

AR/VR – An FE College’s journey towards implementation in the classroom

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Starting point

- Pedagogy Group instructed MS to carry out a desk-based research project around Augmented and Virtual Reality with the aim of identifying whether this was something that could be used effectively in the College
- Teaching and Learning Bulletin produced based on review of current literature. This was in three parts:
 - Effectiveness of AR and VR in the Classroom: evidence showed it was as effective in creating learning but produced better emotional wellbeing and engagement scores than traditional methods
 - Teaching strategies for the use of AR and VR in the classroom: A range of strategies were identified and a framework for blended learning (Fegely et al , 2020) analysed
 - Is AR and VR for all teachers? Is there evidence it works for all subjects?: No evidence was found in the literature about AR and VR for subjects. The underpinning pedagogies of different systems were examined.



What do we want to achieve?

- Evidence to show that introducing AR and VR to the College will be effective in enhancing the student experience at York College and provides good value for money.

Three parts:

- Hardware – is there hardware available that will allow the College to ensure that all students can use this effectively in a fully safeguarded environment?
- Software – what is available, and what is affordable? Are there ways of collaborating with partners to co-create content?.
- Pedagogy – What works? Why does it work? Are there differences in effectiveness in different subjects and with different levels of student?



Hardware

- Oculus: Requires Meta account. Cannot limit access to apps some of which (e.g. VRChat) have been shown to lack safeguarding procedures and would not be appropriate for 16-18 students to use. YC has 8 being used in the Games Development area under a specific Risk Assessment
- Vive: Requires linking to a high specification computer. YC has 5 but they are currently in an area which does not have sufficient computer capacity to allow them to be used.
- 360 camera – just starting to get to grips with this after personnel changes. Aiming to try and understand how the output might be used in classes so that we can generate some content of our own.
- Solutions:
 - Move to use PicoNeo headsets which allow us to control access to the environment when able to purchase.
 - Upgrade computers connected to Vive headsets, or re-deploy to areas where we have such computers already.
- NB: The cost of bespoke VR suites such as those offered by VISR is beyond current finances. Additional resource would need to be obtained by bidding for funding before this sort of development is possible



Software

Have looked at a number of solutions to date:

- a) Meta apps – No due to safeguarding
- b) VISR – no due to cost, though system is of high quality and would allow us to create our own content
- c) Metaverse – some really good virtual environment materials with some AR/VR content. Priced by the package but still not affordable. Does offer a free Careers Fair, which we are keen to try
- d) Collaboration with Research College Group – a GCSE Maths package which we will trial with other RCG member colleges as part of research into VR efficacy
- e) Signed up for USP College VR Classroom pilot. Scoping meeting held. Waiting on outcomes and invitation to join pilot. Possibly costs will be prohibitive.
- f) Creating our own - looking at 360 camera, and free software as a way of creating our own
- g) Blended Learning Consortium – similar to Metaverse but collaborative group of providers. Cheaper to access as fee allows access to all packages



Pedagogy

- Nothing on FE in the UK; and most research is based on HE and in the US
- Bid submitted to fund 3 Action Research projects across College to test the effectiveness of VR in different settings
- Continuing to consider how to make use of what we have to greatest effect.
- Case Study of VR in Games Development to be prepared during the academic year
- Continue secondary research to identify potential pedagogical approaches to test out.



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