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You me and consent awareness(YMCA):using VR and immersion in narrative spaces

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This paper will discuss a collaboration between students and academics from the School of Computing and Creative Technology and Youth and Community Studies. Together we have produced a prototype VR (Virtual Reality) game to raise awareness about sexual consent and how it is secured. This is both and emergent and timely topic, which is being addressed in a number of pedagogical ways, but we felt a GBL learning approach would be beneficial and potentially have greater impact. The narrative we developed focussed on the subjective nature of sexual consent and misinterpreted social cues within a fictional encounter. The scenario was chosen as a response to the growing evidence highlighting the rise in the number of female and male students reporting sexual assaults on university campuses. This paper discuss how we developed a VR prototype and evidence the practice based implementation, and explore effective workflow methods for developing immersive VR environments to evaluate the benefits of:
- Game Based Learning in assisting and evaluating choice within a given scenario about the importance of negotiating sexual consent
- Developing Interactive Narrative within Immersive/Mixed Reality Environments (MR)
- 360 Video Production and Potential Aesthetic & Immersion Constraints
- Best practice in creating learning artefacts for training and teaching within course

Key words: sexual consent, virtual reality, immersion, choice

This paper will reflect on some of the underpinning concepts informing the development of the prototype of a virtual reality game we are confident will make a positive contribution to the growing campaign against the increasing levels of reported sexual violence on campus. The narrative we developed focussed on the subjective nature of sexual consent and misinterpreted social cues within a fictional encounter. The project was developed as a response to the growing evidence highlighting the rise in the number of female and male students reporting sexual assaults on university campuses.

The project was developed through dialogue with students and a commitment to develop a practical real world intervention that has the potential to positively influence knowledge, attitudes and behaviours. The paper and artefact will discuss & evidence the practice based implementation, and explore effective workflow methods for developing immersive VR environments to evaluate the benefits of:
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curriculums

Negotiating sexual consent

Recent years have seen a resurgence of public discussions and (moral) panics about a range of pornography-related topics, the expansion of pornography across the internet, its putative links to rape and sexual violence, and erotic life-styling or the oft-cited 'sexualization' of culture. Over the last few years we have witnessed a rise in examples of rape culture which have forced us to to reconsider and question the effectiveness of the current teaching around sex and relationship education in secondary schools. Whilst giving or obtaining clear consent is a clear rule, the meaning of sexual consent for young adults is often far from clear. The current state of confusion is evident in the numerous competing views about what constitutes agreement (grudging acceptance or eager desire?) and what comprises performative consent (passive acquiescence or an enthusiastic "yes"?). Interventions and resources are being developed as educators globally take stock of the severity of this issue, which in some circles is even being referred to as a pandemic. The National union of Students (NUS) initiated a campaign to heighten awareness of the issue. The I heart consent (http://www.nusconnect.org.uk/liberation/women-students/lad-culture/i-heart-consent) is is an educational programme, which has piloted consent workshops as part of a wider programme to prevent sexual harassment and assault across twenty campuses. The YMCA project seeks to make a positive contribution to this campaign by designing a game using virtual reality.

Students as producers:

The current project is informed by the idea of 'students as producers', an idea developed over the last decade by a team at the University of Lincoln. Neary argues that (2010), as neoliberal globalisation has come to dominate the educational agenda students have been encouraged to see themselves primarily as consumers. Paulo Freire (1970) describes this of system of 'banking education' as a process which treats students as empty vessels to be filled with knowledge. Recasting the student as agents of their own learning re-invigorates the whole educational process and allows for new configurations and collaborations. In the YMCA project we worked collaboratively with a group of students in order to promote a different kind of learning to create a pedagogy which strives to fulfill both social and educational needs, and in so doing values the knowledge and experience of the learners creating a synergy between theory and research. Progressive education theorists support the argument that developing thoughts on recognizing the learner's experience is essential, Dewey, in particular, argues that for learning to be effective it needs to be based on the learner's experience (Dewey, 1902). He maintains that learning is merely symbolic if there is no relation to learning and a person's experience, and that learning only occurs by 'situating' students within this pedagogical process, when they learn and understand through their own meaning and purpose, Vygotsky (1997) claims that the production of knowledge does not present itself as already discovered and static, but as uncovered by the learner themselves through 'the dynamic context of its own appearance'.

Virtual Reality:

Literature on gamification often stresses that the judicious, strategic,and appropriate use of game elements can produce a learning characterized by a high level of active engagement and motivation,

which in turn produces positive outcomes in cognitive, emotional, and social areas. Increasingly serious games are being used in educational contexts as technology advances and educators strive for increasingly diverse and interactive tools. Digital technology offers great potential, however as Whitton and Mosely (2014) counsel, getting it right is key to the potential success of the game. Although the use of VR could be considered creative as a teaching and learning tool, that alone does not capture the potential of this project as creative teaching is analogous to creativity in any domain as it inevitably involves combining existing knowledge in some new form to get a useful result. As Amabile (1996) suggests:

> "A product or response will be judged creative to the extent to that (a) it is both a novel and appropriate, useful, correct or valuable response to the task at hand, and (b) the task is heuristic rather than algorithmic". (p29)

Having set out some of the approaches on which the project was initially designed we will now move onto an account of how we managed the collaborative process.

The Process:

At the start of the process we recruited a group of students because it was important to the construction of the game that the scenario was a) believable, and b) recognisable by other young people of similar ages. For the prototype to work we needed to create an immersive experience, which offered choices, but ultimately would have an educational function.

From the outset this project was intended to connect research and teaching to create a productive and progressive interactive medium to explore issues of sexual consent.

The topic of consent, the macro narratives in which it sits and the medium of virtual reality (VR) gaming were initially introduced to students during a module at the start of their academic journey at the University. This gave *fresher* students a sociological framework within which to understand the complexities and parameters of consent and engage in open dialogue primarily to explore their own understanding and experiences.

The initial curriculum based sessions with students affirmed a core group of 15, all of whom were women and included students undertaking a sociology degree. Three all-day workshops were subsequently organised.

The first workshop identified students own definition of consent:

> "sexual consent is respecting the person's right to say no"

This workshop also reaffirmed the heuristic intentions as it drew out their knowledge and personal experiences of knowing someone, or they themselves being in situations or scenarios which they referred to as 'risky' or '*potentially non-consensual'.*

Through dialogue, what became apparent was that women remain at the fore of victim-blame and students framed this in an understanding (for themselves and 'women' more broadly) of being increasingly aware of the widespread popular acceptance of the traditional sexual double standard: that sexual behaviour which is acceptable for men is unacceptable for women. This is what Gurnham (2016) terms "rape myth acceptance and victim-blame". In purporting that 'real rape' involves a pathological stranger who unleashes a 'blitz'-style attack outside, at night and using overwhelming force", he anticipates that "a woman who is raped or sexually assaulted in circumstances that run counter to that stereotype" (p259), may become the bearer of a degree of

responsibility if she did not effectively communicate '*no*' consistently and clearly throughout all engagements with her 'rapist'. Students concurred with this and felt it vital that the VR role-play game not only raised awareness of the complexities of consent, but also offered 'players' clear teaching/learning moments throughout. By incorporating this idea into the overall objectives of the project, students envisaged that the game should be much more than a straight forward teaching and learning medium and could, as Newman and Holzman suggest (1993), "contribute to the ethical and political transformation of the social world."

In workshop 2, students began to formulate and develop their favoured scenario which they titled "Netflix and Chill". In this workshop they were introduced to the VR technology and began to understand its potential more fully. Netflix and Chill became the central topic for intense discussions throughout the 3rd workshop. Students actively engaged in the writing of a realistic and recognisable scenario and script which would be relatable for the majority of reshers. In the script writing stages, it became evident that this scenario fell firmly within Gurnhams' "rape myth acceptance and victim-blame" (2016) as it included ambivalent situations, the woman drinking, (alcohol); the context of the frisson, (a public space or a private setting like a fellow student's house and/or bedroom); dress; and the interpretation or misinterpretation of cues; intent and meaning throughout. At various points in the interaction, the 'player' would be able to 'choose' an option and thus direct the flow of the engagement. Students considered it important and necessary to illustrate the multiple stages where consent was required and that not saying 'no' did not mean an automatic 'move to the next base'. According to Neary (2010), Vygotsky argues that teaching begins from the student's experience in a particular social context. Netflix and Chill pushed that notion to the extreme of its 'radical logic', and in doing so, the students taught themselves: 'Education should be structured so that it is not the student that is educated, but that the student educates himself'. (Vygotsky, 1997).
With such a framework for learning and role-play experience outlined, a pedagogical process was established. In utilising the technology of VR to this end, the user does not only have to reflect and negotiate what they were experiencing whilst immersed in the scenario, but they are also given choices of what to say throughout, which are transferal into other aspects of everyday life. VR as an interactive medium and the scenario Netflix and Chill, are not only a method of learning with potential 'player' transformation, but simultaneously, the nature and character of the social context can be reviewed and redefined.

Virtual Reality in Game-Based Learning
An increase in the proliferation and expediential growth of, cheap and accessible assistive computer visualisation technologies (i.e. sensory 'addition' in visual impairment and augmenting every-day experiences) suggest areas of complementary investigation within the context of MR (Mixed Reality) social & technologically mediated space. Immersive display technologies, and sharing space with 'virtual humans' and providing a sense of 'agency' in augmented real-word or virtual world environments were of key interest for the team and how MR technologies could be exploited to this end within the development of the project.

An important parameter and objective was to consider is how subjects (users of the training application) would respond to the VR experience, and how immersion within an artificial/VR environment may impact their decision-making or enhance learning. Introspective awareness, or embodied presence through responding to stimulus (visual, physical and emotional) is fundamental

4

the sense of engagement in MR spaces. Some signals (stimulus) can be easily perceived and are associated with strong effective feelings (fatigue, fullness or pleasant social contact) others can be more vague (i.e. if an entity is not trustworthy). Changes in bodily sensations provide emotional motivation and can guide decision-making (Heeter, 2016).

To begin to explore and investigate the potential for VR, a prototype artefact was created to isolate and address perceived issues with delivery of the content, designed to highlight awareness of consent issues. The goal was to further enhance user immersion with a view to a seamless/interactive experience for the user, and the notion of empathy within the given narrative scenario. Although consent awareness is not gender or sexual orientation specific, for initial practicality, the prototype was filmed with a male & female character in a student house scenario, projected from the female's perspective.

Methodology

The initial approach was to create an immersive experience utilising real actors filmed via a 360 camera that would position the user in a 'first person perspective' (a perspective/point of view commonly used in video game based scenarios) in which the user would be presented with a number of consent based questions. User choices would open additional and consequential avenues within the experience in a 'branching narrative' format. The choices would ideally be presented in format that was unobtrusive/vague 'subjective' options, avoiding obvious & binary choices. The issues highlighted and research discoveries within the prototype would be isolated and addressed within a proposed updated artefact.

Developing the script & scenario

As a starting point, it was vital that the script be 'believable' and impactful from the viewpoint of the particular age groups that the prototype was targeted. With this in mind, a first draft of the script was improvised and performed by students from the School of Health & Community Studies under direction from the authors of this paper. The script focussed on events in a student house between male and female students returning to home to watch a film 'as friends'. Once this first draft was complete, peer review was sought from the target groups (in this case students) who reported in feedback that it was fairly 'true to life'. This script was then handed over to the Games Design department to implement within a functional 'experience'

Converting the script to a VR experience

The following stage was to advance the draft script into a immersive experience by building consent based questions into the context of the scenario. For example; 'would you like another drink', 'would you like to go upstairs' etc. As previously highlighted, it was vital questions were not posed as leading or binary in their construction and delivery, so as to enhance the sense of real conversational flow and interactions. Within this initial phase, we identified issues:

> *(i)*   Despite member of the game team being present during the initial improv sessions, it became clear when 'converting' the script to a branching narrative experience, the questions were not focussed and directed around 'one' specific person experiencing these consent issues – i.e. questions were framed in a typical 'two header' script format where both participants asked each other questions during the course of the script.

This became an issue as for the purposes of experiencing one character's perspective, it had previously been decided the experience would be directed from the view of one performer (first person perspective) who would be wearing the 360 camera. This was corrected in the shooting script (with some perceived loss of 'realism') with questions being directed at the user, and the choices becoming available via an overlaid user interface.

Location shoot and VR filming

The filming took place at a student house for purposes of cinema veritas, and featured two actors as described. The footage was shot on a theta 360 camera where the image field is 'stretched' and mapped onto a sphere that encompasses the users field of view. For the shoot we utilised both a tripod and a head mounted harness to replicate the viewpoint of the protagonist. For purposes of completeness, we shot all scenes (repeated) from tripod, and harness from both actor viewpoints.
In this process we identified following issues:

(ii)   Shooting in 360 presents a number of problems, as the camera captures everything within the field of view it's placed within. This in turn negates use of anything other than natural lighting or special bulbs designed for the purpose; unwanted props, notes, or actor marks are also visible.

(iii)   Due to shooting day for night (or early evening) it was required that windows, etc. be blacked out. It was assumed at a resolution of 1280 * 960 per eye that these would be visible, but due to the conversion resolution of the footage adapted from the Theta camera, the scene was somewhat 'blurry', and improvised light blockers not evident.

(iv)   When utilising the tripod, there was a question as to where to place the camera in a scene. A set up 'two header' was required for the first scene, and the camera was placed two feet away from the actors, on a worktop in the corner of the kitchen. Although aware that this would result in one of the directions of the shoot facing a wall, this was not perceived as an issue, as extensive user testing of similar projects within VR points toward the user tending to focus on a 180 arc in front of them, which was reiterated during testing of this artefact. The immediate (unexpected) concern was that a distance of two feet amplified within VR, gave the impression of the actors being much further apart and as a result prevented reading of their facial expressions and emotions during their spoken delivery, countering a sense of immersion.

(v)   Rear vision was (or the ability to look behind them) we found was not a common issue as users would be able to clearly see what would be assumed to be 'peripheral vision', as well as their tendency to look down to see what is below. However, in the case of the tripod shots, this resulted in what appeared to be some abnormally enlarged kitchen implements! This was also more prominent when the actors utilised the head harness for the camera – not only did this result in an odd and uncomfortable POV (i.e. above normal eyeline), but looking down in this setup resulted in a view of the harness and the top of the actor's head. In regards to this, constraints in controlling a user's field of vision will be explored in later prototypes and how this may impact immersion.

6

Post-Production, editing & **user interface**

Editing provided several useful insights in the post-production process. Due to the live action nature of the shoot, a common grammar of film and television was expected. Within a normal 'flat' 2D scenario, an initial establishing shot of the two characters would be common practice. Within a VR/3D context this mechanic is impractical, but without which you would be unaware of the character you would be 'playing'. User testing would need be sought to establish if this mechanic /visual grammar is necessary or the alternatives that could be explored.

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