



TEACHER TRAINING MANUAL

MULTIMEDIA APPLICATIONS
FOR EDUCATION

Index

Part 1: INTRODUCTION

Chapter 1: Theory of eLearning

Vilnius Pedagogical University (LT)

Introduction
Personalization
Motivation
Responsibility
Interactiveness
Higher order thinking
Life-long education
Informal learning
Blended learning

Chapter 2: The Application of Multimedia Solutions to Education

University of Fine Arts Brera (IT)

Videogames and new literacy
Gee's 36 principles

Chapter 3: Videogames and Education

University of Fine Arts Brera (IT)

Multimedia Systems in Education

Chapter 4: Introduction to Programming for education

University of Fine Arts Brera (IT)

Objectives
Methodology
2D Drawing

- Translations
- Changes in the Scale
- Rotations

3D Drawing

- Perspective Projection
- Field Angle
- Rotations

Animation
Interaction with the User

Part 2: EDUCATION

Chapter 1: Education and theory of e-learning

University of Patras (GR)

Introduction

Carrying out distance learning (Commercial Learning Environments)

Comparative Analysis of Online vs. Face-to-Face Instruction (Analogies and Differences)

How video gaming languages can integrate distance learning

Conclusions

Chapter 2: Practical Methodologies of e-learning

Vilnius Pedagogical University (LT)

Beginning of the course

Accessibility

Goals and Objectives

Content

Organization of content

Language of content and tasks

Learning Resources

Layout

Evaluation

Methodology of evaluation

Moodle

Chapter 3: How and why to use videogames in didactics

Vilnius Pedagogical University (LT)

Basic principles

Simulations

Part 3: MULTIMEDIA

Chapter 1: How to use Multimedia languages in didactics

In.For.Ef (BE)

Introduction

Analysis of multimedia software

- "The Mechanisms of Chemical Reactions"
- StarBoard
- Scenario of computer assisted classes

Language learning with multimedia games

- The European project "I speak therefore I write"
- Simulation software for environmental sensitisation
- "VirtVal, the virtual valley"

Chapter 2: How to produce and manage images with IT

University of Fine Arts Brera (IT)

2d Image

- How to use Image processing software
- Photoshop
- How to use Vectorial Design software
- Macromedia Flash

3D Image

- How to create Texture Maps for 3D

Virtual Sets

- Call of Cthulhu
- Golf

Chapter 3: How to produce and manage animation with IT

In.For.Ef (BE)

How to create Gif Animation

- Introduction
- What you need
- Frames and Timing
- First, select the animation dimensions
- Creation of the drawing
- Steps of the animation.
- Saving your animation

How to create Vectorial Animation (eg. Flash)

- Introduction
- Basic animation
- Guided animation
- 3D effect
- Morphing
- Flash
- Using of Flash

How to create Morphing Animation

- Introduction
- Abrasoft FantaMorph Tutorial : Starting a project
- Adding dots.

Chapter 4: How to produce and manage video with IT

In.For.Ef (BE)

How to record and digitalize video

- Importing Media Files into your Project

How to edit digital video

- Introduction
- Adobe Premiere Tutorial: Starting a Project
- The Premiere Workspace
- Editing Video
- Working with Audio

- Adding Titles
- Adding Effects

How to create Chroma-Key

- Introduction
- Why blue?
- Adobe Premiere tutorial: Transparency key

Exporting the Project

- Export to DVD
- Output back to DV tape
- Export the movie

Chapter 5: How to produce and manage sound with IT

In.For.Ef (BE)

How to record and digitalize audio

- Recording audio
- Digitalizing audio

How to create sounds of synthesis

- Introduction: the Sounds Synthesis
- Creation of sounds of synthesis with Orion

Chapter 6: How to conceive and design an Interface

University of Patras (GR)

How to conceive an Interface

- Introduction
- The art of creating the videogame environment

The interface of 2D videogames

- Define a Look
- Express Yourself in the Design
- Research and Inspiration
- Creativity versus Standards
- Using Photographs
- Illustrations

The interface of 3D videogames

- Introduction
- Displaying 3D Models

Part 4: VIDEOGAMES

Chapter 1: Videogames as possible "learning environments"

Vilnius Pedagogical University (LT)

Videogames as unimedial applications

Brief history of videogames (From Pong to Doom)

Type and characteristics of videogames (Adventure, Puzzles, Simulation etc.)

Integrated multimedia

Virtual experience

Chapter 2: Creating Videogames

University of Fine Arts Brera (IT)

How to create videogames with practical examples

- First example: "The Dark Room", The Making of
- Second example: "Return to Castelvechio", The Making of
- Third example "Tarot", The Making of

Chapter 3: The problem of violence in videogames

Vilnius Pedagogical University (LT)

Psychology of aggression

How to channel competitiveness

Part 5: PROGRAMMING

Chapter 1: IT theory and languages

University of Patras (GR)

Introduction

Basic Theories

Basic Data Structures

Function Theory and the concept of the variable

Theory of programming

- Specifications
- Program Development
- Time
- Space

Programming Language

- Scope
- Data Structures
- Control Structures
- Time and Space Dependence
- Subprograms
- Timeline of programming Languages

Chapter 2: How to programme videogames with accessible tools

University of Fine Arts Brera (IT)

Basic use of authoring tools (es. Macromedia Director, Neobook)

Chapter 3: How to programme videogames with SDK editors

University of Patras (GR)

GTK Radiant

- Introduction
- Basics
- Script Writing Examples
- The Accum Value
- Accum vs. GlobalAccum
- Set vs. Bitset

- Commonly Commands
- Valve Hammer Editor
- Introduction
 - Basics
 - Adding New Commands & Variables
 - The Force Game Data (FGD)
 - Entities
 - Authoring a Model Entity
 - Authoring a Brush Entity
 - Sample Code
- UnrealEngine
- Introduction
 - The Unreal Virtual Machine
 - Class overview
 - Variables
 - Enumerations
 - Structs
 - Expressions
 - Functions
 - States
 - Language Functionality
 - General purpose functions
 - Dynamic Arrays

Part 6: SIMULATIONS

Chapter 1: Educational Potentials of Second Life

Zepf - University of Koblenz Landau (DE)

Introduction

From MUDs to Metaverses: A short history of virtual worlds

Second Life

- What is Second Life and what does it offer to its users?
- What makes Second Life different from other virtual worlds?
- The social impacts of virtual worlds

Using Second Life for educational purposes

- What makes Second Life interesting for educators?
- Educational Uses of Second Life
- The strengths and limits of Second Life in education

Development of learning courses in Second Life

- Step 1: Installation of Second Life software
- Step 2: Registering
- Step 3: Modifying your avatar's appearance
- Step 4: Exploring Second Life
- Step 5: Practicing ...
- Step 6: Renting or purchasing a location
- Step 7: Creating the learning environment
- Step 8: Preparing the course

Summary and outlook

Summary: Second Life and its use in education

Outlook: What may the future bring