appropriate authoring tools for designing & developing e-learning contents | • Authoring Tools  
• Types of e-Learning Authoring Tools  
• Desktop Authoring Tools  
• Server-Based or Web Authoring Tools  
• Criteria in Selecting Appropriate Authoring Tools | • Demonstration + Q & A  
• Online tutorials  
• Group Wiki (compare & contrast various authoring tools)  
• Online voting  
• Self-exploration – Wallwisher | • Assessment of group presentation  
• Reflection portfolio  
• Online forum- Proboards  
• Assessment of Wiki Reflection | 6 8 |
| **LO3:** Analyze end user learning needs & requirements | • Overview of Needs Analysis  
• Types of Needs Analysis in an e-Learning Context | • Lecture + Q & A  
• Small group discussion  
• Identification of various need analysis approaches  
• Case study analysis | • Assessment of group presentation  
• Reflection portfolio  
• Online quizzes  
• Assessment of case study report | 6 8 |
| **LO4:** Design e-learning contents | • Analysing Instructional Goals, Learners’ Needs, & Prior Knowledge  
• e-Learning Design Tips | • Lecture + Q & A  
• Identification of content & ID model | • Assessment of group presentation  
• Peer review | 10 12 |
| **LO5:** Develop e-learning contents | • Methodology for e-Learning Content Development  
• Utilising Authoring Tool | • Q & A  
• Practice  
• Lecture Presentation  
• Demonstration  
• Groupwork | • Peer assessment  
• Product design evaluation | 10 12 |
| **LO6:** Evaluate the e-learning contents | • Courseware Evaluation  
• Development of Rubrics for Courseware Evaluation | • Lecture + Q & A  
• Identification of various evaluation rubrics  
• Online voting  
• Group Wiki (compare & contrast various evaluation rubrics) | • Assessment of group presentation  
• Reflection portfolio  
• Online forum- Proboards  
• Assessment of Wiki Reflection | 4 6 |
**LO7:** Plan a training program on the development of e-Learning contents.
- Overview of Needs Assessment & Analysis
- Developing Training Goals & Objectives
- Constructive Alignment
- Planning an Appropriate Training Programme
- Samples of Training Programme
- Q & A
- Filling in the blanks
- Group discussion
- Practice
- Wallwisher
- Review
- Online quiz
- Assessment of e-Learning training plan.

| TOTAL NO. OF HOURS | 54 | 106 |

F2F = Face to Face
SDL = Self-directed Learning
Task 1.1 Video Reflection

Watch the following videos and respond to the following questions:

Source: [http://www.youtube.com/watch?feature=player_detailpage&v=CEjo1Bd_DSw](http://www.youtube.com/watch?feature=player_detailpage&v=CEjo1Bd_DSw)

Source: [http://www.youtube.com/watch?feature=player_detailpage&v=tnbdW9mvy2U](http://www.youtube.com/watch?feature=player_detailpage&v=tnbdW9mvy2U)
i. For whom is the instruction being developed?
ii. What should the learner be able to do after completing the instruction?
iii. How are these learning objectives best acquired? What teaching/learning methods, activities, and resources should you use?

Learning Outcomes
At the end of this unit, you should be able to:
i. identify instructional design principles in e-Learning; and
ii. identify appropriate ID models for developing e-Learning content.

Task 1.2 Video Reflection
Watch the video and identify the instructional design principles portrayed.

Source: www.tutorchicagoland.com

1.1 Instructional Design Principles
Before we begin designing our teaching, we should consider the following questions:
i. When applying instructional design principles, what are the important considerations to make in online instruction and face-to-face instruction?
ii. What is course design, and what makes it effective?
iii. When designing an online course or face-to-face course, what are the important issues to first address, and where do you begin?
iv. How can you tell that the course will be effective?

These are questions that are asked within educational principles. Comprehensive planning of courses to assist learners in achieving the stated instructional goals and objectives is vital. Thinking about instructional design foundations and principles is important to the process of designing effective instruction.
Task 1.3  Video Reflection

Watch the following videos and identify the ID principles and foundations of instructional systems design as a guide to good instructional development and delivery.

Source: http://www.youtube.com/watch?feature=player_detailpage&v=M_pIK7ghGw4

Source: http://www.youtube.com/watch?v=TJSvGHmFqTq
Instructional design is defined as the systematic process of translating general principles of learning and instruction into plans for instructional materials and learning. Principles and foundations of instructional systems design guide good instructional development and delivery. As a field, it is rooted in cognitive and behavioural psychology. As a discipline, it is concerned with educational and instructional research and instructional theory and learning theory about instructional strategies and the process for developing and implementing the strategies. In the process, it is systematic and uses learning and instructional theory for instructional quality. This requires analysis of learning needs and goals and the development of a delivery system to meet those needs. It includes development of instructional materials and activities, implementation, and evaluation of instruction and learner activities. It is the science of creating design plans and specifications for instructional development, implementation, evaluation, and environments that facilitate learning.

**Task 1.4  Group Reflection**

Working in groups, answer the following questions:

i. How do you normally present the content of your lesson?
ii. How do you design the activities?
iii. How do you assess your lessons?

Share your ideas with others.

### 1.2 Learning Domains

Learning domains, sometimes referred to as categories of learning outcomes, are critical to consider as you plan your lessons. By analysing the type of learning domain or outcome that you want, you can determine which activities, assessments, and representational modes (face-to-face, video, online, multimedia) are optimal based on the learning outcome desired. With the access to learning technologies more available to faculty and with greater numbers of students having access at home and work, it is possible and desirable to use multiple representational modes to increase the probability that students will attain higher levels of learning.
Task 1.5  Video Reflection

View the following videos and summarise what you understand about learning domains.

Source: [http://www.youtube.com/watch?v=wC-f1-Z8IQ0](http://www.youtube.com/watch?v=wC-f1-Z8IQ0)

Source: [http://www.youtube.com/watch?v=76bW5-sCpfM](http://www.youtube.com/watch?v=76bW5-sCpfM)

The following is a brief overview of learning domains with examples of how you might represent content, provide activities, and assess mastery of that domain. These domains include cognitive, affective, psychomotor, and interpersonal domains.

Cognitive Domain
This domain focuses on intellectual skills and is familiar to educators. Bloom’s Taxonomy (knowledge, comprehension, application, analysis, synthesis, and evaluation) is frequently used to describe the increasing complexity of cognitive skills as students move from beginner to more advanced levels in
their knowledge of content. The cognitive domain is the core learning domain. The other domains (affective, interpersonal, and psychomotor) require at least some cognitive component.

The cognitive domain is well suited to the online environment. Face-to-face courses benefit from using the web as a way to supplement classroom lectures that are cognitive in nature. These supplemental materials may include the following:

i. Additional explanations of key concepts
ii. Graphics to show relationships between ideas
iii. Organised class notes
iv. Tables that provide summary information
v. PowerPoint slides
vi. Additional examples
vii. Self-check quizzes
viii. A discussion board
ix. Case studies
x. Drill and practice of content that must be memorised
xi. FLASH animations or simulations of challenging and key concepts
xii. Practice questions with answers and ‘expert’ explanations
xiii. Links to similar information presented in a different way

Courses that are hybrid (presented in both an online and face-to-face format) often present the cognitive portion of the course via the web and use classroom time for the more affective, psychomotor, and interpersonal learning outcomes.

As we move up the cognitive domain, especially as we get to synthesis and evaluation, collaborative assignments requiring students to engage in problem-based or project-based activities serve as important ways to determine if students have reached that level of learning. These projects can be done online, but often lend themselves to at least some face-to-face interaction. If face-to-face interaction is not possible, synchronous mediated events such as web casting, interactive video, or conference calls facilitate project development. Also, higher cognitive skills provide opportunities for students to develop interpersonal domain learning. To the extent that we desire interpersonal learning outcomes, we should consider how to facilitate face-to-face interactions.

Affective Domain

The affective domain is critical for learning but is often not specifically addressed. This is the domain that deals with attitudes, motivation, willingness to participate, valuing what is being learned, and ultimately incorporating the values of a discipline into a way of life. Stages in that domain are not as sequential as the cognitive domain, but have been described as the following:

i. Receiving (willing to listen)
ii. Responding (willing to participate)
iii. Valuing (willing to be involved)
iv. Organising (willing to be an advocate)
v. Characterisation (willing to change one’s behaviour, lifestyle, or way of life)

We do not necessarily expect our math students to become math instructors or mathematicians, but we want them to be willing to ‘show up’ for class, participate in class, and become involved with the content. We expect students to expend effort in their courses and sustain the effort throughout the duration of the course. We would also like our students to take the next higher course or another course in the curriculum because they value what they have learned.
The affective domain is not best handled with just text on a screen. Class meetings or an initial class meeting to support an online course might be used for affective development. Videos and audio clips are also excellent ways to engage the affective domain. These should be short and may include the following:

i. Former students giving tips on how to be successful
ii. The instructor informing the students of the value of the course
iii. Professionals who are using the knowledge from the course in their lives
iv. An overview of the programme with key support personnel and facilities visible to the student
v. Streaming audio files throughout the course encouraging students and providing helpful tips
vi. Short video clips of the instructor explaining course content

Additionally, chunking information into small steps and designing opportunities for the students to be successful facilitate affective learning for students. Face-to-face courses can include affective online components by allowing students to have a place to post questions, get feedback, and hear encouraging messages from the instructor (with a text accompaniment). Encouraging students to set goals for themselves that are reasonable can also enhance affective learning. To the extent that students are challenged or are new to a content area, we would expect instructors to include more affective learning outcomes.

**Psychomotor Domain**

The psychomotor domain focuses on performing sequences of motor activities to a specified level of accuracy, smoothness, rapidity, or force. Underlying the motor activity is cognitive understanding. In the higher education environment, we see psychomotor learning in content including the following:

i. Lab courses for science classes
ii. Vocational courses
iii. Physical education courses
iv. Training in using specified equipment such as computers, cameras, musical instruments, etc.
v. Performing arts
vi. The stages of the psychomotor domain have been described as follows:

vii. Action (elementary movement)
viii. Coordination (synchronised movement)
ix. Formation (bodily movement)
x. Production (combine verbal and nonverbal movement)

The psychomotor domain is best assessed in a face-to-face situation. Since there is a cognitive component underlying motor skills, these can be effectively viewed in videos, demonstrations, online text descriptions, or with pictures of each step in the sequence. Simulations can be used to help people learn the steps or practice variations of a motor sequence, but ultimately, the student should perform the skill with an instructor or designee judging if the skill was performed to a set standard. Sometimes, simulations are used for learning without ‘hands on’ opportunities, because the psychomotor activity is dangerous or equipment is not readily available.

Students who are new to a content area will generally benefit more from ‘hands-on’ learning than from mediated learning within the psychomotor domain. As students become more expert, videos and pictures can be used to teach the skill.
Interpersonal Domain

The Interpersonal domain focuses on people interacting with others. As a guide, the interpersonal domain takes on greater importance than perhaps in the past. The levels in this domain should not be considered hierarchical as in the cognitive domain, but more as a list of skills. These include the following:

i. Seeking/giving information (asking for and offering information)
ii. Proposing (putting forward an idea)
iii. Building and supporting (helping another person’s idea move forward)
iv. Shutting out/bringing in (excluding or involving another)
v. Disagreeing (appropriately offering a difference of opinion)
vi. Summarising (restating in a compact form a discussion or collection of ideas)

The above list is not exhaustive. Other skills to add to the list might include negotiating, compromising, facilitating, and leading.

Interpersonal skills are learned by seeing models, practicing the skills, and getting feedback in the form of coaching. While short videos, good explanations, and checklists can facilitate the conceptual learning of the skills, the actual acquisition of the interpersonal skill is best done with face-to-face contact and lots of instructor feedback. With the use of forums and classroom meetings online, we might be tempted to believe that face-to-face is no longer necessary and interpersonal skills can be taught in a virtual environment. While a technical innovation allows us more collaboration than in the past, if our core learning outcome is interpersonal, some face-to-face interaction is desirable.

Task 1.6 Reflection

How do you design an instruction?
What are the steps involved in the Instructional Design Process?

1.3 Instructional Design Models

In the real world of education, teachers function as ‘teacher-designers’ who determine the need for instruction and design and develop, revise, and teach the materials they develop. As education moves toward e-learning environments, the issues and concerns with designing effective instruction seem to have intensified. And yet, with the application of sound instructional design principles, e-learning environments can be just as effective, interactive, and relevant as campus-based learning.

There are essentially five phases to designing any instruction, from entire courses to individual lessons: Analyse, Design, Develop, Implement, and Evaluate.

The Five Phases of Instructional Design

There are many models for designing instruction just as there are many learning theories. Instructional design is in fact based on learning theories from educational psychology. Design models may range from very prescriptive, behaviourist presentations to more free-flowing constructivist forms. In every case, however, there are certain design elements that must be addressed at some point or other in the process to produce effective and relevant instructional materials and lessons.
Generally, instructional design models involve the following phases:

i. **ANALYSIS PHASE:** Analysing the need for instruction (needs analysis), curriculum requirements, and the limitations and resources available for instruction.

ii. **DESIGN PHASE:** Analysing the instructional goals, learners’ needs, and their prior knowledge (entry level skills).

iii. **DESIGN PHASE:** Constructing assessments (as you consider goals, learners’ needs, and prior knowledge).

iv. **DEVELOPMENT PHASE:** Determine instructional strategies and select instructional media that best facilitates student understanding of new knowledge and supports the instructional strategies.

v. **IMPLEMENTATION PHASE:** Implementing the design: teaching/learning experience and student understanding (assessments).

vi. **EVALUATION PHASE:** Examining the actual lesson or course you designed: evaluate the connection between goals and understanding, effectiveness of instructional strategies and media. Revise for the next course or lesson. Revise for the next time you teach the class.

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**Task 1.7  Video Reflections**

Watch the following video on ID models and see if you can identify the main phases involved.

[Source: http://www.youtube.com/watch?v=m-GpKSN36Eq&playnext=1&list=PLFC6D1877BBA7DF80&feature=results_main](http://www.youtube.com/watch?v=m-GpKSN36Eq&playnext=1&list=PLFC6D1877BBA7DF80&feature=results_main)

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Instructional design models and instructional design methods can be very complex. However, there are some common questions an educator or a course designer should ask:

i. What do the learners have to learn? This does not just include definition of the subject matter but also the learning type (in particular, the learning level) and a sort of description of what the learner should be able to do with this new knowledge.

ii. Who are the learners? This includes assessment of their entry skills and maybe learning styles.

iii. What is the setting? How many learners? How much resource can you spend? Who is teaching? Is the design ‘industrial’ (i.e. a canned product) or can it be dynamically changed?

iv. Given these constraints, what are the appropriate strategies and instructional design models? Do we need a formal instructional design method?

v. How should we evaluate the learning? Are there institutional rules?
There have been multiple instructional design models that have been developed and implemented over the years. Below are just a few of today’s most commonly applied and practiced instructional design models:

i. ADDIE Model
ii. ASSURE Model
iii. Gagne’s Nine Events of Instruction
iv. Kemp’s Instructional Design Model

**ADDIE Model**

The ADDIE instructional design model is the generic process traditionally used by instructional designers and training developers. The five phases—Analysis, Design, Development, Implementation, and Evaluation—represent a dynamic, flexible guideline for building effective training and performance support tools. The following video describes the ADDIE model:

Source: [http://www.youtube.com/watch?v=Ok0-ctDoKhM&feature=related](http://www.youtube.com/watch?v=Ok0-ctDoKhM&feature=related)
**Analysis**

In the Analysis Phase, the instructional problem is clarified, the instructional goals and objectives are established, and the learning environment and learner's existing knowledge and skills are identified. The following video describes the Analysis Phase.

Source: [http://www.youtube.com/watch?v=JZdv5lrJJs4U&feature=related](http://www.youtube.com/watch?v=JZdv5lrJJs4U&feature=related)

**Design**

The Design Phase deals with learning objectives, assessment instruments, exercises, content, subject matter analysis, lesson planning, and media selection. The design phase should be systematic and specific. The following video describes the Design Phase.

Source: [http://www.youtube.com/watch?v=BhLiF9QyTo&feature=relmfu](http://www.youtube.com/watch?v=BhLiF9QyTo&feature=relmfu)

1. Design Assessments
2. Choose a Course Format
3. Create an Instructional Strategy
Development

The Development Phase is where instructional designers and developers create and assemble the content assets that were blueprinted in the design phase. In this phase, storyboards are created, content is written, and graphics are designed. If e-learning is involved, programmers work to develop and/or integrate technologies. The following video describes the Development Phase.

![DEVELOPMENT](http://www.youtube.com/watch?v=VzYDNWhQWYA&feature=relmfu)

1. Create a Sample
2. Develop the Course Materials
3. Conduct a Run-through

Implementation

During the Implementation Phase, a procedure for training the facilitators and the learners is developed. The facilitators' training should cover the course curriculum, learning outcomes, method of delivery, and testing procedures. The following video describes the Implementation Phase.

![IMPLEMENTATION](http://www.youtube.com/watch?v=q8yky6-P1Uw&feature=relmfu)

1. Train the Instructor
2. Prepare the Learners
3. Arrange the Learning Space

Evaluation

The Evaluation Phase consists of two parts: formative and summative. Formative evaluation is present in each stage of the ADDIE process. Summative evaluation consists of tests designed for domain-specific
criterion-related referenced items and providing opportunities for feedback from the users that were identified. The following video describes the Evaluation Phase.

![Evaluation Video](http://www.youtube.com/watch?v=CBoI0wBo4vw&feature=relmfu)

Most of the current instructional design models are spin-offs or variations of the ADDIE instructional design model; other models include the Dick & Carey and Kemp Instructional System Design (ISD) models. One commonly accepted improvement to this model is the use of rapid prototyping. This is the idea of receiving continual or formative feedback while instructional materials is being created. This model attempts to save time and money by catching problems while they are still easy to fix.

**ASSURE Model**

The ASSURE model was developed by Heinich, Molenda, Russell, and Smaldino in 1999 and is an instructional model for planning a lesson and the technology that will enhance it. The ASSURE Model is:

i. A procedural guide for planning and delivering instruction that integrates technology and media into the teaching process
ii. A systematic approach to writing lesson plans
iii. A plan used to help teachers organise instructional procedures
iv. A plan used to help teachers do an authentic assessment of student learning
v. A model that can be used by all presenters

The ASSURE model contains six steps and the letters in ASSURE form an acronym as follows:

The ‘A’ stands for **Analyze the learner**. Who are your students? While this seems to be common sense, the step is important to mention because keeping your students in mind will help ensure that you work diligently to find those materials and resources that will be most appropriate and useful to your students. You should know who your students are (e.g. demographics, prior knowledge, learning styles, and academic abilities) on a multitude of levels, and use this knowledge in every lesson you plan.

The first ‘S’ stands for **state objectives**. You will have a curriculum to teach in your classroom, with specific objectives that will become the focus of individual lessons. What are these objectives? What should be the outcomes of the lessons that your students will know or learn? Each lesson will probably be tied to curricular objectives, and this step reminds you to keep these objectives as the focus of the student learning.
The second ‘S’ is Select media and materials. When choosing the media and materials to help you teach a lesson, you will first choose a method for delivering your instruction. For example, you might decide that having your students work in small cooperative groups is most appropriate, or you might determine that a lesson is best taught using a tutorial. You then select the media that best supplements or enhances the method of teaching you have chosen. The media could include technology solutions (e.g. CD-ROMs, DVDs, calculators, software, Internet resources, and videos); print resources, such as a textbooks; or any combination of the various media types. You will have to decide which materials and media can best help your students master the learning objectives you have identified.

The ‘U’ stands for Utilise media and materials. In the last step, you identified specific media and materials to help meet your learning objectives. In this step, the lesson is actually taught and the media and materials get implemented. This is also the step that should have a backup plan in place. Technology solutions can break down, so an alternative solution should be available. For this reason, a teacher should always test the media first, to help prevent disappointment. In other words, make sure you have tried the software or device to ensure that it is age appropriate, grade appropriate, usable, and valid for the lesson and objectives being taught. Evaluating the media will also raise any red flags (e.g. is any training going to be required? Is an extension cord going to be necessary?).

The ‘R’ stands for Require learner participation. Your students are going find learning more meaningful when they are actively involved in the learning process and not sitting there passively. Are there strategies you can use to get your students practicing? Thinking? Solving? Creating? Developing? Analysing? More often than not, a lecture is not going to allow your students to move beyond passive learning. On the other hand, integrating technology into a lesson almost necessitates that you use a teaching method beyond lecturing. How can you best facilitate the learning process?

Finally, the ‘E’ stands for Evaluate and revise. This is one of the most important steps, but is often overlooked. Becoming a good teacher requires that you constantly evaluate your own teaching, evaluate the students’ learning, and make needed revisions for the next lesson and for the next time you teach the current lesson. Always striving to improve is the first step to becoming a better teacher. Evaluation occurs when you determine the worth of your teaching methods and the media you used. During the evaluation stage, you should ask yourself questions such as, ‘Did this lesson meet the objectives?’; ‘Did students gain from this lesson?;’ ‘Can this lesson be improved?’; ‘How so?’; ‘Could individual work or group work have been more effective for parts of this lesson?’; ‘Was the media appropriate?’; and ‘Are there other technology solutions that might have worked better?’ While this is not a comprehensive list of questions, this should provide you with some direction for the evaluation stage. You might also ask students to reflect on their learning and the experience they had in the lesson. Perhaps your students will have feedback that could help you to improve the lesson for the next time, or feedback that could help you improve future lessons for them. Having things go wrong does not make a teacher a bad teacher. However, failing to take corrective and preventative actions for the future is bad teaching.
Task 1.8  Group Work

Working in groups,
1. Plan a lesson

2. Develop an e-learning material by going through the six phases:
   i. Analyse the learner,
   ii. State the objectives,
   iii. Select media and materials,
   iv. Utilise media and materials,
   v. Require learner participation, and
   vi. Evaluate and revise.

3. Present your group findings to others.

1.4  End of Unit Assessment

Identify a task/problematic e-learning situation to be solved. Develop the ID for the identified task by going through the five phases—Analysis, Design, Development, Implementation, and Evaluation

1.5  Summary

In this unit, you were introduced to the knowledge on the instructional design (ID) principles, learning domains, and selected ID models. In ID principles, you were exposed to the learner characteristics, objective of instructions, and methods of instruction. On the other hand, the learning domains which were included in this unit were cognitive, affective, psychomotor, and interpersonal domains. Finally, you were exposed to the ADDIE and ASSURE instruction design models.

1.6  Additional Reading & Online Resources

Books

Online Resources
Merrill on Instructional Design
http://www.youtube.com/watch?feature=player_detailpage&v=i_TKaO2-jXA

Design Principles, and examples, for Creating Multimedia Tutorials
http://www.youtube.com/watch?feature=player_detailpage&v=vLAlyXWPEmg

Principles and Elements of Design
http://www.youtube.com/watch?feature=player_detailpage&v=oajFDMEePHq

Instructional Design Principles and Foundations
http://www.about-elearning.com/instructional-design.html
Instructional Design

First Principles of Instruction
http://id2.usu.edu/Papers/5FirstPrinciples.PDF

Bloom's Taxonomy of Learning Domains
http://www.nwlink.com/~donclark/hrd/bloom.html

Domains of Learning
http://serc.carleton.edu/introgeo/assessment/domains.html

Learning Domains
http://pixel.fhda.edu/id/learning_domain.html

Instructional Design Models
www.instructionaldesign.org/models/index.html

Instructional Designs and Theories
www.instructionaldesigncentral.com/.../IDC_instructionaldesignmode

ADDIE Models and Learning Theories
www.learning-theories.com/addie-model.html

The ADDIE Instructional Design Models
http://www.intulogy.com/addie/

ASSURE Instructional Design Model
www.instructionaldesign.org/models/assure.html

ASSURE Model of Learning
http://itchybon1.tripod.com/hrd/id15.html
Task 2.1  Video Reflection

Watch the following video.

Source: http://www.youtube.com/watch?v=sQVFx5XOYd8

Based on the video, reflect on the types of authoring tools being shown, the media being utilised (flash, audio, video), and the instructional strategies being deployed.

Learning Outcomes

At the end of this module, you should be able to
i. Identify various types of authoring tools
ii. Select the appropriate authoring tools for developing e-learning contents
iii. Discuss criteria in selecting the appropriate authoring tools available for e-learning content development
2.1 Authoring Tools

Authoring system refers to a computer-based system that allows anybody, including non-programmers, to create e-learning content. It allows a non-programmer to easily create content with programming features. Actually, the programming features are built in but hidden behind buttons and other tools, so the author does not need to know how to programme. Generally, authoring systems provide lots of graphics, interaction, and other tools educational software needs, while an authoring tool is a software package which developers use to create and package content deliverable to end users. Though authoring tools have a range of uses, they are commonly used to create e-learning modules.

Authoring tools usually enable you to create a final application merely by linking together objects, such as a paragraph of text, an illustration, or a song. By defining the objects’ relationships to each other, and by sequencing them in an appropriate order, authors (those who use authoring tools) can produce attractive and useful graphics applications. Most authoring systems also support a scripting language for more sophisticated applications. The distinction between authoring tools and programming tools is not clear-cut. Typically, though, authoring tools require less technical knowledge to master and are used exclusively for applications that present a mixture of textual, graphical, and audio data.

Authoring tools can be further classified into course-authoring tools and content-authoring tools. Course-authoring tools can create online courses, while content-authoring tools create subject-specific online content. Subject-specific online content more than likely has less features and functionality than an online course created with a course-authoring tool, but this depends upon the software used to create the content. However, in the e-learning industry, we generally use the two phrases interchangeably and simply say authoring tool.

Task 2.2 Google Search

Using Google Search, list three authoring tools that you may use for content development.

<table>
<thead>
<tr>
<th>No.</th>
<th>Authoring Tools</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.2 Types of e-Learning Authoring Tools

There are a number of different types of e-learning authoring tools which you should be aware of. These are broadly split as follows:

i. PowerPoint Plugin Authoring Tools - These tools use PowerPoint as the authoring environment but allow you to add interactivity and assessments and to publish your content packaged ready to track in a learning management system. These are very easy to use as most people are familiar with PowerPoint. The most popular tool in this market is Articulate.

ii. Desktop Authoring Tools - These are installed on your desktop and are generally more complex than PowerPoint tools, but they give you more control over the style and interactions. Examples of these tools include Macromedia (Adobe) Authorware, Adobe Captivate, Lectora, Lecture Maker, and Articulate Storyline.

iii. Among the top seven Rapid e-Learning Authoring tools are Adobe Captivate, Articulate Presenter, Articulate Engage, Adobe Connect, TechSmith Camtasia, Adobe Presenter, and Harbinger Raptivity.
iv. Server-Based or Web Authoring Tools - As the name suggests these tools are hosted on a server and are typically accessed via a web browser over the Internet. These online tools can be very easy to use and because they are server based, they are better for managing your files, doing updates, and generally maintaining content. They are also good at workflow processes and allowing subject matter experts to review and comment on e-learning modules as they are developed. They are particularly good for large and dispersed teams to work together on content. Examples of these tools include Coursebuilder, Mohive, and Atlantic Link.

2.3 Desktop Authoring Tools

While there are various types of desktop authoring tools, LectureMAKER, Raptivity, and Articulate will be presented in this section.

LectureMAKER

LectureMAKER is an authoring tool used in PCs for creating lecture contents that are used in e-learning. Various multimedia and existing PowerPoint, flash, HTML documents, etc. can all be reused, and with specialised editors, users can edit their contents directly. Therefore, users can author contents from video lectures to interaction-possible learning contents for online education (WBT) use.
Task 2.3  Self-Exploration

Watch this short video on the introduction of LectureMAKER.

Source: http://www.youtube.com/watch?v=UfnQ-ebbT4Y

Go to http://www.daulsoft.co.kr/eng/product/lecturemaker.asp and click on the video for the manual and illustrations. Follow the online tutorial http://www.daulsoft.co.kr/eng/product/lecturemaker.asp

Raptivity

*World's Largest Library of HTML5 Interactions*

*Raptivity* is a rapid development software tool that comes with a library of pre-built templates, most of which are interactive. It is a rapid interactive building tool that helps to quickly and easily create learning interactions. It allows you to quickly and easily create learning interactions such as games, simulations,
brainteasers, interactive diagrams, virtual worlds, and more. You can embed these interactions right into your online courses to improve learner engagement.

### Task 2.4 Self-Exploration

Go to Website: [http://www.raptivity.com/](http://www.raptivity.com/) and click on the video for the manual and illustrations. Follow the online tutorial and explore its potential in teaching and learning. View some examples of the final product: [http://www.raptivity.com/elearning-interactivity-samples](http://www.raptivity.com/elearning-interactivity-samples)


### Articulate

Articulate is one of the favourite tools for providing e-learning solutions. It enables you to create high-quality e-learning products quickly and easily. The Articulate Rapid e-learning solution makes use of Microsoft PowerPoint for all of its functions. Once installed successfully, it adds an extra option labelled ‘Articulate’ on the same. What sets this e-learning solution apart from many others of its competition is its ease of use.

Once you are done with creating a presentation, you can use the ‘Articulate’ option on your PowerPoint software and add animations that you want and make a Flash file. Any learning software also needs the ability to handle questions. ‘Articulate’ does just that. It has a range of built in question-handling options with various question types. If these aren’t enough, you could always use the ‘Quizmaker’ software, which is a separate software, and develop your questionnaires in a better way. It has the ability to publish SCORM- and AICC-compliant courses and the ability to incorporate graphics and media.
Task 2.5 Self-Exploration

Go to Website: http://www.articulate.com/ and click on the video for the manual and illustrations. Follow the online tutorial and explore its potential in teaching and learning. View some examples of the final product: http://www.articulate.com/

2.4 Server-Based or Web Authoring Tools

There are a number of web authoring tools available, which can be sub-categorised as freeware, and ‘commercialware’. Freeware is software that is available for use at no cost or for an optional fee, but usually with one or more restricted usage rights. Freeware is in contrast to commercial software, which is typically sold for profit, but might be distributed for a business or commercial purpose in the aim to expand the market share of a ‘premium’ product. Following are examples of some server-based or web authoring tools.

CourseLab

CourseLab is a powerful, yet easy-to-use, e-learning authoring tool that offers a programming-free WYSIWYG environment for creating high-quality interactive e-learning content which can be published on the Internet, Learning Management Systems (LMS), CD-ROMS, and other devices.
Task 2.6  Self-Exploration

Go to http://www.courselab.com/db/cle/default.html and click on the navigation link for the manual and follow the online instructions.

eXe

The eXe project developed a freely available Open Source authoring application to assist teachers and academics in the publishing of web content without the need to become proficient in HTML or XML markup. Resources authored in eXe can be exported in IMS Content Package, SCORM 1.2, or IMS Common Cartridge formats or as simple self-contained web pages. Generally, the eXe doesn’t feel like a commercial authoring tool since it runs on Firefox. Once you get used to the simple site approach where you build sections, topics, and pages, it is very easy to add pages and content. In essence, each page is a blank screen and you choose the interaction you want for that page. eXe allows you to add audio, flash movies, RSS news feeds, and attachments and integrate questions into each page. You can also combine multiple items on a page.

Task 2.7  Self-Exploration

Go to http://exelearning.org and download the software for self-exploration.

CourseBuilder

CourseBuilder software is based on templates devised by Learning Designers and academics to meet the learning needs of students from a variety of disciplines. The software provides templates to compose and import text, insert media, develop activities (e.g. case studies, reflections, and quizzes), monitor student responses, and much more. You can publish your website for students to view while you continue to edit and re-publish as needed.

CourseBuilder contains software and instructions for presenting your course material, which can include lessons, student activities, and assessments. It also contains instructions for using other Google products to create a course community and to evaluate the effectiveness of your course. To use CourseBuilder, you should have some technical skills at the level of a web master. In particular, you should have some familiarity with HTML and JavaScript.
Task 2.8  Self-Exploration

Watch the video about the introduction to CourseBuilder.

Source: http://www.youtube.com/watch?feature=player_embedded&v=GAY5ICoVnA8


2.5  Criteria in Selecting Appropriate Authoring Tools

You will need a great authoring tool to support your content development. However, before you start looking at the authoring tools, you should consider

•  What’s your budget?
•  What’s your skill base? How often will your team be using the tool?
•  What type of content are you developing?
•  How rich or complex do you want your interactions to be?
•  Technical issues – what are your accessibility standards?
•  What’s the tracking requirement? Do you need SCORM 1.2 for your LMS?
•  Does your e-learning need to be translated?

Furthermore, in selecting an appropriate content-authoring tool, we often take the following into consideration:

  Situational parameters - Remember that not all tools are appropriate for all training delivery methods. It’s important to consider the context in which course-authoring tools will be used. As you gather information, keep in mind that as long as your online training is founded on good instructional design principles, the interactivity produced by the authoring tool you choose will strengthen the learner’s experience.

  Training objectives and delivery methods - What type of training are you providing? Is it a blended learning experience? Will some training be online and some in classrooms? This will help determine which course-authoring tools and LMSs you can use. Will you provide training on a CD Rom? Are your
learners certifying on a product, service, or procedure? Are you teaching someone to use a certain software program?

Media needs - What types of media will you use? Does the content-authoring tool of your choice support those file types?

Resources and on-going support - Do you have the resources to support the types of online training you wish to develop? Graphic designers? Appropriate subject matter experts? Voice talent? Video producers? Models? Production Designers? Outside user testing?

What about after the training is developed? - Does the training need to be refreshed periodically, anywhere from 6 months to a year or beyond? Will any tests associated with the training change on a regular basis? Will you have the right resources and support in place for any on-going e-learning content development needs?

Funds & timing - How much is budgeted for the project? Will you have a team of people to develop the training? Should you outsource? What things are specific to the type of training you will be developing that may be compromised by outsourcing? How steep is the learning curve associated with the tools you are thinking of using for the project?

Interactivity - What level of interactivity is required for the training? Simulations and other dynamic learning activities are great to have, but are they really appropriate or needed for the type of online training you will be developing? Flash has become the standard tool used for many interactive learning activities. If your authoring tool works with Flash, how much more do you need?

Plug-ins - Some course-authoring tools may need plug-ins, but this has become much less of a problem in e-learning today than it was just a few years ago. Obviously, if you are dealing with a group of learners who are not technically savvy, have older browsers (IE 4.0 or below; Netscape 4.0 or below), or mostly use slow dial-up connections, plug-ins become a real liability in regard to delivering online courses.

Platforms - What platforms will the training be delivered on? Does the online training you develop have to work across a combination of platforms such as PC, MAC, UNIX, or others? Does it have to work across a variety of operating systems and/or browsers?

Total cost of ownership – It’s always best to evaluate any software or systems acquisition by looking at the total cost of ownership (TCO). TCO is a financial metric designed to help assess direct and indirect costs related to the purchase of any capital investment, such as (but not limited to) computer software or hardware. In this case, the TCO would include the cost of the application, training, upgrades, maintenance, and any other costs associated with the company owning the product over its lifetime.

2.6 End of Unit Assessment

Choose a desktop authoring tool or a web based authoring tool that is most suitable for you to develop e-learning content. In the group wiki, discuss the rationale for your choice.
2.7 Summary

In this unit, you have been exposed to several e-learning authoring tools. There are various types of e-learning authoring tools which can be classified as PowerPoint Plugin Authoring Tools, Desktop Authoring Tools, and Server-Based or Web Authoring Tools. You need to carefully consider all aspects before deciding and choosing appropriate tools that can suitably provide the needs on the e-learning contents/packages being developed.

2.8 Additional Reading & Online Resources

Books

Online Resources
Choosing Authoring Tools

e-Learning Methodologies – A guide for designing and developing of e-learning content

Free and Open Source Authoring Tools for e-Learning
http://blog.efrontlearning.net/2010/10/open-source-authoring-tools-for-e.html

e-Learning Resources
http://blog.efrontlearning.net/elearning-resources
Task 3.1  Brainstorm

Answer the following questions and post your answer on the Wallwisher online sticky board.

i. What are the elements that determine the gap between the students’ existing skills, knowledge, and abilities and those that are needed for the institution to function at the desired level?

ii. How do students identify where they are in terms of their knowledge, skills, and competencies versus where they wish to be?

Learning Outcomes
At the end of this unit, you should be able to

i. Explore needs analysis.
ii. Determine the types of Needs Analysis in an e-learning context.

3.1 Overview of Needs Analysis

The foundation of successful e-learning development is to know what purpose it will serve for the organisation. From this, it should be possible to spell out the desired results of learning. This specification of the expected outcomes of learning forms the framework within which sound and effective e-learning materials can be developed. The learning need may be across the organisation; for example, new regulations require everyone to be familiar with them and may result in people changing their working practices. At the other extreme, an individual or small group may need to improve their skills or productivity. In the first case, an e-learning course with modules to take account of different needs in different sections of the organisation might be the chosen solution. In the second case, e-learning may not be appropriate because, although effective, it might be too expensive to develop and may provide insufficient return on the investment.

From within the development project, a more specific approach to learning needs is taken before the decision to produce e-learning materials. The two key questions within the project are as follows:

i. ‘What is the training issue?’

In the answer to the question, contextual questions the project team members need to know, among other things, are as follows:

• why is the e-learning being developed?,
• what is the knowledge or performance gap that the e-learning is intended to remedy?,
• what are the business reasons for and constraints on the project?,
• what other learning opportunities are available and how do these relate to the current project?,
• what expertise and technologies will the team and the learners have access to?, and
• when is the product needed?
ii. ‘Who are the learners?’
To answer the question, internal questions the team needs to know as much as possible about the learners who will use their product are as follows:

- Have they experience of ICT and e-learning specifically?
- What do they know and what can they do currently?
- What is expected of them in their jobs that the learning is expected to provide?
- Are they a specific group within the organisation or are they scattered throughout and perhaps having to learn at a distance?
- What type of work do they do and in what environments?
- Will they able to learn on the job or will they require special facilities at set times?
- What learning styles do they prefer?

Need Analysis
The first element, the consideration of the curriculum requirements and the actual need for instruction is a realistic first step in planning any course or lesson and is certainly true of any e-learning environment. Imagine that you are teaching a freshman computer course (the one everyone picks on as an example). Your university has asked you to re-design the campus-based course for e-learning. Lately, this has become an all-too-real scenario: for whatever reason, you are faced with putting technology at the forefront of your course development. What do you do?

First, do not panic. Second, do not think you may simply turn lectures into web pages. You are about to create a new approach to the class that will provide a rich learning environment for a new group of students.

In the analysis phase, you first need to consider the course curriculum. What is covered in this course? In this case, you know there is a need for the course (everyone has to take freshman computer or at least test out of it) before moving on to higher-level courses.

The major part of your activities in this early phase will be listing the constraints (demands) on this course. You must somehow use the web (when and where it makes sense). You must present the materials in such a way that students do not get lost in the materials. You must consider your own web skills and the time you have to design, develop, and ‘go live’ with your online course. What else might be a limitation?

The sample below from a constraints list for an online college course is a good example.

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not all students will have access to the Internet.</td>
<td>Students may use the computer lab on campus to access the course</td>
</tr>
<tr>
<td>Students may not know how to create html files or work with Web 2.0 applications for their presentations and projects.</td>
<td>Provide links to easy walkthroughs and example exercises.</td>
</tr>
<tr>
<td>Students might feel hesitant to participate in online discussions.</td>
<td>Assign points to participation and actively encourage and foster discussion.</td>
</tr>
<tr>
<td>Some students may have little experience with distance learning. Others may begin to feel lost in the course without some contact.</td>
<td>Schedule 3 face-to-face meetings with an instructor during the semester to provide live feedback and help.</td>
</tr>
</tbody>
</table>
**Task 3.2  Group Work**

List other learning constraints you can think of and keep the list handy as you work through the design and development phases.

**Task 3.3  Video Reflection**

Watch the following video and discuss the importance of end user need analysis. Post your views on the Wallisher online sticky board.

Source: [http://www.youtube.com/watch?v=XORgxMfrbc](http://www.youtube.com/watch?v=XORgxMfrbc)
Task 3.4  Video Reflection

Watch the following video and discuss the importance of end user need analysis in an e-learning context.

Source: http://www.youtube.com/watch?v=WURExEwxU2M

3.2 Types of Needs Analysis in an e-Learning Context

When you are hit with a new training or e-learning project or even an idea for a project, you need the facts before you can proceed. You can usually gather the facts by conducting one or more forms of analysis, of which there are many flavours.

You will find that the amount of effort required for an analysis varies. In some cases, it involves no more than interviewing several key people. In other cases, an analysis might involve poring over organisational documents or examining survey results from scores of audience members. The depth of the analysis depends on the organisational and project goals.

Here are some of the most common forms of need analysis that can be used:

Learner Analysis

The goal of an audience analysis is to help designers and developers understand their learners to serve them most effectively. The learner analysis identifies each audience group who will engage in training and the characteristics of each group.

Try to identify the following:

- Demographics (gender, age range)
- Cognitive characteristics (educational level, language, prior knowledge related to subject, computer literacy, learning preference— independent, motivated, requires assistance, etc.)
- Work characteristics (job roles, work responsibilities, work schedule)
- Affective and social characteristics (interests, attitudes and biases, what makes them laugh, what they disdain)
- Any other traits that could influence the strategies and approaches to learning you might use
Although each group is composed of individuals, try to focus on the similarities within each group. After your audience analysis, you may want to see how to create learner personas.

How to get the information:
- Interviews with members of each audience group (individual or as a group)
- Interviews with supervisors of each audience group
- Interviews with Human Resources
- Surveys and questionnaires completed by the audience members
- Research about the field

**Task Analysis**
The task analysis breaks down all the tasks that are part of a specific job role. It includes task descriptions, subordinate tasks, importance of tasks, length and frequency of tasks, task difficulty, and equipment required to do the task and the work environment and conditions in which the task is performed.

How to get the information:
- Interviews with those skilled in performing tasks (individually or groups)
- Interviews with their supervisors
- Observation of skilled individuals performing tasks (on site and via video)
- Documentation regarding the job role
- Relevant training materials
- Research about the field

**Instructional Analysis**
The instructional analysis (or learning task analysis) examines and breaks down the learning tasks of each specific instructional goal. It provides the steps and associated subordinate tasks that are required to reach each goal. The instructional analysis should only include what’s really necessary to reach the goal and eliminate the extraneous material. A good reference for this is The Systematic Design of Instruction. See this demonstration of how to do one type of instructional analysis.

How to get the information:
- Analysis of the content from relevant training materials and organisational documents
- Interviews with subject matter experts
- Focus groups
- Observation of the skills to be taught

**Environment Analysis**
The environment analysis identifies the learning environment(s) in which a course will occur. The environment can vary from mobile employees listening to a podcast, to employees in one room watching a synchronous webcast, to virtual employees engaging in an independent learning project.

How to get the information:
- Discussion with project manager and supervisors
- Observe the environment
Technical Analysis
The technical analysis identifies the hardware and software specifications that an online course must accommodate. This includes the type of device on which the course will run, operating system(s), type and availability of Internet access, media capabilities (audio, video, graphics), authoring tools required, and the requirements of an LMS if one is being used.

How to get the information:
• Discussions with IT manager
• Discussions with course Project Manager

This list is just a starting point for getting started with analysis and to really conduct one, I suggest you research it more extensively. The most important thing to remember is that most analysis simply involves getting down to the details and using common sense.

Task 3.5  Video Reflection
Watch the following video and discuss the importance of end user need analysis. Post your view on the Wallwisher online sticky board.

Source: http://www.youtube.com/watch?v=Ao0hr7qro4E

3.3  End of Unit Assessment
Identify a task/problematic e-learning situation to be solved. Plan and organise a need analysis process for the task. Use suitable types of need analysis in the particular e-learning context. Present the result verbally and written on paper.

3.4  Summary
In this unit, you have been exposed to the knowledge on analysing end user learning needs and requirements. The unit covered the overview of needs analysis and types of need analysis in the e-learning context.
3.5 Additional Reading & Online Resources

Books

Online Resources
Performing a need analysis
http://ctlinstdesign.project.mnscu.edu/index.asp?Type=B_BASIC&SEC={84090232-F2F6-4AA6-9076-0507F4DBE267}

Need Analysis for e-Learning
http://www2.warwick.ac.uk/services/ldc/resource/eguides/needs/

Need Analysis e-Learning Modules
www.langevin.com/.../training-needs-analysis-e-learning-module
Task 4.1 Video Reflection

Watch the following videos and provide feedback on the e-learning design. Post your views on the Wallwisher online sticky board.

Source: http://www.youtube.com/watch?v=VxY22lhbaH4&feature=related

Source: http://www.youtube.com/watch?v=Mj5M4KCFTwo&feature=related
Learning Outcomes

At the end of this unit, you should be able to:

i. analyse the instructional goals, learners’ needs, and their prior knowledge (entry-level skills), and

ii. construct assessments (as you consider goals, learners' needs, and prior knowledge).
4.1 Analysing Instructional Goals, Learners’ Needs, & Prior Knowledge

Once the curricular requirements are identified and the constraints, resources, and limitations for this course have been determined, it is time to move into the Design Phase.

There are two elements that are usually considered simultaneously: focusing on the instructional goals (and how to accomplish them) and the learner (including needs, characteristics, and skills needed to begin the course). Let’s first focus on the instructional goals and how to analyse the instruction in order to determine the scope (what will be covered) and sequence (the order in which things will be covered).

Instructional Goals

Determining and analysing the instructional goals, learners’ needs, and their prior knowledge make up the next two elements in the design model and process. These elements are always examined simultaneously when following good design practices.

Often, however, goals are developed for a course with little consideration for entry-level skills needed by new learners, or goals are written in such a way that they may or may not coincide with the kinds of learning intended by the instructor.

Robert Gagne’s description of learning outcomes (goals) is a useful and relevant way to think about the kinds of learning you intend to take place in your course and how you can write the goals in such a way that they reflect your intentions:

**Task 4.2 Reflection**

i. Review more information about instructional goals. Be sure to come back to this page to continue this step-by-step instructional design section.

ii. Now consider YOUR course. What kind of outcomes do you hope your learners will gain? Can you state your objectives in measurable terms using some of the verbs suggested by Gagne? How will learners demonstrate their understanding? Will they state facts or generate solutions? Try writing some goals and objectives for your course.

Write the Assessment

Now that the goals have been defined and learner needs, characteristics, and entry-level skills have been determined, appropriate assessments can be created.

Creating and selecting appropriate assessments is an entire field in itself. In every case, your assessments MUST be based on the goals and objectives you wrote earlier. Many of you can probably recall taking a class that seemed to cover certain topics in one way, while the tests seemed to be measuring something quite different.

For example, a unit in a history class may have covered many facts about the Civil War. The students are drilled on dates, places, and events. At test time, the instructor gives an essay test that calls for students to interpret nuances, explain interactions, and compare and contrast perceptions. Remember Gagne? The instructor has TAUGHT verbal information but is TESTING intellectual skills and cognitive strategies. That creates a mismatch between the goals of instruction, the scope of the material covered, the analysis of learner skills, and how students might demonstrate new knowledge.
Think about YOUR course. Carefully consider the goals and objectives you’ve written.

Notice that assessment development is part of the Design Phase and Development Phase. Assessment instruments interact with the goals and learner analysis and are further modified as teaching strategies are determined (we will revisit assessments again under the teaching strategies element). Test items MUST be examined together with the goals of instruction and the scope of what was covered.

Choose Teaching Strategies & Instructional Media
The next two elements in the Design Process are also considered together: teaching strategies and the instructional medium or media you will use to deliver, enhance, and facilitate learning.

Teaching Strategies
Teaching strategies or methods are determined first by the objectives and goals of instruction and secondly, by the constraints (examined in the first element). Below are sample strategies that match the objective for each type of learning outcome (ID for e-learning http://ctlinstdesign.project.mnscu.edu/index).

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Sample Objectives</th>
<th>Sample Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discrimination</td>
<td>Given a sample of a sonnet as a reference, the learner discriminates between sonnets and other poetic forms in a set of sample poems by indicating which poem is a sonnet.</td>
<td>Students are given a sonnet structure and asked to diagram the form. Focus on the distinctive features of the sonnet (such as the final couplet). The structure is presented as text and practice. Demonstration</td>
</tr>
<tr>
<td>Concrete Concepts</td>
<td>Given a set of 8 recordings of blood pressure readings, the learner identifies when to write down the diastolic reading by correctly noting the pressure at the appropriate aural cue.</td>
<td>Students hear many different recordings of blood pressure readings and see the mercury rise to the point of no sound and drop to the final sounds for appropriate readings. Demonstration</td>
</tr>
<tr>
<td>Defined Concepts</td>
<td>When asked to identify differences in tools, the learner classifies a random set of tools into rachets, flat tools, and impact tools and labels them appropriately.</td>
<td>Students have several examples of tools. Distinctive features are identified for each type. Demonstration</td>
</tr>
<tr>
<td>Rules</td>
<td>Given two types of t-tests (one and two-tailed) and specific problems, the learner applies the correct test with 100% accuracy.</td>
<td>Students must run t-tests on data in a variety of situations. Demonstration</td>
</tr>
<tr>
<td>Higher-Order Rules (problem solving)</td>
<td>Given the dimensions of a site, a limited budget, and building needs, the learner generates a design for a day-care centre and explains his or her reasons for choosing the design.</td>
<td>Students must have an understanding of the correct calculations and measurements demonstrated by correctly practicing on smaller forms. Demonstration</td>
</tr>
</tbody>
</table>
### Cognitive Strategies

When asked to recall the developmental theory of Jean Piaget, the learner adopts a key-word mnemonic technique for memorising the major elements of Piaget’s developmental theory. Demonstrate the power of mnemonic memory strategies, rehearsal strategies, method of Loci, etc. Show examples of each.

### Verbal Information

Given a verbal question, the learner can state at least two causes for World War II. Present facts about the war from many perspectives.

### Motor Skills

Using a standard keyboard and mouse, the learner designs a personal web site that includes at least two graphics, a resume, and relevant examples of lesson plans. Demonstrate web site development using an html editor (software). Discuss layout, graphics, and formats; copyright issues; linking; and content.

### Attitudes

When confronted with a ‘flame’ during an email discussion, the learner will choose to ignore the flame or will temper a response rather than continue to argue. Propose several scenarios that allow students to compare reactions and motivations of speaker and listener. Demonstration

Notice that most strategies you would use involve some kind of demonstration (models) of the behaviour or actions you expect from the students.

### Five Types of Content in e-Learning

Content normally comes in one of five forms:

i. Fact - unique data (e.g. symbols for Excel formula, or the parts that make up a Learning Objective).
ii. Concept - a category that includes multiple examples (e.g. Excel formulas, or the various types/theories of ID).
iii. Process - a flow of events or activities (e.g. how a spread sheet works, or the five phases in ADDIE).
iv. Procedure - step-by-step task (e.g. entering a formula into a spread sheet, or the steps that should be followed within a phase in ADDIE).
v. Strategic Principle - task performed by adapting guidelines (e.g. doing a financial projection in a spread sheet, or using a framework for designing learning environments).

### Bloom’s Taxonomy

In turn, each type of content normally has several degrees of difficulties of learning, depending upon how the learners will be expected to use the content. For example, they might have to (i) know about an outside process and how it relates to a process they are involved with, (ii) perform the process, or (iii) create new processes. The revised cognitive domain of Bloom’s Taxonomy provides a good guide for the following six types of learning (Bloom’s Taxonomy of Learning Domains [http://www.nwlink.com/~donclark/hrd/bloom.html](http://www.nwlink.com/~donclark/hrd/bloom.html)).
## Design Architecture Matrix

Putting the above two concepts into a matrix gives us an idea of what type of activities the learners need in order for them to learn the required performance skills. The matrix below lists various instructional options or activities for matching a specific content with a performance level the learners must master:

### Performance level the learners must master:

<table>
<thead>
<tr>
<th>Performance Level</th>
<th>Fact</th>
<th>Concept</th>
<th>Process</th>
<th>Procedure</th>
<th>Strategic Principle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Remembering</strong> (or being able to locate data by searching)</td>
<td>Reading or podcast</td>
<td>m-Learning for finding facts</td>
<td>Multiple choice, puzzles, or Drag and Drop for learning facts</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Understanding</strong></td>
<td>mLearning for finding examples</td>
<td>Reading or podcast</td>
<td>Social Learning Media - learning from others</td>
<td>Matched example/non-example pairs</td>
<td>Demonstration</td>
</tr>
<tr>
<td></td>
<td>Reading with simple graphics</td>
<td></td>
<td></td>
<td>Worked examples</td>
<td>Multiple choice, puzzles, or Drag and Drop for learning about the events</td>
</tr>
<tr>
<td></td>
<td>e-learning, or m-learning for demonstration (rich media)</td>
<td>e-learning, or m-learning for demonstration (rich media)</td>
<td>Social Learning Media - discussing and sharing</td>
<td>Case study followed by questions</td>
<td>Reading or podcast</td>
</tr>
<tr>
<td></td>
<td>Reading with graphics</td>
<td>Demonstration (rich media)</td>
<td>Reading with graphics</td>
<td>Worked examples</td>
<td>Social Learning Media - discussing and sharing</td>
</tr>
<tr>
<td></td>
<td>Worked examples</td>
<td>Multiple choice, puzzles, or Drag and Drop for learning about the events</td>
<td>Worked examples</td>
<td>Multiple choice, puzzles, or Drag and Drop for learning about the events</td>
<td>e-learning - Interactive Scenario</td>
</tr>
<tr>
<td></td>
<td>e-learning - Interactive Scenario</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Task 4.3  Group Work

Working in groups, provide practical examples on the following types of content in e-learning:

i. Fact - unique data
ii. Concept - a category that includes multiple examples
iii. Process - a flow of events or activities

### 4.2  e-Learning Design Tips

1. An e-learning course must have a hook up front. This is a big part of how you grab learners' attention, and get them engaged. A hook must also grab the learner’s attention.
   
   To do this, a good hook
   
   i. Is the first thing in the course – even before the objectives
   ii. Leaves learners guessing a little; teases or previews the content without revealing the whole story. If you leave learners with unanswered questions, they're more likely to continue to find out the answers.
   iii. Makes people think about something important or interesting to them (e.g. Do you ever wonder just how...?) Some common examples or scenarios include
• Someone who is really successful or good at the learner’s job, and then ask, ‘Would you like this to be you?’
• Something bad or frustrating happening to someone, and then ask, ‘Has this ever happened to you? How would you like to fix it?’
• A twist – something that seems innocent or neutral, but which you reveal to have hidden dangers (e.g. compliance violations that most people don’t realise are violations).

2. Once you have grabbed a learners’ attention with a hook, you need to keep them engaged every step of the way.
   To do this, you need a clear structure and story. The structure ties together the course content, relates it all to the purpose/benefit of the course, and leads the learner through the content with a logical flow and transitions. Work process diagrams are another built-in structure, though they may have to be simplified to provide the overall structure, and you can ‘zoom into’ more detail as you cover specific topics. Sometimes, you will have to create the content’s structure. To do this, think of some way to visually represent the overall content of the course. Some common ways you can structure a course include categorising or grouping parts of content according to their similarities and differences. Content like this can often be depicted by a table that builds or becomes more detailed throughout the course. Arrange topics from general to specific or from simple to complex.

3. Once you have defined your overall structure, break the content into small, logical chunks.
   Each chunk should be take users around 5–20 minutes to complete. Generally, assume about 1 minute per ‘page’. Keep the chunks small, but logical. It’s better to follow a topic to its logical end, and go 23 pages, than to artificially divide it.

4. After defining the structure and chunks of content, it’s time to present the content clearly and directly.
   Show it rather than tell it wherever possible. Charts and diagrams can be extremely useful in presenting information. Other graphics or animations can serve as ‘memory anchors’ if they provide a memorable mnemonic for the content.

Whenever possible, make learners respond in an overt, meaningful way to the content rather than telling them about it. Meaningful means related to the training objectives and, ideally, to the job task. Meaningful interactions produce more and deeper cognitive processing, which produces more learning. Clicking ‘Next’ is not a meaningful interaction in this sense. Asking users to ‘think about what they would do’ is not overt, so you can never know if it’s meaningful. Clicking a word to read its definition is useful, but only slightly meaningful. Some common examples of interactions that may be meaningful include:

- Multiple-choice questions that ask users to make fine discriminations – that is, picking answers that are not easy.
- Drag-and-drop exercises to
  i. categorise examples of related concepts
  ii. put process steps in the correct order
  iii. ‘assign’ job roles or tasks to the correct department or job
  iv. ‘complete’ a form by dropping information into the correct locations
- Click on the correct part of a screen shot or other diagram
- Choosing the best example of something
- Completing simulated rating forms as a way to rate the quality of some example.
- In general, think about what tasks learners need to do in their jobs, and approximate those as closely as possible to create learning interactions.
For teaching interactions to be effective, learners need to know whether they responded correctly. They need immediate, useful feedback following every response. Feedback should be brief, salient, and consistent. If it is too long, people will not know immediately – or at all – whether they answered correctly. Generally, if they answered correctly, saying ‘Right!’ or providing an established ‘correct’ symbol is enough. Wherever possible, feedback for incorrect responses should provide a hint to the correct answer, and another chance to respond. When possible, feedback for incorrect responses should explain why that specific response is incorrect. Feedback should not be overly aversive. If it is too punishing, learners may stop responding completely.

4.3 End of Unit Assessment

Working in groups, design an e-learning content by considering the design architecture matrix and the e-learning design tips. Each group is required to present their work to others.

4.4 Summary

This unit has covered designing the e-learning content based on needs analysis and appropriate theories and strategies. Students are also exposed to some e-learning design tips.

4.5 Additional Reading & Online Resources

Books

Online Resources
Merrill on Instructional Design
http://www.youtube.com/watch?feature=player_detailpage&v=i_TKaO2-jXA

Design Principles and examples for Creating Multimedia Tutorials
http://www.youtube.com/watch?feature=player_detailpage&v=vLAlYXWPEmg

Principles & Elements of Design
http://www.youtube.com/watch?feature=player_detailpage&v=oajFDEePHg
Reflection

Reflect on what you have learned earlier in Unit 1 and Unit 2 especially on the various instructional design principles and authoring tools available for e-learning content development. By using the class Wallwisher sticky notes board, write down some content tools that you have been exposed to or have learned before, and then classify them according to their functionalities.

Learning Outcomes

At the end of this unit, you should be able to
i. State various methodologies and modes of delivery of e-learning contents
ii. Compare and contrast the various authoring tools in terms of their functionalities for the development of e-learning contents
iii. Utilise the selected authoring tools and instructional design principles for the development of your own e-learning contents

5.1 Methodology for e-Learning Content Development

e-Learning content must be accurately prepared and presented in order to be effective. Instructional techniques should be used creatively to develop an engaging and motivating learning experience. While e-learning content can consist of different elements, ranging from simple learning resources (e.g. document and PowerPoint presentations) to interactive content, simulations, and job aids. This section will illustrate the process of developing e-lessons, including preparing the content, applying instructional techniques and media, and creating the final product using appropriate software and authoring tools. Instructional design models and methodologies for creating an e-learning content have been discussed in Unit 1. ADDIE is one of the first design models; there has been much discussion about its effectiveness and appropriateness. The ADDIE ID technique methodology can be applied in developing e-content. Individual steps are to assess and analyse needs, to design instructions and presentations, to develop materials, to implement activities and courses, and to evaluate participant progress and instructional materials’ effectiveness.
The following are steps in developing e-content:

<table>
<thead>
<tr>
<th></th>
<th>Storyboard</th>
<th>4</th>
<th>Templates</th>
<th>7</th>
<th>User Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prototyping versus Storyboarding</td>
<td>5</td>
<td>Managing Media</td>
<td>8</td>
<td>Prepare the Delivery System</td>
</tr>
<tr>
<td>2</td>
<td>Tools for Content Development</td>
<td>6</td>
<td>Quality Control</td>
<td>9</td>
<td>Documentation</td>
</tr>
</tbody>
</table>

The following figure shows the courseware development process:

Tools for e-Learning Content Development

You need to use a range of software to create the individual components of the e-learning content. Some of the tools used are shown in the following table.

<table>
<thead>
<tr>
<th>Tools</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authoring</td>
<td>For assembling and sequencing the assets</td>
</tr>
<tr>
<td>Audio</td>
<td>For recording and editing voice-overs and narrated text</td>
</tr>
<tr>
<td>Video</td>
<td>For recording and editing talking heads and action sequences illustrating procedures</td>
</tr>
<tr>
<td>Graphics</td>
<td>For creating static and dynamic images</td>
</tr>
<tr>
<td>Animation</td>
<td>For recording action sequences that cannot be filmed, for example, or telling content-related stories</td>
</tr>
<tr>
<td>Presentation</td>
<td>For sequencing information and assembling assets produced using other software</td>
</tr>
</tbody>
</table>
5.2 Utilising Authoring Tools

As discussed in Unit 2, the e-learning authoring tools are normally used in conjunction with materials already developed in PowerPoint presentations and document files. There are web-based rapid authoring tools and desktop authoring tools.

We shall look at each of these so that you can familiarise yourself with them and, subsequently, be able to use them for content development. We will show you the sample packages as well as the tutorials developed via these tools so that you can also learn how to use these tools by yourself.

Articulate Studio

Articulate Studio consists of three authoring tools, namely, Articulate Presenter, Articulate Engage, and Articulate Quiz Maker. Each of these authoring tools can be used on its own or in combinations.

Articulate Studio is an easy authoring tool to add interactivity and narrations (audio and video) to PowerPoint presentations, resulting in animated annotations to highlight important points. Other learning objects, including live web pages, can be easily embedded.

There are multiple publishing options, including Flash, which can be run on any LMS. Articulate Studio can also create SCORM and AICC complaint contents, which allow us to track the activities undertaken by students. The output can also be published on CDs, podcasts, and on any web server.

Articulate Quiz allows us to develop customised quizzes, assessments, and surveys in the Flash format. It has a friendly interface and allows the integration of advanced features, which include multiple choices, ‘drag and drop’, ‘filling in the blanks’, hot spots, and Likert questions.

Articulate Studio allows the development of compelling and dazzling learning interactions with quick and easy tools that can transform students from passive viewers to active learners. The authoring tools come with a wide variety of templates covering a wide range of interaction types, which include processes, timelines, pyramids, and labelled graphics and interactive frequently asked questions (FAQs).

Click on http://www.articulate.com/products/studio.php/ to see the tutorials and manual for this authoring tool. Also, go on a virtual tour from which you can obtain e-learning examples and view packages that have been developed using this tool.
**Task 5.1  Try It Yourself**

Go to [http://www.articulate.com/products/studio.php/](http://www.articulate.com/products/studio.php/). Download and use the following authoring tools to create some teaching contents:

i. Articulate Presenter
ii. Articulate Engage
iii. Articulate Quiz Maker

Prepare the output and view it. Provide comments on how to improve the quality of the contents/package being produced.

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**Smart Builder**

Smart Builder is a licensed powerful web-based authoring tool that offers solutions to complex e-content development without knowledge of Flash. However, the learning curve is a bit steep and may not be readily understood by a beginner.

Training and tutorial videos are normally required to enable one to comprehend the use of the various tools embedded within. Various templates are available for the users to create their contents, but the significant feature of this tool is the power of its branching and actions that control what happens when a learner performs specific actions on objects.

There is a flow chart about the branching, which can guide the learners effectively. Various types of interactivity can be created and limited only by the developer’s imagination.

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**Task 5.2  Self-Exploration**

Click on [http://www.suddenlysmart.com/smartbuilder.htm](http://www.suddenlysmart.com/smartbuilder.htm) to see the tutorials and manual for this authoring tool. Also, go on a virtual tour to view e-learning examples and packages that have been developed using this tool.
LectureMAKER
LectureMAKER is an e-learning content-authoring tool which empowers a user to create interactive lessons from PowerPoint presentations or document files. The authoring tool also allows for the development and creation of easy-to-use activities which can be readily delivered in various ways based on the deployment requirements.

With LectureMAKER, subject matter experts or instructors can share their knowledge and expertise by developing and distributing highly interactive and persuasive materials. It allows the saving of contents in the universally accepted Flash format and the output is SCORM compliant.

Click on http://www.daulsoft.co.kr/eng/product/lecturemaker.asp to see the tutorials and manual for this authoring tool. In addition, go on a virtual tour to view e-learning examples and packages that have been developed using this tool.

Task 5.3  Try It Yourself
Go to http://www.daulsoft.co.kr/eng/product/lecturemaker.asp and download the trial version which is valid for a month. Develop your e-learning contents and view it. Provide comments on how to improve the quality of the contents/package being produced.

Content Creation Using LectureMAKER
LectureMAKER is an example of an authoring tool used on a personal computer for creating e-learning contents. Various multimedia elements and existing PowerPoint, Flash, HTML documents, etc. can all be re-used, and with specialised editors, you can edit and enhance those contents easily.

You can develop a dynamic e-content at an expert level. You might also author contents from video lectures to interactive learning contents for web-based training.
All video clips can be edited and enhanced in all sorts of ways; that is, multimedia presentation can be added with audio and video by using microphones as well as web cameras.

With LectureMAKER, subject matter experts or instructors can share their knowledge and expertise by developing and distributing a highly interactive, persuasive material. You are encouraged to use LectureMAKER to create interactive e-learning contents.
Task 5.4 Get Started with LectureMAKER

Download the software from http://www.daulsoft.com/kr and install it on your computer. Register the product by entering the product serial number or you can use the trial version. Develop your own e-learning content by using the LectureMAKER authoring tool.

You are advised to watch some video from YouTube to assist your content development.
Basic Features of LectureMAKER
http://www.youtube.com/watch?v=EstXdl9ZSYQ
LectureMAKER - Creating Object Using Editor
http://www.youtube.com/watch?v=JTybxVB78E
Synchronise Video with Slides
http://www.youtube.com/watch?v=s_1qwzfww38
LectureMAKER has a wide variety of authoring tools and configuration possibilities.

1. **LectureMAKER Button (🚀):** to access features such as New, Open, Save, Print, etc.

2. **Quick Access Toolbar:**
   - Button for easy access to features such as New, Open, Save, Print, etc.

3. **Menu Bar:** Shows the name of the current file.

4. **Menu Control Button:**
   - Minimise, maximise, or quit the window.

5. **Ribbon Menu:**
   - Tab: Home, Insert, Control, Design, View, and Format
   - Group: Clipboard, Slide, Font, Paragraph, Draw, Edit, etc.
   - Command: Paste, Cut, Copy, Attribute, etc.

6. **Slide Window:** Shows thumbnail view of the current slides.

7. **Slide:** Working area for current slide.

8. **Object List:** Shows list of objects in the current slide.

9. **View Button:**
   - Adds/deletes slides, controls view default and current.

10. **Scale Up/Down:** Zooms in or out.

**Master Slide** - Build a master slide to streamline the creation of new slides. The master slide can contain all the elements you want in the individual slides, including motion buttons and design details.

**Multiple Editors** - Use LectureMAKER’s editing tools to create the exact graphic you need for your lesson. Popular options include text box, special characters, tables, formulas, shapes, and graphs.

**Variety of Multimedia** - Insert a variety of multimedia formats including pictures, video, sound, and flash files. For ease of use, multimedia files can be inserted directly into a large-capacity video link.

**Video Control** - Use a video clip as part of your lesson. If you wish, bookmark specific parts of the video clip to advance quickly to the area of interest. You can synchronise slides with video clips.

**Special Features**

- **Design and layout, Template** - LectureMAKER contains design and layout, as well as a template. Use the template to quickly design teaching content. The template can be used to design almost any type of content. Video, text, and audio can be configured to work with the built-in template.

- **General & Navigation Button** – Pre-set buttons are provided for contents, progress, and interactive learning.
Dynamic Teaching - By using a webcam, microphone, audio and video recording, and the electronic board, you can create interactive electronic lessons.


<table>
<thead>
<tr>
<th>Creating a New File</th>
<th>Opening the File</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Saving the File</th>
<th>Slide Set up</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Slide Properties</th>
<th>Master Slide controls the settings for the master slide, including font, format, and background images.</th>
</tr>
</thead>
</table>
**Slide Design** - set a pre-set slide design; 20 designed images are available.

**Slide Layout** indicates the shape of an object placed in the slidework in which 10 pre-set layouts are available.

**Template** - uses a pre-set template for design and layout. There are 6 sets and 24 templates available.

**Slide Object List** - corresponds to the current list of objects in the slide.
Finally, the e-Learning contents produced by LectureMAKER can be easily delivered in various ways based on the deployment requirements. The content can be saved in the universally accepted Flash format, HTML, and executable format, and all the output are SCORM compliant.
Following is an example of courseware produced by LectureMAKER.
5.3 End of Unit Assessment

Choose one authoring tool of your choice. Develop a 20-minute unit of e-learning contents using the tool. Publish the contents and submit the contents for assessment.

5.4 Summary

In this unit, you have been exposed to the rapid e-learning authoring tools which are used for content development. There are many advantages and disadvantages in the use of each of these tools. You need to consider all aspects carefully before deciding and choosing the appropriate tools that can cater to your specific needs vis-a-vis the e-learning contents/packages being developed.

5.5 Additional Reading & Online Resources

Online Resources
Rapid e-Learning

Five Strategies for Rapid e-Learning Development
http://rapidintake.com/elearning-mlearning-development/index.php/entry/5-strategies-for-rapid-elearning-development-strategy-4-build-course-content-styles-templates

Rapid e-Learning Tools Selection Criteria

Rapid e-Learning: Ground Breaking New Research

Authoring Tools for e-Learning
http://www.youtube.com/watch?v=IPkcQwowVqM
Task 6.1  Reflection

What criteria can we use to determine the quality and effectiveness of certain e-learning contents?

Learning Outcomes

At the end of this module, you should be able to
i. Evaluate the quality of e-learning content
ii. Develop and apply the course evaluation rubrics
iii. Compare and contrast various evaluation rubrics for courseware evaluation

Task 6.2  Critical Review

Review the article entitled Web-Based Evaluation of Courseware which is available at http://www.ascilite.org.au/conferences/perth97/papers/Le/Le.html

List the advantages of having the evaluation of courseware and discuss the strategies employed during the formative and summative assessment throughout the evaluation of the courseware. Share your ideas with others on the course Wallwisher online sticky board.

6.1  Courseware Evaluation

In general, the focus of the evaluation is more on the presentation of the content and the pedagogical aspects of the courseware. Existing courseware are identified and measured against a set of objective evaluation categories.

These criteria were developed through extensive research and review of instructional design guidelines from nationally recognised course developers, best practices from leading online consultants, and from various academic course evaluations.

Subject matter experts evaluate the scholarship, scope, and instructional design aspects of courses, while online multimedia professionals are used to assess the course production values.

Educators should thoroughly test them to assess the quality of their content and instructional and technical design. Courseware should be evaluated by the students for whom it is intended. Many institutions have published their own evaluation criteria. Rubrics as one of the assessment tools can be used to support and evaluate the quality of the developed courseware.
Task 6.3  Reflection

In groups of five, create your own course wiki entry to discuss the characteristics of good e-learning content packages or courseware.

Characteristics of Good Courseware

The following list is the characteristics of good courseware which are based on the standard evaluation.

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTENT</td>
<td>o content is accurate</td>
</tr>
<tr>
<td></td>
<td>o content has educational value</td>
</tr>
<tr>
<td></td>
<td>o content is free of racial, ethnic, and gender stereotypes</td>
</tr>
<tr>
<td>INSTRUCTIONAL</td>
<td>o purpose of package is well defined</td>
</tr>
<tr>
<td></td>
<td>o package achieves its defined purpose</td>
</tr>
<tr>
<td></td>
<td>o presentation of material is clear and logical</td>
</tr>
<tr>
<td></td>
<td>o level of difficulty is appropriate for target audience</td>
</tr>
<tr>
<td></td>
<td>o graphics/colour/sound are used for appropriate instructional reasons</td>
</tr>
<tr>
<td></td>
<td>o use of the package is motivational – package effectively stimulates student creativity</td>
</tr>
<tr>
<td></td>
<td>o feedback on student responses is effectively employed</td>
</tr>
<tr>
<td></td>
<td>o learner controls the rate and sequence of presentation and review</td>
</tr>
<tr>
<td></td>
<td>o instruction is integrated with previous student experience</td>
</tr>
<tr>
<td></td>
<td>o learning is generalisable to an appropriate range of situations</td>
</tr>
<tr>
<td>TECHNICAL</td>
<td>o user support materials are comprehensive and effective</td>
</tr>
<tr>
<td></td>
<td>o information displays are effective</td>
</tr>
<tr>
<td></td>
<td>o students can easily and independently operate the program</td>
</tr>
<tr>
<td></td>
<td>o teachers can easily employ the package</td>
</tr>
<tr>
<td></td>
<td>o programme provides accounting features that allow teachers to track student progress</td>
</tr>
<tr>
<td></td>
<td>o programme appropriately uses relevant computer capabilities</td>
</tr>
<tr>
<td></td>
<td>o programme is reliable in normal use</td>
</tr>
</tbody>
</table>

Task 6.4  Online Voting

Share your previously developed courseware in Unit 5 to the class and choose the five best coursework based on the characteristics of good e-learning content or packages. Cast your preferred courseware using our online voting poll accessible at www.polleverywhere.com.
6.2 Development of Rubrics for Courseware Evaluation

A rubric is a scoring tool that lists the criteria for a piece of work, or ‘what counts’ (for example, purpose, organisation, details, voice, and mechanics are often what count in a piece of writing).

It also articulates gradations of quality for each criterion, from excellent to poor. The four columns to the right of the criteria usually describe varying degrees of quality, for example, from excellent to poor. As concisely as possible, these columns explain what makes a good piece of work good and what makes a bad one bad. The following tables show some rubrics that can be used for courseware evaluation.

<table>
<thead>
<tr>
<th>Guidelines</th>
<th>Rubrics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beginning</td>
</tr>
<tr>
<td>Course Outcomes</td>
<td></td>
</tr>
<tr>
<td>Learning outcomes (competencies) are clearly stated.</td>
<td>Competencies do not convey the intended outcomes of the learning experience in clear terms.</td>
</tr>
<tr>
<td>Learning outcomes (competencies) are observable, measurable, and achievable.</td>
<td>Competencies are neither observable nor measurable.</td>
</tr>
<tr>
<td>Learning outcomes (competencies) are closely correlated with real-world performance expectations.</td>
<td>Competencies do not correlate with real-world performance expectations, but rather relate only to specific in-class performance.</td>
</tr>
</tbody>
</table>

Course Construction
<table>
<thead>
<tr>
<th>Course content, outcomes, practice, and assessment are consistent.</th>
<th>Course contains at least three of the four elements; some consistency may be implied.</th>
<th>Course contains all four elements; consistency is generally indicated.</th>
<th>Course content, outcomes, practice, and assessment are consistent; the relationship among them is clearly indicated; outcomes may be linked to institutional outcomes or target standards in the field (when applicable).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course materials are presented to accommodate multiple learning styles.</td>
<td>Presentation of materials uses primarily one methodology (e.g. print)</td>
<td>Presentation of materials uses more than one method (e.g. print, visual, and experiential). Applications to real-life situations may be presented.</td>
<td>Course materials are presented in a variety of ways, and students are able to select methods to suit their abilities/preferences. Applications to real-life situations are presented; student tasks sometimes require application.</td>
</tr>
<tr>
<td>Presentation of content fosters active learning opportunities.</td>
<td>Course requires students to read materials and respond to instructor’s posted questions.</td>
<td>Material is chunked (divided, organised) into appropriate sections for learning audience; includes basic recall exercises and practice.</td>
<td>Material is appropriately chunked, interspersed with activities that require both recall and some application (e.g. identifying examples, deriving examples, and practice applications).</td>
</tr>
<tr>
<td>Course design includes the necessary components of successful instruction at the module/lesson level.</td>
<td>Lessons/modules have an organised format and include some basic events: for example, objectives, information, and assessment. However, numerous critical events are missing.</td>
<td>Course design includes most elements in many lessons. Some elements, such as motivational techniques or practice, may not be as complete as necessary.</td>
<td>Course design includes, for each lesson: • motivational techniques, • objectives, • overview, • demonstration or information, • practice or exploration • feedback, • a summary/transfer, and assessment.</td>
</tr>
<tr>
<td>Course instructions, navigation, and definitions are clear.</td>
<td>Course contains a list of prerequisite skills and learning objectives (usually in Syllabus).</td>
<td>Course contains a list of the prerequisite skills and knowledge, expectations of each activity, grading criteria, and a general description of course requirements.</td>
<td>Course contains a list of the prerequisite skills and knowledge, expectations of each activity, the expected level of participation and time commitment, and specific instructions on how to proceed and learn the material. In addition to overall expectations and directions, each activity, assignment, exercise, etc. clearly indicates what students need to do, how they should submit results, any special instructions, etc.</td>
</tr>
</tbody>
</table>
## Course Interaction

<table>
<thead>
<tr>
<th>Course Interaction requirements are clearly stated.</th>
<th>Course requirements state that students are required to interact.</th>
<th>Course requirements state that students are required to interact within a designated timeframe.</th>
<th>Course requirements state that students are required to interact with each other and with the instructor, a designated timeframe for the interaction is stated, directions for how to participate in the interaction, standards for the quality or expectations of the interaction are set, and the outcomes of those interactions are noted (the student will receive points for the interaction).</th>
</tr>
</thead>
<tbody>
<tr>
<td>A variety of opportunities are designed for interaction between instructor and student.</td>
<td>Course is designed so students are required to answer questions about or apply what was learned for the most important learning objectives. The method of interaction varies depending on what is most effective for the learning objective. The instructor promptly provides feedback.</td>
<td>Course is designed so students are required to answer questions about or apply what was learned for all learning objectives. The method of interaction varies depending on what is most effective for the learning objective. Much of the instructor feedback has been automated. All feedback is prompt.</td>
<td>Course is designed so students are required to answer questions about or apply what was learned for all learning objectives. Multiple methods of interaction are available for the most important learning objectives. Much of the instructor feedback has been automated.</td>
</tr>
<tr>
<td>Clear standards are set for instructors’ response to students.</td>
<td>Course guidelines state that the instructor will provide feedback to the students in a timely manner.</td>
<td>Course guidelines state that the instructor will provide feedback to the students within a specified amount of time, and a clear description of how the task of providing feedback will be accomplished</td>
<td>Course guidelines state that the instructor will provide feedback within a designated timeframe, a clear description of how the task of providing feedback will be accomplished (how the student will receive the feedback – email, discussion board, etc.), and the specific types of feedback that will be submitted – for example, feedback on assignments, on class participation, etc.</td>
</tr>
</tbody>
</table>

Source: [http://www.mccvlc.org/~staff/content.cfm?ID=108](http://www.mccvlc.org/~staff/content.cfm?ID=108)
### Guiding Principles

**Content** - Breadth, depth, approach appropriate for course level and subject coverage.

- Clear presentation of major principles, concepts, framework and thinking processes of subject. Incorporates real-world examples, applications, additional sources, and a variety of information types. Learning objectives reflect building knowledge, critical thinking, and transfer. Content organised in units with topics and subtopics. Transparent content framework that shows learning chunks, subject structure, and associated activities. Coverage maps to depth and breadth of generally accepted standards for target course. Includes current, socially and culturally relevant context and connections. Writing tone, level, and style clear, informal, and accessible to learners.

- Complete course content online, objectives clear, assessments mapped to objectives

- Majority of course content online, linked supplemental content, assessments mapped to objectives

- Areas of weak coverage, objectives missing or not clear, assessments not relevant to objectives

- More than half the course is textbook dependent, no objectives, no assessments

### Rubrics

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guiding Principles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content - Breadth, depth, approach appropriate for course level and subject coverage.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Media</strong> - Use of multiple media types to present content, provide activities and interactions.</td>
<td>Multi-modal media used to help present, and work with, key concepts, examples, applications. Provide for varied learning style and skill approaches: text, graphics, photos, animation, simulation, video, and audio as appropriate for conveying subject. Engaging, motivating. Coherent arrangement of media types designed to link and reinforce each other. Learner navigation and controls available and consistent.</td>
<td>Good design and pedagogical use of 4+ media types</td>
<td>Good pedagogical use of 3 or fewer media types</td>
<td>Weak use of media</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Design</strong> - Overall course construction, content presentation, navigation, use of visual elements, and technical features.</td>
<td>Course navigation is intuitive, provides logical and varied paths through material. Helps to reveal context and connections of topics. Well-used mix of media for content presentation to scaffold new understanding, different learning modes, and perspectives. Elements proportional, harmonious, uncluttered, and restrained. Control of navigation and media consistent, clear, and available to learner.</td>
<td>Well-executed instructional, information and media design</td>
<td>Design weakness can be augmented by customisation</td>
<td>Contains design flaws that do not enhance the experience</td>
</tr>
</tbody>
</table>
Pedagogy - Application of universal and subject-specific learning theories that enable effective learning and teachers.

- Multiple approaches integrated and aligned to provide rich learning and teaching environment.
- At least three well-executed pedagogical approaches. Lacking learner and community centred approaches.


Task 6.5 Online Forum

Using ProBoards accessible at www.proboards.com, lists and discuss the guiding principles to be used for developing the rubric of courseware evaluation.

6.3 End of Unit Assessment

Develop your own rubric for the courseware evaluation. Upload your work into the course Wiki. Compare and contrast your rubric with those of other rubrics from your group.

6.4 Summary

You have been exposed on the courseware evaluation process. Rubrics as an assessment tool can be used to support and evaluate the quality of the developed courseware.

6.5 Additional Reading & Online Resources

Books


**Online Resources**

Standards for Digital Learning Content in British Columbia


Inclusive e-learning courses and contents design and evaluation for socio-culturally diverse groups of adult learners in Europe.

Design and Implementation of an E-learning Content Using Simple and Obtainable Tools

Task 7.1  Group Discussion

In a group, discuss what is needs analysis and why this analysis is important before the actual training programme on the development of e-learning contents is implemented.

Learning Outcomes

At the end of this unit, you should be able to
i. Undertake the needs analysis of a training programme on the development of e-learning contents
ii. Plan appropriate training on the development on e-learning content based on the needs analysis

Task 7.2  Reflection

Can you still remember the steps or sequence necessary for the development of a training programme? List your answers and discuss each of them.

7.1  Overview of the Needs Assessment & Analysis

Need assessment and analysis of the training of e-learning content development are imperative as they enable us to know the purposes that they will serve for an academic institution. They are part of the key factors for successful deployment of e-learning.

To recall what training needs assessment and analysis are and why they are important, let’s undertake the following activity.

Task 7.3  Q & A

Answer the following questions:
   i. What are training needs of e-learning content development?
   ii. Why are training needs important?
Training Needs in e-Learning Content Development

In the planning of training on the development of e-learning contents, you need to consider various aspects. These are:

i. **Types of tools for contents developments**
   The types of tools (rapid authoring tools) chosen must be appropriate to the finished products expected by the institution.

ii. **Types of Media**
   The types of media used are suitable to the competency level of the trainees.

iii. **Competency**
    The extent of competencies of the trainees for contents development that need to be acquired

iv. **The Learning styles and characteristics of the trainees**
    What are the learning styles and characteristics of the trainees so that appropriate training approach can be utilised.

v. **Training approach**
    The type of training approach suitable for the trainees

vi. **The delivery system**
    The type of delivery system that can support the finished product being developed

For e-learning contents to be developed, the above training needs have to be addressed so that the finished learning materials being developed achieve the training outcomes as well meet the expectations of the institution.

Importance of Training Needs in the Development of e-Learning Content

In the context of e-learning content development, the training needs and assessment are important:

i. To elucidate the process of e-learning content development for an institution whether it is full-scale, ground-up content development or rapid prototyping

ii. To fulfil the expectation of the organisation that students will benefit from the use of the e-learning materials being developed

iii. To justify the cost of investing in the development of e-learning products

iv. To ensure that the e-learning materials being developed meet the expectation of the institution in terms of quality

v. To ensure that the right tools are being used for development e-learning materials

vi. To ensure that the right media are being used in the development

vii. To ensure that the proper delivery system is in place and is appropriate for the content being developed

viii. To ensure that all the training materials/documentations/manuals are in place for the developmental process
Techniques of Training Needs of Content Development

Now, let us look at the techniques of training needs. In the Basic Module, you were exposed to the techniques of assessment of training needs. You may want to recall whether you still remember these techniques because the same techniques can be used in the context of the training on e-learning content development. Let’s do the following activity.

**Task 7.4 Individual Work**

In the table below, fill in the blanks with descriptions of each of the techniques considered effective in needs analysis as well as their strengths and weaknesses for the training on the development of e-learning contents.

<table>
<thead>
<tr>
<th>Technique</th>
<th>Description, strength, and weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td></td>
</tr>
<tr>
<td>Questionnaires</td>
<td></td>
</tr>
<tr>
<td>Focus group discussions</td>
<td></td>
</tr>
<tr>
<td>Key informants</td>
<td></td>
</tr>
<tr>
<td>Performance appraisals</td>
<td></td>
</tr>
</tbody>
</table>

**Task 7.5 Group Discussion**

In a small group, discuss what techniques of needs assessment are suitable when developing a training programme on the development of e-learning contents. The suitable techniques that can be used for assessing the needs of training of e-learning content development are:

i. Questionnaires  
ii. Interviews
There are various questionnaires available for the needs analysis of e-learning content development. Below is an example of a needs assessment questionnaire that can be used for content development.

**Criteria for a Needs Assessment: Checklist**

<table>
<thead>
<tr>
<th>No.</th>
<th>CRITERIA</th>
<th>NOTES</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Employee knowledge or competence needs improvement (performance)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>There is a wider CPD* requirement in the organisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Improved knowledge or competence can be measured</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Expectations for improvement are realistic and can be met through training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Any obstacles to improvement can be identified and removed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Appropriate learning resources are available or can be bought or developed in time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>The organisation will enable and acknowledge performance improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Performance improvement will benefit the organisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>The target learners know and understand the need for and benefit from training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>e-Learning is an appropriate solution</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*CPD refers to Continuing Professional Development

**TOTAL SCORE**

Sample of Need Assessment questionnaire
Task 7.6  Group Work

In a group, develop a questionnaire related to the assessment of the need of training for e-learning content development. Present the questionnaire details to the entire class and get the comments from the class.

Needs analysis is a process whereby the data of needs assessment are critically examined. From the analysis, the current level of knowledge and skills is noted and an appropriate training programme for e-learning content development can be designed.

Task 7.7  Group Work

In small groups, analyse the data from the needs assessment in Task 7.5. What important information can you derive from the analysis?

7.2 Developing Training Goals & Objectives

After the undertaking of the assessment of the needs analysis, the next important step when planning a training programme for e-learning content development is to develop training goals and objectives. In the Basic Module, you have been exposed to the process of developing training goals and objectives. Let’s recall how to do so by undertaking the following activity.

Task 7.8  Brainstorm

Write down two sample objectives for the training on e-learning content development.

i. Training Objective 1
ii. Training Objective 2

Discuss the training objectives with your peers. Post your answer in the Wallwisher online sticky board.

7.3 Constructive Alignment

In the Basic Module, you would also have been exposed to the concept of constructive alignment. The principle of constructive alignment must be adhered to when designing activities in the training on e-learning content development so that the activities are aligned to the training expected outcomes.
Task 7.9  Group Work

In a small group, discuss how constructive alignment can be used in designing the e-learning training activities for content development so that the training can achieve the end-of-course objective or expected outcomes.

In the development of e-learning content, the expected outcomes of the training can be measured from the specification of competence in both knowledge (know-what) and skill (know-how). These can be measured in three dimensions namely:

i. Performance - description of behaviour that demonstrates the outcomes of the training
ii. Conditions - description of condition (assessment or workplace) in which the performance occurs
iii. Standards - description of criteria that illustrate the degree of the competent person will perform

7.4  Planning an Appropriate Training Programme

As already discussed in the Basic Module, planning a training programme involves looking at the following aspects:

i. Training needs
ii. Training objectives and goals (expected outcomes)
iii. Training materials
iv. Facilitators and trainers
v. Methodology
vi. Training environment
vii. Time frames
viii. Resources
ix. Trainees (characteristics and learning styles)

The same aspects are to be followed when planning training programmes for e-learning content development.

Task 7.10  Group Work

In a small group, discuss ways to plan the training of e-learning content development taking into consideration all the aspects stated above.

7.5  Samples of Training Programmes

There are many samples of training programmes on content development available online. You may want to examine these samples carefully and make some suggestions in improving certain training programmes you viewed.
Task 7.11 Critical Review

Download samples of training programmes and closely examine the theme. Write down suggestions for improving some of the training programmes.

7.6 End of Unit Assessment

Undertake the needs analysis for the development of e-learning contents and establish the gap between the current situation and the expected situation in your institution. Write a 10-page needs analysis report with an appropriate training plan to eliminate such a gap. Submit the report for assessment.

7.7 Summary

This unit has presented the planning of a training programme on the development of e-learning contents. It involves the aspects of needs assessment, training goals and objectives as well as constructive alignment. The aspects of planning an appropriate training programme and samples of training programmes are also presented and discussed.

7.8 Additional Reading & Online Resources

Books

Online Resources
Planning the training session
http://www.slideshare.net/bldsinfolit/planning-the-training-session-4842808
Planning and Implementing Training
http://www.worlded.org/docs/Publications/training/planning_and_implementing_training_community_handbook.pdf
Planning a Successful Training Program
http://writing.colostate.edu/guides/teaching/pcteacher/pop2a.cfm
Planning a training session
Task 8.1  Group Discussion

In a group, discuss how training materials can be designed so that they meet the expected learning outcomes. Also, discuss techniques that can be deployed to deliver such training materials.

Learning Outcomes

At the end of this unit, you should be able to:

i. determine the materials of the training programme relevant to the development of e-learning contents
ii. select the appropriate training approaches for the development of e-learning contents, and
iii. deliver an effective e-learning training programme for content development.

8.1 Training Materials for e-Learning Content Development

The materials of a training programme focusing on e-learning content development must be carefully selected so that they meet the training objectives. The important aspects should cover the following areas:

i. The selection/identification of the content
   The content must be suitably selected and chosen so that it is suitable for the development of e-learning content and meeting the training objectives and expected outcomes.

ii. The arrangement/sequencing
   The content must be suitably arrange and sequenced so that the content on the development of e-learning contents is presented in a logical and systematic way.

iii. The presentation of the content
   The content must be effectively delivered so that the trainees are engaged and successful in acquiring the necessary knowledge and skills.

The contents and sequence of the training materials for e-learning content development may be the following:

i. The instructional model
   ADDIE, ASSURE model of content development, and Gagne Nine Event of Instruction
ii. **Authoring tools**
Various content creation tools using rapid authoring tools such as Lecture Maker, Raptivity, and Articulate

iii. **Needs analysis**
Need analysis involves competence, expected outcomes, learning environment, learning style, developmental strategy, resource person, and key success factor.

iv. **The design of e-learning contents**
Design specification (user interface, navigation, and delivery), learning strategy, topic structuring, resources, collaborative structure, assessment, and feedback.

v. **The development of the e-learning contents**
Storyboard, tools for content development, template, media, quality control, and delivery

vi. **The implementation of e-learning content development**
Piloting, training, support to trainees, access to training materials, and monitoring

vii. **The evaluation of the e-learning contents**
Courseware evaluation, rubric, Kirkpatrick levels of evaluation, evaluating outcome of training

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**Task 8.2 Group Work**

In a group, discuss the contents of the topics suitable to be designed, developed, and delivered after taking into consideration the training goals and objectives of e-learning content development.

**Task 8.3 Group Work**

In groups, arrange the contents already determined in Task 8.2 in a sequence. Provide justification on its suggested sequencing and arrangement.

Now, let us look at the presentation of the training materials. The presentation of the training materials must adhere to some structure or order. From the previous module, you have already learned how to present the training materials in a systematic way. Let’s undertake this activity.

**Task 8.4 Group Work**

In groups, discuss the instructional activities which should be conducted when presenting a topic reflecting some selected training materials. How can you ensure that the presentation is systematic and orderly and make learning on content development effective?

---

**8.2 Training Methods**

Various training approaches and methods can be utilised when delivering training materials for e-learning content development. The types of approaches being utilised depend on the intended training
objectives and learning output; each of the approaches has its own advantages and disadvantages. You were exposed to various training methods and approaches in the Basic Module. Let’s undertake the following activity to ensure that you are knowledgeable and skilful regarding the use of the various techniques and approaches.

### Task 8.5 Individual Work

Fill in the blanks.

<table>
<thead>
<tr>
<th>Method of delivery</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-way lectures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hands-on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q &amp; A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brainstorming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buzz sessions</td>
<td></td>
<td></td>
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<tr>
<td>Panels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role play</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group discussions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scenario-based sessions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Issues to consider when undertaking hands-on training on content development

There are various issues to consider when undertaking hands-on training on content development, particularly when imparting skills in the utilisation of rapid authoring tools for content development. Among the issues to consider are

i. **Computer and authoring tools**
   
   Ensure that the computer is in working order and that the authoring tools are already installed in the computer and properly functional.

ii. **Internet connection**
   
   Ensure that the Internet is accessible to all trainees during the entire duration of the training.

iii. **Media being used in the training**
   
   Prepare all the media needed in the training (doc, ppt, audio, video, flash files) in the folder and install the folder on the desktop of the computer. Alternatively, put the folder in the cloud storage and allow the trainees to access the folder.
iv. **Manuals**  
The manuals for the training must be suitably prepared and made available to all the trainees. It is advisable to follow all the steps involved as illustrated in the manual.

v. **Different level competency**  
Be aware that trainees are of different levels of competencies. Some are difficult to comprehend and some are very advanced. More attention should be given to the trainees with low-level competency.

vi. **Facilitators for the training**  
Additional facilitators are required in the hands-on training to provide individual help to the trainees who encountered problems. In this way, all the trainees can progression of the training involves the whole group and no one is left behind.

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**Task 8.6 Reflection**

In a small group, reflect on the e-learning training on content development you have attended. How can you improve the training taking into account all the issues discussed above.

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**Sitting arrangement of the training**

Besides the training methods, the furniture, sitting order, and placement of equipment in a training venue have to be carefully arranged so that the venue is comfortable for the trainees, conducive for interaction among them, and provides some kind of protection from outside distractions.

Most importantly, however, the arrangement of the various items in the venue must harmonise with the training methods being utilised. Many types of sitting arrangements can be made and to understand the kind of sitting arrangements most appropriate to the training methods being utilised, let’s undertake the following activity.

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**Task 8.7 Reflection**

Take 10 minutes to complete the table below.

<table>
<thead>
<tr>
<th>Type of room arrangement</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom/Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Round table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U-shaped</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish bowl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role play/open space</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V-shaped</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conference table</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In undertaking the hands-on training on the use of authoring tools for content development, different sitting arrangements might be appropriate. Let’s undertake the following activity.

### 8.3 Delivery

One of the important factors to take into consideration when delivering e-contents is to create the right and conducive environment for training. In the Basic Module, you were exposed to the techniques of creating such an environment.

When conducting a training programme for e-learning content development, the creation of a similar environment is imperative. You must be skilful and knowledgeable in creating such an environment. Let’s undertake the following activity.

#### Task 8.8 Q & A

What do you remember about the techniques of creating a conducive training environment? List the techniques you can use and let the class comment on each of them in terms of its usefulness and suitability for the planned training programme.

Among the techniques of creating conducive learning environments for e-learning contents development are the following:

i. **Icebreakers**
   - The use of icebreakers will allow each of the participants to introduce himself/herself to others and express what each expects from the training.

ii. **Interaction**
   - Let the trainees interact freely with each other as the training progresses. This can be achieved by using extensive group-based work and discussions.

iii. **Progression of the training**
   - The progression of the training must be at a slower pace so as to accommodate learners with low ability. At a slower pace, the trainees as a whole will benefit and not only trainees with high ability.

iv. **Acknowledge the trainees’ opinions**
   - Respect the opinions of the trainees. Acknowledge their opinions and give them credit.

v. **Provide feedback**
   - Provide feedback to the questions posed by the trainees.

vi. **Interactive sessions**
   - Have interactive sessions with numerous questions and answers.

vii. **Training aids**
    - Use a variety of training aids, such as video/multimedia materials, to make the sessions interesting and informative.
8.4 Characteristics of Effective Trainers

Apart from the techniques of delivery, effective training also depends on the individual characteristics of the trainer. So, it is important for you to possess the characteristics of effective trainers.

You have also learned what characteristics effective trainers should have in the Basic Module. It will be of advantage to further enhance your skills so that you, in turn, become good and effective trainers. Let’s undertake the following activity.

Task 8.9 Reflections

Find out more information on the characteristics of effective trainers. Then, categorise the information under suitable headings. Discuss with the class to see whether the class agrees that the categories you suggested are adequate.

In general, the characteristics of effective trainers can be grouped into the following categories:

i. Character
ii. Command of subject matter
iii. Communication skills
iv. Contact
v. Clarity
vi. Charisma

In delivering the training for e-learning content development, apart from having the character and communication skills and charisma, the knowledge of latest trends in e-learning is very important. There will be instances when you need to connect the training materials to the latest and current happenings in e-learning.

Learners’ Characteristics

When guiding trainees to the training materials, it is also important to take into consideration the characteristics of these trainees as well as their learning styles and preferences. You must realise that the trainees are adults who may wish for some shared responsibilities as well as a voice in what they are undertaking. This factor has to be kept in mind as well as their diverse backgrounds and cultural differences. Appropriate training strategies must be utilised to address these differences.

8.5 End of Unit Assessment

Write a 10-page report on a planned training programme which includes the aspects of designing the programme, developing the training contents, and delivering these training contents. Your focus should be more on creating a conducive learning environment with maximum engagement from the trainees. Submit the report for assessment.

8.6 Summary

This unit has presented the design, development, and delivery of a training programme. It includes discussing the training contents, training methods as well as the seating arrangements of the training venue. This unit also looks at the delivery of the training as well as the characteristics of effective trainers.
The characteristics of the trainees, which include different learning styles and preferences, are also presented and discussed.

### 8.7 Additional Reading & Online Resources

#### Books


#### Online Resources

Discover the 7 Hidden Qualities of an Exceptional Trainer

The Seven Characteristics of Good Leader
http://www.edutopia.org/blog/successful-school-leadership-social-emotional-learning-maurice-elias

Characteristics of Good Trainers
UNIT 9
Conducting an Actual e-Learning Training Programme

Task 9.1  Group Discussion
In a group, discuss the skills necessary to conduct the training on e-learning content development. How can the training be evaluated based on the Kirkpatrick Model of evaluation?

Learning Outcomes
At the end of this unit, you should be able to:

i. conduct an actual training programme for content development,
ii. evaluate a training programme on content development based on Kirkpatrick’s Four-Level Evaluation Model, and
iii. write a training report of content development.

9.1  Conducting an e-Learning Training Programme
You have learned in the Basic Module that before being capable of conducting an actual training programme, you need to structure your presentations. The structuring of the training presentations may include the following:

i. Putting the participants at ease
ii. Using ice breaker activities
iii. Using a variety of training methods
iv. Involving the participants
v. Selecting a variety of media materials
vi. Using appropriate training aids

In the Basic Module, you have been exposed to the techniques of putting the participants in their training programmes at ease. In this module, the same techniques are being applied but for the training on e-learning content development. Let’s undertake the following activity so that they can enhance your skills further in putting the participants at ease before commencing the actual training on content development.
Task 9.2  Individual Work

Fill in the blanks in the table below on the activities that can be used to put the participants at ease.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Sample of narration (or presentation to the participants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greet the participants in a friendly manner</td>
<td></td>
</tr>
<tr>
<td>Do not overwhelm the participants with your expertise</td>
<td></td>
</tr>
<tr>
<td>Share your experiences and skills with the participants</td>
<td></td>
</tr>
<tr>
<td>Relate the importance of new skills to be learned in the workplace</td>
<td></td>
</tr>
<tr>
<td>Stimulate the participants’ interest in the topics to be learned</td>
<td></td>
</tr>
<tr>
<td>Remove fears about acquiring new knowledge</td>
<td></td>
</tr>
</tbody>
</table>

You are now aware of the importance of icebreaker activities. Let’s undertake the following activity.

Task 9.3  Experience Sharing

What are the types of activities that you can use as icebreakers? Let’s share these activities with others.

You have come to the stage of presenting your training. By now, you have planned and designed the best training methods suitable for your training presentations on e-learning content development.

It would be a good idea to share information on the training methods they used in the Basic Module in order to improve their presentations. Let’s do the following activity.

Task 9.4  Experience Sharing

Present the planned training methods/approaches that you are going to use in the actual training programmes on content development. Get comments from the class. Summarise the presentations to see whether the methods you used are appropriate or otherwise.
Getting the participants involved in the training programme is important in order to create a conducive training environment. You have already been exposed to such techniques and skills in the Basic Module.

**Embarking on actual presentations**

Now, you are ready to embark on the actual presentations. It would be a good idea if you use similar techniques in the class so that the whole class can provide feedback to enhance their skills further. Let’s undertake the following activity.

**Task 9.5 Experience Sharing**

Prepare 10-minute presentations to the whole class. Let the class observe the techniques you utilised in getting the involvement of the class. When the presentations end, let each participant comment on the techniques you utilised.

You may use some of the following techniques:

i. Let the participants know that their involvement is encouraged and that this involvement is important in the learning process.

ii. Ask a variety of questions so that the participants are clear about the intended answers.

iii. Give credit to the responses received from the participants. Suggest reviews of what has been said.

iv. Pose questions to individuals rather than to the whole class

v. Draw points of view from all participants

vi. Do not become emotionally involved in discussions, but rather, act as facilitators to stimulate the discussions.

vii. Summarise the findings of the discussions and clear up any misconceptions should they arise.

In the training on the development of e-learning content, the hands-on session is the most prominent approach being utilised. In this technique, trainees follow a step-by-step process of content development. To get the participants involved in the training, it is advisable to divide them into small groups and let the trainees engage themselves in the group work where the group undertakes the tasks specific within the members of the group.

To make training more even more meaningful, make the groups compete with each other in the development of the e-learning contents where the winners are determined by peer rating. In this way, the training is more engaging and meaningful.

**Training Aids**

From the Basic Module, you are aware that the training aids in the form of audio-visual materials (videos, flip charts, films, and audio tapes) or handouts, questionnaires, etc. can enhance and reinforce the understanding of the subject matter among the participants.

By now, you have already selected the training aids suitable for their actual presentations. In that respect, it would be useful if you can share with the class information regarding the training aids that you are going to utilise in your training presentations. Let’s undertake the following activity.
Task 9.6  Experience Sharing

Present to the class your preparations for the training aids that you are going to use in your actual presentations. Most importantly, you have to illustrate the factors being considered when selecting such training aids.

9.2 Actual Training Programme

Now, you are ready to undertake an actual training programme at the university or institutional level on the development of the e-learning contents. You have by now planned, developed, and designed their training programmes on the development of e-learning content based on what you have learned in the Basic Module.

At the same time, you have already acquired the necessary skills and techniques to create a conducive training environment. However, in the actual training programmes, there are other issues that you need to consider in order to conduct the programmes effectively.

These are mainly logistical in nature, but they are equally important to ensure the smooth running of the training. Some of the aspects are:

i. Date and duration of the training programme and venue of the training
ii. The facilitator (to help you with the training)
iii. Desktop/laptop equipment with the necessary authoring tools being installed.
iv. Multimedia folder consisting of audio, video, swf, pdf, and ppt files to be used by the trainees
v. Internet access, projector, and audio system
vi. Seating arrangements
vii. Flip papers

When all the logistical arrangements are ready, the next step is to ensure a maximum attendance of participants. In most cases, the training at the institutional and university level may draw a poor response from lecturers. The trainees must ensure that this is being addressed.

Task 9.7  Practice Makes Perfect

Prepare all the necessary arrangements for an actual training programme on the development of e-learning contents at your institution or university. Deliver the actual training and undertake the evaluation of the training (next section) as well as write the training report (next section). Use the techniques that they have learned in this module as much as possible.

9.3 Evaluation of the Actual Training Programme

You have learned from the previous module that evaluation of a training programme is imperative, as it indicates and measures the level of fulfilment of the training objectives. The evaluation also provides an indication of whether the training programme being delivered meets organisational expectations.

You are now in a position to deliver the actual training. You have already prepared their training contents and you have also acquired the necessary skills and techniques to become an effective trainer.
In the actual training programme, you need to ask the trainees to undertake the process of evaluation of the entire programme that they deliver.

In the Basic Module, you have been exposed to Kirkpatrick’s Four-Level Evaluation Model. In this unit, we need to ensure that you can apply this model of evaluation in your actual training delivery of the development of the e-learning content. Let’s undertake the following activity:

**Task 9.8 Experience Sharing**

Using Kirkpatrick’s Four-Level Evaluation Model, develop the instrument of evaluation suitable for the training delivery on the development of e-learning content. Present your evaluation instrument and let the whole class comment on your presentations.

Note that Kirkpatrick’s Four-Level Evaluation Model consists of the following elements:

**Level 1: Reaction**
This evaluation looks at participant satisfaction – how they feel and what they think about the training. Questionnaires are normally used and can be designed to elicit judgement on training on the development of e-learning content being conducted.

**Level 2: Learning**
This evaluation looks at how much the participants have learned in the training or how much learning enhancement has taken place. In other words, what knowledge have the participants acquired, what skills have been developed or improved upon and what attitudes have been changed related to e-learning content development.

**Level 3: Behaviour**
This evaluation looks at the extent of behaviour and capability improvement on the development of e-learning content that the participants can bring about. In other words, the evaluation on the training for the development of e-learning content looks at how much desire the participants have for change, what further knowledge they have acquired related to content development, and what they wish to do about it.

**Level 4: Results**
This evaluation looks at the impact the training has on the organisational output such as increased productivity, work quality, reduced turnovers, or enhanced cost-effectiveness.
9.4 Writing a Training Report

You are already aware that good training reports are essential, as they consist of the information required to inform the senior management and stakeholders regarding the status of the training on the development of e-learning content. In the Basic Module, you have been exposed to the components of good training reports. They are
i. Title of the training (with location, date, and time)
ii. Background of the workshop
   - Needs analysis and training gaps
   - Participants (nature and number of participants)

i. Objectives
ii. Discussion and training activities
   - Contents of the training
   - Training methodology

i. Recommendations based on the evaluation of training
ii. Follow-up action plans
iii. Conclusion
iv. Acknowledgements
v. Appendices
   - List of participants (and their details including addresses and contact numbers)
   - Details of training materials
   - Training schedules

9.5 End of Unit Assessment

You have now undertaken the actual presentation of a training programme. You have also administered the training evaluation instruments. Analyse the data and write the reports. The report must consist of all the components stated above and must be approximately 30–40 pages long. This report has to be submitted as part of the assessment process.

9.6 Summary

This unit has illustrated how to conduct the actual training of e-learning content development. This unit shows the techniques of structuring the presentation and has presented the techniques of the training evaluation based on the classic Kirkpatrick Four-Level Evaluation Model. At the end of this unit, the process of writing a training report is presented.
9.7 Additional Reading & Online Resources

Books

Online Resources
Kirkpartick's Four Levels Evaluation Online Program
http://www.youtube.com/watch?v=hyaQDkP-G2c
Kirkpartick's Four Levels of Evaluation
http://www.youtube.com/watch?v=oBplOB5PtaA&feature=related
Did the training work?
http://www.slideshare.net/dawndrake/L14-Evaluation