Middlesbrough College: Creating a 3D immersive learning environment

Summary

Middlesbrough College has recently introduced 3D interactive software to their learners and staff. Wearing 3D glasses, learners are able to see how organs of the body work as they carry out their usual daily functions or take journeys through virtual, historical worlds.

The 3D project is still in its pilot phase but is already a success with both lecturers and learners. It has increased learner engagement and is used to enrich the learning experience for various subjects from Maths to Biology and History.
About Middlesbrough College

Middlesbrough College is a further education college that offers a wide range of courses and facilities for the people of Middlesbrough and the Tees Valley. The College relocated from four sites to a single site in 2008. The new building has plenty of facilities; learners have access to recording studios, dance and drama studios; a 156 seat theatre; a six-court sports hall; a spa suit; engineering and construction workshops; training kitchens; lecture theatres; science laboratories; a restaurant and more.

The challenge

Middlesbrough College is part of the Technology Exemplar Network (TEN) and is committed to transforming its teaching, learning and management through the use of technology.

To increase learner engagement and enrich the learning experience the college used TEN funding to invest in 3D technology.

Claire Donlan, Head of Learning Resources at Middlesbrough College said:

"We decided to purchase the 3D interactive software as it was something new and different that would appeal to learners. The system itself is appealing as it is relatively easy to set up yet has impact and a wow factor for students. The software includes subjects such as Maths which are sometimes dry subjects but when represented as a supermarket to use percentages for example, it is much more interesting. Also some areas such as Biology and Physiology have a dramatic effect when a 3D image is shown of a heart or other parts of the body".

The activity

A team of IT and e-Learning representatives researched the possibilities of 3D technology in education by attending various demonstrations and discussing the options with lecturers at the college. It was decided to work with a local company, Amazing Interactives, which could provide bespoke packages for a reasonable price. The company is local, which also makes it is easier to liaise about new or existing products.

Another advantage is that the 3D system is self contained and mobile; it consists of two hard drives on a trolley and a portable screen, so it can be moved to any class room or teaching area. This means that it can be used in traditional classroom set ups to make them a technology enabled area.

The system is easy to use and the lecturer can rotate and zoom into the 3D image and highlight particular areas. The system displays questions and tasks for either an individual or a group of learners.
Introduction:

The learners and lecturers were introduced to the 3D experience in the central reception area where they were given the opportunity to immerse themselves in 3D Tudor Life, a 3D supermarket or explore 3D images of the human heart, which proved to be very successful.

Maths: a visit to the 3D supermarket is used for calculating fractions, volumes, averages or percentages.

Feedback included:

"Appears very effective for anatomical theory lessons"
Sports lecturer

"Will make boring lessons more fun', ‘will make theory based lessons more interesting through visual images"
Childcare lecturer

"The supermarket will be fantastic for my learners"
Foundation Learning lecturer
The outcomes

The 3D equipment has been set up in a separate classroom which can be booked by lecturers in advance and is currently mainly used for GCSE levels:

- Maths: a visit to the 3D supermarket is used for calculating fractions, volumes, averages or percentages.

- English and History: ‘Life in a Tudor Village’ is used for creative writing and history.

- English Literature: Shakespeare’s ‘Much Ado About Nothing’ gives learners the chance to follow the characters in the play and see and hear it from their perspectives.

- Biology: ‘Discover the body’ is a programme that shows how a human heart works in 3D. The heart can be viewed from any angle.

- Key Skills and Functional Skills: the 3D supermarket visit is used to teach numeracy skills and nutritional values.

- The Visual and Performing Arts department is also very keen to use 3D in many of their classes, including computer game design.
English Literature: Shakespeare’s ‘Much Ado About Nothing’ gives learners the chance to follow the characters in the play and see and hear it from their perspectives.

The impact

Although the project still in its pilot phase, 3D has already proved to be very popular with both learners and lecturers. 3D technology has increased learner engagement and aided understanding of subjects which can be difficult to visualise or demonstrate.

Middlesbrough College learners said:

“We do this <topic>, it makes it more informative”

“Really attention grabbing, which is important”

“Extremely stimulating for learners"

- Learner Health and Care, on the lungs...

The college will evaluate the 3D project in the coming year and continue exploring the range of applications available.
Claire said:

"The funding from TEN meant we could develop a system which is exciting and appealing to staff and learners. The company that develops the software is local to our College so we were aware of it and can now share this information with other providers".

Tips:

- Although the 3D equipment is easy to use, it is advisable to organise training sessions for staff. The popularity of the 3D software meant that a lot of the IT technician’s time was used to explain lecturers how to use the 3D equipment.

- Research which 3D software is available and what would work best for your college or workplace. It is also useful to talk to various lecturers to get an idea of what they expect from the software and how they would like to use it.

Useful links

- Jisc RSC Northern
- Middlesbrough College
- Amazing Interactives
- YouTube - Amazing Interactives

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