# TABLE OF CONTENT

**FOREWORD** .................................................................................................................. i

**ELECTRONIC, MOBILE AND UBIQUITOUS LEARNING IN HIGHER EDUCATION**
Basuki Wibawa .................................................................................................................. 1

**AN IDEA INSTRUCTIONAL STRATEGY FOR INCLUSIVE EDUCATION**
Rusmono ............................................................................................................................ 25

**ELECTRONIC & MOBILE LEARNING DESIGN** ................................................................. 35

**M-LEARNING DESIGN: INTEGRATION DISCOVERY LEARNING METHOD IN MOBILE APPLICATION**
Heni Risa Susila .................................................................................................................. 37

**DESIGN E-LEARNING INFRASTRUCTURE BASED ON OBJECT ORIENTED MODULAR DYNAMIC LEARNING ENVIRONMENT AS AN EFFORT TO HELP STUDENTS AND TEACHERS IN LEARNING PROCESS HOMESCHOOLING**
Ariana Azimah and Heni Jusuf .......................................................................................... 89

**INSTRUCTIONAL MODEL NEEDS ANALYSIS BASED ON E-LEARNING**
Zul Anwar and Hasturi Draha Elawati .................................................................................. 96

**DESIGN OF E-LEARNING INFRASTRUCTURE TECHNOLOGY TO SUPPORT LEARNING WITH COMPETENCY-BASED CURRICULUM**
Lucia Sri Istiyowati ............................................................................................................. 100
INSTRUCTIONAL MODEL NEEDS ANALYSIS
BASED ON E-LEARNING

Zul Anwar¹ and Hastuti Diah Ekawati²
¹,²Institut Keguruan dan Ilmu Pendidikan Mataram
Zulanwar17@gmail.com

Abstract
Interactive, informative and collaborative instructional which are some parts of student needs in teaching and learning process. These are offered by instructional model based on e-learning, besides, the easily of unlimited access is one of the characteristic instructional model online. These needs becomes close to the material or the contents of instruction. Otherwise, the chosen and management of the contents become something important in order that e-learning could give what the student needs. Besides, instructional program using through appropriate technology is the one of the important thing to reach out the goal of this instructional model based on e-learning.

Keywords: instructional model, e-learning.

FOREWORD
The development of human being resources and education world cannot separate from technology based on computer, even just as tools for development media and materialized or as instructional contents. One of instructional system which has been developing in using technology based on computer is e-learning model education. Lately, e-learning more develop because of technology makes teaching and learning process more efficient. It could be seen from times, distances, and costs.

E-learning is offered new chances for teachers and students for enrich their experience in teaching and learning process through the real of environment which is supporting in transferring the material but also in explorations and implementation of the informations and getting the new science. Thus for, e-learning is focusing on the most sophisticate combinations and characteristic convergence, i.e. video mobile phone and telecommunications audio, graphic three dimensions, email, website, and face to face were oriented object which all of these programmed for supporting, creating and giving the significance experience in educations and environments.

The success of e-learning system could be saw from the effectiveness on facilitating the education activities and human being resources development, i.e. on the transferring the materials instructional process, social interaction and communications between individuals and also the reach out the goal of instructional based on e-learning. Thus for, the two main keys for reaching the affectivity of e-learning are, 1) the contents which is emphasized on student needs and also 2) using the technology for transferring the materials of instructional.

DISCUSSIONS
E-learning is study process effectively resulted trough combinations on transferring the materials instructional digitally which is consisted of supporting and servicing on teaching and learning process (Barbara,S., Wagner P., et al., 2008: 4).

International Research Clinic and E&M Learning Seminar in Educational Technology
Universitas Negeri Jakarta
Clark and Mayer (2003: 11) defined e-learning as training delivered on a computer (including CD-ROM, Internet, or intranet) that is designed to support individual learning or organizational performance goals. Besides, Rosenberg (2001: 28-29) explained e-learning has been using the Internet for transferring the solutions on enrich science and capability based on three criteria:

1. E-learning is networked which makes it capable of instant updating, storage/retrieval, distribution and sharing of instruction or information.
2. It is delivered to the end-user via computer using standard Internet technology.
3. It focuses on the broadest view of learning solutions that go beyond the traditional paradigms of training.

Furthermore Rosenberg (2001) explained the excess of e-learning such as:

1. **Lower cost.** E-learning can decrease course cost then time for using in teaching and learning process and also decrease infrastructure class needs supply.
2. **Unlimited access.** E-learning can handle unlimited virtual users simultaneously.
3. **Contents variation.** E-learning could be pretend giving some another contents differently for teaching and learning process as students need.
4. **Up to date.** E-learning is very easy to do because of its sophistication.
5. **Universal.** E-learning can be appropriated with universal protocol, i.e. internet and browser.
6. **Communities.** E-learning has been supporting and facilitating on community formed with many various (self-) interests.
7. **Capable on handle many scale.** E-learning is the solution for many scales. It's just needs a little change on infrastructure and cost development.
8. **Services improvement.** E-learning can be able improving services on teaching and learning process effectively.

To construct e-learning instructional model at least it needs three important aspects which are main framework e-learning:

1. **Contents**

   Content has important role on teaching and learning process because it related to students on teaching and learning process directly. Content is the object on instructional which is as success parameter trough various, contents and quality of content. E-learning system should be:

   - Supplying the teacher-centered content characteristic. This content has feature procedural, declarative and also defined clearly.
   - Supplying the learner-centered content characteristic. This content serves the outcomes from instructional focused on creativity development and autonomous maximize.
   - Supplying work design. It's on the content of material for understanding and giving chances for practicing easily.
   - Supplying educative games. As media designed, e-learning helps making questions (Rosenberg, 2001).

Based on the functions above, a good e-learning system should not need some contents, i.e.:

   - Information. These information contents of materials transferred to users as materials will be followed. The type of information such as syllabus, news and announcement etc.
• Instructional Material. This point consists of instructional will be transferred through many forms. Such as texts, pictures, photos, graphics, presentation slides, animations, HTML, audio (script, audio streaming, audio recorded), video (video recorded, video streaming).

• Interactions and communications. This point facilitated interaction and communication process between the students to students or students to the teacher directly and indirectly.

• Assignment, test, and student evaluation. This item consists of assignment activity, test, and also evaluations for the students.

• Digital Resources. This point consists of instructional digital resources formed digital or online (Rosenberg, 2001).

2. Technology

Technological using in teaching and learning process became indicator technology chosen which means technology capable in facilitating transferring the information to the students efficiently and effectively. Rosenberg (2001) said that the other things related to network infrastructure, i.e.:

• Connection network model is developing the connections through 2 approaches: 1) Local connections (intranet) and, 2) global connections (internet).

• Band width. Capacity of Band With which is available should through exact consideration and analyze specially on Bandwidth’s needs.

• Location. Facilitating representative location even the easily location access, the easily hardware appointment and the safety network.

• Infrastructure management. This point has to enactive the infrastructure component process besides scant the platform to system process and also enactive the system access fluently.

• IT staff. Staff who has knowledge and technical skill on system platform e-learning and technology infrastructure management.

CLOSING

E-learning is one of instructional model using internet technology. E-learning (Electronic learning) is one of application aspect ICT in education institute. As media expected became part of instructional process in education institute, it should be able supporting for interactive communication process between teacher and students as requisite in teaching and learning process. The condition that should be able to support especially related to instructional strategy which will be developed. On the other words as communication activity has be done that can be stimulus for many students to do their homework, assignment and help them to get knowledge. Even though, the adoption and using e-learning so wide in education world but it was proved exemplary and effective for transferring the instructional materials and efficient in using education institution resources component even it’s so hard on the application. The difficulties rise up because of creating, using, and supporting for the facility of e-learning needs balance between infrastructure technical needs, human being resources (manager and user), institution and also pedagogy aspect.
LITERATURES


