

# Story, Narrative, Content Integration, Assessment Integration in Serious Games

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# Structure of Presentation

- Story
  - Definition
  - Computer Games and Stories
- Narrative
  - Definition
  - Use of Narrative in Commercial Games
  - Use of Narrative in Serious Games
- Content Integration for Serious Games
- Assessment Integration for Serious Games

# Story - Definition

- Crawford (1982) - A *story* is a linearly ordered sequence of events set by a storyteller, whereas a game allows the players to have a choice of the sequence of events. A play of a game can be told afterwards as a story, but a game cannot be constructed from a story alone
- Puts the gamer in a position where they know what is going on and gives them the reasons for why they have to do what they have to do
- An account of a series of events

# Story - Definition

- Makes the player associate with an appealing, pivotal and desirable character
- The Sims, SimCity shows that story is not always required



# Story - Example

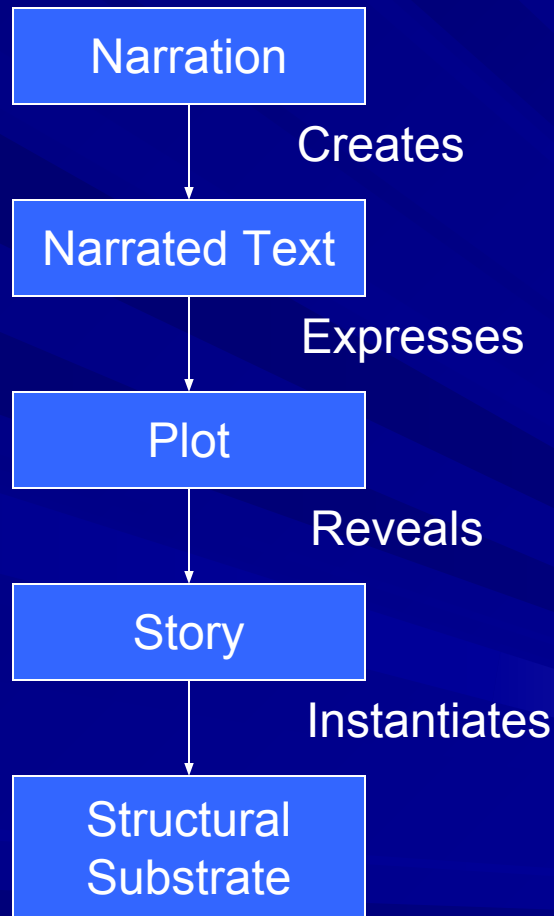
- Good stories are exceptionally difficult to come up with and plan – even when considering linear medium such as a book or film.



# Computer Games and Stories

- Two schools of thought
  - Narratology – where we think of the world as a story, so computer games are just another form of storytelling and can be studied through theories of narrative
  - Ludology – computer games are different from any other form of storytelling media. The fact that they are “games” is the primarily important thing and can be viewed with their own theories and rules

# General Narrative Theory Terms



Chatman S. 1978. Story and Discourse. Cornell University Press.

# Narrative – Definition

- The section of the story presented by the designer to the player
- The text of a narrative expresses a story where “‘Story’ designates the narrated events, abstracted from their disposition in the text and reconstructed in their chronological order, together with the participants in these events”
- Various forms of narrative: Linear, Interactive, Embedded, Emergent.



# Narrative – Definition

- Linear – Proceeds in a linear fashion. One example is the three act-restorative structure borrowed from film scriptwriting, drama and literature.
- Interactive narrative – various different kinds:
  - Tree
  - Hypertext
  - Exploratorium
  - Parallel plot structure
  - Modulated (allows multiple choices, but access to new interactions only possible after different parts of story have been experienced)
  - Open structure in which story elements are associated with different physical spaces, allows exploration between spaces (typical of early adventure games)
  - Open structure with no story-arc (strategy, simulation MMORPGS)

# Narrative – Definition

- Embedded – narrative embedded in the game space (pre-structured vs. unstructured). The content exists prior to the players interaction with the game
- Emergent – storytelling is produced entirely by the player, varies from play session to play session. Arises from player interaction with the game world and game rules

# Narrative – How it is utilised

- In-game (text, dialog, game setting, behaviour of synthetic characters)
- Out-of-game (cut-scenes, voice over, scrolling text)
- The narrative is there to limit the control of the player
- However after the narrative has been initially discovered then it is good practise to make it interruptible

# Narrative – How it is utilised

- Advantages of cut-scenes:
  - easy access
  - can be produced independently
  - familiar for story writers etc
- Disadvantages of cut-scenes:
  - can cause the game to look very different
  - causes the player to switch from an active to a passive stance
  - makes us apply less effort at incorporating the story into the game play

# Use of narrative in commercial Games

- Star Wars
- Halo 3
- Zelda
- Lord of the Rings
- Guitar Hero
- X-men
- Mortal Kombat vs. DC Universe





# Use of narrative in Serious Games

- BATILE

**Converting Binary to Decimal**

► It is a simple matter to convert a number from binary notation to decimal notation. All that is required is to multiply each binary digit by the appropriate power of 2 and add the results. In other words, we simply place our values obtained in the previous section above the **BINARY NUMBER**.

Decimal:	128	64	32	16	8	4	2	1
Binary:	1	0	1	1	0	1	1	0

[CONTINUE](#)

► Then we add together all the numbers that are tied in to 1's. This gives us the final **DECIMAL NUMBER**.

Decimal:	128	64	32	16	8	4	2	1
Binary:	1	0	1	1	0	1	1	0

$128 + 32 + 16 + 4 + 2 = 182$

[CONTINUE](#)



# Use of narrative in Serious Games

- Virtual Work Experience

**What are the things you like and least like about being a bus mechanic?**



The things I like most about being a mechanic is the variety of work. You never get bored. You never do the same things twice. What gives me the most satisfaction about my job is being able to fix things first time.

**Bus Mechanic**

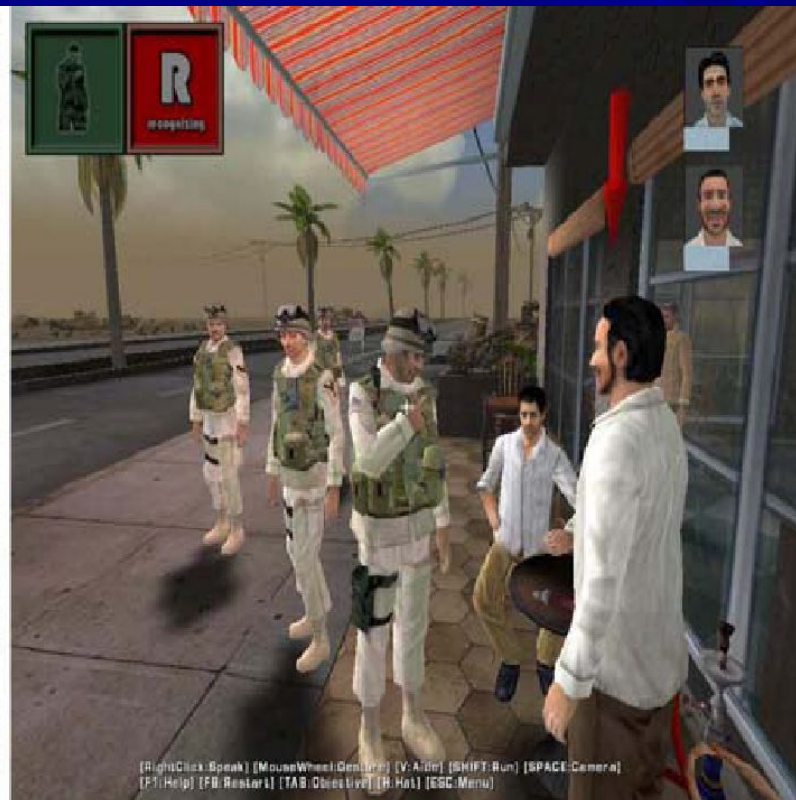
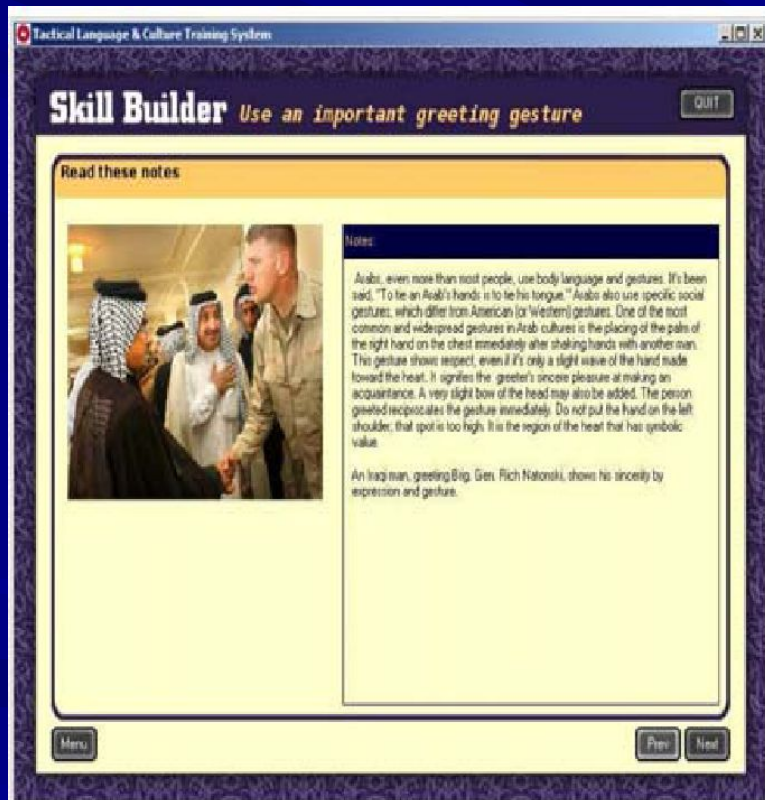
- Getting the Job
- Training
- My Job
- Likes and Dislikes
- The Challenges
- Recommendation

**Job Profile**



# Use of narrative in Serious Games

- Tactical Iraqi





# Use of narrative in Serious Games

- McDonalds Game



# Content Integration in Serious Games – Important Points

- Identification of Learning Outcomes – Example BATILE
  - Binary numbers and arithmetic principles
  - Conversion between binary and decimal
  - Logic Gates (AND, OR, NOT, XOR)
  - Simple logic circuits avoiding timing
- Layout of environment – Plan

# Content Integration in Serious Games – Important Points

- Environment Plan



# Content Integration in Serious Games – Important Points

- Character attributes:
  - Name
  - Position
  - Job description
  - Skills - Experience
  - Level of job satisfaction
  - List of questions they can answer
  - Current list of tasks
  - Completed tasks
  - Salary
  - Hired/Fired



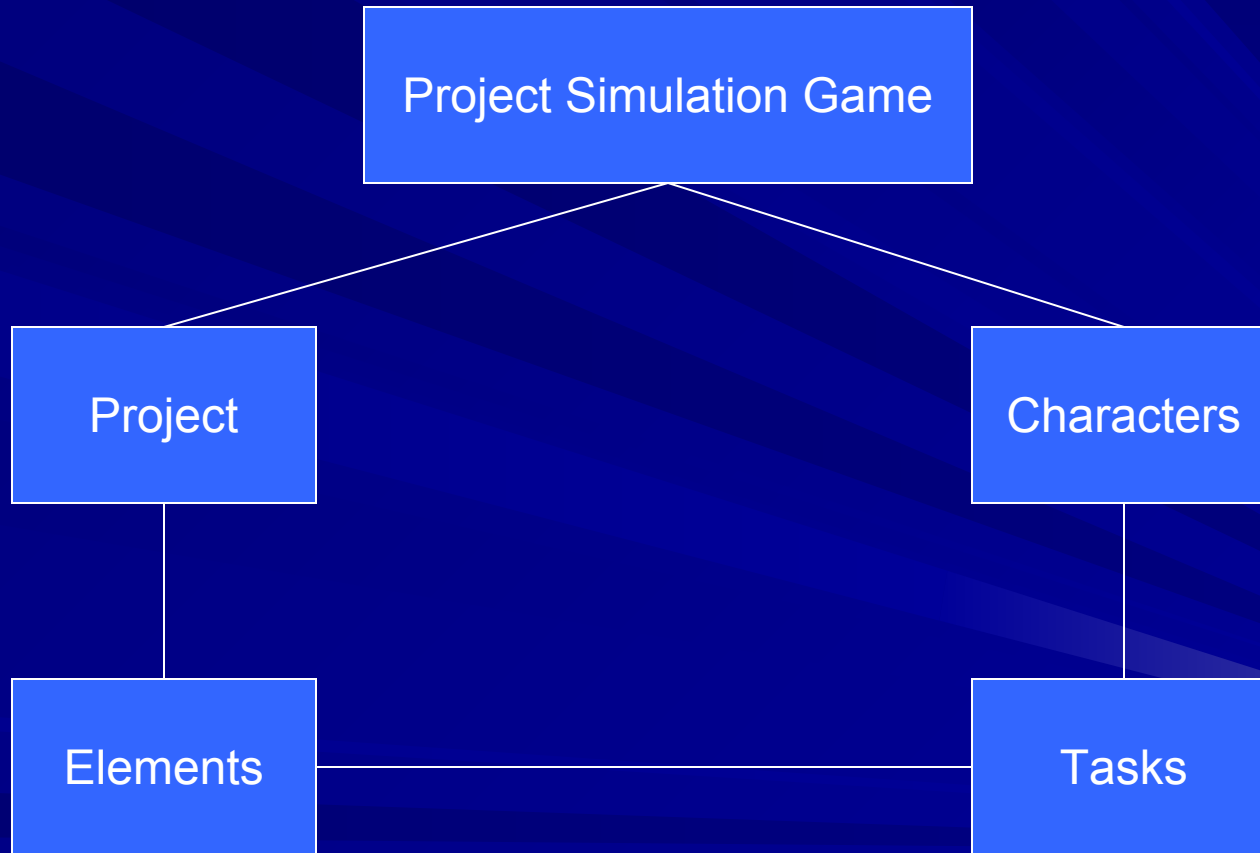
# Content Integration in Serious Games – Important Points

- Player attributes
  - List of questions they can ask
  - Options they have the ability to take
    - Allocate tasks to different individuals
    - Fire staff members
    - Take particular courses of action
  - Advance to a specific time-frame
  - Check project status

# Content Integration in Serious Games – Important Points

- Project attributes
  - Budget
  - Time to completion
  - Nature of project
  - Required elements
    - Analysis – time, cost, complexity
    - Design
    - Implementation
    - Software Testing
    - Deployment

# Content Integration in Serious Games – Important Points



# Content Integration in Serious Games – Important Points

- Requirements Collection and Analysis Game
- Runs from four files – XML tags
  - Content.ini contains the dialogue, questions, requirements, todos
  - Groups.ini contains object name, default greeting, questions that can be answered and what dialogue is unlocked
  - Office NPCs – name, position, clothing, path
  - Office Objects – name, position, active



# Content Integration in Serious Games – Important Points

- Content integration can be handled in the following ways:
  - Base files that are searched for the information required
  - XML
  - Object Orientation
- The primary goal is to design a structure and a series of search algorithms to make interaction effortless

# Assessment Integration for Serious Games

- Primarily linked to the learning outcomes of the game
- Courses of action should be assessed



# Assessment Integration for Serious Games

- In a commercial game assessment occurs through scores and scales
- In a project management simulation game:
  - Calculation of project completion percentage
    - Comparison of staff allocation with task time and completion
  - Correct choices made, incorrect choices made
  - If the project runs over budget then the player should be penalised
  - Staff satisfaction should also be monitored
- Can add in multiple choice PM knowledge questions at some stages
- COCOMO II for ideas
- Researchers are exploring adaptivity / personalisation and attempting to determine whether they can score (mark) students from their game play