

New software will help children design their own games and aid learning

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Pioneering software that enables children to design their own computer games could significantly improve the teaching of literacy, design and ICT skills in our schools.

With EPSRC funding, a new project at Heriot-Watt University aims to produce "Adventure Author" – innovative game-creation software specifically targeted at enhancing children's education.

The objective is to show that computer games, as well as being fun, offer a great way of motivating pupils to learn. They can develop their creativity, and in many cases, generate better results than conventional teaching methods.

Adventure Author will allow 10-14 year olds to design and build 3D, interactive fantasy-based computer games, which will involve developing characters, writing dialogue, plot-structuring and visual design, as well as dealing with technical programming issues and testing/evaluating the games. It could make a particularly valuable contribution to developing children's self-esteem and helping pupils with motivation/concentration problems in the classroom.

"Because they see games as 'play' not 'work', many children are much more receptive to the idea of designing computer games than to conventional schoolwork," says Dr Judy Robertson, who is leading this groundbreaking project. "The value of teaching through play is increasingly being recognised – we're simply extending the concept to

see if learning can be improved not just by playing computer games but also by creating them in the first place."

As well as computer scientists at Heriot-Watt University, the initiative is harnessing the expertise of an educational consultant and a software developer. A central task is to acquire a detailed understanding of the creative process involved in computer game design and, based on this, to pinpoint how Adventure Author can be designed in a way that encourages development of the necessary skills. Equipped with easy-to-use editing tools and cutting-edge graphics, Adventure Author will include an integrated "Designer's Notebook" to help children develop their ideas and a "Teacher's Notebook" providing lesson plans, classroom materials etc.

Close involvement of schoolchildren (to test ideas, features etc.) will be a vital component in the project. A preliminary field study, in which 10-11 year old children at Ancrum Road Primary School in Dundee designed games using existing, non-education-specific game-authoring software, has produced very promising results – and has highlighted the even greater impact that education-specific software like Adventure Author could have in terms of delivering major educational benefits.

"It really opened up my son's creative side," says the parent of one child who took part in the preliminary field study, while head teacher Mrs O'Rourke notes: "It ticks a lot of boxes for me – especially motivation. Children of all abilities have benefited."

"We're keen to hear from other primary schools around the country who would be interested in taking part," says Judy Robertson. "We believe our initiative could ultimately lead to education-specific game-authoring software becoming widely available and its use could boost achievement in many aspects of learning in UK schools."

Source: Engineering and Physical Sciences Research Council

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