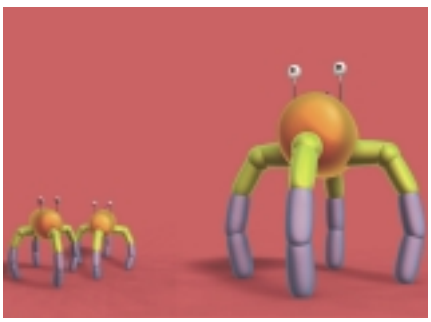
Create-a-Creature

Create-a-Creature is a vast internet-based virtual world containing an ecosystem of thousands of semi-intelligent artificial life forms. Children can create their own creatures and release them into the world to observe their creature's behaviour and success within the ecosystem. The project is aimed at worldwide school and home use, and investigates cross-curricular activity.



Team

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Nick Mackie, Character Designer, Aardman Animation
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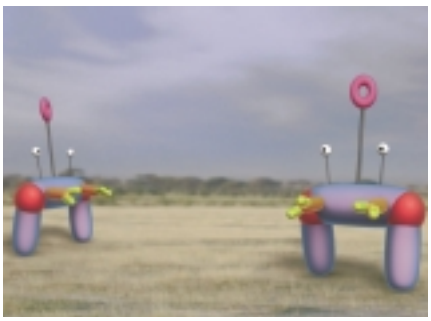

Outline

The Create-a-Creature concept is a large-scale educational software application for schools. The idea is to construct a vast, internet-based virtual world containing an ecosystem of thousands of semi-intelligent artificial life forms. Children will be able to create their own creatures and let them loose in this world. They can study their creature's progress in order to learn about ecology, creature behaviour and other biological topics, while at the same time strengthening their ability to reason scientifically and gaining experience in modern 'systems' concepts such as Complexity and Chaos.

Children will be able to enter the world in school, as part of a lesson facilitated by a teacher, and at home as a location for play and experimentation. NESTA Futurelab believes this project's cross-curricular, creativity-focused approach will have a significant impact on educational methodology in the UK and beyond.

Learning Research Objectives

In this project, NESTA Futurelab is interested in finding out:

1. Whether it is possible to create a character (creature) based environment sufficiently engaging to encourage self-motivated play at home, while being a rich enough resource for the development of systems thinking and scientific understanding in the classroom.

2. Whether a rich game-based learning resource is capable of being 'staged' in such a way that younger learners can gain easy entry to the game, while older learners can still be challenged and engaged in order to create a 'spiral' curriculum.

As with all NESTA Futurelab prototypes, we are also interested in:

1. What this project tells us about the best ways of designing educational digital resources.

2. What this project tells us about how learning processes can be transformed through use of these tools.

3. How this project helps us to understand the potential of next generation technologies to create intrinsically motivating and engaging learning experiences.

Research and Development Process

To date the concept has been developed through a series of workshops, with children and with industry experts. The launch workshop brought Aardman Animation together with Lionhead Productions, the Open University, Artificial Life (A-Life) specialists and the NESTA Futurelab team to discuss the notion of A-Life creatures existing in a massive online virtual world.

Children's workshop

The Hacker-Slasher

A series of intensive workshops led by NESTA Futurelab has followed, with the idea, character development, technical specification and requirements issues being further developed by the Create A Creature team. Discussions with teachers and LEA policy advisors have helped to make the concept more robust, and more workshops with children are planned in the near future.

Findings

To date NESTA Futurelab has worked with a small sample of 25 young people (13-15 year-olds) within community and specialist technology centres, discussing with them the concepts and types of creatures and habitats the application could provide. This early research suggests that the young people were motivated and engaged by the subject and entered into discussions about the biological, social and psychological nature of their creatures and habits. However, the workshops identified numerous misunderstandings that young people have about the nature of existence, which suggests a need to develop a tool that addresses and supports young people's thinking about life, existence, complexity and chaos. This early work also suggests that such a tool could potentially support cross-disciplinary and systematic thinking.

Technology

Simulation engine capable of real-time modelling of large creature populations.

Distributed network architecture which supports:

- each organisation hosting their own region of the world
- perception and movement of creatures between regions in the wild
- a security model which allows autonomous organisations to safely share their resources.

Extensible rendering architecture which provides:

- real-time high quality 3D views of individual creatures and the dynamics of creature populations
- the ability to view creatures on a variety of devices including mobile phones and handhelds.

Comprehensive toolset including:

- a 'sandbox' to allow private experimentation with creatures before releasing them into the wild
- beginner and expert tools for building your own creatures
- the ability to 'view source' to enable people to see how any creature in the world is made.

Next Steps

The next steps for the project are currently structured around pedagogic, technology and content development issues and will comprise:

1. A period of research and development in which an A-Life programmer and animators can come together to discuss the possibilities of creating an environment that is aesthetically pleasing but sufficiently complex and emergent.

2. Primary investigations about what kinds of technologies would be needed to run the system – what online, offline, mobile etc resources would users need to run the system both at home and in school.

3. Investigating the development of a working prototype.

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