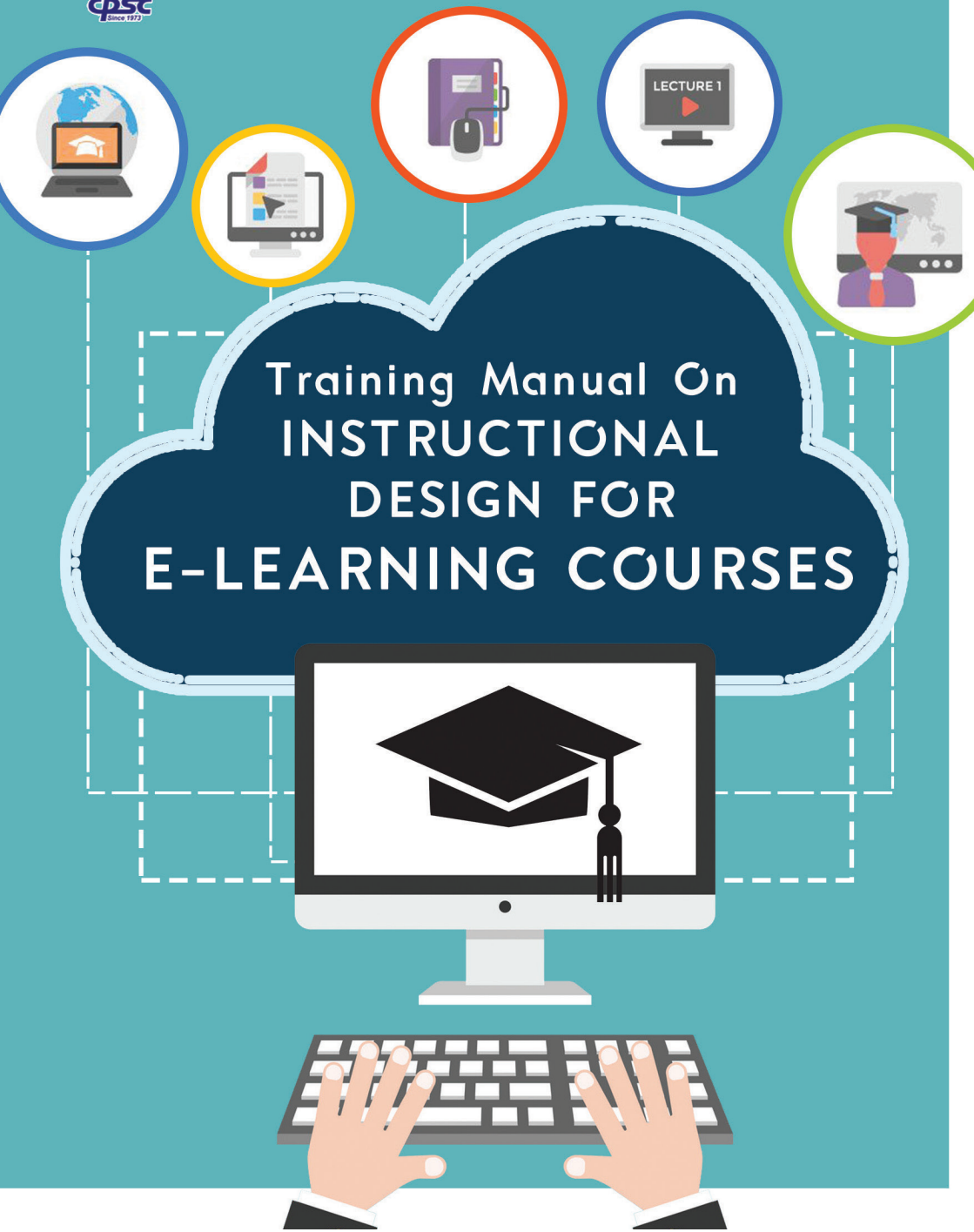
Inter-governmental International Organization
Colombo Plan Staff College
for Human Resources development in Asia and the Pacific Region



Training Manual On INSTRUCTIONAL DESIGN FOR E-LEARNING COURSES

Preface

This training manual is a guiding document for a trainer in conducting training activities related to designing of e-learning courses in TVET. It is prepared with the contents collected from different documents and especially designed to encapsulate the needs of the TVET leaders, managers and faculties/instructors in practical and easy strategies to convert TVET in a sustainable development.

The purpose of preparing this document is to provide a fundamental and step-by-step process for the guidance of the TVET trainers, administrators and academics, which are the target users of this manual.

This training manual recognizes the dynamic nature of the topic and thus, can be edited or changed as the authors see fit. It is designed to build the capacity of TVET practioners on Re-designign Teaching and Learning Material in line with new latest IT technologies that the trainers can apply to the present training context or to the scenario of their respective countries and localities.

This training manual does not guarantee the success of the training as it is up to the trainers and administrators to manage the activities during the training proper and derive the best outputs from their participants. However, it provides clear, concise and informative strategies that were adopted from CPSC's own experience on the subject as well as from my own knowledge and expertise.

As CPSC successfully implemented ICT in TVET programs in the past, this is a testament of CPSC's continued commitment to provide a simple, applicable and innovative publication that is targeted to increase the knowledge of its trainees.

We hope that this manual will fulfill its intended purpose and may you be able to find inspiration and ideas for its use and dissemination.

Best of luck!

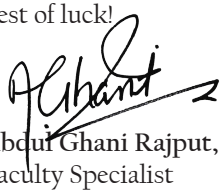


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Table of Contents

INTRODUCTION

To foster economic development, it may not important to change thinking and lifestyle but also crucial to change a culture in TVET (Technical Vocational Education and Training) setting. The culture change is only possible by adopting ICT practices in education and training. TVET system in the world today are undergoing major shifts in their training delivery systems to be able to accommodate shifting industry demands towards Industrial Revolution 4.0 and in the lifestyles of people.

The main objective of TVET system across the world is to prepare trainees for specific trades, crafts and careers at various levels of Vocational Qualification Framework (VQF) from a market oriented trade such as tourism, agriculture, construction, automobile etc. In Asia Pacific region, most TVET authorities are still using traditional methods in teaching and learning process, where a trainee must be physically present in classroom and the trainer is mostly the source of the training content while the trainee is only a recipient. The current dynamic of TVET and world of work environment is a shift from the norm such a SMART factory concept.

Internet-based learning or e-learning in TVET has become a current trend and requirement of future needs of the industry due to the disruption of industrial revolution 4.0. Specifically, e-learning is the term broadly used to describe "instructional content or learning experience delivered or enabled by electronic technologies". E-learning provides a flexible system of information dissemination which is not confined to only regular day time activities but can also take place in a variety of locations including homes, schools, libraries internet cafes and open fields. With e-learning, the TVET instructors will be able to reach learners in different set-ups using the available diverse ICT resource to meet the learners' needs. The purpose of this training manual is to provide detailed guidance on designing and developing an e-learning course for trainers, instructional designers and TVET practitioners in line with industry emerging industry requirements to produce skilled workers.

This training will also covers the methodology, skills and techniques necessary for developing effective and useful e-learning courses. The manual will also cover all the important elements of course design regardless of the context. This manual is based on the guidelines provided by Food and Agriculture Organization of the United Nations (FAO, 2011) on e-learning course development.

OBJECTIVE OF TRAINING MANUAL

To develop the capacity of TVET practitioners on the development of elearning courses, this training manual is the first step towards designing instructional material on e-learning. The manual equips trainers, instructors, curriculum developer with a set of competencies and tools that allows them to:

- Explore current theories, principles, methodologies, and techniques of online learning;
- Create interactive e-Learning solutions that meet the learners' needs;
- Gain strong knowledge and skills to design e-Learning interactions that increase learning effectiveness and decrease costs;
- Develop rich media E-learning resource for Tourism, Construction and Agriculture sector etc;
- Customize their own learning management system that they can use in their institutions for online delivery;
- Apply ICT tools and techniques in class delivery;;

CONTEXT OF THE TRAINING

Electronic learning, popularly called e-learning, is one of the most popular forms of training now a days to meet the demand of the industry. Lamichhane (2018) discussed that educators are faced with the challenges of adapting their teaching styles to accommodate a new generation of digital learners. These digital learners, who are now entering monotechnic, polytechnic, colleges and universities, have learning

expectations, styles, and needs different from past students. The question is how to adapt new teaching & learning strategies to accommodate the digital learners, in light of their preferences for digital literacy, experiential learning, interactivity, and immediacy? Therefore to address this question, we have to conduct this training in order to build the capacity of TVET practitioners on development of instructional design for e-learning courses. In this context, this training manual will support and guide trainers to build around the learning needs on development of e-learning courses. The target audience such as trainers, curriculum developers, facilitators, assessors, technical staff from CSOs, NGOs, and other civil society actors being trained and will be benefited from this training manual.

TRAINING PLAN

Technology is driven by TVET (Technical Vocational Education and Training), since TVET not only spawns technology by pull of demand and innovation, but also diffuses it by way of transfer of knowledge and skills. The objective of training plan is to identify most appropriate training activities required to achieve the desired goals of the training program. The training plan also provides a clear understanding and outline the following information.

- Who will deliver the training?
- Will the training happen? and
- Where will the participants convene to receive the structured component of the training?

It is flexible enough to meet the needs of trainers and trainees. It includes training design (objectives, components/ competencies, schedule, training modes/methods), training resources, and roles of trainer, trainees, organization and resource person. Some training plans also include assessment and certification arrangements. In addition, it should have a contingency plan that will outline all the possible scenarios.

METHODS USED IN TRAINING

There are numerous methods and techniques are available to conduct a

training program. In this manual, most effective methods are recommended to e-learning instructional design such as brainstorming, lecture, audio visual, group work, exposure visit and others. However, resource person's are free to device their own strategies depending on the objectives of the training.

LECTURE

A lecture is "an oral presentation intended to present information or teach people about a particular subject" (Lamichhane, 2018) . That method is useful if the trainer intends to apply this for the knowledge delivery part. In this training, lectures are used to convey the following information to the participants. Figure 1 elaborates the information below.

AUDIO VISUAL METHOD

In order to trained participants on present day need such as innovation in industrial revolution, Audio visual method is very important in teaching-learning process. The audio visual method has great significance, interesting and impact full on new digital era such as smart factory or simulator (Massive Open Online Courses). Audio literally means 'hearing' and visual means that which is found by seeing. So, which endeavor to make the knowledge clear to us though our sense are called audio visual techniques. Currently, TVET professional are looking to become better and to further develop his/her skills and knowledge to develop and introduce e-learning courses. However, we need a mechanism to understand the needs of new teaching learning material in line with e-learning requirements. Therefore audio visual methods is only way to simulate the future industry needs and provide the real sense of use of ICT in workplace environment.

GROUP WORK

The best way to explore innovation in learning is through group work. It is an effective method in imparting knowledge, skills and attitudes to a large number of participants. In order to maximize its benefits, the trainer can explore assigning a

project task for two or more participants in one group. They can create an action plan, revise existing TVET curriculum, online assessment or initiatives, or other possible interventions. As it is a group activity, the trainer has to ensure that the contents of the outputs will be applicable to all trainees.

PROJECT WORK

ProjectWork is a learning experience which aims to provide trainees with the opportunity to synthesize knowledge from various areas of of teaching and learning, and critically and creatively apply it to real life situations such as IR4.0 needs. This process, which enhances trainees' knowledge and enables them to acquire skills like collaboration, communication and independent learning, prepares them for lifelong learning and the challenges ahead.

BRAINSTORMING

Brainstorming is a method for generating ideas to solve a design problem. It usually involves a group, under the direction of a facilitator. The strength of brainstorming is the potential participants have in drawing associations between their ideas in a free-thinking environment, thereby broadening the solution space.

EXPOSURE VISIT

In this method, the participants will visit TVET institutions, software house which are implementing e-learning programs in their operations and other organizations. This is to inspire and motivate the participants to adapt these practices or develop their own initiatives by showing them the real scenario. Exposure visits enable participants from different regions to interact with and learn from each other, allowing them to view practical examples of successful integration of IR 4.0 elements in TVET. It is hoped that the participants will be able to replicate any successful models to the benefit of their own institutes, communities and industry.

ICE BREAKERS

An ice breaker is an activity, game, or event that is used to physically motivate the participants to listen and participate by warming up the conversation or introduce stretching exercises that are simple but fun. Ice breakers are "any event that requires people to comfortably interact with each other and a trainer is an opportunity to use an ice breaker"(Heathfield, 2017).

THE PROGRAM BOOK

The program is an important part of training. It is a printed guide of a plan of action aimed at accomplishing a clear training objective or objectives. It describe that what work is to be done, by whom, when and what means or resources will be used including other important pertinent information pertaining to the conduct of the training.

COMPONENTS OF THE PROGRAM BOOK

INTRODUCTION

This is the introductory part of the program book which provides information on what the book is going to be about. It gives scope, context, and background information by simply giving brief understanding about the topic. talks about why the book is important, and gives an overview of the contents. It's also including main purpose of the program highlighted and potential outcomes.

A good introduction should identify your topic, provide essential context and indicate your particular focus in the training session.

RATIONALE

In developing the rationale, a clear explanation of the reason for the program's organization or a general statement about the program's relevance in addressing the challenges is recommended. Include diagrams, pictures and illustrations if necessary.

TRAINING CONTENTS

The training content is the information presented to learners with the aim of providing knowledge, skills and attitude. The training manual content is based on four main sections.

- Part I: Introduction
- Part II: Designing an e-learning course
- Part III: Creating interactive content
- Part IV: Managing and evaluating learning activities

PART I - INTRODUCTION

Many education and training providers are using e-learning because it can be as effective as traditional training at a lower cost. Developing e-learning is more expensive than preparing classroom materials and training the trainers, especially if multimedia or highly interactive methods are used. However, delivery costs for e-learning (including costs of web servers and technical support) are considerably lower than those for classroom facilities, instructor time, participants' travel and job time lost to attend classroom sessions. Moreover, e-learning reaches a wider target audience by engaging learners who have difficulty attending conventional classroom training because they are:

- geographically dispersed with limited time and/or resources to travel;
- limited from participating in classroom sessions because of cultural or religious beliefs;
- busy with work or family commitments which do not allow them to attend courses on specific dates with a fixed schedule;

E-learning can offer effective instructional methods, such as practising with associated feedback, combining collaboration activities with self-paced study, personalizing learning paths based on learners' needs and using simulation and games. Further, all learners receive the same quality of instruction because there is no dependence on a specific instructor. The e-learning program is used to develop the following type of skill?

- Cognitive Skills
- Interpersonal Skills
- Psychomotor Skills

E-learning is a good option when there is a significant amount of content to be delivered to a large number of learners and learners come from geographically dispersed locations. In addition to this, it is also good for learners are highly motivated to learn and appreciate proceeding at their own pace and the course addresses long-term rather than short-term training needs.

E-LEARNING APPROACHES:

In In e-learning, there are two general approaches.

- Self-paced e-learning - courseware is usually housed on a Web server, and learners can access it from an online learning platform or on CDROM at any time and any where.
- Instructor-led and facilitated e-learning. The course is scheduled and led by an instructor and/ or facilitator through an online learning platform.

E-LEARNING COMPONENTS:

The e-learning approaches can combine different types of e-learning components, including:

- e-learning content;
- e-tutoring,
- e-coaching, e-mentoring;
- collaborative learning; and
- virtual classroom

Figure 1: Self paced e-learning

SYNCHRONOUS AND ASYNCHRONOUS E-LEARNING:

Synchronous events take place in real time. Synchronous communication between two people requires them to both be present at a given time. Examples of synchronous activities are chat conversations and audio/video conferencing. The asynchronous learning events are time independent. A self-paced course is an example of asynchronous e-learning because online learning takes place at any time. E-mail or discussion forums are examples of asynchronous communication tools.

Table 1: Examples of synchronous and asynchronous

Synchronous	Asynchronous
Chat and IM	E-mail
Video and audio conference	Discussion forum
Live webcasting	Wiki
Application sharing	Blog
Whiteboard and Polling	Webcasting

QUALITY OF E-LEARNING:

The quality of an e-learning course is enhanced by:

- learner-centred content: E-learning curricula should be relevant and specific to learners' needs, roles and responsibilities in professional life. Skills, knowledge and information should be provided to this end.
- granularity: E-learning content should be segmented to facilitate assimilation of new knowledge and to allow flexible scheduling of time for learning.
- engaging content: Instructional methods and techniques should be used creatively to develop an engaging and motivating learning experience.
- interactivity: Frequent learner interaction is needed to sustain attention and promote learning.
- personalization: Self-paced courses should be customizable to reflect learners' interests and needs; in instructor-led courses, tutors and facilitators should be able to follow the learners' progress and performance individually.

BLENDED LEARNING:

Blended learning combines different training media (e.g. technologies,activities and events) to create an optimum training programme for a specific audience. The term "blended" means that traditional instructor-led training is being supplemented with electronic formats. The terms "blended learning", "hybrid learning", "technology-mediated instruction", "web-enhanced instruction", and "mixed-mode instruction" are often used interchangeably in research literature.

EXAMPLES OF CPSC E-LEARNING COURSES:

The CPSC experts developed many e-learning courses on TVET to support capacity development of CPSC members' countries TVET practitioners. CPSC Online Course Ubiquitous Realtime System of Education

(OnCourse) is a web-based learning management system for human resources development with advanced and cutting edge training technology platform.

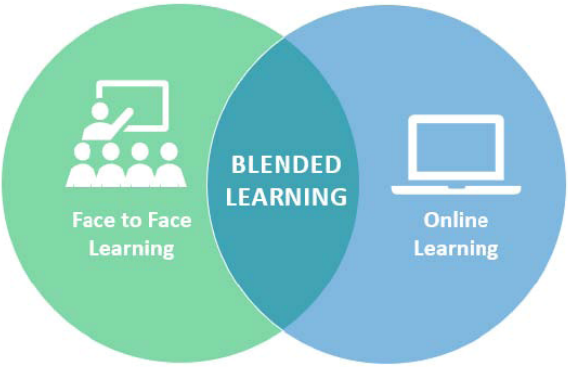


Figure 2: Sample of Blended Learning Approach. Diagram adapted from, Granite School District (2019). Retrieved from: https://www.graniteschools.org/edtech/tip/blended-learning/

All the e-learning courses on different areas are available free of charge from the CPSC OnCourse website (www.oncourse.cpsctech.org). The CPSC is extended its services and continue innovating its blended learning system for human resources development in Asia and the Pacific Region.

The learner needs to register in order to take register and can choose between studying online, downloading the courses on there laptop or computer. Courses consist of interactive lessons including text, images, animations and interactions. It has a set of slide presentations that trainers can use.

Figure 3: CPSC OnCourse Learning Management System. Image adapted from Colombo Plan Staff College OnCourse. Retrieved from: https://www.oncourse.cpsctech.org

Key points:

- E-learning is a convenient option for organizations in certain situations (e.g. when there is a need to reach many geographically dispersed learners).
- In a self-paced e-learning course, learners can study course materials at any time they wish. This requires that learners have access to a set of interactive and self-contained materials. Facilitated or instructor-led e-learning takes place at a specific time and usually integrates self-study with collaborative activities such as discussions or group work.
- Facilitated and instructor-led e-learning courses use communication tools which allow learners to communicate with facilitators and other participants. Tools can be asynchronous, such as e-mail or discussion groups, as well as synchronous, such as chat and audio conference.
- Both facilitated and self-paced e-learning activities and content should conform to a set of quality standards to ensure the effectiveness of the learning programme.
- In a blended approach, e-learning sessions can be integrated with face-to-face traditional activlit7ies using a variety of approaches.

WHAT IS NEEDED TO DEVELOP AN E-LEARNING COURSE:

Good design and planning, while crucial for every type of training programme, are even more important for e-learning projects. In traditional training, the largest effort is in the delivery of training sessions, while in e-learning, it is in the design and development of structured materials which must be self-contained and able to be used multiple times without making ongoing adjustments.

Well-developed e-learning courses can be delivered many times to different learners using the same materials. In addition, individual course components (e.g. units, lessons and media elements such as graphics and animations) can be reused in different contexts. For example, interactive e-lessons developed for a given self-paced e-learning course can be integrated into facilitated courses or can become part of another self-paced e-learning course.

INSTRUCTIONAL DESIGN PRINCIPLES:

An instructional design model can be used to define the activities that will guide e-learning development projects. Instructional design is the systematic development of specifications using learning and instructional theory to ensure the quality of training. In job-related training, the aim of instructional design is to improve employee performance and to increase organizational efficiency and effectiveness. There are many instructional systems design models, most of which are based on popular ones such as the ADDIE (Analysis, Design, Development, Implementation and Evaluation) model (see diagram in Figure: 5).

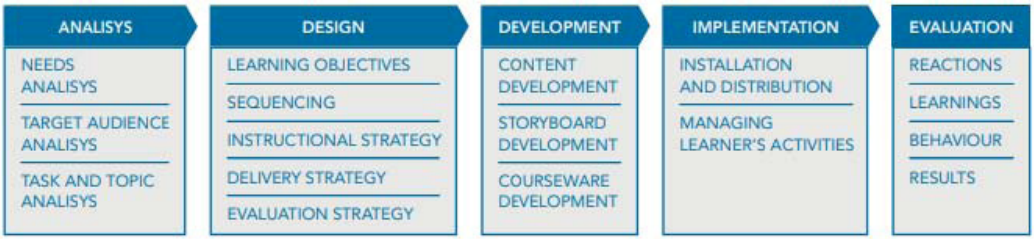


Figure 4: ADDIE Instructional Design Model (FAO, 2011)

ANALYSIS

Before you start developing any content or training strategies, you shouldanalyze the current situation in terms of training, knowledge gaps etc. The needs analysis also allows the identification of general, high-level course goals. Target audience analysis is another crucial step. The design and delivery of e-learning will be influenced by key characteristics of the learners (e.g. their previous knowledge and skills, geographical provenience, learning context and access to technology). Analysis also is needed to determine the course content such as skills and knowledge.

DESIGN

The design stage encompasses the following activities:

- formulating a set of learning objectives required to achieve the general, high-level course objective;
- defining the order in which the objectives should be achieved (sequencing); and
- selecting instructional, media, evaluation and delivery strategies.

The outcome of the design stage is a blueprint that will be used as a reference to develop the course. The blueprint illustrates the curriculum structure (e.g. its organization in courses, units, lessons, activities); the learning objectives associated with each unit; and the delivery methods and formats (e.g. interactive self-paced materials, synchronous and/or asynchronous collaborative activities) to deliver each unit.

DEVELOPMENT

At this stage, you can begin to create the courses. You will be heavily guided by the prototype/storyboards at this point. Each element of the course should be developed to match the design phase. The core of the content has already been decided. All you need to add is a level of detail and polish to the courses. For example, e-learning content may consist of only simpler materials (i.e. those with little or no interactivity or multimedia, such as structured PDF documents) which can be combined with other materials (e.g. audio or video files), assignments and tests. In that situation, storyboard development and the development of media and electronic interactions would not be conducted. The development of multimedia interactive content is comprised of three main steps:

- content development
- storyboard development
- courseware development

IMPLEMENTATION

At this stage the course is delivered to learners. The courseware is installed on a server and made accessible for learners. In facilitated and instructor-led courses, this stage also includes managing and facilitating learners' activities.

EVALUATION

An e-learning project can be evaluated for specific evaluation purposes. You may want to evaluate learners' reactions, the achievement of learning objectives, the transfer of job-related knowledge and skills, and the impact of the project on the organization.

THE GROUP MEMBERS:

Participation in e-learning projects requires capabilities in certain areas –such as technology and media-related skills – that are not essential intraditional education or training. For example, a subject matter expert (SME) in an e-learning project still provides the required knowledge for the course, but does not directly teach the learners. Instead, the SME interacts with another professional, the instructional designer (ID), who defines the activities and e-learning content formats and develops the e-learning products. The following roles are required to perform the ADDIE model's activities:

- Human resources/Capacity development manager
- Instructional designers (IDs)
- Subject matter experts (SMEs)
- Web developers and media editors
- Course administrators, online facilitators and tutors
- Technical support specialists

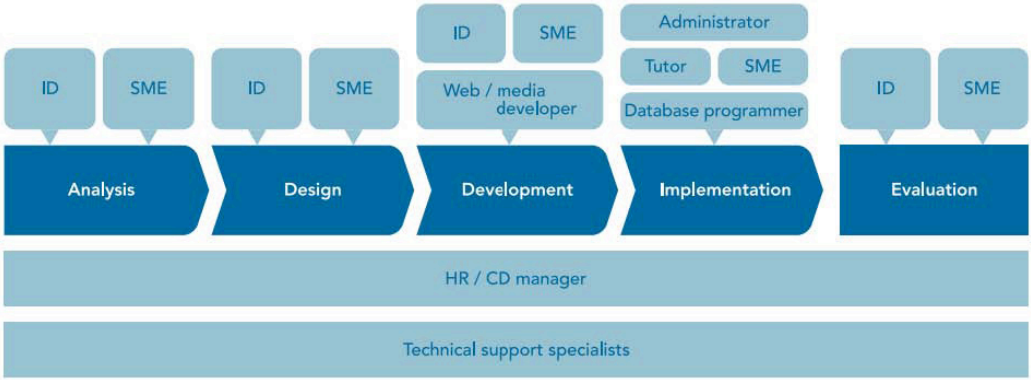


Figure 5: Areas of responsibility for key roles in the ADDIE process

The Technology Requirement:

Technology is required to produce and deliver e-learning. Different tools can be used to produce e-learning content, depending on which file formats will be used and the nature of the desired final product. Microsoft PowerPoint or even Word can be sufficient to create simple learning resources like a presentation or a tutorial. However, more sophisticated tools are required if you want to create interactive content. Learning platforms are usually referred to as a learning management system (LMS) or a learning content management system (LCMS), terms which often are used interchangeably. There are a variety of learning platforms with different levels of complexity, and despite their differences, they also have many features in common. Their most important features include:

- learning content management: creation, storage, access to resources;
- curriculum mapping and planning: lesson planning, personalized learning paths, assessment;
- learner engagement and management: learner information, progress tracking; and tools & services: forums, messaging system, blogs, group discussions.

Key points:

- A series of activities are required to develop e-learning. According to the ADDIE model for instructional design, they can be grouped into five main stages: Analysis, Design, Development, Implementation, Evaluation.

- The following roles are generally required at different stages of the process (but some of them can be combined into a single job profile): project manager; instructional designer; subject matter expert; online administrator; e-tutor/facilitator; web developer; media editor; technical support specialists.
- Technology is needed both to create e-learning material and make it accessible to learners. Big projects may require the use of an LMS or other type of learning platform to track and administer learners' activities and manage e-learning content.

PART II: DESIGNING AN E-LEARNING COURSE

The Instructional Design theory you choose has the power to make or breakyour e-learning course. Therefore, it's essential to evaluate your subject matter, target audience, learning objectives, and online learners' needs before making your final decision.

The analysis and design stages are essential to ensure course effectiveness and learners' motivation and participation (See figure: 5). Analysing learners' needs and learning content, finding the appropriate mix of learning activities and technical solution is crucial to creating an effective and engaging course.

Analysis:

- NEEDS ANALYSIS: In order to develop a effective e-learing course, it is important to validate the need of e-learning intervention and to provide crucial information regarding which gaps need to be addressed to ensure that the intervention is targeted to institution needs.
- ANALYSING THE TARGET AUDIENCE: Analysing the target audience is required to identify a variety of factors that will influence the course design such as learners' previous knowledge, learners' IT skills and technical expertise, amount of time region or geographic area etc.
- TASK ANALYSIS: It helps to define the content of job-oriented learning courses that aim to develop or reinforce job-related skills.
- TOPIC ANALYSIS: The task analysis is usually completed by conducting a topic analysis.The topic analysis aims to identify course content and classify content elements.

SMEs and IDs work together to perform the analysis. This process helps the ID to familiarize with the content; moreover, it forces the SME to work through each individual content element and indicate the most important and challenging aspects that should be considered. During this process, both of ID and SME have the opportunity to view the content from the learner's perspective.

If the course is intended primarily to provide information or achieve educational objectives broader than improving job performance, the ID will skip the task analysis and directly conduct a topic analysis to define the major topics and subtopics for the course.

By looking at the tasks and content elements identified in the task and topic analyses, it is possible to translate the overall course goal into more specific learning objectives.

Design:

- LEARNING OBJECTIVES: A learning objective is a statement describing a competency or performance capability to be acquired by the learner. Objectives should be specified for the course as well as for each single activity.Clear learning objectives allow the development of learning activities which are really focused on learners' needs and provide the basis for evaluation tests.
- COURSE SEQUENCE: To sequence the learning objectives with structure of the course, different methods can be used. The outcome of sequencing is a course structure where each element corresponds to a specific learning objective and contributes to the achievement of the overall course goal.
- DEFINING INSTRUCTIONAL METHODS: The design of an elearning course will involve using a combination of the following instructional methods:

  1. Expositive methods

  2. Application methods

  3. Collaborative methods

  Each method can be delivered in different formats, using different types of media and communication tools. For example, a presentation can be delivered as a Power Point file or as a

recorded (or live) video presentation. An online discussion can be carried out in a discussion forum or through a Skype call.

- DEFINING THE DELIVERY STRATEGY: To define the delivery strategy, the following factors should be considered.

  1. **Learner-related factors**
  2. **Technology aspects**
  3. **Organizational requirements and constraints**

- EVALUATION STRATEGY: First establish the purpose of the evaluation. The purpose might be to: check the quality of the course to improve it before it is implemented (formative evaluation); measure the effectiveness of training and learning immediately after the course has been implemented (confirmative evaluation); or evaluate an old course to see if it is still valid or needs to be modified (summative evaluation). The overall evaluation strategy and the methods for assessing learners' progress should also be defined as part of the design stage.

PART III: CREATING INTERACTIVE CONTENT

This part will describe the process of developing e-lessons including preparing the content, applying instructional techniques, media and creating the final interactive product using appropriate software and authoring tools. The manual only define the necessary elements. The details of each elements will be discussed during the training delivery of this manual.

PREPARING CONTENT

Content development is based on the course (or curriculum) plan, which describes learning objectives and topics to be covered.In authoring the content, subject matter experts' should provide all the knowledge needed to meet the learning objectives and avoid unnecessary information. The language should be direct, informal, easily understood by diverse people and culture- and gender-sensitive.

CREATING STORYBOARDS

The term "storyboard" is taken from movie production where it indicates a visual representation of the various scenes of a film. In e-learning, the storyboard describes screen by screen what will happen in the final e-lesson.

The storyboard is not a final product. It is an intermediate product which is then used by Web developers to create the final interactive e-lesson. In creating the storyboard for an interactive e-lesson, the ID reorganizes the content provided by the SME into a sequence of slides, which will correspond to the screens of the final interactive lesson.

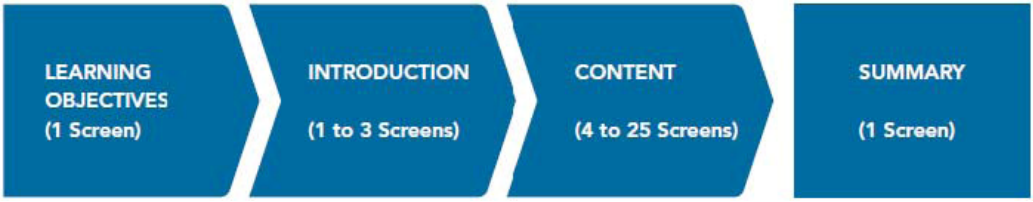


Figure 6: e-lesson structure example. (FAO, 2011)

When creating storyboards for e-lessons, IDs may choose among diverse techniques for presenting content, according to the type of content and the desired instructional approach.

- scenario-based approach;
- storytelling;
- demonstration-practise method;
- toolkit approach and adding examples;
- Developing practice and assessment tests

COURSEWARE DEVELOPMENT

The last step of the development stage, which is the creation of the final interactive courseware. The following two topics are very important to develop coursewear.

- Authoring tools for producing e-learning courseware; and
- Types of Authoring Tools
- Select the right authoring tool.

A number of authoring tools exist for producing courseware. Authoring tools are specifically designed for producing e-learning content without needing programming skills. However, media editors are usually needed to develop graphics and other media elements. There are three main kinds of authoring tools: template-based, timeline-based and object-based. Compared with template-based tools, object-based tools offer more flexibility for content developers but require more development time. When selecting your authoring tools, consider important factors such as team expertise, development costs, desired output, creative freedom and community or vendor support.

PART IV: MANAGING AND EVALUATING LEARNING ACTIVITIES

The part discuss and provide guidance on how to manage and evaluate learning activities. To manage and evaluating learning activities, the following two approaches are good.

- Online facilitated Courses
- Instructor-led courses

Online facilitated and instructor-led courses can include the following components: a kickoff event, core learning activities (e.g. self-study, online discussions, group work, virtual classroom), final assessment, conclusion and feedback. A course syllabus needs to be developed which reports sessions and learning objectives. A set of storyboards should detail the activities that will be carried out in each session. Activities can be realized by using a range of tools, both synchronous and asynchronous, which are selected according to learners' preferences and technical requirements. Some of them, such as wikis, blogs and chats, are called "social" or "Web2" tools. Evaluating learning activities is crucial for both self-paced and facilitated online courses. Evaluation allows you to assess learners' progress, the quality and effectiveness of the course, and improve future learning activities and content.

LEARNING PLATFORM

There are number of different types of learning platform are available which can be used to host e-learning courses and make them available to learners. The following are the types of learning platform:

- Virtual learning environments (VLEs) like Moodle and Blackboard.
- Learning content management systems (LCMS)
- Learning management system (LMS)

Learning platforms are used by organizations and institutions to deliver and manage their learning processes. A learning platform is a set of interactive online services that provide learners with access to information, tools and resources to support educational delivery and management. Learning platforms are usually referred to as VLEs (virtual learning environments), LMSs (learning management systems) or LCMSs (learning content management systems). These terms are often used interchangeably, and despite differences between these platforms, they have many features in common. Solutions for low Internet connectivity can be considered, such as LAN (local area network)-based LMS, offline players and mobile-learning technologies.

GROUP WORK

To reinforce the e-learning courses designing behaviours or skills, the group work tasks are very important in this type of training program. The group work will involve participants actively on set of tasks, either in or out of the training venue.

Group work include any assignment or task that require participants to work in group. Thus, it is important to arrange a co-facilitator during the group discussion as part of the circle. Small group work may be used within the training program.

Small group work may be used within the workshop. There are three characteristics that need to be present for small group work to be effective.

- There should be active participation from all the members of the group
- There needs to be specific task
- There needs to be reflection

Example:

Group Work

Identify the course content based on learners' needs using needs analysis technique for an e-learning course

Objectives

After the group activity the participants will be able to:

- Understand the use of needs analysis techniques to identify the course content based on learners' needs.
- Apply needs analysis techniques to fill a gap in professional knowledge and skills for an e-learning course
- Apply needs analysis to define course structure for an e-learning course

Input

1. Special Lecture
2. Theme Papers
3. Discussion and deliberations of issues and concerns

Instructions

1. Decide a course to identify the course content and learning objectives in order to organize the course into a logical flow.
2. Brainstorm as a group on a specific course goal such as "improving food security analysis and promoting its use in decision-making"
3. Identify the skills and knowledge require to achieve the course goal
4. Present needs analysis to plenary

Output

Needs Analysis report to be submitted to a funding organization

SCHEDULE OF ACTIVITIES

It is another important element of a training program which plan the list of activities, task and events. It is a sequence of events/activities in the chronological order in which such things are intended to take place.

An example is shown below (see Table 2). You might like to design your own schedule of activities depending on your creativity. The important thing is to mention the activities, names of the people responsible, time allocations, dates, topics and other additional information or note in the schedule that should be communicated to the participants.

In this training manual, we considered two weeks to implement the training using this manual. In first week, Part I and II will be delivered and second week is cover Part III and IV of this manual.

Table 2: Sample Schedule of Activities

Days	9:00 - 10:30 A.M.		11:00 A.M. – 12:30 P.M.		1:30 - 3:00 P.M.		3:30 - 5:00 P.M.
Week 1 - Part I & II of E-Learning Course Designing							
Day 1	**Opening Program**	TEA BREAK	**Program Orientation** **House Rules** **Levelling of Expectations** **OnCOURSE Registration** **(Program Coordinator)**	LUNCH	**Theme Paper 1** Overview and Concept - Designing and Developing E-Learning Course Ice-Breakers during lecture **(Group Work 1) Participants**	TEA BREAK	**Presentation on Group Work (Participants)**
Day 2	**MILy** **Theme Paper 2** Elements to Develop an E-Learning Course **(Resource Person)**		**Presentation on Group Work (Participants)**		**Theme Paper 3** Basic Instructional Design Principles to develop eLearning course **(Resource Person)**		**Group work Presentation**
Day 3	**Theme Paper 4** Identifying and organizing e-learning course content Ice-Breakers during lecture **(Resource Person)**	TEA BREAK	**Presentation on Group Work (Participants)**		**Theme Paper 5** Defining instructional, media, evaluation and delivery strategies **(Resource Person)**		**Group work Presentation**
Day 4 -5	**Individual Presentation on Part I & II of the Training Program** (Participants) Study Visit, Case Study on E-Learning (I-Mark Work Flow)						
Week 2 - Part III & IV of E-Learning Course Designing							
Day 6	**Theme Paper 6** Designing Interactive content (Preparing Content, Creating Storyboards, Courseware Development) **(Resource Person)**	TEA BREAK	**Presentation on Group Work (Participants)**		**Theme Paper 7** Managing and evaluating learning activities **(Resource Person)**	TEA BREAK	**Group work Presentation (Participants)**
Day 7	**Theme Paper 8** Develop different types of valid and reliable assessment items using E-Learning Tools		**Group Work 6** Practice developing Assessment items using E-Learning) **(Participants)**		**Theme Paper 9** Practice development of LMS. (Create online video lecture using online free available tool)		
Day 8- 9	**Study Visit** **Industry / University of the Philippines Open University (UPOU), Los Baños, Laguna** **Individual Presentation on Designing of E-Learning Tool** (Participants)						
Day 10	**Program Evaluation** **Closing Ceremony** **Awarding of Certificates**				**Departure from venue**		

TRAINING PROGRAM FRAMEWORK

Generally speaking, training program framework is managing training to enhance the overall operational performance and moving towards the final output. It is provide outline/skeleton of interlink items which supports a particular approach to a specific objective/s. It can be modified as per requirement by adding or deleting items. Usually, the program framework is represented graphically using the Input-Process-Output model. An graphical example of training framework based on input-process-output is illustrated below in table 3.

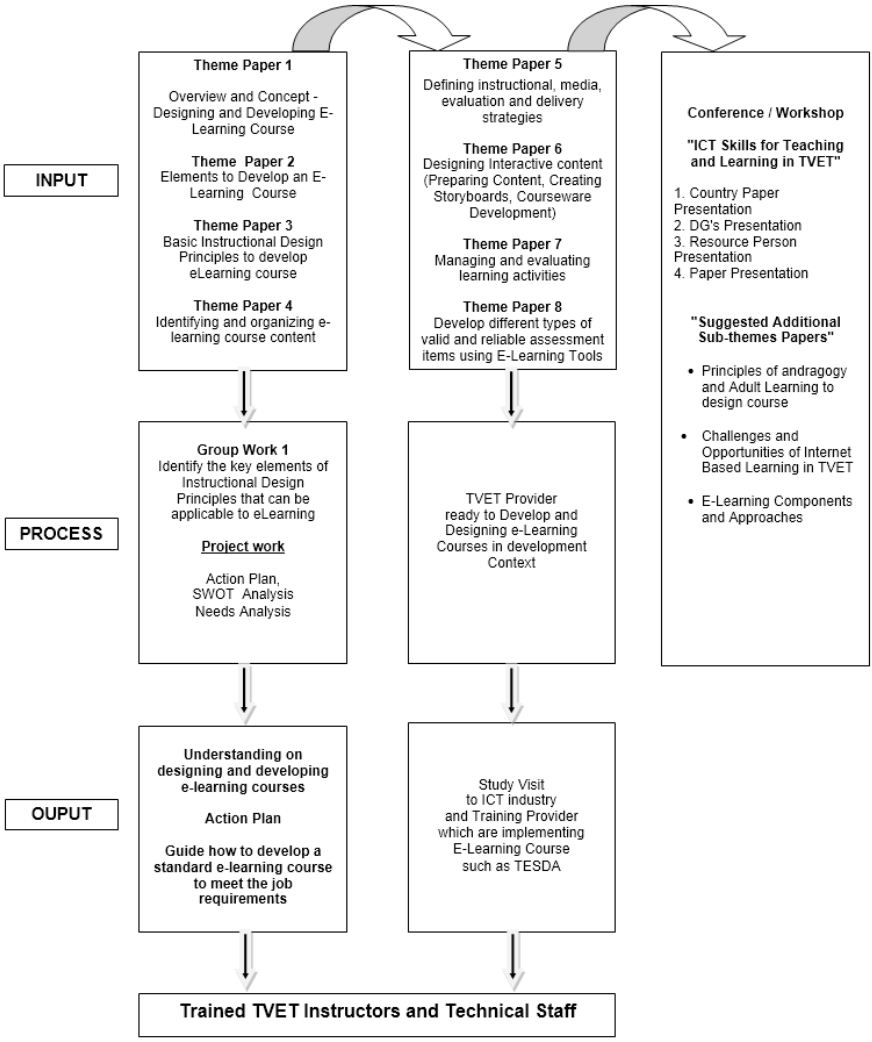
TRAINING PROGRAM MANAGEMENT

Training management is an action to carry out direction, coordination and transformation of activities to achieve output by personalities involved in the training program from planning to implementation. The personalities involve in the training management are program supervisors, program coordinator, local coordinator, international and national resource persons, and logistic staff to manage training effectively and efficiently. It is important to include their picture, name, designation/ office and contact details (email addresses or office/business numbers). This is to provide a record in case the participants would seek additional clarification on the topics delivered or interested in establishing connections with them.

ANALYSIS OF TRAINING OBJECTIVES FOR RELEVANCE

It is another important exercise of training program which ensure that the training program is well-prepared and ready to use for delivery of training. Following are the questions that will aid you in the analysis:

Table 3: Example, Input - Process - Output



- How objectives of the training is to be achieved? Usually, learning builds on learning. It may be useful to learn certain areas of knowledge and skills before learning new areas.
- Do I communicate my objectives effectively to my intended audiences?
- Will the objectives achieve the overall training goal(s)?

- What are the best learning activities to achieve the objectives?
- Do the methods match the participants' particular learning styles?
- Do the methods stretch their styles, too? Are the methods readily accessible? Do the methods take advantage of real-life learning opportunities?
- Do the activities include ongoing reflections about learning? The learners will benefit from regularly taking time to stand back and inquire about what is going on in the training, what are they learning and what, if anything, should be changed.
- What costs will be associated with developing and implementing your plan?
- How will you evaluate the competencies o participants? Think about facilities, technologies, personnel, special expertise, etc. You may want to update the "Budget".
- How will learners' manage time and stress during the learning?

PROGRAM/COURSE EVALUATION

A training program on instructional design for E-learning courses is based on three steps:

- Step 1: Planning of training on instructional design for Elearning program.
- Step 2: Implementation of the training; and
- Step 3: Evaluation of the training.

The evaluation is the final step ofthe training program cycle and it will be done before certificates of participation are handed out to the participants. The evaluation of the program is done online through onCourse website of CPSC. The results of the training evaluation are in the next phase of training planning to improve future training programs as shown by the arrow in the figure (JICA, 2010). The evaluation covers both administrative and academics aspects of the program.

CLOSING CEREMONY

The E-learning training program has opening and closing ceremonies. In the closing of the program, participants received training completion certificates and give recognition. It is expected that training is conducted in an organized and professional manner, as it is considered a semi-formal event. Special remarks

can be given by chief guest and remarks followed by participants' representative and program coordinator. It is important to ensure that the trainees have gained a substantial knowledge on designing of teaching and learning practices towards e-learning context needs and are capable of applying these lessons in a practical manner by trainer.

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Shared Vision 2023

The Inter-governmental TVET Leader for Sustainable Development

Mission

Transforming TVET towards Sustainable Societies through Outcome-Based Quality Training, Accreditation, Research and Image Building for stakeholders

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