

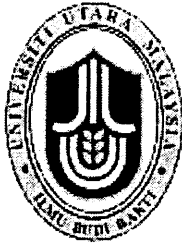
**INSTRUCTOR AUTHORIZING TOOL FOR  
CREATING E-LEARNING CONTENT  
USING LEARNING OBJECTS**

**This thesis is presented to the Graduate School  
In fulfillment of the requirements for  
Master of Science (Information Technology)  
Universiti Utara Malaysia**

**By**

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## ABSTRACT

This thesis illustrates the conception of creating e-learning content. It is based on a research study with the aim to create a framework that can assist instructors to create e-learning content. This research presents the usage and approaches of XML and LCMS Component Technologies in the creation of IAT functional model and the development of IAT. XML can simplify the courseware authoring and structuring process. As a neutral meta-language, it can also separate course contents from course presentation. However, LCMS Component technology is a multi-user environment where instructors can create, store, reuse, manage, and deliver digital learning content from a central object repository. The use of XML and LCMS Component Technologies help a lot in adding the features of easy-to-use, easy-to-maintain, and flexibility to assist instructor to create e-learning content using IAT. This research employs courseware development research method, which aims to create IAT functional model and also develop IAT prototype system in order to help instructor create e-learning content. IAT allows instructors with non-programming skills to create e-learning content easily by using a template to customize their own course content.

## ABSTRAK

Tesis ini menunjukkan konsep untuk menyediakan kandungan e-pembelajaran. Ianya berdasarkan kepada kajian penyelidikan dengan tujuan untuk menyediakan rangka kerja yang dapat membantu pengajar menyediakan kandungan pembelajaran. Penyelidikan ini akan memaparkan penggunaan dan pendekatan XML dan teknologi komponen LCMS di dalam pembangunan IAT bagi membantu dalam menyediakan kandungan e-pembelajaran. XML dapat memudahkan penulisan perisian dan proses penstrukturan. Ianya adalah meta-bahasa, ianya juga dapat mengasingkan isi kandungan kursus dan paparan. Disamping itu, teknologi komponen LCMS pula adalah persekitaran berbilang pengguna di mana pengajar boleh menyediakan, menyimpan, mengguna semula, mengurus dan menyampaikan kandungan pembelajaran digital daripada pusat gudang objek. Penggunaan XML dan teknologi komponen LCMS banyak membantu dalam menambahkan ciri-ciri mudah digunakan, mudah diselenggara, dan fleksibel dalam IAT. Penyelidikan ini menggunakan metodologi pembangunan perisian kursus di mana matlamatnya adalah untuk menyediakan model fungsian IAT dan membangunkan sistem prototaip IAT untuk membantu pengajar menyediakan kandungan e-pembelajaran. IAT membenarkan pengajar yang tidak mempunyai skil pengaturcaraan dapat menyediakan kandungan pembelajaran dengan mudah menggunakan borang untuk menambahkan isi kandungan kursus mereka sendiri.

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## ABBREVIATIONS

<b>ADLNet</b>	- Advanced Distributed Learning Network
<b>AICC</b>	- Aviation Industry Cbt Committee
<b>ASP</b>	- Active Server Pages
<b>CoD</b>	- Content on Demand
<b>DOM</b>	- Document Object Model
<b>DTD</b>	- Document Type Definition
<b>HTML</b>	- Hyper Text Markup Language
<b>HTTP</b>	- Hyper Text Transport Protocol
<b>IAT</b>	- Instructor Authoring Tool
<b>ICT</b>	- Information Communication and Technology
<b>IDC</b>	- IDC Company
<b>IE</b>	- Internet Explorer
<b>IEEE</b>	- Institute Of Electrical And Electronics Engineers
<b>IIS</b>	- Internet Information Service
<b>IMS</b>	- Instructional Management System
<b>LCMS</b>	- Learning Content Management System
<b>LMS</b>	- Learning Management System
<b>LOM</b>	- Learning Object Metadata
<b>LoD</b>	- Learning on Demand
<b>MSXML</b>	- Microsoft XML
<b>PDA</b>	- Personal Digital Assistant
<b>SCORM</b>	- Sharable Content Object Reference Model
<b>UiTM</b>	- Universiti Teknologi MARA
<b>URL</b>	- Uniform Resource Locator
<b>UUM</b>	- Universiti Utara Malaysia
<b>W3C</b>	- World Wide Web Consortium
<b>WBT</b>	- Web-based Training
<b>WebCT</b>	- Web-Based Educational Environments
<b>WWW</b>	- World Wide Web
<b>WYSIWYG</b>	- What you see is What you get
<b>XML</b>	- Extensible Markup Language
<b>XSL</b>	- Extensible Stylesheet Language

## **CHAPTER 1**

### **INTRODUCTION**

Electronic learning, or e-learning is a relatively new form of distance education. It is an important aspect for the educational area (Lennon, & Maurer, 2003). Education that stresses the ubiquity of technology in the business world needs to be integrated into all aspects of the curriculum. Since the Internet has become an increasingly popular media (Piguet & Peraya, 2000), educational institutions are interested in using it as a delivery platform for teaching and learning materials.

For many years, the educational environment has been at the forefront in adopting new technologies to increase e-learning opportunities. According to Taylor (2000) the educational environment operations have evolved through five generations: Firstly, the Correspondence Model is based on print technology. Secondly, the multimedia model is based on print, audio and video technologies. Thirdly, the tele-learning model is based on applications of telecommunication technologies to provide opportunities for synchronous communication. Fourthly, the Flexible Learning Model is based on online delivery via the Internet and finally the fifth generation aims to capitalize on the features of the Internet and the Web.

Current e-learning development is moving away from courses and more towards the resources that actually form the components of those courses. These components are

The contents of  
the thesis is for  
internal user  
only

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