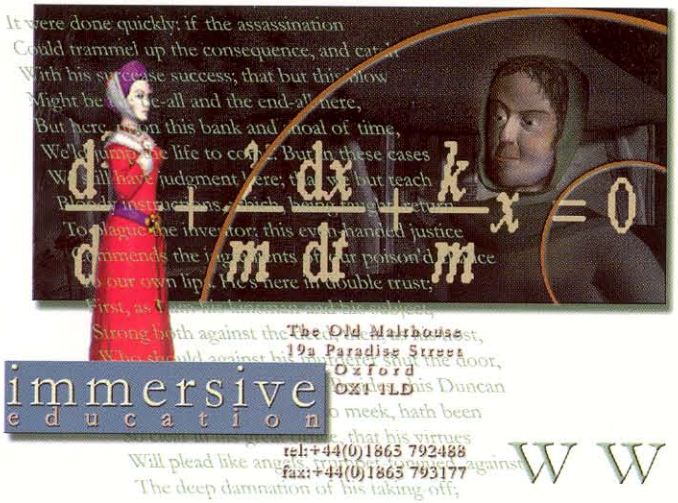

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IMMERSIVE EDUCATION is a software company specialising in applying cutting edge technology to educational tools for use by schools, institutions and the home.

This technology allows the creation of stimulating simulations that contain an unprecedented level of detail. Environments can be brought to life, providing the viewer with a breathtaking degree of realism hitherto unknown in computer simulation. IMMERSIVE's expertise and its unique use of high-end technological innovation demonstrate the potential of cutting edge computer technology as a solution to the requirements of education and information provision.

IMMERSIVE's software design expertise and technological innovation provide comprehensive solutions to today's information needs. Drawn from a wide range of related experiences, the company, along with its technology and content partners, is ideally placed to deliver high quality, easy to use, flexible software. Capable of providing stimulating and informative experiences in a wide range of disciplines.

Educational software has to compete in a world where entertainment software is becoming increasingly seductive. Immersive Education is in able to harness that technology and to apply ground breaking design techniques to create applications that entertain and educate.

immersive education **The Future of Educational Software**

PLAY AS YOU **LEARN POWERS UP**

Medieval history comes to life thanks to Elixir's Totality engine

***Medieval Kingdom* is the start of what Immersive hopes will be an entirely new paradigm in educational software**

The wider aim of this game is to bring a normally archaic subject – medieval history – to life using top-of-the-range computers not normally seen in the school environment, such as PIIIs

Educational software is becoming cutting edge thanks to developer Immersive Education – set up by realtime tools expert MathEngine and Demis Hassabis' Elixir Studios.

Immersive's debut title, *Medieval Kingdom,* uses MathEngine's physics code and the Totality engine which powers Elixir's game, *Republic*.

"We want to move educational software into a new era, one that's much closer to the games industry," says **Lincoln Wallen**, MathEngine's technical director.

The studio's director, **Ian Maber**, agrees: "Most current educational material is quite bland. It's point-and-click, prerendered scenes. Yet at home kids can play any number of games where they control armies and empires."

Developed with the Intel-Oxford University Education Initiative, Immersive is working closely with teachers to ensure the game meets their criteria. They selected its historic setting. Designed for 12- to 13-years-olds, *Medieval Kingdom* fulfils key stage three in the history syllabus of the national curriculum.

Based at a 13th century manor house, the firstperson perspective game allows students to interact with up to 79 residents of all ages as they go about their everyday lives. "The characters will have a degree of autonomous AI. They will be charged with daily tasks and you will be able to follow them around throughout the day," explains programmer **Ian Downend**.

Students will also be able to trigger prescripted sequences, where characters discuss a specific historical topic chosen in advance by the teacher. Birds, rats and domestic animals are also included in the simulation. And Totality's impressive architectural rendering power is put to good use – there are 40 buildings ranging from plain houses to a church, blacksmiths and a watermill, with polygon counts from 12,000 to above 60,000.

In contrast to most educational games, designed for low-end PCs, *Medieval Kingdom* is designed to push the performance of PCs such as the Pentium III. The game also has strong online aspects, which allow students to download 3D models of objects and buildings that feature in the game and interact with them in greater detail.

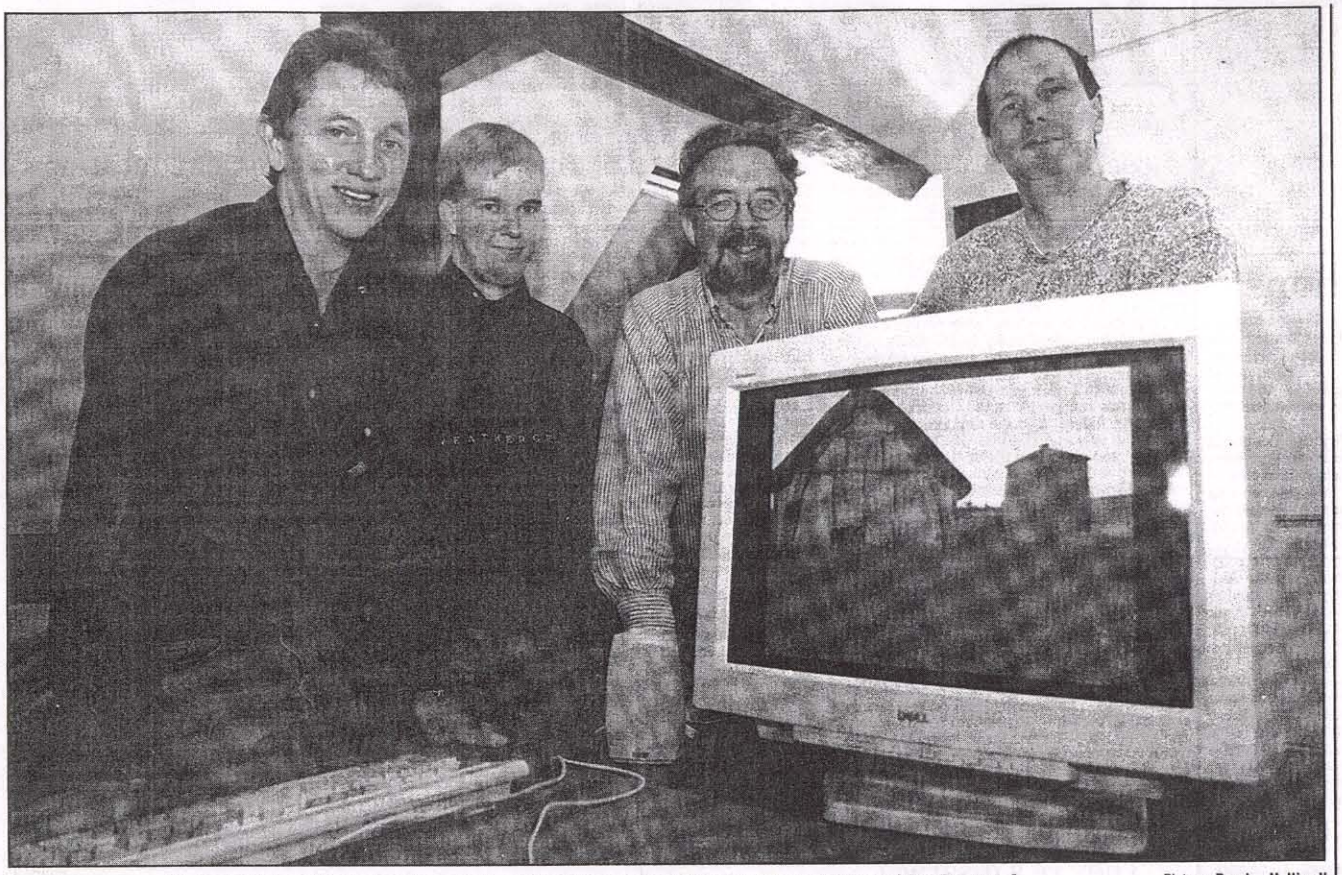
A joint announcement is expected soon by the government, Intel and Dell, concerning the stated aim of ensuring every school in the country is equipped with state-of-the-art, Net-connected PCs required to play games such as *Medieval Kingdom*.

Debut title aims to move educational software away from bland 'point-and-click' scenes into a new era, closer to the games industry, as government plans arrive for state-of-the-art school PCs

Set up by Mathengine and Elixir, Immersive is hoping to make education software to rival the best games

BERNIE'S BACK

After an ignominious $5m exit from Sega, Bernie Stolar has returned to the games industry. He will head Mattel's troubled interactive division, previously known as The Learning Company



Learning curve. . . Mr Ian Maber, of Immersive Education, with colleagues Paul Crowder, Lloyd Sutton and Ian Downend Picture: Damian Halliwell

Immersion learning

Do computers help children learn? Maggie Hartford looks at a project aiming to find out

IN DEPTH

In the run-up to Christmas, parents will be spending billions on computers and computer software that claims to give their children the winning edge in their school work. But according to Mr Ian Maber, of Immersive Education, many of them could be wasting their money.

But he is not sneering at the unwillingness of today's youngsters to absorb information from the pages of a book – far from it. He believes that education must adapt to modern life. He says: "Children go home to their computers and consoles, where whole worlds are invigorating, spectacular and graphically astonishing.

"They can control cars, spaceships, armies and aliens and can fulfil their dreams and stimulate their senses. Where has the fun in education gone? Where is the use of the technology?"

He believes that the problem with educational software is that there are too many dull, stale products on the market which fail to enthuse pupils and teachers.

Mr Maber is in a unique position to pronounce on the subject, since he is one of the few former classroom teachers to have found his way into the computer games industry. After 21 years as an art teacher and later a lecturer to master's degree students, he became art director for Psygnosis and later creative director for Elixir Studios, working with Dennis Hassabis, who at 16 wrote the program for Theme Park.

Mr Maber was therefore the perfect choice to lead a new company set up as a result of an initiative by the world's largest chip maker, Intel, which was also interested in promoting the educational benefits of information technology in the classroom.

Intel president and chief executive Dr Craig Barrett told last year's launch at the House of Commons: "As we approach the milestone of one billion connected PCs worldwide, we need to ensure that teachers have the tools they need, and the training they need, to make multimedia teaching both beneficial and fun."

Teachers' IT skills will be boosted with an "extranet" where they can keep up with educational developments and research topics. Intel will also work with UK NetYear to produce several publications about IT and education.

The company gave Oxford University £200,000 for a pilot scheme to do research which it hopes will help to answer the 64,000 dollar question: "Can computers actually help children to learn?"

Elixir was drawn in by Dr Lincoln Wallen, who as an Oxford University Reader in computing science knew of its reputation for employing some of the brightest Oxbridge graduates in its small creative team. He also drew in the expertise of software company MathEngine, based at the Oxford Innovation Centre, whose managing director Dr Alan Milosevic is backing the initiative.

MathEngine and Elixir agreed to set up a joint venture, Immersive Education, specifically to produce pioneering educational software using the technology of the games industry to produce vivid and long-lasting learning experiences for schoolchildren.

The software developers asked Oxford University's department of education to find out what teachers wanted and drew up the first three programs – history, English and maths for key stage three of the national curriculum.

In the first project, Rochester Castle, pupils join a battle, storming the castle using catapults which they have to drag up hill and load with ammunition. Because of MathEngine's "real-time" maths and physics software, the armaments behave exactly as they would in real life, showing how difficult it was to aim – and how the defences of the castle would have worked in practice.

The second history program, a medieval village where pupils can move around encountering a different scene each time, is breathtaking in its realism. Mr Maber said: "Each character has his or her own artificial intelligence, with voice-activated software so that the pupils can ask the blacksmith about his work, for instance. But a fellow pupil on another computer would find that the blacksmith was out chatting, because it's a virtual village with its own life."

Oxford Archaeological Unit helped to create the village, which uses real pots from the Ashmolean Museum and images from the Bodleian Library. St Catherine's College dons made sure the academic content of all three programs was correct.

Mr Maber emphasises that the learning is still controlled by the teacher – pupils visit the village to answer specific questions about medieval life and produce written work showing what they have learnt.

Dr Chris Davies, an English specialist from the university's department of educational studies, said: "I was as sceptical as anyone, but I have been convinced by pupils' reactions to the Shakespeare project. It's more than just a game.

"It has been exciting to see what the technology can do. Children find it difficult to understand Shakespeare's language and they find it difficult to write about it. This gives them activities that are irresistible and force them to look at the text – I haven't seen anything else like this. I can't wait to get my hands on it."

Once the software is launched early next year, a researcher paid for by Intel will work out how to assess whether it actually improves pupils' work. This will be done in a rather old-fashioned way – after their interactive experience the children will be told to write an essay.

Business Briefs

Internet move

■ Internet firm RMR Design, which employed 20 staff at its offices in Henley, has taken on another 20 people following its move to the Oakfield Industrial Estate, Eynsham. Within the next ten months the firm is expected to double in size again. Chief executive Mr Philip Marcela, 34, said the firm specialised in corporate, multimedia and e-commerce Web sites, including online conferences.

Call for cut in VAT

■ **Hundreds of jobs could be created in Oxfordshire if the Government brought in a new European directive, claims Green Euro MP Caroline Lucas. Ms Lucas, who represents Oxfordshire, said the directive allowed member states to cut VAT on house repairs as an experiment to boost jobs.**

Screen display

■ A prototype which could be used in the next generation of flat TV and computer screens is being demonstrated today at the Institute of Electrical Engineers in London by Printable Field Emitters, a company based at the Rutherford Appleton Laboratory, Chilton, near Didcot.

BMW buys shares

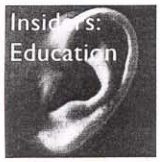
■ **German car giant BMW is to up its stake in aero-engines group Rolls-Royce to ten per cent as part of an overhaul of the two companies' shared business. Rover's parent company will be issued with an extra 33.3 million shares by Rolls-Royce and will buy a further 90 million shares on the open market.**

Moving images

■ Growing audio visual sales and hire company Images Business Systems has moved with nine staff to Harwell International Business Centre from Milton Park. It was launched five years ago to supply audio-visual equipment to conference centres, hotels and other users.

Sports job boost

■ **More than 70 staff are being recruited to work at the new £6m Esporta Health and Fitness Club, opening at St Edward's School, off Woodstock Road, Oxford, at the end of January. For details of the jobs apply to Ms Liz Malloy at First Leisure Health and Fitness, Nine Mile Ride, Bracknell, Berks.**



By Ian Maber

The learning experience

We all know how powerful and adaptable computers and software are. But a lot of educational software has failed to capitalise on this, so that it is often unimaginative and dull. However, there is light at the end of the tunnel

The introduction of technology into the classroom has often been a contentious issue among academics and sometimes the general public. Opinions range from those who believe that the use of computers makes children a bunch of anti-social tech-heads, to those who consider that there are substantial benefits for a younger generation that embraces and explores these new technologies.

Many of the critics readily take full advantage of our high-tech world – with computers in everything from supermarket check-outs to medical applications – yet they discourage youngsters, claiming that they lose their interpersonal and basic communications skills.

The word 'multimedia' was introduced into our vocabulary many years ago, with several companies producing a myriad of software under this grandiose title. Exhibitions, shows and conferences all emerged, and promised to change the face of education by offering stimulating and exciting new resources that could be used with a computer.

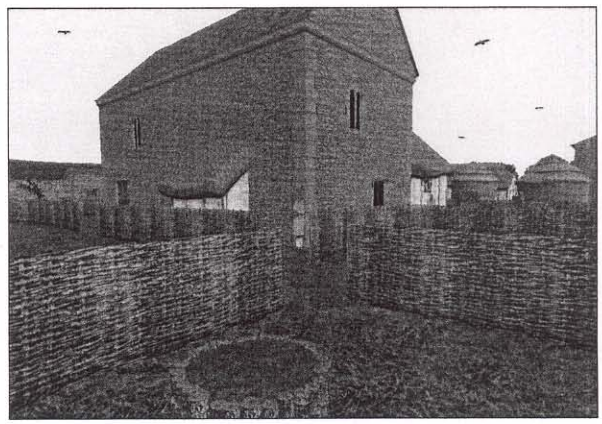
These were all taken with much enthusiasm and encouragement from various sources. Consequently, computers became embedded into our culture, and a new era of technology was introduced into the classroom as an integral part of the curriculum.

I FIND IT VERY DISTURBING THAT APART FROM THE INTRODUCTION OF THE INTERNET IN SCHOOLS, LITTLE HAS CHANGED IN THE FORM OF EDUCATIONAL SOFTWARE SINCE THE INCEPTION OF MULTIMEDIA

Yet I find it very disturbing that apart from the introduction of the Internet in schools, little has changed in the form of educational software since the inception of multimedia, and very little of the software that does exist uses the computer's technical capacity to the full. It is equally sad to say that there are many dull and stale products that are often clones of each other, which teachers have had thrust upon them.

Children go home to their computers and consoles, where whole worlds are invigorating, spectacular and graphically astonishing. They can control cars, spaceships, armies and aliens, and can fulfil their dreams and stimulate their senses.

Where has the fun in education gone? Where is the use of the technology? The computer games industry cleverly used the full potential of chip development, console units, sound cards, motherboards and so on, in the creation of products using real-time 3D, providing stimulating, exciting and sensational results.



Educational software should be visually strong

Few have stopped to consider the advances in technology and begun using the full potential of the computer for delivering software to the classroom. There is little surprise that pupils are often unimpressed with these applications, finding many of them uninspiring, tedious and repetitive versions of previous packages.

So am I just another critic of the system? In a word, no! I am the studio director for Immersive Education, a company that is addressing these issues and whose attention is directed at using the power of the computer and technological developments to enhance the learning process.

Applying game technologies

Having worked at Psygnosis and with the new elite game development team, Elixir Studios, I realise that if these computer game technologies and developments could be combined and injected into educational software there would be astounding results.

Imagine having real physics and mathematical formulae that show graphically the results of equations in real-time, changing with every small alteration. (I don't mean little pieces of pre-rendered film.) Imagine travelling back into worlds that existed in the past; being part of historical battles; walking the streets at the turn of the century; seeing precious museum artefacts in their true surroundings; exploring cities, interacting with characters from another time. There would be a real sense of empathy with historical events and situations. The possibilities are endless.

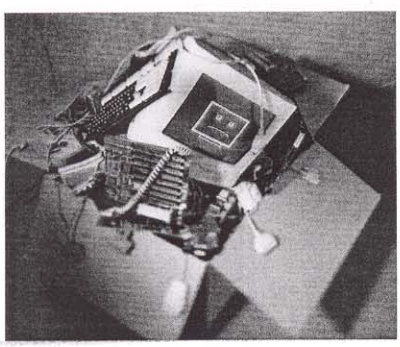


Image courtesy of PhotoDisc

It is about time that we gave children and teachers the opportunity to explore and use the power of computers, instead of just providing them with glorified data viewers.

At Immersive Education we develop our applications to make full use of the hardware capability. Using the power of Intel's new PIII processor combined with the latest sound and graphics cards, a powerful render engine from the games industry and generic physics engine from Mathengine has enabled us to produce a new generation of educational software. The results are photorealistic, real-time applications in 3D, with all the physical attributes and full interaction.

As many people from the games industry would agree, content is king. This is especially true in educational software, and working with Oxford University staff we can place a very powerful resource in the hands of the teachers and pupils, supported by sound educational values.

The road ahead

Capturing the FMV quality from post-production, the dynamism and inspiration from the games industry and the physics from unparalleled dynamics specialists like Mathengine, using them in real-time 3D and combining them has allowed us at Immersive Education to create a truly stimulating and captivating experience. As part of The Intel Educational Initiative, we are exploring the technology and developing cutting edge applications for the next generation.

In a discussion recently with the editor of *CGI*, the phrase 'The tip of the iceberg' was used when referring to the Internet. I suggest that you watch this space, as this phrase also applies to the educational software market. ✸