The slide features several decorative circles. Two solid light purple circles are positioned in the lower-left quadrant. A row of three circles is located in the upper-middle section: the leftmost is a thin light purple outline, the middle is a solid light purple circle, and the rightmost is a thin light purple outline. The main title text is centered in the upper half of the slide.

Developing young people's storytelling skills through computer game design

A thin light purple outline circle is positioned in the lower-right quadrant, partially overlapping the author's name.

Judy Robertson



Overview

- What are the educational reasons for making computer games in the classroom?
- Description of Gamemaker workshops
- Demo of software and example games
- Teenagers' work: story themes and dialogue
- Conclusions and future directions

Why make computer games in the classroom?



- It develops a wide range of creative skills (literacy, sound and visual design, computer programming)
- It develops general thinking skills
- Computer games are important to young people
- It's highly motivating – why?

Fun and learning: sugar and cocaine?

- “Fun from games arises out of mastery. It arises out of comprehension. It is the act of solving puzzles that makes games fun. In other words, with games, **learning** is the drug”

(Koster, 2006: 40)



Fun and learning: hard fun

- **Hard fun:** “the kind of motivation that combines the pleasure of accomplishing something with the intense concentration ... involved in achieving it. Hard fun is intense concentration coupled with passion”

(Kafai, 1995: 290)

Hard fun in hobbies



- “Hobbyists spend considerable time and fervent effort learning” (Pfaffman, 2002:1)
- Important factors for motivating hobbyists:
 - Produce an artefact
 - Share the artefact
 - Learning the skills necessary to make the artefact

Hobbyists who make games

- For any given game, thousands of players get together online to make new versions, and add content.
- For example, modders of the game Half Life produced their own multi-player version (Counter Strike)
- A community was also formed to make a sub-title version of Doom for deaf gamers.
- “While completion rates for online courses barely reach 50%, gamers spend hundreds of hours mastering games, writing lengthy texts, and even setting up their own virtual ‘universities’ to teach others to play games” (Squire, 2005)

Creating games, creating stories

- Technology now allows children to create their own games:
 - build areas;
 - create characters;
 - develop plots (and explore branching plots);
 - write dialogue;
- Thus, game creation has potential in an educational context for developing story making skills



A note on interactive stories

- Every story has a beginning, middle and end...
- Just one end? Just one middle?
- Not with interactive stories!
- The author imagines all the (interesting) possibilities in the story world
- And the audience gets to choose which path to take through the story
- Authoring stories of this kind is complex...
- ...and requires good audience awareness



Gamemaker workshop series

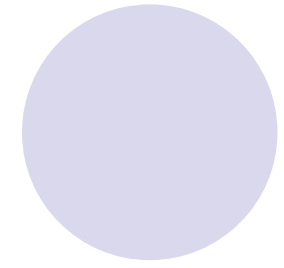
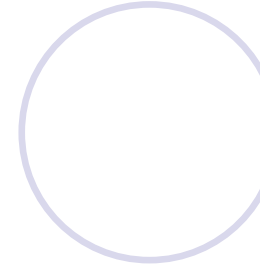
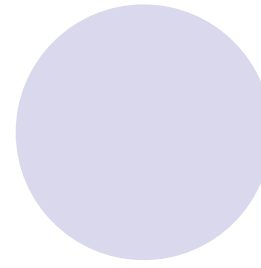
Since 2003 we have offered Gamemaker workshops to ~300 10 -16 year olds :

- 3 hour workshops at the Edinburgh International Science Festival, Edinburgh International Games Festival (for 10 years + but...)
- 6 X 5 day workshops in conjunction with Edinburgh City Council's Go4it scheme (for 12 years +)
- 19% female at shorter workshops, this year a girl only week workshop
- During the workshops participants learn to make games using the Neverwinter Nights Aurora Toolset

Teaching approach in workshops

- Lots of exploratory learning
- “Just in time” help from adults when learning new skills
- The “brush fire” effect
- Some group teaching of story telling skills (e.g. dialogue, planning)
- Reflection at end of each day
- Reflection through playing own and others’ games

Neverwinter Nights



What do children learn from making games in NWN?



- Meta-cognitive skills
 - Reflecting and revising own work
 - Modelling and testing how a player will react to a game
- Literacy skills
 - Interactive plot structures
 - Dialogue writing
 - Audience awareness
- Computing skills



Looking more closely

We need to understand the sorts of stories young authors wish to tell in this medium. This will help us to support them better.

- *Theme*: what sorts of issues are the authors grappling with and how is this expressed in the game medium?
- *Interactivity*: to what extent do the authors incorporate interactive features into their stories?



Story themes - revenge

- Revenge plots which relate to family members are common.
- “Well it’s about this guy and his mother and father are killed by, like, this gang person and he’s just trying to seek revenge and at the end he eventually kills them.” (Aaron, 13)



Story themes - revenge

Sebastian: It's a guy who is a prince and he goes around and he wants to avenge his father's death. He wants to find the guy who killed his father who turns out to be his brother. And he kills him.

Researcher: How come his brother killed his dad?

Sebastian: Eh.. well, I've not got the story for that. But it's still quite a good story.

Researcher: Yes, it is. It has a good strong revenge theme.

Sebastian: It's because he's evil.

- Common element of taking on the world in absence of/ on behalf of parents

Story themes – saving the world

“I play someone called Gerald who’s an agent of MI6. He saves them...the people that he’s got to save are his best friend Vinnie and his girlfriend Kerry who are captured by Bin-Laden and taken into a dungeon with a dragon protecting it.” (Gerald, 13)

Story themes - romance

The element of romance is generally missing from the authors' games with notable exceptions:

- “My story answers the fundamental question – can a mortal fall in love with an angel?” (Edmund, 14)
- “Lindsay who is one of the kidnap [victims] is em,. the player slays the dragon for her and she says what do you want, my hand in marriage gold, or XP (experience points)? And then she follows you around if she gets married. I might put in some nagging though” (Ronald, 14)

Story themes - romance

- The revenge theme where the player's wife is shot on their wedding day (dialogue from Ralph's game, 13):

Fiancé: Hello Darling. I cannot wait to marry you

Player (choice 1): Me too I'm so happy

Player (choice 2): Not me I never ever wanted to marry you!

Player (choice 3): Okay say could you give me your present now!

Fiancé: Oh thanks very much.

Story themes – moral values

- The player must “go on a journey to the after life” and is asked “to do a favour by God”. On success : “you will not only go to the after life but you will be getting to go to god's own place in the clouds” (Edmund, 14)
- “Well there was a war ages ago and obviously you won and you are the great hero and you hated this idea of fighting now and just wanted to live peacefully...But then this army has come back and everyone is calling on you to defend them and you don't want to but you kind of have to. It's against your will.” (Greg, 15)

Story themes – moral values

- The player goes on a journey to recover his memory only to discover that his amnesia is self inflicted “because he didn’t want to be a fighter”. At end player chooses to be a fighter again. (Rory, 15)
- “You were the Emperor, ruler of the land. You were brought down from power when it was thought you were gaining too much power by an unknown source. This was not meant to happen, it was not written on the wheels of fate. You must regain power, regain your servants and great balance again” (Edgar, 14) Note: you were an *evil* emperor!

Story themes - satire

- “The President has been kidnapped by the evil doctor – his real name is John Kerry. He wants to capture him so that the “Happy Camper” Society can take over the USA” (Anthony, 13)
- “It’s not anything like saving anyone or killing anything. It’s just to find your wallet... The background is you’re just some person who lives in the present day. You’re walking to Blockbusters and some zombies come and nick your wallet. You accidentally get hit by a car and you find yourself in hell. Instead of a great fiery pit it’s a snowy icy place. There’s signs saying “welcome to hell” . It’s a very commercial place. It’s strange. You get people like John F Kennedy and Johnny Cash and stuff” (Steve, 13)

Interactivity

Author	Number of dialogues	Total word count	Average depth of dialogue	Total dialogue choices
Alastair	0	0	0	0
Anthony	18	627	5	0
Aaron	2	141	10	2
Chris	10	324	5	9
Greg	10	3499	58	98
Edmund	9	909	13	9
Simon	11	591	6	9
Steve	54	2601	6	47
Josh	14	1002	7	19
Julian	5	278	8	7

Latest results



- Average word count (boys): 432
- Average word count (girls): 1339
- (Different is significant, $p < .001$)



What next?

- We're just starting an EPSRC funded grant to develop game authoring software and study creativity
- This involves classroom studies with a school in Dundee
- I'm also working with librarians and youth workers in Glasgow who want to use NWN in out of school projects



Conclusions

- Authoring computer games:
 - Motivating
 - Opportunities for literacy development
 - Interests young people in computer science
 - Fosters creativity



Thank you!

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- I think my writing skills have gone up a bit because I wasn't really good at writing, like conversations... people talking... , it wasn't always that good, so, ...when I've got conversations in my game I think they're better than I would do at school.
(Alice)