



The Five Competencies of E-Learning

Edited by

Prof. Abdulmonem bin Abdul Salam Al-Hayani

Dr. Hisham bin Jameel Bardesi

Prof. Mohammed bin Ahmed Hassanien

Translated by

Dr. Sameh Salah Youssef

© Abdulmonem Abdul Salam Al-Hayani, Hisham Jameel Bardesi, Mohammed Ahmed Hassanien , 2021
King Fahd National Library Cataloging-in-Publication Data

Hassanien, Mohammed Ahmed

The Five Competencies of E Learning. / Mohammed Ahmed
Hassanien ; Hisham Bardesi ; Abdulmonem Alhayani ;
Sameh youssef .- Riyadh , 2021

95p ; ..cm

ISBN: 978-603-03-6571-5

1- English language - Study and teaching-
I-Hisham Bardesi(co. author) II-Abdulmonem
Alhayani(co. author) III-Sameh youssef(translator)
IV-Title

428.241 dc

1442/4298

L.D. no. 1442/4298

ISBN: 978-603-03-6571-5

The Five Competencies of E-Learning

Edited by

Prof. Abdulmonem bin Abdul Salam Al-Hayani

Dr. Hisham bin Jameel Bardesi

Prof. Mohammed bin Ahmed Hassanien

Translated by

Dr. Sameh Salah Youssef

1442/2020



Foreword

At the outset, we would like to stress that one of the reasons to write this book is that we are fully convinced that faculty members need to identify and understand the nature of the most important competencies that must be mastered to perfectly do their role in teaching and assessment of programs and courses that are taught in e-learning platforms. This is significant especially as this mode of education has expanded greatly more recently in the universities and educational institutions around the world. In addition, the world needs the educational institutions stimulate e-learning to have a positive impact on the continuity of the educational process and support faculty members and students to boost their skills in e-learning. While we appreciate the role played by students and faculty members in our universities, they continue to teach us a lot.

Special thanks go to both Professor Abdul Rahman Al-Sulami and Dr. Mohamed Abdulmaksod Abdullah. We appreciate their sincere efforts as additional contributors who helped bring this book to life.

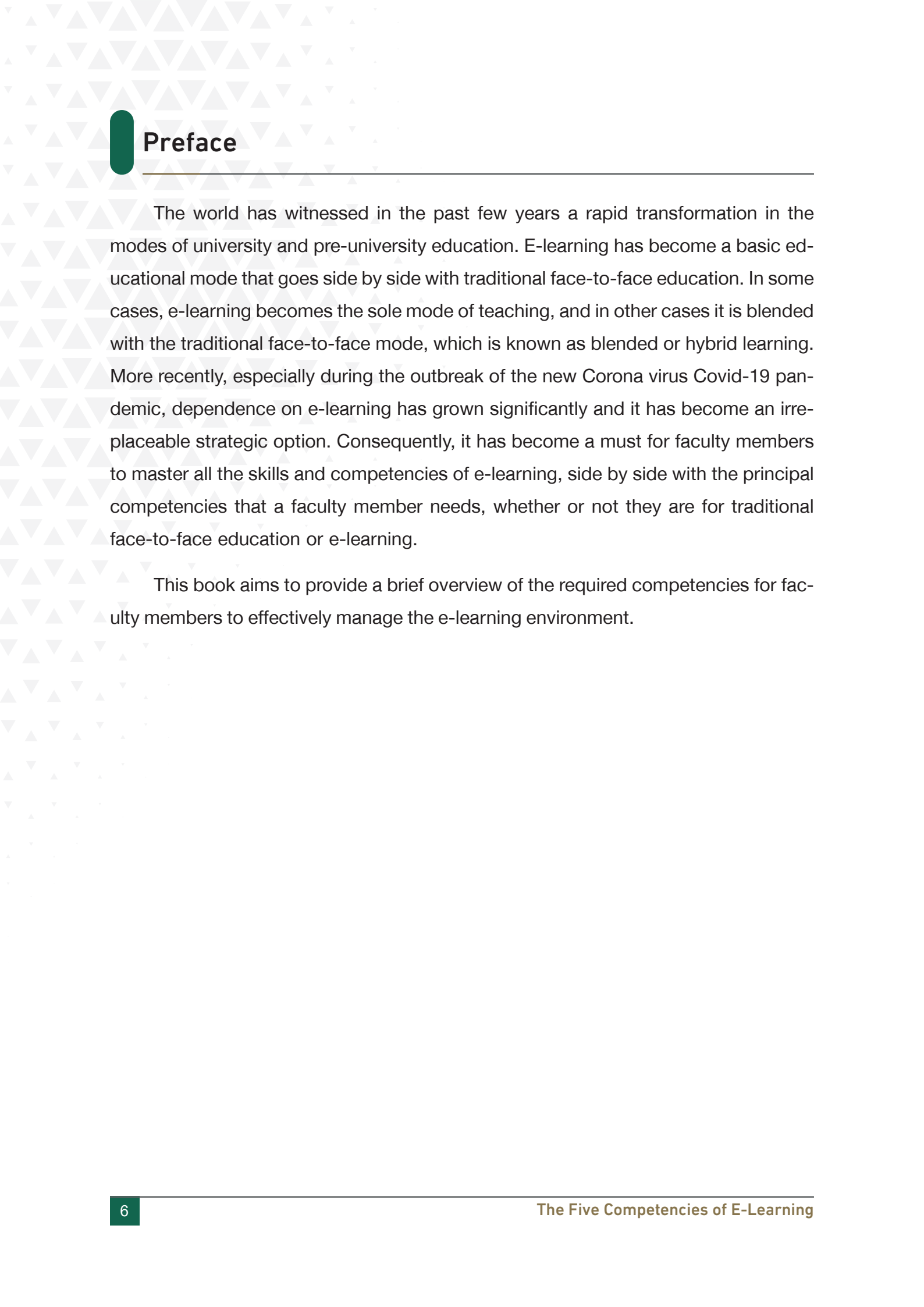
The Authors

Table of Contents

Preface	6
Introduction	7
E-Learning	7
The Concept of E-Learning	7
Core Competencies of a Faculty Member	8
Role of Faculty Member in E-Learning	9
Chapter 1: Effective Communication in an Electronic Environment	11
1- Communication Tools in Synchronous E-Learning	13
2- Communication Tools in Asynchronous E-Learning	13
3- Tools and Management of Content and E-courses	14
Features of Effective Communication in an Electronic Educational Environment	14
Chapter 2: The use and employment of technology in E-Learning	17
Learning Management Systems (LMS)	22
Chapter 3: E-Course Design	33
ADDIE Model for E-Course Design	35
Approved Scientific Standards for Designing and Producing E-courses	37
Designing E-Courses and the Five Competencies	37
Chapter 4: Engaging students into the educational process in E-Learning	39
Attendance and Presence in Virtual Classes and Distance Education	40

Table of Contents

Interaction in E-Learning	43
Types of Interaction	43
Interaction Mechanism	44
I. Student-Content Interaction	44
II. Student-Student Interaction	45
III. Student-Faculty Interaction	46
Learning Strategies in E-learning	47
Principles of the effective application of E-Learning strategies	56
Summary	57
Chapter 5: Student Assessment in E-Learning	59
Standards for Effective Assessment of Students' Performance in E-Learning and Distance Education	60
Procedures for Assessment of Students' Performance for E-Learning	62
Methods of Assessment of Students' Performance in E-Learning	66
Constructive Feedback in E-Learning	78
Appendix 1- Terminology for E-Learning	82
Appendix 2- General controls for E-Learning and distance education	86
Appendix 3- General Guidelines for Virtual Lectures	88
Appendix 4- Approved Scientific Criteria for E-Course Design	90
References	91



Preface

The world has witnessed in the past few years a rapid transformation in the modes of university and pre-university education. E-learning has become a basic educational mode that goes side by side with traditional face-to-face education. In some cases, e-learning becomes the sole mode of teaching, and in other cases it is blended with the traditional face-to-face mode, which is known as blended or hybrid learning. More recently, especially during the outbreak of the new Corona virus Covid-19 pandemic, dependence on e-learning has grown significantly and it has become an irreplaceable strategic option. Consequently, it has become a must for faculty members to master all the skills and competencies of e-learning, side by side with the principal competencies that a faculty member needs, whether or not they are for traditional face-to-face education or e-learning.

This book aims to provide a brief overview of the required competencies for faculty members to effectively manage the e-learning environment.

Introduction

E-Learning

As an integrated and interactive multi-source educational system, e-learning depends on the internet to offer students educational courses, programs, pedagogical activities and electronic sources anytime and anywhere, whether synchronous or asynchronous, through IT techniques and interactive communications in a manner that allows the faculty member to assess the student in a comprehensive and fair manner.

The Concept of E-Learning

E-learning has a special nature as it is based on pure scientific foundations such as the principles of educational techniques that are fundamentally based on self-learning so that it provides learning that copes with the characteristics of each learner. This means individuality, self-reactivity, disciplined freedom; and performance characterized with competence and speed. This inevitably leads to achieving the largest possible number of educational goals.

The e-learning environment is an interactive remote instruction environment that employs information and communication technologies in the learning process to carry out a group of activities that are similar to traditional learning activities, so that remote students can work together, regardless of where they are. Further, they can follow an e-lecture in a live broadcast in virtual classes, multi-media presentations, write notes, make discussions and ask questions, interact with students in other places using audio and video, and participate in virtual learning sessions, as if they are present under one roof. They can work together as a team to build their own learning, under the supervision of their teacher, plan and recognize the educational tasks and implement them. Together, they can also search for information in multiple sources, some search on internet sites, while some search in the course database, and others search in multi-media files relevant to the topic, etc. Then, they may continue their communications with each other through various synchronous and asynchronous means for consultation and solving problems. They can present their findings on discussion boards, or send them to each other by e-mail or during chat sessions, and receive suggestions, and so on.

Core Competencies of a Faculty Member

There are a number of core competencies that faculty members should acquire over the course of their academic career. These competencies vary from teaching competencies to course design, assessment, leadership and management, finally to scientific and professional research. Harden and Lilley (2018) maintain that these competencies reflect eight roles that a faculty member should play; though the example Harden and Lilley gave is on a faculty member in medical colleges, they apply to all faculty members in all colleges. These roles include being able to competently and effectively master the following:

1. Source of scientific resources and information.
2. Facilitating student learning and mentoring.
3. Curriculum design and implementation.
4. Assessment and assessment.
5. Role model in teaching and work.
6. Leadership and management.
7. Scientific research.
8. Professionalism.

In addition to mastering these roles, a faculty member needs five other competencies to effectively manage and achieve learning outcomes in electronic courses. These core competencies are:

1. Effective communication in an electronic environment.
2. The use and employment of technology in e-learning.
3. Designing and developing e-courses.
4. Engaging students into the educational process in e-learning.
5. Assessment of students' level in e-learning.

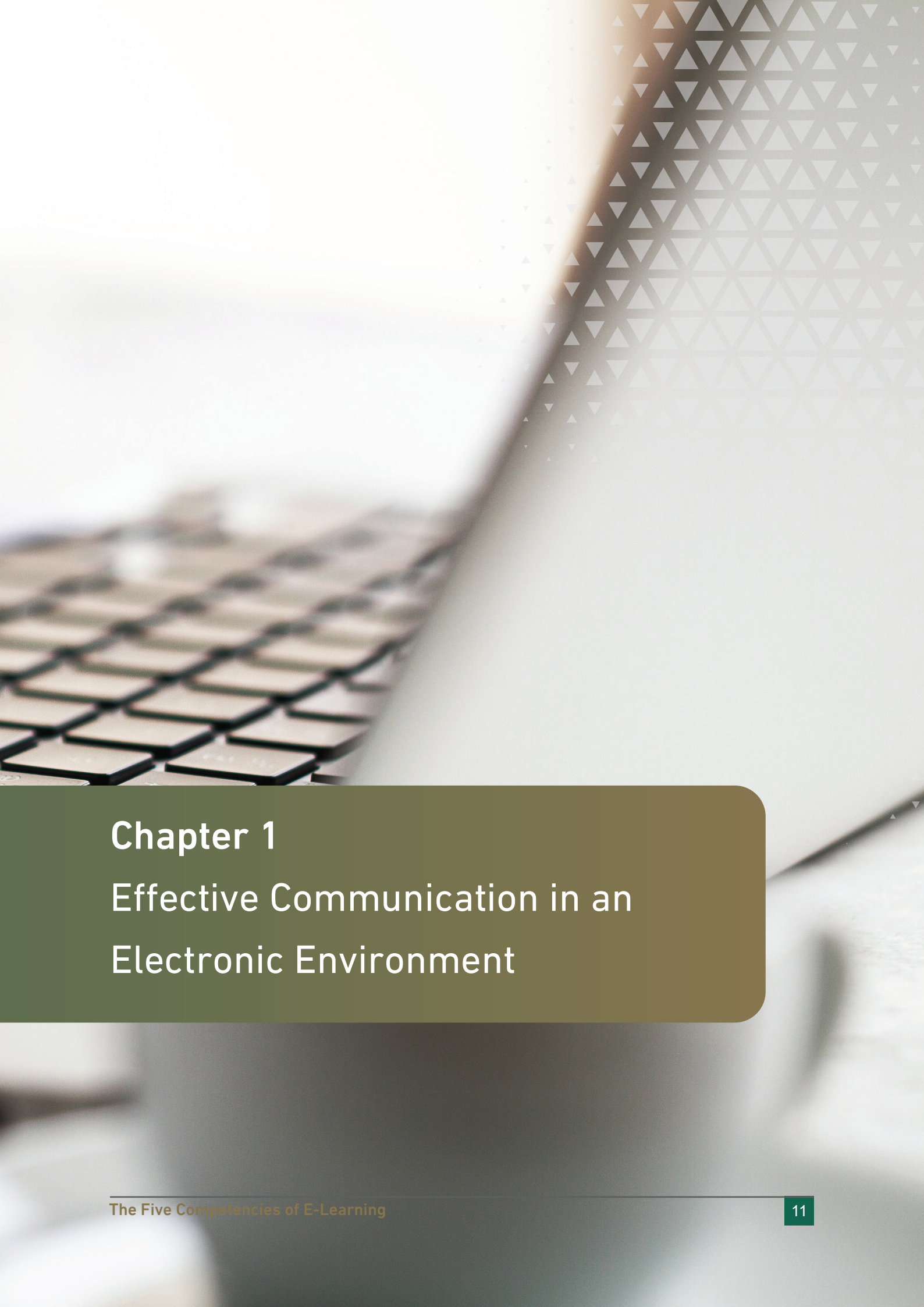
Introduction

The five chapters of this book deal with these competencies in terms of their significance and the skills and strategies that fall under each of them, which a faculty member must acquire and master to achieve the learning outcomes of the programs and courses offered through e-learning and distance education.

Role of a Faculty Member in E-Learning

- a. Analyze the educational content before submitting it.
- b. Diagnose student characteristics and determine their needs.
- c. Determine the appropriate educational strategies for the learning environment, students and the content.
- d. Designing educational activities that guarantee student interaction.
- e. Follow up the implementation of educational strategies.
- f. Direct and encourage students to implement educational activities.
- g. Participate actively in interaction and social communication with students.
- h. Motivate students to use all e-learning tools.
- i. Monitor students' performance and their various participations.
- j. Provide feedback on students' participations.
- k. Participate in some digital educational materials related to the educational content.
- l. Determine the tasks to be implemented by each of the e-learning tools.
- m. Determine the content presentation strategy for each of the e-learning tools.
- n. Provide students with constant updates on content topics and activities.
- o. Hosting experts who can be contacted via the web environment.





Chapter 1

Effective Communication in an Electronic Environment

Chapter 1: Effective Communication in an Electronic Environment

The pattern of communication between students and faculty members in e-learning differs from that in face-to-face education, as there is no direct contact between the two parties and the means of communication are limited to electronic means such as written or voice messages or video communication. This communication may be synchronous, i.e. occurring at the same time between the student and teacher, such as the case in virtual classes; it may also be asynchronous, where the two parties are not present together at the same time, as is the case in communication through e-mails or discussion forums. This requires that the faculty member must master the communication skills in the electronic environment as follows:

- a. Written communication skills and writing letters in different instruction languages.
- b. Skills of designing educational materials and integrating graphics and multimedia in them.
- c. Skills of designing educational videos and audio files.
- d. Effective listening and communication skills.
- e. Skills of managing discussions in the electronic environment.

It is possible to divide the means of communication that a faculty member needs for e-learning based on the pattern used, whether synchronous or asynchronous, in addition to the tools for content management and electronic courses that are considered a basis for effective communication in the electronic environment.

Chapter 1: Effective Communication in an Electronic Environment

1 Communication Tools in Synchronous E-Learning

The following tools are used synchronously, i.e., at the same time, between the parties of the teaching and learning process. The tools are:

- a. Chat tools.
- b. Tools to create virtual classrooms in e-learning management systems (LMS).
- c. Audio and video communication tools in social media applications.
- d. Virtual meeting applications.

2 Communication Tools in Asynchronous E-Learning

The following tools do not require that learners attend at the same time with each other or with a faculty member in the e-learning environment. These tools are:

- A. Email.
- B. Discussion Boards.
- C. Blogs.
- D. Wiki.
- E. Announcements and advertisements.
- F. Dynamic / Static Web Pages.
- G. Podcasting.
- H. E. Portfolio.
- I. Listserves.

Chapter 1: Effective Communication in an Electronic Environment

3 Tools and Management of Content and E-courses

- A. Schedule.
- B. Search Engine.
- C. On-Line Resources.
- D. Content Pages.
- E. Educational Activities & Tasks.
- F. Homework Page.
- G. Assessment & Tests Pages.
- H. Learners' Results Pages.
- I. Course Listserves.

Features of Effective Communication in an Electronic Educational Environment:

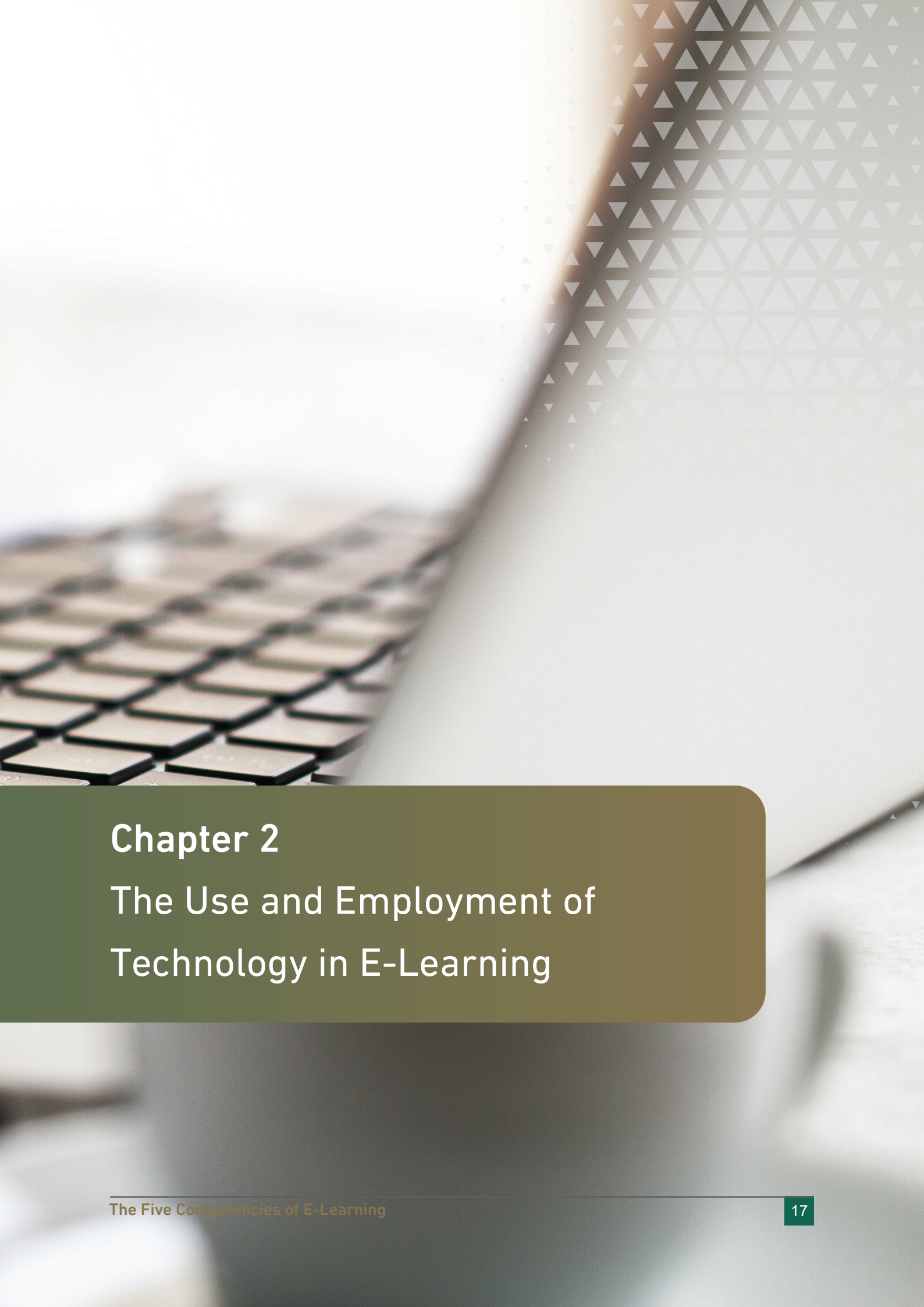
Faculty members should acquire the following features for good communication in e-learning management environments:

- Understanding students' traits, needs and educational and personal abilities;
- Focusing on pedagogical goals and participating in developing educational content in line with the standards of e-learning environments;
- Familiarity with the skills of communication and information technologies to the extent that exceeds the skill level of their students;
- Responding with interest to students' inquiries and responses (immediate feedback);

Chapter 1: Effective Communication in an Electronic Environment

- Enjoying the use of technology in teaching rather than doing a routine job;
- Selecting the appropriate teaching method to achieve the desired goal in the e-learning environment;
- Designing tests and assessment methods in an attractive and professional way;
- Automatic/self-correcting of tests, assignments and projects submitted by students;
- Performing academic and pedagogical guidance and supervision according to a pre-set plan to achieve the learning outcomes; and
- Writing periodic status reports and sending them to the officials of the e-learning management system in the educational institution.





Chapter 2

The Use and Employment of Technology in E-Learning

Chapter 2: The Use and Employment of Technology in E-Learning

A faculty member needs a number of skills and competencies related to the use and employment of technology in the educational process for the effective management of e-learning. These skills and competencies include:

- a. Full knowledge of the requirements of accessibility to technology in the classroom and online education;
- b. The ability to evaluate internet resources;
- c. Understanding aspects of copyrights and their violations;
- d. Being a role model for students on the usage and monitoring of the ethics of sound internet usage and the generally accepted policies of online use;
- e. Designing and implementing lesson plans suitable for online students; and
- f. Ability to troubleshoot simple technical issues and refer to technical support personnel when necessary.

The faculty member's mastery of this competency also requires that the member is fully aware of the different applications that can be used in e-learning and engage them into the educational process. The following are the most important of these applications, programs, and their categories:

Chapter 2: The Use and Employment of Technology in E-Learning

1- Social Networks

Social networks include, for example:

1. Facebook
2. Twitter
3. LinkedIn
4. YouTube
5. Instagram

2- Learning Management Systems (LMS) and Course Platforms

LMS and course platforms include:

1. Blackboard
2. Coursera
3. Moodle
4. Udemy

3- Microsoft Office Applications and Programs

They include:

1. Microsoft Word
2. PowerPoint
3. Excel
4. Access

There are several other programs and applications that are heavily used every day.

Chapter 2: The Use and Employment of Technology in E-Learning

4- Internet Browsing Applications & Programs and Internet Search Engines

They include:

1. Internet Explorer
2. Google Chrome
3. Firefox
4. Safari

5- External Sources of Information

They include:

1. YouTube
2. Wikipedia

6- Applications Organizing Developments and Contents

They include:

1. Padlet
2. Evernote
3. Google Bookmark
4. Pinterest
5. Diigo
6. Dewy Bookmark
7. iCloud Bookmarks
8. Pinboard

Chapter 2: The Use and Employment of Technology in E-Learning

7- Blogging Applications and Programs

They include:

1. Blogger
2. Tumblr
3. WordPress
4. SQUARESPACE

8- Plans and Personal Information Keeping Applications

They include:

1. Evernote
2. Microsoft OneNote

9- Files and Folders Saving and Sharing Applications

They include:

1. Microsoft OneDrive
2. Dropbox
3. Google Drive

10- Productivity Improvement Applications and Programs

They include:

1. Doodle
2. Evernote
3. Toodledo

Chapter 2: The Use and Employment of Technology in E-Learning

Each of these application or program may require a training course or access to aids tools assigned to each application or program on its website to achieve the maximum possible benefit of the capabilities of these programs and applications.

Given the enormity of such technical applications and programs that represent an important support for the e-learning environment, this handbook shall detail one of the most important of these applications, which is the Learning Management Systems (LMS).

The Learning Management Systems (LMS)

Several changes have been experienced by educational institutions recently due to developments of the concept and tools of e-learning, emergence of new open sources that enabled teachers to access and use them to serve the educational process. The Learning Management System is one of the main e-learning tools.

The concept of LMS is defined as the systems that support and enhancer the educational process so that the teacher uploads educational materials such as lectures, examinations and resources to the system's site, and LMS has discussion rooms, E-Portfolios and other electronic services that support the subject.

Chapter 2: The Use and Employment of Technology in E-Learning

Objectives of the Learning Management System:

The learning management system seeks to achieve the following objectives:

- Providing multiple and varied educational experiences and situations that are rich in meaningful electronic audio-visual stimuli for students.
- Providing the experiences, situations and stimuli that the lecturer cannot provide in the regular classrooms by using the Learning Management System that has multiple and varied electronic learning resources to facilitate the learning process for both the teacher and the learner.
- Creating an engaging interactive educational environment by diversifying interesting and attractive electronic information sources that overcome the problem of student's mental distraction, and instead helps students focus their attention on the subject to engage them in a positive participation.
- Supporting electronic interaction between students and faculty members through exchanging views, educational experiences, and meaningful dialogues and discussions using synchronous and asynchronous communication and interaction tools.
- Overcoming the problem of time and place distancing, which affects the educational process and poses a problem for the teacher and the learner.
- Modeling lessons and presenting them in a standardized format through the optimal use of sound, image and motion technologies and related multimedia, hypermedia and electronic learning resources.
- Providing learners and teachers with the constantly evolving IT skills.
- Expanding the circle of learners' web-based communication so that the teacher shall not be the sole source of knowledge through linking educational content with to other learning resources available on the internet.

Chapter 2: The Use and Employment of Technology in E-Learning

- Directing the learner towards the method of research and investigation rather than relying on the method of passive reception, the teacher's presentation and instruction method, and learner's listening and memorization, as the prevailing method in traditional education.
- Developing the professionalism of a faculty members to keep their role in line with modern scientific and technological developments through reducing the teaching load and directing them to mentoring, advising, examining, managing resources and processes, and assessing them.
- Overcoming the problem of the size enormity of the curricula and academic courses by presenting them in a simple, clear and concise manner that transmits the required meaning without dull elaborations or blatant shortening.
- Finding an ultimate solution for some of the prevailing educational problems such as individual differences, dropout, academic delay, educational loss, private lessons, teaching large groups of students, lack of faculty members, lack of appropriate educational equipment, and the scarcity of excellent learning resources.

Advantages of the Learning Management System:

The Learning Management System has many advantages, including:

- Registration: Entering and managing learners' data.
- Scheduling: Scheduling the course and developing a training plan.
- Delivery: Making content available to the learner.
- Tracking: Monitoring and subsequently reporting the learner's performance.
- Communication: Communicating with the learners through chats, discussion forums and e-mail.

Chapter 2: The Use and Employment of Technology in E-Learning

- Assessments: Conducting exams for learners and dealing with their assessments.
- Designing/ Supporting the Arabic interface: User-friendly interface that includes simple and specific procedures that provide flexibility to the user.
- Quality of the technical support from within the program using the Help Icon or from a technical support specialist.
- Compliance with international standards for e-learning.
- Some systems are free of charge or open source, and some are affordable.
- Having a central authentication system to provide a single entry point for all parts of the system while maintaining the system security.

Requirements of the Learning Management System:

The following points are a summary of the requirements of the Learning Management System:

- A comprehensive infrastructure for fast communication means.
- Training teachers to use the technology.
- Building interactive curricula and materials that are attractive to learners.
- An effective program that manages the educational process, including student registration, follow-up, and assessment.
- Making educational materials available around the clock.

Chapter 2: The Use and Employment of Technology in E-Learning

Services of the Learning Management System:

The most prominent services provided by the Learning Management System include:

- The possibility of linking the educational institution elements together, such as linking the administration, students, teachers, and parents.
- The possibility of creating student groups at the course level or at the educational institution level, such as student clubs.
- Adding educational content in multiple formats.
- Submitting homework, assignments and various electronic Assessments and assessments, and receiving results on the system, with a possibility of adding feedback to them.
- Communication and exchanging information between the educational process parties through discussion boards and chat rooms, or between majors of different educational institutions. Students are allowed to communicate and engage with their peers inside and outside their educational institution.
- Teachers from around the world are allowed to exchange experiences and ideas.
- Sending alerts to participants, entering grades automatically, and following up on the progress of each learner individually.
- Establishing a dedicated library for each course or group, with access to various resources around the world.
- Communication with a larger community around the world.
- Placing course announcements on the advertisement board, and some systems provide cloud storage.

Chapter 2: The Use and Employment of Technology in E-Learning

Advantages of using a Learning Management System:

There are several advantages for using a Learning Management System including:

- Safety: LMS is a safe environment for digital learning.
- Empowerment: LMS provides a private communication network.
- Collaboration: LMS prepares a place for sharing ideas and actions.
- Professional development: LMS supports and expands the teaching process.
- Organization: LMS brings everyone together in one place.
- Appropriateness: The content is appropriate to students.
- Real communication: LMS allows communication with real audience.
- Engagement and participation: LMS increases classroom effectiveness and accuracy.

Elements of a Learning Management System:

Amongst the most prominent elements of learning management systems are the following:

- E-courses;
- Content;
- Electronic assessments;
- Homework;
- Groups;
- Library and resources;
- Discussion and notes board;
- Grades transcript;
- Alerts and notifications;
- Chat rooms;
- E-mail;
- Advertisements board; and
- Calendar.

Components of the Learning Management System:

The learning management system environment consists of an integrated system for managing the e-learning process via the internet. This system consists of the following components:

Chapter 2: The Use and Employment of Technology in E-Learning

1 Courses

Courses are characterized with the following features:

- They can be accessed and browsed at any time.
- They have multiple presentation features that allow watching, listening, reading, and interaction with lessons.
- They comment on the learner's performance and can tell the learner's level.
- According to the course design, the study course can be either linear or subordinate.

2 Virtual Classrooms

Virtual classrooms have the following characteristics:

- Broadcasting live lessons with audio, video, and text in the synchronous e-learning system only.
- Lessons are explained, and students can make discussions.
- Broadcasting at predetermined times according to the course schedule.
- Electronic whiteboard is used effectively for instructions, study, and analysis.
- Voice or chat sharing for students are possible.
- Conversation and lecture activities can be saved to return to them later.

Chapter 2: The Use and Employment of Technology in E-Learning

3 Teaching and learning tools

Electronic teaching and learning tools are necessary to transmit the characteristics of direct communication that are available in traditional face to face learning. The student in a learning management system needs to interact with the teacher and colleagues, or ask for assistance, or guidance and direction. All this can be done through teaching and learning tools, also known as communication and interaction tools.

4 E-Homework

E-homework has the following characteristics:

- The teacher can send the homework or assignments in the form of files in multiple formats, and sets a deadline for receiving them.
- The student can upload the answer to his / her account in the system on the deadline for submitting the homework / assignments.
- The system provides a report on the student's submitted homework / assignments, including submission date and time.
- The teacher can score the homework / assignment and write relevant comments.

Chapter 2: The Use and Employment of Technology in E-Learning

5 Electronic Assessments

The following are characteristics of electronic assessments:

- The teacher can build a questions bank for exam questions.
- Start and end time of the assessment can be set.
- Assessments can be made in various forms (multiple choice, true or false, etc.).
- Results can be sent via e-mail, and the student can review them on his page in the system, or directly after answering the assessment.

6 Electronic Follow-up

It has the following characteristics:

- Monitoring information about the student's learning behavior and the way the student performs and proceeds in the lessons.
- Spotting information about the pages and lessons visited by the student.
- Identifying the number of courses the student has completed, semester and cumulative averages, and the remaining courses for completion.
- Identifying the students participating in the learning management system, or students in a specific course at a specific moment.
- The lecturer can accurately determine the academic level of the student to place the student in the appropriate educational place in the course

Chapter 2: The Use and Employment of Technology in E-Learning

Learning Management System Types

1- Open Source Systems:

Free or cheap software, open source systems allow sharing and modifying their code, and an open source system is a preferred and appropriate medium of education. An up-to-date version of any of these software can be obtained from their websites, such as Edmodo, Caroline, Top Class, and Moodle. Open source systems have recently developed as they tend to be more modern and efficient.

Recently, we noticed the emergence of Massive Open Online Courses (MOOCs), which are a group of programs that offer many open source courses online that could be the associated with a particular university. More generally, participation in MOOCs is voluntary as most of them do not ask for any fees, any prerequisite or prior knowledge. However, there is no academic accreditation for this type of education.

2- Closed Source Systems:

Closed source systems are (owned) commercial software, and a copy of a closed source system can be obtained for a price determined by the company. One of the most important closed source systems are: BlackBoard and School Gennie.

It is noted from the previous review of the Learning Management System that it provides an appropriate learning environment that helps students participate in the learning process and increases their efficiency and performance in educational courses through the elements that it can provide in the electronic assessment and feedback.





Chapter 3

E-Course Design

Chapter 3: E-Course Design

Compared to courses offered in a traditional face to face environment, e-courses differ to a large extent in the way they are designed. This is due to the difference in their nature, in the educational environment through which they are offered, in the needs and requirements of students in e-courses, and in teaching and assessments methods in e-courses compared to courses that are offered face to face. This requires different procedures and strategies to design e-courses in light of approved academic standards. The most important challenges that may face faculty members in designing e-courses can be summarized in the following points:

1. Lack of knowledge of the technical and educational standards for designing and producing e-courses;
2. Lack of clarity regarding educational outcomes, especially skills and how to achieve them in electronic courses;
3. Disparity of students' levels in terms of their technical skills, their acceptance of and integration into e-learning and distance education;
4. Multiple models for designing e-courses;
5. Enormity of information and knowledge available electronically;
6. Focusing on specific elements of the course and disregarding other elements of the educational material;
7. Falling into the trap of repeatedly using the same method of teaching and assessment in e-learning;
8. Lack of mastery over project management skills; and
9. Disparity of the technical skills of faculty members as some of them may not master them.

In view of these challenges and due to the availability of multiple models for designing e-courses, we have decided to suffice with explaining one of the most popular electronic course design models (ADDIE). It shall be followed by a list of locally and internationally adopted scientific standards for designing and producing e-courses.

Chapter 3: E-Course Design

ADDIE Model for E-Course Design

ADDIE Model is one of the most prominent globally used models for designing courses in general, and e-courses in particular. According to the model, the curriculum or course goes through five consecutive steps in the designing process, which are: Analysis, Design, Development, Implementation, and Evaluation.

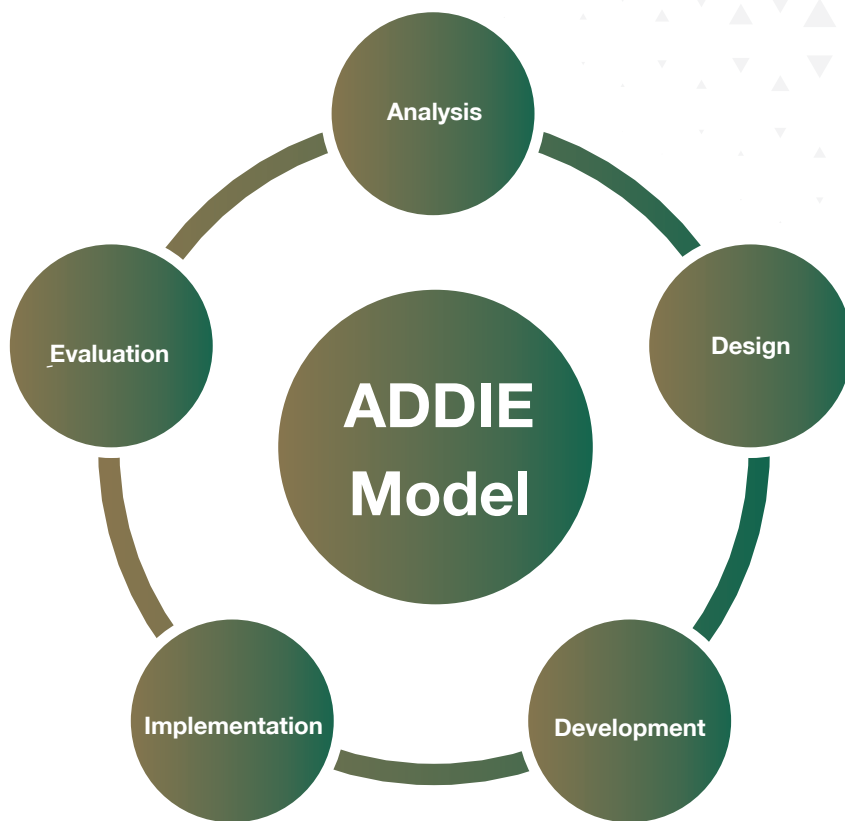


Figure 1: ADDIE Model for E-course and Curriculum Design

Chapter 3: E-Course Design

- 1. Analysis:** This step includes analyzing the various human and technical needs of the course, which contribute to achieving the educational outcomes of the course.
- 2. Design:** This step includes the following steps:
 - a. Defining the knowledge and skills that students should acquire and master during their study of the course.
 - b. The logical design of the sequence of the course content .
 - c. Integrating content, educational resources, and assessment tools in the form prepared for the course design.
- 3. Development of the Content:** This step includes preparing the content and the course educational resources, including setting the schedule for teaching the course..
- 4. Implementation:** This step includes teaching the course by placing it on the learning management system at the educational institution or any other electronic applications adopted to teach the course electronically, while taking into account the following points:
 - a. Organizing the course content presentation process; and
 - b. The means of communication that support the interactive activities in the course.
- 5. Evaluation:** The step of Evaluation of the e-course aims to answer the following questions:
 - a. Was the course teaching process successful?
 - b. Have the educational outcomes of the course been achieved?
 - c. What are the changes that the course needs when taught in the future?

The process of designing e-courses requires the existence of an approved template to document and describe the design process, including the five steps mentioned above. This may also include some guidelines and regulations that explain the implementation of these steps on the ground.

Chapter 3: E-Course Design

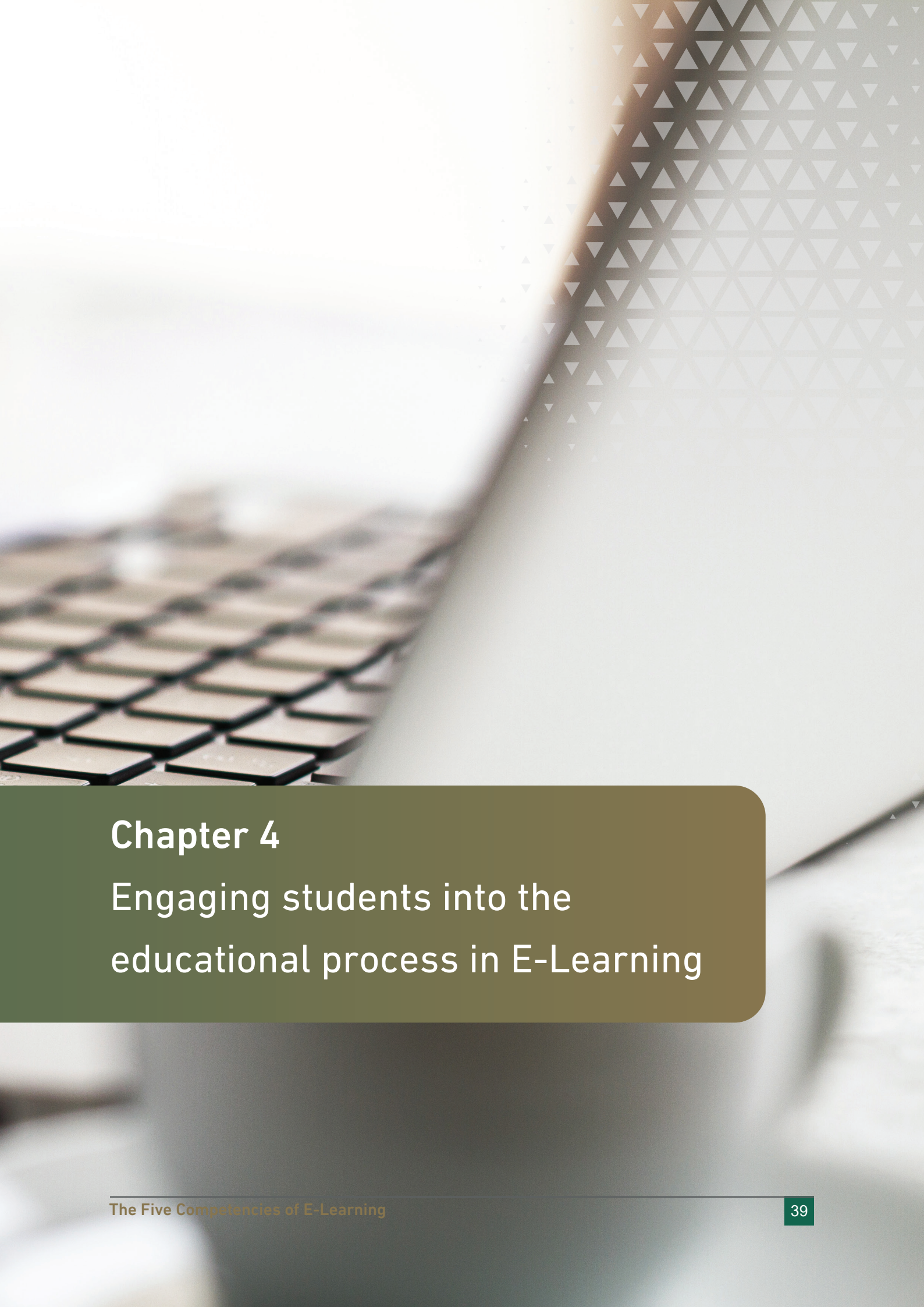
Approved Scientific Standards for Designing and Producing E-courses

Appendix 4 illustrates the list of scientific and educational standards and specifications recently approved by the National Center for E-Learning. These standards and specifications are concerned with controlling the practices related to designing e-courses in a way that achieves educational competencies and objectives, while linking them to various course activities, including assessments, homework, discussions, research, activities and other requirements for measuring educational objectives, Assessment and continuous improvement for the e-course.

Designing E-Courses and the Five Competencies

- Designing e-courses is one of the five most important competencies that a faculty member should have because of its great benefits in maximizing the scientific and academic experience of a faculty member. This can be summarized as follows:
- Saving the faculty member time in guiding students,
- Increasing the academic productivity of a faculty member in other fields,
- Increasing cooperation opportunities with colleagues on the scientific, educational and social levels,
- Focusing more on student activities and achieving learning outcomes,
- Continuous review of the course, its contents, activities, assessments, and method of implementation,
- Active participation in the efforts to develop the institution and restructure the learning objectives and outcomes,
- Increasing the faculty member's communication with community institutions and students' parents,
- Providing the faculty member with sufficient opportunity and time for development of self and performance through academic and technical skills needed for e-learning environments.





Chapter 4

Engaging students into the educational process in E-Learning

Chapter 4: Engaging students into the educational process in E-Learning

Attendance and Presence in Virtual Classes and Distance Education

The teacher's face to face presence in the classroom is not totally hard as the teacher meets his students several times a week, whether in lectures, practical lessons or during office hours. In contrast, creating a strong and effective online educational presence requires more work and a great deal of planning. However, it may even be a huge challenge for a faculty member.

It is of paramount importance to create this presence and attendance through different methods several times a week, whether through sending various electronic messages and instructions to students, or responding to the topics in the discussion forums, holding electronic office hours, or even sending a simple e-mail reminder to students about an upcoming assignment that can act as a reminder of the presence of their teacher. These methods may not be of great importance in face-to-face classrooms, but they have a great impact in virtual classrooms and e-learning, as they are considered essential for following-up students.

In traditional face-to-face classes, it is natural that presence and communication occur, but the matter is different in online classroom. Therefore, lack of physical presence needs more effort to compensate for this divergence and create an effective educational community and engage students in meaningful ways.

Creating an online learning community can begin with students and teachers writing introductory notes about themselves in discussion forums. This contributes to getting everyone to know the others, which is an effective way for students to communicate with their peers and teachers.

It is also to keep lines of communication open by informing students what is expected from them, the expected volume of work, means of communication, the regulations governing their studies, assignments and duties required, and the feedback mechanism.

Finally, it is important that students understand that their teachers value their viewpoints by stressing the keenness to know their regular feedback on all the academic content, what should work well and effectively, and the concepts or tasks that need to be further elaborated.

Chapter 4: Engaging students into the educational process in E-Learning

For an effective presence among your students in virtual classes and distance education, pedagogical and educational studies recommend the following:

1. Be always present through:

- a. Responses to discussion forums.
- b. Emails and constructive feedback.
- c. Advertisements and messages through the e-learning management system.
- d. Virtual office hours.

2. Create a dynamic and effective virtual community with students through

- a. Blogs / magazines.
- b. Discussion forums.
- c. Introductory and educational videos.
- d. Rapid response to students' questions and inquiries.

3. Stimulate continuous feedback through:

- a. Periodic tests.
- b. Giving constructive feedback to students on an ongoing basis.
- c. Taking feedback from the students themselves.
- d. Students' Assessment for themselves and their peers.

4. Inform students of all expectations, the most important of which are:

- a. The expected academic burden.
- b. The duties and assignments required of them.
- c. The means of communication available with their teachers.
- d. All the important times and dates of the course.

Chapter 4: Engaging students into the educational process in E-Learning

5. Use a variety of methods to encourage interaction between:

- a. Students and their teachers.
- b. Students with their peers.
- c. Students and the subject interactive content.

Chapter 4: Engaging students into the educational process in E-Learning

Interaction in E-Learning

Modern pedagogical and educational studies have unanimously agreed on the importance and necessity of diversifying interaction in the process of e-learning. The studies have also emphasized that all interaction patterns should be learner-centered by focusing on creating three types of interaction in the learning environment. These three interaction types are learner-centered and contribute to building knowledge and acquiring skills. The three types are: unilateral interaction, bilateral interaction, multilateral interaction, which is the most difficult but also most useful interaction, as it builds a network of interaction and communication between learners with each other and with the concerned faculty member.

Types of interaction

- **Student-student interaction:** This type of interaction is about building and designing an activity that provides students with learning experiences from each other in a meaningful way. There are several forms of this interaction: one-way interaction, two-way interaction and multiple interaction through building team works and applying the principles and basics of cooperative learning, through which knowledge is built.
- **Student-faculty interaction:** This type of interaction occurs when a faculty member designs an interactive educational activity to serve as an interaction framework between the faculty member and students during the learning experience.
- **Student-content interaction:** This type of interaction is about the main step in distance learning, which is the educational design of the interactive content. This step designs the student-content and student-student interactions. Student-content interaction shows the vast difference between distance education in emergencies and distance learning. The following figure illustrates the relationship between these types of interaction.

Chapter 4: Engaging students into the educational process in E-Learning

Interaction Mechanism

1. Student-Content Interaction

This type of interaction is based on the principle of having the student to act regarding some content elements such as listening or reading so that the interaction takes place. The passive learning attitude, perhaps when a student passively receives information, is not sufficient in e-learning. Upon designing the course, creating an environment for active learning must be taken into account, so that the student must do meaningful activity related to the educational content and build new knowledge. After completing the lecture or reading the content, the student is asked, for example, to do the following:

- Summarize the topic.
- Make a presentation or short video on learned key concepts and how they will be of benefit in the future.
- Participate in a two-way interaction activity: The teacher poses a question and asks the learners to take some notes independently to create a list of initial ideas. Then, students are distributed to virtual groups and a virtual meeting is set to present and discuss the students' ideas.
- Use the whiteboard to write down key concepts and terms discussed in the lecture, especially several platforms offer the whiteboard feature for free.
- Lead the discussions in the platform.

In addition, and depending on the nature of the lecture or the content, students can be assigned the following tasks:

1. Doing a field trip and write a report or make a video on the visit.
2. Writing a report on a daily environmental problem relevant to the lecture.
3. Analyzing data and then writing conceptions based on that data.
4. Preparing and presenting multimedia presentations.
5. Creating infographics, web pages, groups and blog posts, and collecting photos relevant to the lecture.

Chapter 4: Engaging students into the educational process in E-Learning

II. Student-Student Interaction

When students interact with each other, they feel they are part of the knowledge and learning community. Student-student interaction helps engage them in constructive and critical thinking that contributes to the process of building knowledge, which is difficult for a student to perceive if he/she is studying alone.

Cooperative work is one of the 21st century skills that educators and faculty members must instill in students in order for them to be able to enter the labor market in the future. Through collaborative work, the skills of brainstorming, argumentation, debate, respect for the opinion of others and acceptance of constructive criticism will be enhanced.

A set of strategies that can be used to enhance the student's interaction with his colleague have been identified, including:

1. Creating discussion forums in the LMS such as Blackboard, Google Classroom, Moodle and others,
2. Using blogs and social media sites,
3. Peer-reviewing of students' work and writing constructive notes and comments,
4. Collective projects,
5. Group Presentations,
6. Individual projects,
7. Encouraging students to use some internet tools such as storage, cloud computing, Google Drive tools, and Dropbox,
8. Assigning students to write a protocol of cooperation between them,
9. Encouraging students to use live broadcast platforms such as Zoom, Google Classes, and Skype to hold meetings, and
10. Encouraging students to e-learning tools.

Chapter 4: Engaging students into the educational process in E-Learning

III. Student-Faculty Interaction

Interaction is not only answering a question, but rather it includes the human dimension in granting and building confidence and mutual respect between the student and the faculty member, especially that they are separated in terms of space and perhaps time. A presentation by a faculty member requires a regular and objective interaction using the strategies adopted to enhance student-faculty interaction in e-learning. Some of these strategies are, for example:

1. Participation and interaction with the learners about the content of the lecture by creating a discussion forum or dialogue on the learning management system, such as Blackboard or Google classes, and about the course content through discussion forums in the LMS.
2. Recording a short video to explain how to make an assignment or to clarify and discuss a specific learning objective by using “Microlearning”.
3. Writing educational comments on what the learner writes or records.

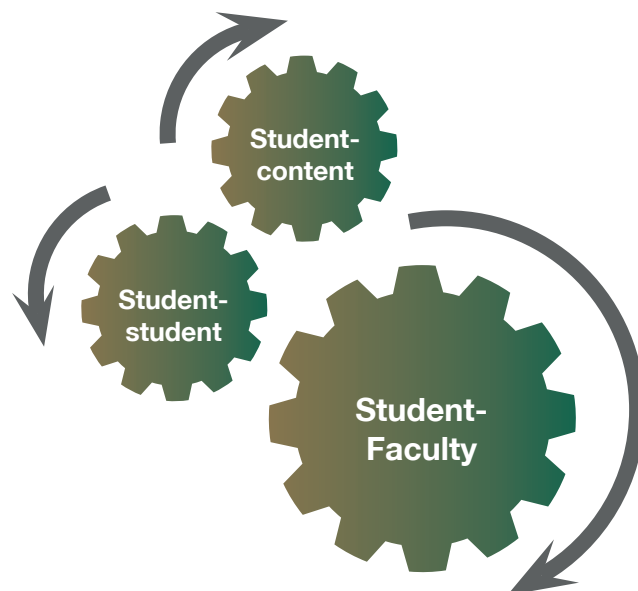


Figure (2) – The tri-lateral interaction patterns in e-learning

Chapter 4: Engaging students into the educational process in E-Learning

Learning Strategies in E-learning

The faculty member should diversify using teaching strategies and methods to help engage students into the e-learning process, provided that these strategies achieve active student interaction with their professor, with each other, and with the content provided by the faculty member. Teaching and learning should be student-centered rather than teacher-centered.

1- The Lecture

An effective way to communicate information and knowledge to students, the lecture is one of the most widely used teaching methods. Most educators agree that the purpose of lectures is to lay the foundations when students are working through a topic. By knowing their students, faculty members develop their lectures according to their students' needs. Most importantly, lectures are more effective when used in combination with other educational strategies.

Practical guidelines for developing lectures in E-Learning:

1. Posting lecture notes and links to related resources and websites on a web-page or the LMS for students to review.
2. Presenting lectures via audio or video via the Internet. Online lectures should be shorter and more to the point than traditional classroom lectures, which often extend beyond students' attention scope.
3. Dividing the long presentation into shorter parts, if necessary, as short lectures provide enough information to serve as a basis for further reading, research, or other learning activities.

Perhaps one of the most important advantages of online lectures is that they are easily available for students to review when needed.

Chapter 4: Engaging students into the educational process in E-Learning

2- The Flipped Classroom

In order to simplify the concept of the flipped classroom, we must first mention the meaning of the regular, non-flipped classroom. Regular classroom is the class in which the teacher explains the lesson to the students and introduces through it the concepts and knowledge contained in the relevant lesson, and after or during the explanation, the teacher poses many questions to the students to make sure they understand what has been explained. Sometimes, the teacher prefers to give the students time to study before answering the questions.

In the flipped classroom, students usually receive the explanation through other means outside the classroom and before the lecture, whether the lecture is face-to-face or online. Thus, students have a good opportunity to grasp the lesson before the lecture and without the explanation of the faculty member. When the lecture starts in the flipped classroom, the process goes in the opposite direction of the regular classroom so that the faculty member does not explain the lesson again, but rather students interact with one another and with the faculty member regarding what they have grasped from the resources prepared for them outside the classroom. The role of the faculty member here is to clarify what students may inquire about, which means that students are the ones who ask and the faculty member answers, explains, interprets and manages the discussion, and that is why it is called the flipped classroom as the roles are exchange between students and faculty members. The faculty member also prepares some interactive activities and works as a facilitator of the educational process, rather than a source of information.

Chapter 4: Engaging students into the educational process in E-Learning

3- Discussion

Most adult learners prefer discussion as an education strategy because it is interactive and encourages participatory learning. Discussion also encourages learners to analyze alternative ways of thinking and finding solutions. This allows learners to explore their own experiences to become better critical thinkers, and therefore discussion is often at the heart of online courses.

The Internet provides several discussion modes including mailing lists, LMS discussion forums, and social media. These are asynchronous communications. Synchronous (real-time) communication includes web conferencing, chat rooms, or text-based virtual reality environments. Massive Open Online courses (MOOCs) illustrate the limits that can be reached in remote discussions.

4- Self-learning

Self-directed learning is the learning initiated by the learner. The self-directed learning may also be called independent or individual learning. Whatever the term we use, self-directed learning places the responsibility for learning directly on the learner. In many ways, learning is eventually a self-directed process. Learners who take the initiative learn more and better than passive (interactive) learners. Proactive learners are the most effective and they tend to retain and make use of what they learned better and longer than interactive learners. The independent learner is more engaged, motivated, and active while learning.

Online learning supports the self-directed learner in pursuing individual and self-directed learning activities. The learner who works on a computer at a convenient time and speed is able to search and make use of vast online resources in almost any subject. Students can visit various libraries, museums, and institutes worldwide, speak to specialists, access recent research, and read scholarly journals that have been reviewed by fellow researchers online. Students can write collaboratively with their peers and post written and multimedia products online.

Chapter 4: Engaging students into the educational process in E-Learning

5- Mentoring

The aim of Mentoring is to promote the learner's development by putting what the student already knows in a form. The Mentor acts as a guide rather than as a knowledge provider and therefore serves to introduce students to the new world, explain it to them, and help them learn what they need to know to work in it. Mentors teach through interpreting the environment and modeling the expected behaviors, and they also support their students and provide insight to them.

A major advantage of online Mentoring is that it allows frequent and comfortable communication between the Mentor and the student. Weekly or even daily information and messages can be exchanged between the faculty member and the student via e-mail or various social media, which provides an ongoing 'dialogue' that supports the development of the faculty-student relationship and provides many opportunities for timely comments on students' questions, concerns, and issues.

6- Teamwork in small groups

In small groups, learners discuss content, share ideas, and solve problems. They present and consider ideas that others have come up with. In this way, they see a variety of perspectives on a certain topic. There are many small group strategies that encourage and provide opportunities for interaction, such as the following:

Discussion group

Learners are allowed to reflect on a topic under discussion and provide their opinions. Small group discussions may vary on the intellectual level from low to very high levels.

Chapter 4: Engaging students into the educational process in E-Learning

Directed-Design

The focus in directed-design is on developing learner's decision-making skills and on teaching specific concepts and principles. Participants work on open-ended problems that require work outside the classroom to gather information. This strategy encourages learners to think logically, communicate ideas, and apply steps in the decision-making process. Learners should apply what they have learned, exchange ideas and think of solutions. The teacher's role is to act as a counselor or facilitator for groups.

Role Play

Role-playing strategy is implemented by creating a situation related to a real-world problem in which participants take on different roles. This enhances understanding of the attitudes and positions of others. In addition, there are also helpful procedures for diagnosing and solving problems. Role-playing can be used to simulate real-world group work situations and it can help learners understand a problem or situation.

Games

Two or more groups compete to achieve one set of objectives. The game follows the rules and procedures, as the faculty member provides information that requires decision-making. Most education games reflect typical real-world situations. The rules, procedures, and objectives of the game should be clear and concise.

Online learning environments provide many distinct benefits of small group work. They allow small groups to work independently with continued access to a faculty member. In some cases small groups can be coordinated to meet synchronously online when all class members cannot. Larger groups can communicate asynchronously via

Chapter 4: Engaging students into the educational process in E-Learning

conference programs. The second benefit of online group work environments is that a faculty member can respond directly to questions and needs of specific groups without wasting other groups' time.

Projects

Online projects give students opportunities to pursue special interests, either individually or in groups. Projects also provide students with practical experience and a sense of achievement. Using projects in a learning activity engages students with the learning process. Project outcomes can be shared with others in the classroom, evaluated and criticized by other groups or by the facilitator. By sharing individual projects with other participants, the learner gets diverse perspectives and comments.

Many of the education strategies presented earlier and shall be presented later can be considered as group projects for small groups. Group projects can include simulations, role-plays, case studies, problem-solving exercises, group work, discussions, small group discussion, and brainstorming. As the case with individual projects, group projects should receive peer comments to receive varied perspectives. Through individual and group projects, learners pursue special interests, and publish or present their findings and conclusions online. The Internet provides the possibility to receive comments from experts or interested peers outside the course by accessing the project online.

Chapter 4: Engaging students into the educational process in E-Learning

7- Cooperative learning

Cooperative learning is the process of having two or more students work together to learn by forming small groups of participants with different abilities while using a variety of learning activities to master the subject developed beforehand by the faculty member, or to build knowledge on objective issues. Each team member is responsible for learning what is being taught and helping colleagues to learn.

Cooperative learning methods are used in almost two-thirds of higher education courses, according to a recent survey conducted by the University of California's Institute of Higher Education Research. Employers seek workers with cooperative skills and look for graduates of educational programs that teach these skills. Cooperative learning can be more effective than personal and individual competitive efforts in promoting cognitive development, self-esteem, and positive student-student relationships.

8- Case study

Participatory and containing work components associated with future experiences, the case study requires learners to make use of their experiences. The key to a successful case study is choosing an appropriate situation for a problem that is closely related to learners' interests, level of experience, and the concepts taught. The case report should include facts of the problem, environmental context, and those interested in the case. The case study should be realistic and must contain opinions and perspectives of interested people. Learners should be able to find a solution to the problem, not just mentioning their own conclusions. Later, they may compare their findings with the actual decision made to solve the problem.

In the context of the case study, learners can work independently or in groups. An advantages of using the case study method is that it emphasizes practical thinking and helps learners define principles after examining the facts of the case, and then apply those principles to new situations. Case analysis is equally effective when used in combination with other educational strategies.

Chapter 4: Engaging students into the educational process in E-Learning

In online or LMS environments, case studies are presented and discussed on web pages and discussion forums. Developed by class groups as collaborative projects, case studies can benefit from the tremendous online resources to contribute to data, information and seeking expert advice to case development and analysis.

9- Forum

A forum is an open discussion between one experienced person or more on one hand and a group on the other. The moderator directs the discussion, responds to the audience, discusses issues, provides comments and information, or poses questions to the experienced person and so on. The forum is always of two types: the expert team and the symposium.

A- The expert team

Usually it comprises three to six people who sit in front of an audience and have a meaningful conversation about a topic in which they have specialized knowledge. While the forum is run by the mediator, the committee is informal in nature but public participation is not allowed.

B- The seminar

The seminar is a series of presentations by two to five people on different aspects of the same topic or closely related topics. Although the seminar is formal in nature, questions from the audience are encouraged after the presentations. One of the advantages of the seminar is that it allows learners to identify a variety of expert perspectives and provides an opportunity for the public to ask questions.

Since the online environment facilitates group communication, it is ideal for exchanging information, so an online forum can be more convenient and effective than a traditional classroom. Speakers, experts and moderators can participate without the need to travel or even be present at a certain time as both synchronous and asynchronous communication can support online learning forums.

Chapter 4: Engaging students into the educational process in E-Learning

10- Learning contracts

Learning contracts link educational needs to student's individual needs. This is a useful bridge when there is a diversity of a learner's needs and interests. A learning contract is an agreement, written by the learner, detailing what will be learned, how the learning will be accomplished on what time span, and the specific Assessment criteria that will be used to determine that the learning process is completed. Learning contracts help the faculty member and the learner to share the responsibility for learning.

Learning contract can have many practical benefits including a deeper learner participation in learning activities, which were planned by the students themselves. Once the learner goes through the stage of confusion and anxiety associated with developing a learning contract, the student will be motivated to implement his/her own plans. Another benefit of using the learning contract is the issue of increased accountability, as the learning contract provides more functional evidence and validation of learning outcomes. The contract also provides a means for the learner to receive continuous feedback on the progress to achieve the learning objectives.

Learning contracts can be very effective in an online environment since the online context does not allow meeting face-to-face to discuss learning objectives, goals, and expectations. Faculty members should be very clear and concise in what they expect of the learner, and likewise, learners should also be clear in terms of what they expect from a faculty member. The learning contract is a document of negotiated learning objectives and outcomes.

Some exemplary practices for learning contracts

1. Providing learning contract examples on the LMS for the student to use.
2. Encouraging students to exchange ideas on learning contracts with their peers via the Internet.
3. Motivating students to negotiate the final contract with the teacher through e-mail or online meetings.

Chapter 4: Engaging students into the educational process in E-Learning

The following table is a list of the most important different teaching strategies in e-learning and the level of students' integration in the educational process:

	Teaching Strategy	Level of Student Integration
1	Traditional lecture	Low
2	Forum / Seminar / Expert Team	Low
3	Interactive Lecture / Videos	Medium
4	Discussion	Medium
5	Case Study	Medium
6	Cooperative Projects	Medium
7	Blended Learning (face-to-face/distance)	Medium to High
8	Critical Thinking Strategies	Medium to High
9	Simulation, Role-playing and Games	Medium to High
10	Mentoring	Medium to High
11	Peer Education	High

Table (1) – Different teaching strategies and the level of student integration

Principles of the effective application of E-Learning strategies

In order for the e-learning strategies in the LMS to be effective when applied by a faculty member, the following general principles should be considered:

- The tools and means of e-learning systems are compatible, and they are selected in to suit the e-learning strategies, rather than revolving around them.
- Designing the e-course, units and contents in a way that allows it to circulate and to be used synchronously and asynchronously within the LMS.
- There is a strong correlation between the adopted e-learning strategy, the method of designing the e-course structure, and the procedures for employing its media and content.

Chapter 4: Engaging students into the educational process in E-Learning

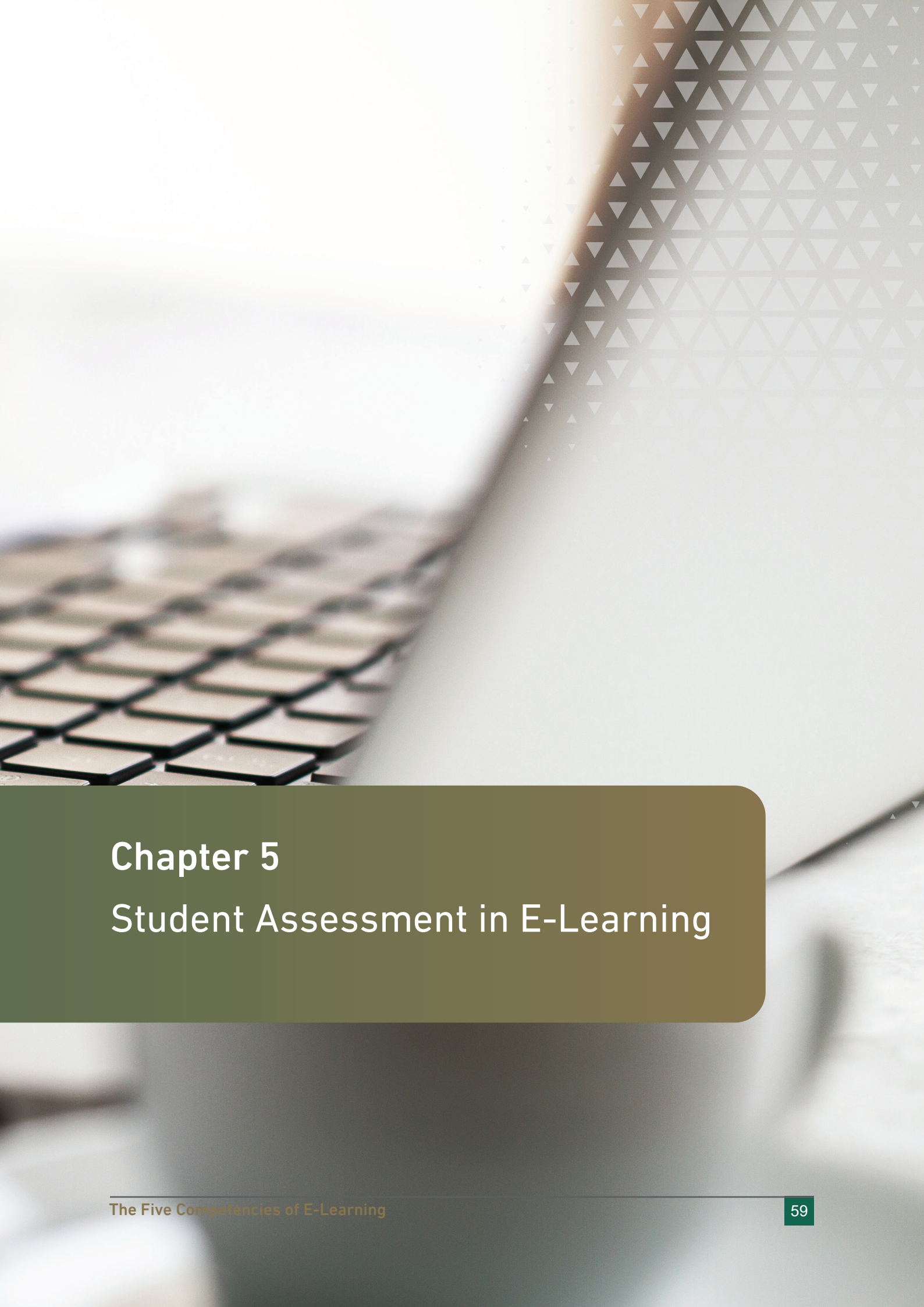
- The smart and efficient employment of high-quality multimedia presentation tools, which are a major and essential part of e-learning.
- The necessity to change the adopted e-learning strategy according to developments so that it may not be the same in all educational situations, in form and content.

Conclusion

The online learning environment allows faculty and students to work and exchange ideas and information together on projects, around the clock and from anywhere in the world, using multiple communication modes. Given the advantages and resources of this rich learning environment, can multiple learning strategies be used for a better online learning? Just like the case with traditional classroom, educational strategies are more effective when used to achieve specific educational goals and objectives. Effective course design can begin with asking and answering the main question: What are the main learning goals and objectives for this course? Once these goals and objectives are identified, the faculty member proceeds to address questions on the learning strategies, activities, and experiences that should be employed.

Online learning can employ many of the strategies discussed here. A large part of the power of online learning lies in its ability to support multiple communication styles: **student-content, student-student, and student-faculty** whether this is an individual or group communication, taking into account learners' varied learning modes and providing opportunities for self-directed and collaborative learning. Educators can also facilitate powerful and effective courses aimed at achieving specific educational goals and outcomes using the vast resources and capabilities of online learning.





Chapter 5

Student Assessment in E-Learning

Chapter 5: Student Assessment in E-Learning

The process of assessing and evaluating the performance of students and trainees is an integral part of all educational curricula. This process cannot be separated from the teaching and learning process to guarantee the quality of the Assessment process for e-learning and distance education and to ensure its comprehensiveness and accuracy in assessing the learning outcomes for all majors and programs offered by the university. Consequently, the results can be used to improve the educational process. It is crucial to have in place clear standards and practices for tests, Assessments, and other means for performance Assessment in e-learning and distance education. This may include the procedures used in the Assessment process and the tasks assigned for all bodies and individuals responsible for the Assessment process and tests in e-learning and distance education. This serves as a framework through which colleges and academic departments implement the student Assessment process in a manner that guarantees accurate assessment of the learning outcomes and therefore helps making the necessary decisions to develop the educational process at the university.

Standards for Effective Assessment of Students' Performance in E-Learning and Distance Education:

The academic department should take into consideration the following criteria when designing tests and selecting various Assessment methods in e-learning and distance education, so that the tests meet all of the following criteria:

- 1. Validity:** The Assessment tool used to shall measure what it was designed to measure to determine the progress in achieving educational and pedagogical objectives and learning outcomes.
- 2. Reliability:** The Assessment tool used shall give consistent results all the time to reflect the level of student's achievement as much as possible or with minimal error.

Chapter 5: Student Assessment in E-Learning

3. **Objectivity:** The means of evaluating students' performance and tests shall be designed based on specific, measurable standards that are not subjective.
4. **Variety:** Varied assessment methods mentioned in these policies shall be used, taking into account their suitability for different learning domains and their ability to measure learning objectives and outcomes in terms of knowledge, skills and attitude.
5. **Comprehensiveness:** The assessment methods and tools used in the tests shall be comprehensive to all areas of learning and shall not be limited to one aspect or level so that they cover all educational outputs and academic content in a balanced manner.
6. **Feasibility:** The assessment methods and tests used shall be applicable and feasible, and this includes the availability of all capabilities, required resources and experience necessary to apply them in the educational environment.

Chapter 5: Student Assessment in E-Learning

Procedures for Assessment of Students' Performance for E-Learning:

The procedures for the Assessment process are divided into: procedures for formative Assessment and procedures for summative Assessment.

1. Formative assessment procedures:

Formative procedures are the means of evaluating students' performance and tests aimed at introducing students and training them to perform various tests and giving them feedback on their level of achievement of educational objectives provided that this is not reflected in their academic record. These procedures include the following:

- a. A table is designed for the formative assessment process during the semester for each subject. The table includes the date of each Assessment, the content it covers, and the type of questions used in the test or Assessment.
- b. Giving feedback to students after each formative Assessment should be taken into account in order to identify points of strength and points that need improvement.
- c. Underperforming students are identified through formative tests and Assessments, and necessary measures are taken to improve their level and/or appropriate solutions to the difficulties they face should be developed.
- d. Formative tests shall not be reflected on the academic records.

Chapter 5: Student Assessment in E-Learning

2. Summative Assessment procedures:

The final Assessment process goes through four stages:

- a. Preparation stage for the Assessment or the pre-Assessment stage.
- b. Assessment stage.
- c. Post-Assessment stage -1.
- d. Post-Assessment stage -2.

Each of these stages has a number of procedures that must be followed in order to guarantee the quality of the e-learning and distance education Assessment process, as they are implemented according to the Quality cycle (PDCA Cycle), and these procedures include the following:

A. Pre-Assessment procedures:

This stage includes the following steps:

1. Establishing a timetable for each procedure of this stage.
2. Reviewing the learning outcomes that will be included in the Assessment process (cognitive, skills and behavioral), according to the timetable.
3. Preparing the Assessment plan according to the timetable, taking into account that the plan is comprehensive and that it covers all learning outcomes and content that will be evaluated throughout the whole academic year and not one specific assessment.
4. Choosing the appropriate Assessment methods to evaluate the various educational outcomes, and using the existing list of these policies.
5. Preparing Assessment methods that shall be used, so that each educational output corresponds to an Assessment that is consistent with the educational objective and it can measure it accurately.
6. Reviewing means of Assessment by the concerned academic department, taking into account the use of dedicated forms for each test to document the review process.

Chapter 5: Student Assessment in E-Learning

B. Assessment procedures:

This stage includes the following steps:

1. Preparing examination schedules.
2. The academic department, colleges, and e-learning units shall monitor the implementation of other Assessments that are planned through Blackboard platform, such as homework, projects and discussion forums.
3. The body responsible for e-learning at the university shall be responsible for following up the progress of the e-Assessment process, making sure that nothing interrupts its progress, while providing the necessary support to departments and faculty members to ensure that the Assessment process proceeds appropriately.

C. Post Assessment procedures -1:

This stage includes the procedures for internal and external verification of the Assessment process to ensure its quality, integrity and transparency. This also includes:

1. Analyzing the results of objective tests, such as multiple-choice and extended metered connection, determining the difficulty factor, bias and dispersion analysis, making sure that there are no problems in the test questions, and taking the necessary action if a problem occurs.
2. Internal auditing of the essay questions and assignments and ensuring that they conform to the model answer form prepared by the subject teacher, or confirming that the correction was based on the grading scale.

Chapter 5: Student Assessment in E-Learning

3. Each e-portfolio is evaluated by at least two faculty members.
4. Preparing reports on internal review, analyzing test results and discussing them with the subject teacher and the concerned academic department.
5. Reviewing the results by the concerned academic department, discussing them in the department council, interpreting the results, and develop the necessary improvement plans.
6. Establishing a program for gifted and talented students to develop their skills and support them, in addition to another written, activated and approved program by the college council for low-achievers, to link them with specialized academic advising programs to support them.

C. Post Assessment procedures -2:

This stage includes the following steps:

1. Preparing and following up the performance indicators for the tests and making the relevant benchmarking.
2. Following-up with the departments concerned with implementing the proposed improvement plans for the teaching, learning and Assessment process, which was developed based on the results.
3. Preparing follow-up reports and submitting them to the college curriculum committees.
4. Reviewing annual reports for programs and academic courses and ensuring that they include plans and proposals for developing teaching, learning, Assessment of student performance, and testing.

Chapter 5: Student Assessment in E-Learning

Methods of assessment of students' performance for E-Learning

Selecting the methods for assessment of students' performance should be diverse, provided that they are suitable for the educational outcomes to be measured. When selecting Assessment methods in e-learning and distance education, the following should be put into consideration:

1. Preparing an integrated plan for the Assessment by using the attached template, explaining to students the Assessment methods, the tools used such as check lists, rubrics, and e-portfolio).
2. Using diverse methods of Assessment.
3. Using interactive methods of teaching and Assessment, including multimedia, simulation, case studies and all methods that contribute to the integration and inclusion of students in the educational process.
4. Focusing on giving constructive and qualitative feedback that focuses on improving students' performance.
5. Using all technical programs and means to maintain academic integrity while educating students about that issue.
6. Getting prepared with contingency plans and various alternatives to avoid technical problems, including preserving and storing students' work in more than one way.

These methods include, but not limited to, the following:

Chapter 5: Student Assessment in E-Learning

1. Discussion forums

They are electronic sessions for discussion organized on electronic learning systems, such as Blackboard. They allow students to comment and interact with each other and with the faculty member. Discussion forums can be used for general discussions of courses or for specific topics.

Main features of discussion forums

- a. Students can exchange discussions and ideas with each other and with a faculty member.
- b. Students can discuss their personal experiences and different points of view.
- c. Students build ideas through the opinions of their peers.
- d. It is possible to study and analyze cases.

Activation Strategies

- a. Explaining to students the purpose of the discussion forums and the expectations required of them.
- b. Taxonomy of discussion forums can be made based on their type and goal: a discussion forum for exchange views, for a case study, for argumentation, etc.
- c. Using discussion forums for problem-solving activities as a channel for brainstorming, and scores are given for participation in discussions and for the solution to the problem.
- d. Following up on students' comments, especially to avoid and block any unacceptable comments from some students.

Chapter 5: Student Assessment in E-Learning

- e. Giving students some examples of peer comments at the start of the discussion.
- f. Encouraging students to ask questions that support fruitful thinking and discussion.
- g. Evaluating students on some comments, but not all of their comments, in order to alleviate the burden of correction, and students may suggest the comments or answers that deserve to be counted in the Assessment.
- h. Self-Assessment may also be required from students during and after the discussion is completed.
- i. In some cases, a faculty member may specify the number of words in the comment, following Twitter Style, by specifying for example 140 words for each comment. This helps make the responses more organized and focused.

2. E-tests for continuous Assessment through E-Learning Management systems like Blackboard:

In e-learning, the e-tests for continuous Assessment mean the long or short tests that are done on the computer without invigilators, which are different from the e-tests that take place in equipped halls with the presence of invigilators.

Chapter 5: Student Assessment in E-Learning

The most important features of e-tests for continuous Assessment:

- a. They can be repeated, which contributes to the students' understanding of the course materials with the possibility of having regular and detailed feedback.
- b. They give students confidence in their acquisition of the course outputs through repeating them and therefore students' level is improved in the next e-test, especially with the existence of feedback. So, it is advised that the start should be through an experimental test so that the students get used to this type of tests.
- c. They allow the use of the features of e-learning systems that contribute to reducing the cheating process.
- d. They allow the use of different types of questions available in e-learning systems such as Blackboard.

Activation Strategies:

- a. These tests are designed to simulate the course review activities. This contributes to the achievement of educational outcomes.
- b. If possible, the tests should be designed to be open book tests to ensure deep learning and reduce the possibilities of cheating.
- c. These tests must include some feedback, which is allowed by learning management systems like Blackboard.
- d. It is recommended to conclude with a question so that students reflect on what they learned or what they benefited from the course.
- e. It is also better to use some types of questions other than multiple choice, such as pairing and short essay. This may increase the mental level of questions to reach higher memorization skills.

Chapter 5: Student Assessment in E-Learning

- f. The integration of some video films, simulations, cases and other interactive methods are recommended as this contributes to the Assessment of higher levels of thinking and the integration of students in the educational process.
- g. It is possible to create questions based on students' questions during the educational process in addition to their common mistakes.
- h. In the case of using ready-made question banks, the extent of their suitability for the course content shall be taken into consideration.
- i. If students have several electronic tests, it is recommended that the lower test score may be omitted. This feature is provided by the e-learning management systems.
- j. The timings of electronic exams should be carefully selected to suit other Assessment methods in the course.

3- Final e-exams through E-Learning management systems such as Blackboard:

The test-tools can be adopted to activate Short Answers Quizzes, Essay Quizzes, MCQs, and Open Book Exams to meet the knowledge and skill requirements in the relevant courses. It can also be used to cover the knowledge side in practical / laboratory courses. It is possible to redistribute course grades in line with the reorganization of the Assessment processes in a way that does not affect the coverage of learning outcomes, the study mechanism and the tests approved by the university, while adopting certain settings to ensure academic integrity and reduce cheating.

Chapter 5: Student Assessment in E-Learning

Main features of the final e-exams in E-Learning management systems such as Blackboard:

- a. Testing all students for all sections in a certain course at the same time.
- b. Activating the feature of banning to return to previous questions while informing the student about this before starting the test.
- c. Making test time appropriate to the nature of the test, and activating the feature of forced completion which closes the test session at the end of the test time.
- d. Activating the feature of random arrangement of questions and answers in MCQs to prevent cheating.
- e. Building the test from the question bank so that a certain number of questions is randomly selected from a bank full of questions, as this reduces the possibility of cheating. The number of difficult, easy and average questions must be taken into account, and question banks must be classified according to chapters.
- f. Setting an appropriate password and changing it ten minutes after the start of the test time, and keeping nobody informed about it until the test time.
- g. Hiding the test link from the students after twenty minutes of the start time of the test.

Strategies of designing (quarterly/final) e-tests

- a. Commitment to the ideal design rules for MCQs with multiple dispersions, sound style, quality, adequacy, and comprehensiveness of the questions, whether in the quarterly or final Assessment.
- b. Designing MCQs, essay questions, and Open Book questions in a way that guarantees defining the criteria for evaluating the student by adding a rubric rule either through the test instructions or adding it as an electronic rule.

Chapter 5: Student Assessment in E-Learning

- c. Using tools of question banks and question pools to create multiple questions that cover the course content and prepare random samples of the quarterly or final exams that contribute to guarantee the academic integrity of the e-tests.
- d. Using the tools designated for test description, giving clear instructions for students, specifying the grades assigned to each test, and elaborating rules of Assessment for essay tests and open book tests, if used.
- e. Using the communication tools in the e-learning management system (mail, media messages, etc.) to alert students when the quarterly and final electronic exams are announced. In the case of the final exams, a specific schedule for each department is published and students are notified with all available means of communication.
- f. Determining the types of benefiting groups of students registered in a course, and taking into account the cases in which the e-Assessment is not applied, whether due to the nature of the course or the student's status, especially when there is a student with special needs. Therefore, the appropriate procedure is applied when designing and publishing e-Assessments (tests / assignments) so that they are excluded and they shall have to take another Assessment that suits their status.

4- Homework:

The Homework Tool can be used to fulfill requirements of project, scholarly research, case studies, reports, etc. This requires basic knowledge and skills that do not require practical/laboratory practice. In practical/laboratory courses, the Homework Tool can be used to fulfill the theoretical requirement or reports on the skill verification if it can be implemented outside the classroom. Course grades can be redistributed in line with the reorganization of the Assessment processes in a way that does not affect the learning outcomes. When a homework deadline is over, it should be made available again as an additional attempt for the student, an alternative homework is made, or the appropriate grade is recorded according to the study and examination bylaws approved by the university.

Chapter 5: Student Assessment in E-Learning

Main Features of Homework

- a. Homework can be used as an alternative way to essay questions to guarantee the quality of what students submit and to encourage them to innovate instead of focusing on the huge amount of information they write.
- b. Homework can be designed to be an individual or group task, and it can be published through blogs or discussion forums, which encourages cooperative learning and interaction between peers.
- c. Homework should include at least one feedback, which means that the student submits it as a draft and then submits the final product after receiving feedback.
- d. Homework feedback should include both the comment on the method of writing (Process) and the quality of the scientific content (Quality of the Product).
- e. The assessment for homework is done according to a Rubric, whether ready-made or specially designed.

Activation Strategies

- a. The resources that students can use should be part of the directions given to them with the homework.
- b. In the event that a large number of students fail in the same part of the homework, a general feedback on it shall be given to the whole class.
- c. Students should be informed of the timing for submitting draft homework and the final homework, as well as the timing of the feedback.
- d. Big projects or homework can be divided into phases to allow giving feedback to students periodically for continuous improvement.

Chapter 5: Student Assessment in E-Learning

- e. Training is carried out for faculty members or junior staff on designing and applying assessment scales to be used to correct and record homework grades.
- f. Students are provided with a model answer for a homework that has a different content to show the students the most important features of the quality of homework.
- g. Students are allowed to make a self-Assessment of the homework and then this shall be compared with the course teacher's Assessment. This strengthens their full knowledge of the components of the Assessment as included in the grading scale, and enhances their general perceptions of the course.

5- E-Portfolio:

The e-portfolio is a compilation of the student's academic, personal and professional development. It is used to show the extent of students' acquisition of skills and it includes a reflection of how the students perceive their academic achievement and performance in various courses. E-learning management systems such as Blackboard allow e-portfolios to be collected and evaluated by faculty members.

Main Features of E-Portfolio:

- a. Students should be introduced to the e-portfolio at the beginning of the semester and they are encouraged to update it during the semester.
- b. Students should use the e-portfolio feature in the e-learning management system to upload the e-portfolio while faculty members should evaluate it and give feedback through it.
- c. Grading scales are used in the Assessment and recording grades the e-portfolio.

Chapter 5: Student Assessment in E-Learning

- d. Peer review may be integrated into the design of the e-portfolio to encourage collaborative learning through identifying what students do in designing their e-portfolios. This should be written as students' reflection.

Activation Strategies:

- a. From the beginning of the course, students are made aware of the purpose of the e-portfolio and the value it adds to them in their educational journey.
- b. Faculty members and junior staff should be trained on how to use the e-portfolio, especially the technical aspect associated with it, and how to overcome the difficulties that may encounter them and the students.
- c. Designing a grading scale (Rubric) to evaluate the e-portfolio, taking into account that the e-portfolio should be divided into sections and assigning a grade to each section, in addition to giving feedback to each section without sufficing with the final feedback.
- d. Students are given the Rubric from the beginning of the semester so that they are fully aware of the criteria of Assessment.
- e. It is recommended that students submit a draft of the e-portfolio in the middle of the semester so that they receive feedback on it to improve the final product of the e-portfolio.
- f. The e-portfolio should include a reflection, and students may get some help through giving them some questions to answer as a reflection of their thinking.
- g. There should be some flexibility when dealing with the e-portfolio uploaded by students, whether they upload written files, presentations, photos, or videos, etc.

Chapter 5: Student Assessment in E-Learning

Other Assessment methods of students' performance in E-Learning and distance education:

- 1. Distance Oral Assessment (for undergraduate courses based on oral Assessment, and postgraduate defense):** This type of Assessment can be used in both theoretical and practical / laboratory courses using virtual classes, as clear rules are defined for evaluating the learner who joins the session that is scheduled by the professor beforehand. The student is given the status of a moderator to be able to participate.
- 2. Open Book Exam (recommended as a quarterly Assessment only):** The option of «One Attempt Only» must be activated, without activating the «Forced Completion» option. Exam time must be set in the «Setting Timer» option, and the option «Automatic Sending» should be activated. It is important to specify a time for exam start and end while putting into consideration the times of high traffic on the system, based on the relevant deanship's reports. These settings allow students during a specific time to complete the exam requirements, allow them to exit and return to the exam later within the time frame specified in the timer, and save their answers and automatically send them.
- 3. Mind Maps:** Students are required to design electronic mind maps to link the studied topics and concepts with each other. Appropriate grading scales should be designed to evaluate them.
- 4. Multimedia Projects:** Students design the project or homework through a video movie, for example, as an alternative to written homework.
- 5. Digital Posters:** Students are asked to design an electronic poster. Different learning platforms are used to present and evaluate it at the presence of the rest of the students to give immediate feedback so that all students benefit from it. Reflection grading scales are used to evaluate it.

Chapter 5: Student Assessment in E-Learning

- 6. Reflection / Blogs:** Students are asked to write their reflection about their educational experience. Their writings are guided by answering some questions prepared for this purpose.
- 7. Research project:** This is considered one of the many types of homework in which the student answers a research question and presents it through a research essay. The project may be an individual or group project.
- 8. Simulation / virtual labs:** These strategies are appropriate for health and practical colleges, where the student completes an assignment or solves a practical problem through the virtual lab or simulation in a manner proportionate to the course content.

Chapter 5: Student Assessment in E-Learning

Constructive Feedback in E-Learning

Definition of feedback

Feedback can be defined as informing the student of the outcome of his/her learning, or a correction of a behavior that the student has made by providing the student with an ongoing information on the progress of his/her performance, to help the student continue the good performance, or to correct the performance if needed. This indicates the correlation between the concept of feedback with the comprehensive concept of the Assessment process as one of the means used to guarantee the achievement of the maximum possible learning goals and objectives.

The importance of feedback

Studies and research have indicated that constructive feedback increases motivation, strengthens sound behavior, and contributes to modifying inappropriate behavior. The importance of feedback can be summarized in the following points:

- Feedback enhances the capabilities of the learner and encourages the learner to continue the learning process.
- It gives the student the opportunity to practice and then compare the performance with the correct one. When a student solves a problem or answers a question, the feedback received after completing the work improves future performance and identifies points of strength and weakness.
- It boosts the learning process, and increases the student's motivation.
- It makes the student enthusiastic to know his/her performance, and the results of his/her efforts, especially if this feedback is provided in a proper manner.

Chapter 5: Student Assessment in E-Learning

- It helps to set appropriate standards for evaluating students' works to self-direct themselves.
- Students know through feedback what is required and the time needed to reach their objectives.

Criteria for providing constructive feedback:

For feedback to be effective, there are a set of criteria that must be followed, including:

1. Providing feedback on certain aspects related to educational objectives.
2. Avoiding offering students huge amounts of information so as not to confuse them.
3. Giving feedback according to the priority of the educational objectives.
4. Giving students the opportunity to use feedback in subsequent learning processes.

Finally, the rapid development of educational technology has not changed the basic nature of constructive feedback, but it has significantly identified all the methods in which feedback can be presented to students to improve their performance. These methods include: wikis, blogs, personal response systems, and learning management systems, among others. Such methods provide continuous, fast, and practical feedback, compared to providing feedback face to face. Some studies have indicated that technological tools that provide feedback individually to each student and direct the student through the formative electronic assessment enhance students' performance, positive participation, and enable them to follow up on their results and performance, which would be a stimulation factor and would facilitate the process of self-Assessment of their learning. On the other hand, it is useful for the teacher in improving the teaching and learning process.



The background of the page is a close-up, low-angle photograph of a laptop keyboard. The keys are dark and the laptop body is light-colored. On the right side of the image, there is a semi-transparent geometric pattern consisting of a grid of small triangles. A dark, rounded rectangular box is positioned in the lower-left area of the page, containing the word 'Appendices' in white text.

Appendices

Appendix 1 – Terminology for E-Learning

1. **E-learning:** E-learning can be considered as a method of education that depends on providing educational content and acquiring the learner the skills and concepts through information and communication technologies and their multimedia in a way that allows the student to actively interact with the content, teacher and colleagues in a synchronous or asynchronous manner in time, place and speed suitable for the learner's circumstances and capacity, and manages all educational activities and their requirements electronically through the electronic systems designated for this purpose.
2. **Types of E-Learning:**
 - A. **Distance Education:** It is one of the learning methods in which the available means of communication represent a fundamental role in overcoming the problem of distances that separate the teacher and the learner.
 - B. **Blended learning:** It is a model in which direct learning strategies in traditional classrooms are blended with online e-learning tools.
 - C. **Mobile learning:** It is the use of small and portable wireless devices such as mobile phones, smart phones and tablet PCs, to ensure that the learner has access to the educational content from anywhere and at any time.
 - D. **Synchronous learning:** It is the teaching mode that brings together the teacher and the learner at the same time using educational tools, such as: Virtual Classrooms or Blackboard Collaborate, instant messaging or text chatting.
 - E. **Asynchronous learning:** Asynchronous learning tools include the following: educational forums, social networks, digital educational content, e-mail, blogs, and private encyclopedias.
3. **Learning environment:** It refers to the various school spaces, outdoor places, and social and cultural contexts within which students learn. It is not limited to classrooms and playgrounds, but rather it includes social relations between the administration, teachers, students, parents and various stakeholders in the educational learning process.

Appendix 1 – Terminology for E-Learning

4. **Learning Management System (LMS):** It is an electronic system for managing, documenting, tracking and reporting the progress of academic courses or training programs, students or trainees, providing the possibility of co-operative education and training, enabling participation and communication between users and the professor or trainer, and managing the entire educational process electronically.
5. **Virtual Classrooms:** It is also called electronic classrooms, smart classrooms, or global network of information classes. It is an environment for direct or indirect education, and this environment can be web-based, accessed through a portal, or based on applications that require download and installation.
6. **Flipped classroom:** It means flipped or reversed learning. It is an educational model that aims to use modern technologies and the Internet in a way that allows the teacher to prepare the lesson through video clips, audio files, or other media so that students can view them at home or anywhere else using their computers, smartphones, or tablets before attending the class. Lecture time is therefore devoted to discussions, projects and exercises. Video is an essential element in this style of education, where the teacher creates a video of 5-10 minutes in length and shares it with students on a website or social network.
7. **Massive Open Online Course (MOOC):** This is a new method that enables thousands of students around the world to study at distance and for free in the best international universities through the enormous potentials of the internet. For this purpose, multiple educational platforms have been established, focusing mainly on applied sciences, computer technologies, contracting management, law and philosophy.
8. **Open Educational Resource (OER):** It is a teaching, educational and research resource available to everyone as a common or public domain, or it was issued using a specific intellectual property license, which allows the distribution and modification of these resources and allows cooperation with others to reuse them even for commercial purposes.

Appendix 1 – Terminology for E-Learning

- 9. Personalized learning:** It is a relatively new term that refers to a set of programs, experiences, curricula, and academic support strategies that aim to meet the learning needs of students in an individual manner based on the students' differences, aspirations, preferences and backgrounds.
- 10. Project-Based Learning (PBL):** It is an effective educational model that blends modern learning theories. It is based on troubleshooting problems through designing and implementing pedagogical classroom projects in which students integrate their various skills and previous knowledge.
- 11. Assessment:** It is an organized process for collecting and analyzing information with the purpose of determining the degree of achievement of educational goals and taking decisions regarding them to address weaknesses and providing healthy and engaging growth through reorganizing the educational environment and enriching it.
- 12. Electronic Assessment (E-Assessment):** It is the use of any electronic method, which allows making organized and systematic judgments about the skills and knowledge of students' abilities.
- 13. Performance Assessment:** It requires the learner to evidently show, prove, or present examples, experiences, products, etc., of his/her achievement of a certain educational level or a specific educational objective. The Assessment requires the student to perform a real task (writing an essay, making classification, preparing a project, conducting an experiment, etc.).
- 14. Authentic Assessment:** It takes into account modern assessment approaches. Reflecting and assessing students' achievements in real situations, assessments engage students in meaningful tasks. Therefore it looks like a learning activities not a routine test in which students practice high thinking skills and make decisions, or solve real life problems.

Appendix 1 – Terminology for E-Learning

- 15. Summative Assessment (Assessment of Learning):** It is defined as the assessment of learning after it is done by using information about students' performance and making reports about it. It has a unidimensional and summative nature that is an integral part of the curriculum but it leads the teaching for assessment process. It is used to emphasize what students know, are able to do, and whether they have achieved the curriculum objectives. It also helps determine students' standing compared to others.
- 16. Formative Assessment:** It is defined as assessment for learning. It is multidimensional, formative, integrated in the curriculum, real, present in a context, and flexible. In this type of assessment, the faculty member is required to collect information not only to determine what students know, but also to know when and how students apply what they have learned, to improve teaching, and to give students feedback to improve their learning. It depends on continuous self-Assessment.
- 17. Feedback:** It is informing the student of the outcome of his/her learning, or a correction of a behavior that the student has made by providing the student with an ongoing information on the progress of his/her performance, to help the student continue the good performance, or to correct the performance if needed. This indicates the correlation between the concept of feedback with the comprehensive concept of the Assessment process as one of the means used to guarantee the achievement of the maximum possible learning goals and objectives.
- 18. E-Course:** It is a course based on integrating educational material and e-learning technologies in its design, creation, implementation and Assessment. The learner studies the contents technically and interactively with a faculty member at any time and place.

Appendix 2 – General Controls for E-Learning and Distance Education

A faculty member should adhere to some controls and guidelines while performing his/her academic role in e-learning and distance education, which include:

1. Using the approved e-learning systems in the educational institution, while committed to preserving the privacy and confidentiality of information.
2. Scheduling academic lectures on the virtual classroom system according to the times specified in the academic schedule.
3. Commitment to attend and present lectures on the specified times, and scheduling compensatory lectures only when necessary.
4. Informing students about the times of lectures or compensatory lectures through the e-learning system by using the advertisement tool or a notification message via the application.
5. Recording virtual classroom lectures and allowing students to view and access them through the side navigation menu of the course.
6. Printing the report on the virtual classroom after it ends as per schedule.
7. Using the available means to train students in practical and clinical skills, and taking advantage of the available virtual laboratories in different specializations.
8. Directing students regularly to use the available technical support channels offered by the authority responsible for e-learning and distance education to remedy the technical problems they may face and solve such problems as soon as possible.
9. Recording attendance and absence of students registered in the course regularly to ensure that students do not drop out by using the “Attendance” tool in the e-learning system.

Appendix 2 – General Controls for E-Learning and Distance Education

10. Determining electronic office hours through which the student can communicate with the teaching staff to get electronic support and academic guidance.
11. Verifying the status of students who do not attend the virtual lectures and sessions, and therefore sending alerts according to the regulations.
12. Determining the students who obtained the degree of (DN) as they did not attend the e-Assessment / final exam based on the percentages specified in the «attendance and e-Assessment» system, and following the legal procedures in this regard.

Appendix 3 – General Guidelines for Virtual Lectures

1. It is better for a faculty member to start the lecture by giving a quick overview of his/her expectations of the student's behavior, such as how to act in the event the student wants to ask, to inform the students to switch off the microphone in case of not speaking, or the rules for switching the camera on and off, etc.
2. When sharing the screen with students through Blackboard, all important, personal and sensitive files must be closed.
3. During the lecture, it is necessary to make sure from time to time that the sound works well and that the picture is clear.
4. Upon the end of the lecture, the faculty member should not leave first, but rather he/she should wait for all students to leave the session.
5. It is better that the student's camera is switched off all the time, unless there is a need to use it.
6. In the event that a faculty member wants to record a lecture so that students can return to it later, students must be informed of this beforehand.
7. Students should not share the lecture or any part of it with any external party.

Appendix 4 – Approved Scientific Criteria for E-Course Design

I. Design Criteria:

1. The objectives of the digital content are clear.
2. Standard designs and a standard structure must be followed in all units and pages.
3. The content must be divided into smaller reusable parts (chunking).
4. The digital content should be available in various forms (texts, audio, and visual materials) that support the different needs of the learner.
5. The design, media and fonts used in different sizes, colors and formats should be available in a way that facilitates reading and reduces stress.
6. The quality of educational and training media should be guaranteed and they should be transferrable to text.
7. A percentage of the e-course content should be available as enriching information.
8. Digital content should be displayed in an organized manner that facilitates movement between its parts.

II. Interaction Criteria

1. Providing instructions on how to start using the e-course, the communication policy, and defining the main sections and the starting point.
2. Providing a timeline for all the steps expected from the learner for each electronic unit, and the needed content and tools for each step.
3. Putting in place a mechanism to answer the learner's inquiries, and providing him/her with feedback on the tasks accomplished on an ongoing basis.
4. Providing a self-Assessment that enables the learner to verify the progress achieved and provide the learner with feedback.

Appendix 4 – Approved Scientific Criteria for E-Course Design

III. Justice and Accessibility Criteria:

1. The design should commit to the minimum level of knowledge, technical skills and learners' competencies.
2. Fair access to the electronic content for all learners with all abilities must be guaranteed.
3. Assisting technologies that are easily accessible from inside and outside the content should be available with an explanation of ways to obtain them.

IV. Assessment and Evaluation Criteria:

1. Tools to measure learning objectives should be selected in a manner suitable for digital content activities and resources.
2. The Assessment grades for e-courses should be clear and announced as they appear.
3. Assessment tools should be sequenced, varied, and relevant to the learner's work being assessed.
4. Several opportunities should be available for the learners to measure their progress in their educational process.

References

1. Barkley, E.F., & Major, C. H. (2016) Learning assessment techniques: A handbook for college faculty. San Francisco: Jossey-Bass.
2. Beebe, R., Vonderwell, S., & Boboc, M. (2010). Emerging patterns in transferring assessment practices from f2f to online environments. *Electronic Journal of e-Learning*, 8(1), 1-12.
3. Bennett, S., Dawson, P., Bearman, M., Molloy, E., & Boud, D. (2017). How technology shapes assessment design: Findings from a study of university teachers. *British Journal of Educational Technology*, 48(2), 672-682. doi.org/10.1111/bjet.12439
4. Blackmon, S.J. (2012). Outcomes of chat and discussion board use in online learning: A research synthesis. *Journal of Educators Online*, 9(2). doi.org/10.9743/JEO.2012.2.4
5. Boitshwarelo, B., Reedy, A.K., & Billany, T. (2017). Envisioning the use of online tests in assessing twenty- first century learning: A literature review. *Research and Practice in Technology Enhanced Learning*, 12(16). doi.org/10.1186/s41039-017-0055-7
6. Bolliger, D.U., & Shepherd, C.E. (2010). Student perceptions of ePortfolio integration in online courses. *Distance Education*, 31(3), 295-314. doi.org/10.1080/01587919.2010.513955
7. Canadian Digital Learning Research Association. (2019). Tracking online and distance education in Canadian university and colleges: 2018. Retrieved from <https://onlinelearningsurveycanada.ca/publications-2018/>
8. Daly, C., Pachler, N., Mor, Y., & Mellar, H. (2010). Exploring formative e-assessment: using case stories and design patterns. *Assessment and Evaluation in*

References

- Higher Education, 35(5), 619-636. doi.org/10.1080/02602931003650052
9. Drury, H., & Mort, P. (2015). Engaging students in online learning environments for success in academic writing in the disciplines. In M. Deane, & T. Guasch (Eds), *Learning and Teaching Writing Online: Strategies for Success* (pp.151-175). Brill. doi.org/10.1163/9789004290846
10. Dumford, A.D., & Miller, A.L. (2018). Online learning in higher education: Exploring advantages and disadvantages for engagement. *Journal of Computing in Higher Education*, 30(3), 452-465. doi.org/10.1007/s12528-018-9179-z
11. Harden, R. M. and Lilley, P. (2018) *The Eight Roles of the Medical Teacher: The purpose and function of a teacher in the healthcare professions*. Elsevier Health Sciences. Available at: <https://books.google.com.sa/books?id=GG-FbDwAAQBAJ>.
12. Hortsmanshof, L., & Brownie, S. (2011). A scaffolded approach to discussion board use for formative assessment of academic writing skills. *Assessment and Evaluation in Higher Education*, 38(1), 61- 73. doi.org./10.1080/02602938.2011.604121
13. Khan, S., & Khan, R.A. (2019). Online assessments: Exploring perspectives of university students. *Education and Information Technologies*, 24(1), 661-667. doi.org/10.1007/s10639-018-9797-0
14. Lorna R. Kearns 2012: *Student Assessment in Online Learning: Challenges and Effective Practices*. MERLOT Journal of Online Learning and Teaching. Vol. 8, No. 3, September 2012
15. Moon, J. (2005). *Reflective writing—some initial guidance for students*. Retrieved from <http://efs.weblogs.anu.edu.au/files/2018/01/Moon-on-Reflective-Writing.pdf>

References

16. Moussa-Intay, J. (2015). Reflective writing through the use of guiding questions. *International Journal of Teaching and Learning in Higher Education*, 27(1), 104-113.
17. Mueller, R.A. (2015). ePortfolios: Best practices for use in higher education. Taylor Institute for Teaching and Learning. Retrieved from https://eportfolio.ualgarny.ca/wp-content/uploads/2015/09/e-portfolio-support-document_best-practices-final.pdf
18. Olofsson, A.D., Lindberg, J.O., & Stodberg, U. (2011). Shared video media and blogging online: Educational technologies for enhancing formative e-assessment. *Campus-Wide Information System*, 28(1), 41-55. doi.org/10.1108/10650741111097287
19. Redecker C., Punie Y., & Ferrari A. (2012) eAssessment for 21st Century Learning and Skills. In Ravenscroft A., Lindstaedt S., Kloos C.D., Hernández-Leo D. (Eds) 21st Century Learning for 21st Century Skills. EC-TEL 2012. Lecture Notes in Computer Science, vol 7563. Springer, Berlin, Heidelberg.
20. Rolim, C., & Isaias, P. (2018). Examining the use of e-assessment in higher education: teachers and students' viewpoints. *British Journal of Educational Technology*, 50(4), 1785-1800. doi.org/10.1111/bjet.12669
21. San Jose, D.L. (2017). Evaluating, comparing, and best practice in electronic portfolio system use. *Journal of Educational Technology Systems*, 45(4), 476-498. doi.org /10.1177%2F0047239516672049
22. Stodberg, U. (2012). A research review of e-assessment. *Assessment & Evaluation in Higher Education*, 37(5), 591-604. doi.org/10.1080/02602938.2011.557496

References

23. Van der Pol, J., van den Berg, B.A.M., Admiraal, W.F., Simons, P.R.J. (2008). The nature, reception, and use of online peer feedback in higher education. *Computers and Education*, 51(4). doi.org/10.1016/j.compedu.2008.06.001
24. Vlachopoulos, D. (2016). Assuring quality in e-learning course design: The roadmap. *International Review of Research in Open and Distributed Learning*, 17(6). doi.org/10.19173/irrodl.v17i6.2784
25. Watanabe-Crockett, L. (2017). 25 self-reflection questions to get students thinking about their learning. Retrieved from: <https://www.wabisabilearning.com/blog/25-self-reflection-questions>
26. Xie, K., Yu, C, Bradshaw, A.C. (2014). Impacts of role assignment and participation in asynchronous discussions in college-level online classes. *The Internet and Higher Education*, 20, 10-19. doi.org /10.1016/j.iheduc.2013.09.003

Arabic References

١. حصة الخالدي وعثمان التركي. أثر تقديم التغذية الراجعة الفعالة في نظم إدارة التعلم على تعزيز نواتج تعلم الطلبة. *المجلة الدولية التربوية المتخصصة*. المجلد (٧) العدد (٧) تموز ٢٠١٨.
٢. سياسات الاختبارات وتقويم أداء الطلبة -جامعة الملك عبد العزيز -ديسمبر ٢٠١٩.

Websites and links

1. Strategies for Enhancing Learner Participation in Distance Teaching in Emergencies: Learner-Centered Learning:

<https://www.new-educ.com/%D8%A7%D9%84%D8%AA%D8%AF%D8%B1%D9%8A%D8%B3-%D8%B9%D9%86-%D8%A8%D8%B9%D8%AF-%D9%81%D9%8A-%D8%AD%D8%A7%D9%84%D8%A7%D8%AA-%D8%A7%D9%84%D8%B7%D9%88%D8%A7%D8%B1%D8%A6>

(Last Retrieved: 03 October 2020)

2. A Must Know Terminology in educational technology and techniques:

<https://www.new-educ.com/%d9%85%d8%b5%d8%b7%d9%84%d8%ad%d8%a7%d8%aa-%d9%81%d9%8a-%d8%aa%d9%83%d9%86%d9%88%d9%84%d9%88%d8%ac%d9%8a%d8%a7-%d8%a7%d9%84%d8%aa%d8%b9%d9%84-%d9%8a%d9%85>

(Last Retrieved: 03 October 2020)

3. Instructional Strategies for Online Courses:

<https://www.uis.edu/ion/resources/tutorials/pedagogy/instructional-strategies-for-online-courses/>

(Retrieved 03 October 2020)

4. Online Learning Tools: Synchronous Communication Tools:

https://www.angelo.edu/instructional-design/online-teaching/section_32.php

Last visited in October 3, 2020.

5. Online Learning Tools: Asynchronous Communication Tools:

https://www.angelo.edu/instructional-design/online-teaching/section_31.php

Last visited in October 3, 2020.

A faculty member needs a number of competencies that enable him to effectively manage and achieve educational outcomes in e-courses. Perhaps the most prominent of which are the five basic competencies:

1. Effective communication in an electronic environment.
2. The use and employment of technology in e-learning.
3. Designing and developing e-courses.
4. Engaging students into the educational process in e-learning.
5. Assessment of Students' level in e-learning.

The five chapters of this book deal with these competencies in terms of their significance and the skills and strategies that fall under each of them, which a faculty member must acquire and master to achieve the learning outcomes of the programs and courses offered through e-learning and distance education.



The Five Competencies of E-Learning