Software Engineering and Criminology Practices: Collaborative Works on Second Life

Iván García-Magariño, Javier Bravo
Universidad a Distancia de Madrid (UDIMA), Spain

EduLearn 2011
Outline

- Introduction
- Technique for learning activities
- Case Studies
  - Object-oriented applications
  - Strategic Techniques for Knowledge Management
- Evaluation Results
- Related Work
- Conclusions
Introduction

- UDIMA Island in Second Life
- Methodology based in roles
- Experiments:
  - Object Oriented Applications (in Software Engineering)
  - Knowlegement management (in Criminology)
Technique for learning activities

- Collaborative works for obtaining solutions
- Based on Roles
- Possible Interchange of Roles
- Student roles:
  - Head: Solution design, distribution of work
  - Technical members: Solution parts
  - Evaluator: Evaluate the solution
  - Client: Requirements of task
- Teacher roles: moderator and/or client
Case Study 1: OO applications (I)

- Particularities of OO
  - Diagram classes
  - Interfaces for encapsulate different parts
  - Relations for dependencies
  - Assignment of Interfaces and classes to each technical member

- Scenario
  - Second Life
  - UDIMA island
  - Aula with ”judgment Configuration”
Case Study 1: OO applications (II)
Case Study 1: OO applications (III)

- Representation of roles: place
  - Head: one-person platform
  - Technical members: tables left and right of the head
  - Client: In front of the designer
  - Moderator: None of the other places

- Application: Game "Kidnapped Rabbit".

- Script for Client: Incremental requirements for the game
Case Study 1: OO applications (IV)
Case Study 2: Knowledge management (I)

- Representing knowledge for business (in criminology grade)

- Roles:
  - Head: Organize a collaborative group to perform a task.
  - Technical member: perform sub-tasks
  - Evaluator: Assess whether the solution satisfies the requirements of the task
  - Client: Indicate a task with requirements

- Representation of roles: T-shirt colors
Case Study 1

3 students, and a specialist observer of university UNC (Argentina)

They all agreed that:

- Enjoyed More than traditional exercises
- Reached learning purposes
- Acquired collaborative skills
Evaluation Results (II)

- Case Study 2
  - Above 50 students
  - Questions and answers:
    - Enjoyment (3.9 out of 5)
    - Learning concepts (3.9 out of 5)
    - Acquiring collaborative skills (4.3 out of 5)
    - Comparison with other activities (53% said "better", 10% said "worse")
Related Works:

- Group think game, M.I.T (Ye et al. 2008)
- Collaborative learning (Andreas et al. 2010): New SL features
- Delphi method (Listone et al, 1975)

Comparison

- Similar: Evaluation of Surveys
- Innovation: Technique for teaching learning objects and collaborative skills applicable to different fields with 3D environments
Conclusions and Future Work

Conclusions

- Methodology for teaching in 3D environments
- Increasing enjoyment of students
- Motivating lazy students
- Students learn concepts
- Students acquired collaborative skills

Future Work

- More experience in the proposed technique
- E.g. use Second Life for teaching multi-agent systems