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RESEARCH REPORT

Title: Foregrounding agency in interactive-narrative based HIV interventions

Hadassah Myers

760519

March 2017

UNIVERSITY OF THE WITWATERSRAND

JOHANNESBURG

Supervised by

Catherine Duncan

Declaration

I declare that this is my own unaided work. It is submitted for the Degree of Masters of Digital Arts (Interactive Media) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree of examination in any other university.

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Hadassah Myers

March 2017

Acknowledgements

I would like to thank Catherine Duncan for her excellent supervision and patient guidance. I would also like to thank my husband Doryn and children Yair and Gilad for their constant support and encouragement throughout my study.

Abstract

The HIV epidemic has severely affected many parts of the world, especially Sub-Saharan Africa. There is clear evidence suggesting that computer-based HIV prevention interventions are efficient. Interactive-narrative is just beginning to be explored for Technology-Based Learning. I inspect the concept of agency afforded by interactivity and participation to determine the possibilities of interactive-narrative in HIV interventions. By scrutinising three noteworthy instances of interactive-narrative based HIV interventions, I extract evaluative criteria that this format facilitates, in the way that it can preference user choice. I conclude that while platform and content may form a significant element of a successful intervention, it is the elements of navigability, identification, co-creation, immersion and transformation that direct the agency. When these are interwoven successfully, interactive-narrative becomes a powerful tool for learning.

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Glossary of Acronyms and Terms

Avatar: A virtual, represented image of a particular person in digital media

CBI: Computer-Based Interventions

CPU: Computer Processing Unit

Database: A structured set of data stored on a computer

Electronic hardware: The physical components of a computer system

Gameplay: Features of a game such as the plot and play

GUI: Graphical User Interface

HCI: Human-Computer Interaction

Hypertext: Linking text on a computer display

IF: Interactive fiction

Programing language: Formal computer language

Chapter 1:

Introduction

Sub-Saharan Africa has been severely affected by the HIV epidemic, there is clear evidence suggesting that computer-based HIV prevention interventions are efficient. Interactive-narrative is just beginning to be explored for Technology-Based Learning. To formulate a methodology for creating and assessing an interactive-narrative intervention, a framework must be created as a starting point from which design can be strategised. Human Computer Interaction with a basis in Activity Theory, as well as Audience Reception Theory focusing on Participation and the Active Audience, must be drawn upon. Case studies that use interactive-narrative for the purposes of HIV Education can be used as a springboard for an analysis of the important tools extracted, namely navigability, identification, co-creation, immersion and transformation, that lead to the greater levels of agency such an endeavour would require.

The 2016 UNAIDS report figures show 2.1 million new HIV infections worldwide, adding up to a total of approximately 36.7 million people living with HIV. Research conducted over the last ten years has established the efficacy of Computer-Technology-Based HIV prevention interventions. The consensus of these studies is that Computer-Technology-Based interventions (CBI's) are efficient and have varying levels of effectiveness. Furthermore there are many added advantages to CBIs. These include cost, reach, dissemination, flexibility, content customisation and standardisation (Noar 527). Current research supports a need for further exploration in technology-based applications for delivering HIV education (Ybarra et al. 1566).

Interactive-narrative interventions for HIV are in an initial and experimental phase; there are not many instances of it at present and such a tool has yet to be brought to bear. This report is premised on the argument that there is enormous opportunity for further exploration. Interactive-narrative offers a specific type of engagement. It pulls together many effective aspects of communication: the technology of computers, Human Computer Interaction, storytelling and theatre. Interactive-narrative takes on different implementations such as interactive video, gaming, music,

artworks, and even commercial applications. There are many platforms for creating such content, including YouTube, Interlude and Rapt Media for video and game engines such as Unity, Unreal, GameMaker and Rage Engine. The genre that I have explored is education interventions. This research focuses on the potential of interactive-narrative and the possibilities of the system, and I argue that this particular way of addressing young people about HIV is a useful complement to other forms of HIV educational interventions such as classroom lessons, films and printed material. I am drawn to the possibilities for an individual user in the journey through the pathways of the interface, as they navigate through a multitude of options and choices. In this setting the user is granted a space to think through the options without real-world consequences. The various scenarios offered by interactive-narrative allow a safe place for the user to play and explore the various narrative possibilities that technology affords. This research is premised on the possibility of agency and choice in the narrative journey that interactive technology affords. Interactive-narrative that is constructed with digital media must be unpacked in the context of the medium.

Computer systems are built on principle structures and operations. Interactive-narrative is constructed within this framework. Computer systems are complex; they are designed to hold, store, calculate and retrieve data. In its most simplistic form, data takes the form of numbers, booleans (true or false statements) and strings (text). More complex data is built with these basic building blocks, and can be stored, ordered, computed and retrieved at any point. This is made possible by a system built on layers. The machine itself is known as the Central Processing Unit (CPU) and contains electronic hardware that receives instructions from a computer program. A computer program is built in a programing language by a computer programmer; these human-written instructions are converted into “machine language” by a compiler. The computer’s operating system and application software are forms of computer programs. When a computer system is used as a tool for creating, storing and compiling interactive-narrative, it is important to understand the tool’s mechanisms, in order to understand the output. Data and databases become the primary tools in this medium. Hypertext is the mechanism for retrieving and linking data together (narrative in this case). There are many possibilities of action that interactive-narrative allows for, however it is the elements of navigability, freedom and flexibility that drive towards the

potential of choice. If these elements are constrained, choice becomes limited. The medium of interactive-narrative is viewed through the lens of the agency and freedom that the medium intrinsically affords.

By scrutinising three noteworthy instances of interactive-narrative based HIV interventions, I extract evaluative criteria that this format facilitates, in the way it can preference user choice. It is the question of agency that is used as a yardstick for evaluating the case studies. In my literature review, I inspect the concept of agency afforded by interactivity and participation to determine the possibilities of interactive-narrative in HIV interventions. For this research I have chosen studies based in the United States of America. This decision is based largely on the fact that they are in English. Examining exclusively USA-based studies will ensure a comparison of like with like, since the targeted audience is part of the same cultural society. The findings will be discussed in the light of their implications for contexts different to those of these specific case studies.

Chapter 2

Literature Review and Theoretical Framework

My conceptual and theoretical framework is framed within the field of Interactive Media and talks to the discourses of Human Computer Interaction, Media Studies and Ludology. I address the primary literature that constructs a paradigm to evaluate the use of interactive-narrative for HIV interventions.

Core Terms and Their Definitions

2.1. Interactive-narrative

Meaning-making in interactive-narrative takes place in multiple ways, however, I focus on the points in the interactivity at which the user can make choices in the narrative which in turn influences the level of participation. I introduce the concepts of participation and interactivity, foregrounding it in agency, and I distinguish between the concepts of interactivity and participation. While these terms are often used interchangeably in the literature, I attempt to untangle them and forge my own distinction of terms. Human Computer Interaction, participation and agency are three core concepts underpinning this project. When I refer to interaction, I refer to Human Computer Interaction – which looks at the relationship between the user and the technology and the affordances of that technology. Kari Kuutti is one of the main theorists in the more contemporary understanding of HCI, with a foundation in Activity Theory, which looks at the motivations for human behaviour. I will be using the term *participation* to define the interaction between the user and the content, in an individual process: the personal articulation in the audience interaction with the text. In my investigation I will address interactivity in media and its possible facilitation of this function, as a medium where the agency lies primarily with the 'reader' and not the 'writer'. Finally, agency and choice form a central thread in my argument about the potential mechanisms of interactive-narrative. In order to determine a working definition of agency I will be focusing on the politics of meaning-making in interactive-narrative. These are the points in the interactivity at which the user can make choices in

the text (narrative) that influence the level of participation. I will introduce the concepts of participation and interactivity, foregrounding it in the role that agency plays.

2.2. Interaction

Interaction refers to the relationship between the user and the technology as well as the affordances of that technology. Human Computer Interaction (HCI) is a framework for understanding this type of interaction and grew out of collaboration between different disciplines. In her paper[1] "Hunting for the lost user: from sources of errors to active actors – and beyond", Kuutti describes the development of this new field of study that began in the seventies, a framework was built from the disciplines of computer science and psychology. A computer was seen as a tool to accomplish specific tasks and the user as the operator of the computer. The computer system was seen as being the most important aspect in the human-computer interaction. By the 1990s the disciplines of sociology and anthropology became an important lens in the discourse of HCI, highlighting the social context of activity in the interaction between people and technology and allowing for an appreciation of the user. The user was now seen as an "active actor" in the system, and the computer system was seen as a tool, subordinated to the actions of actors. Users became partners and participants in the computer system as well as constructors of their environment. More recently users have been defined as "consumers" and "participants". The user's role as active participants in interactive systems has been recognised as significant (Jenkins 2013). As a participant the user is foregrounded and they are acknowledged as individuals with personal lives, experiences and frames of reference that influence their choices. Anthony Dunne places these users as "authors, characters, protagonists, and co-producers" of narrative, rather than passive consumers (69). While the designer is the "author", the platform itself presents experiences as opposed to just representing them. A primary affordance of the medium is its ability to question and alter the user's way of thinking with an embodied experience (Dunne).

[1] Paper written for the Cultural Usability –seminar, Media Lab, University of Art and Design Helsinki, 24.4.2001

Paul Dourish looks at HCI with a focus on the concept of "Embodied Interaction", which he defines as "interaction with computer systems that occupy our world, a world of physical and social reality, and that exploit this fact in how they interact with us" (3). According to Dourish, the focus of HCI is ethnographic (16). It is a method of analysing interaction that focuses on more than simply the actions of the user. It looks at motivations behind the actions, the context of the interaction, as well as the experience and meaning. The notion of embodiment is central to his framework. Embodied Interaction emphasises that users act in a world that is suffused with social meaning, which makes interactive activities meaningful. Embodiment is engaged interaction. It is an attempt to unify the physical and electronic worlds, giving the user an experience closely matched to real life experience, rooted in the ways in which people participate in the world (17).

Janet Murray discusses the term interactivity and correctly notes that it designates quite a vague concept, despite its pervasive use (74). She expresses the need for interactive environments to be meaningfully responsive to user input.

> Procedural environments are appealing to us not just because they exhibit rule-generated behavior, but because we can induce the behavior. They are responsive to our input. Just as the primary representational property of the movie camera and projector is photographic rendering of action over time, the primary representational property of the computer is the codified rendering of responsive behaviors. This is what is most often meant when we say that computers are interactive. We mean they create an environment that is both procedural and participatory. (Murray 74)

Murray names three primary concepts for defining interactivity in what she calls "the aesthetics of the medium" (94). These are immersion, agency and transformation. Understanding interaction on this premise allows for a more comprehensive analysis of the role agency plays in interactivity. Interactivity is clearly not just about giving users a selection of options. Interaction needs to be an engaged and meaningful experience.

2.3. Participation

My delineation of Participation refers to Henry Jenkins' description of the "active audience" as influenced by the work of media scholar John Fiske.[2] In his book *Textual Poachers: Television Fans & Participatory Culture*, Jenkins addresses fan culture and how audiences become "active participants" in the construction and circulation of textual meanings (24). The audience is no longer seen just as a passive recipient of content, rather the audience enjoys taking content, mixing it up, playing with it and adapting it for their purposes so it makes sense in their worldview. Jenkins uses the metaphor of "textual poachers" and "textual nomads" to talk about the individual reader's engagement with text (27). This term (textual poaching) is borrowed from Michel de Certeau, who describes readers as travellers; "they move across lands belonging to someone else, like nomads poaching their way across fields they did not write, despoiling the wealth of Egypt to enjoy it themselves" (175).

In this understanding, there is not a distinction between "user" and "content" or "author" and "reader" and participation is a conversation between the user and the content. Meaning is not intrinsic in the content, but rather is constructed by the individual's engagement with the content. Interactive-narrative allows the audience an engagement in ways that offer a high level of agency and activity. It is this facet of interactive-narrative that facilitates the pleasure of these "nomadic" readers that is my focus in understanding participation.[3]

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[2] As discussed on Henry Jenkins official blog *Confessions of an Aca-Fan.* "John Fiske: Now and The Future"

[3] It is important to note that Henry Jenkins' later work focuses on participation in a social context. In his text *Convergence Culture: Where Old and New Media Collide*, he discusses the participatory relationship between media producers and consumers, and looks at the role the audience plays in this new media system (3). This points to the interaction between the audience and the content in a more collective process – referring to community-based participatory culture in which social engagement requires sharing and spreading media. This element of participation is an important notion, but is not directly relevant to this study and therefore does not form part of my working definition of participation in this specific context.

2.4. Narrative

The idea of the narrative is an important feature in this study because storytelling is a universal method for creating individual and cultural meaning. One important concept in understanding the medium of interactive-narrative is the concept of "Ergodic Literature" coined by Espen J. Aarseth who delves into the affordances of cybertext (1). He uses this term to describe the user's journey through cybertext and the meaning created in this process whereby the agency is placed on the reader (Aarseth 2). This understanding assists in clarifying the connection between the possibilities that interactive-narrative holds in the creation of meaning, and the case studies themselves. Aarseth's insights regarding ergodic literature are central to my review of the case studies in the following chapter.

> When you read from a cybertext, you are constantly reminded of inaccessible strategies and paths not taken, voices not heard. Each decision will make some parts of the text more, and others less, accessible, and you may never know the exact results of your choices; that is, exactly what you missed. This is very different from the ambiguities of a linear text. And inaccessibility, it must be noted, does not imply ambiguity but, rather, an absence of possibility – an aporia (3).

The invention of digital computing allowed for a new medium of textuality that held new potentials with more flexibility. Database systems provided a new platform for the storage and retrieval of information, in this case textual material.

Another important concept in understanding the medium of interactive-narrative, is the user's response; the impression left after the interaction takes place. In his text *Actual Minds, Possible Worlds* Jerome Bruner defines two modes of sense-making: the convincing argument and the good story (12). While arguments convince one of their truths, stories convince one of their lifelikeness. Arguments are a search for universal truth, while stories are connections between two events (Bruner 12). Stories themselves create meaning, the embodied interaction that takes place through interactive media evolves the meaning-making further. Bruner traces the history of

narrative, and the empowerment of the "agent protagonist" (698). He examines two landscapes of narrative as discussed by Algirdas Greimas et al.: "a landscape of action on which events unfold", and "a landscape of consciousness" (Greimas et al. 443-447), which are the inner worlds of the protagonists involved in the action (Bruner 698). There has been a transformation from early folktales. Stories do not play out purely as "what happens", but on the motivations of the characters, what drives them to behave in a certain way – what Bruner refers to as "more epistemological, less ontological." The omniscient narrator disappears, and with him so does the ontological truth. Agency in narrative is a product of the portrayal of the type of relationship between an "intention-driven actor" and the "settings" in which he must act to achieve his goals" (Bruner 699). These two components formulate an understanding of the affordances of narrative. Narrative allows for a more comprehensive understanding of events and takes into account why stories might unfold in a specific way. It endorses a contemplation of the possibilities in a story. While narrative allows for this thoughtfulness, interactive-narrative allows for an investigation and experience of potentiality. The agency is transferred from the protagonist to the user, and can feel that much more personal. The medium itself adds much value in the meaning that can be made.

2.4.1. Database and Hypertext-based Narrative

Database and hypertext are important concepts in the ontology of computer science. In this context they may be taken to refer to the back and front end of a Graphical User Interface (GUI). Hypertext is a specialised database system used to link objects through an interface. These terms describe the mechanisms of human computer interaction. They are the convergent point in the interaction that takes place between the user and the screen. Interactive-narrative occurs within these two systems. Manovich defines database narrative as such:

> The "user" of a narrative is traversing a database, following links between its records as established by the database's creator. An interactive-narrative (which can be also called "hyper-narrative" in an analogy with hypertext) can then be understood as the sum of multiple trajectories through a database. A traditional linear narrative is one, among many other possible trajectories; i.e. a particular

> choice made within a hyper-narrative. Just as a traditional cultural object can now be seen as a particular case of a new media object (i.e. a new media object which only has one interface), traditional linear narrative can be seen as a particular case of a hyper-narrative. (201)

Manovich addresses the concept of a database for interactive-narrative. He looks at the relationship between the database creator and the audience of a narrative. The creator creates a plurality of trajectories for the narrative, and stores these components in a database. The user traverses the database by following links between the files, and as such creates an interactive-narrative. He indicates that providing the user with a plurality of trajectories with which to construct a story is not necessarily going to create a narrative (Manovich 10). It is the setup of the system, which must enable the construction of a narrative. In actual fact, it can be stated that database follows an anti-narrative logic in its essence. Manovich addresses this in his article "Database as a Symbolic Form", but points out that convergence of "old" and "new" media can create a new form of narrative that brings new capabilities for narrative (201). While database narrative does not necessarily create meaning, it becomes an effective shell for holding units of meaning. The narrative is produced by the user's choices, thereby producing interactive-narrative and the affordances thereof. Database narrative can be seen as a repository of individual modules that may be used in a story. These segments are accessed via hypertext, which is an ongoing editing system that allows for the linking of separate nodes. Hypertext-based narrative is built on a system of links that allow users to jump between separate parts of a story. When these parts are connected and sequenced, they may construct a narrative and/or influence the outcome of the story. This framework demands participation and engagement. Hypertext supports interactive-narrative, because it is a medium of interactivity. George Landow and Ted Nelson describe the affordances of hypertext.

Landow investigates the principles of hypertext-based narrative (218). He notes that hypertext calls into question (1) fixed sequence, (2) definite beginning and ending, (3) a story's certain definite magnitude, and (4) the conception of unity or wholeness associated with all these other concepts (Landow 218). These form what he calls a spectrum of possibilities that allow for permutation of plot, characters and setting

(Landow 218). These are implicit characteristics of hypertext narrative. Ted Nelson, one of the pioneers of hypertext theory, coined the terms "hypertext" and "hypermedia" (110). In his article *Computer Lib/Dream Machines*, Nelson defines hypertext as a type of writing that can branch or move when directed (314). A computer display screen allows for pathways through separate pieces of text connected by links. These jumpable interconnections are part of the medium itself (Nelson 314). The primary affordance of hypertext-based narrative, is the pathways a story can take based on a user's choice. This type of narrative has intrinsically interactive elements. The user is co-creator of the narrative. The level of agency afforded to the user can vary, but the environment lends itself to being active and reactive.

2.4.2. Interactive-narrative

Andrew Glassner canvasses the participatory experience of interactive-narrative and sees this form as an assemblage of gaming and storytelling. He calls this platform a "reactive environment", where audiences become active participants (21). He points to fundamental principles in creating engaging experiences with this medium, which will be useful in creating a framework for understanding and evaluating interactive-narrative (Glassner 21). He looks at the concepts of player engagement, drama, interface and language that go hand in hand with the principles of agency. Active engagement requires effort on the part of the user/player – they have to want to engage, otherwise they will not put in the effort required to actively engage and participate. A return of sufficient, high-quality engagement is essential for it to be worth the input effort (Glassner 293). Another important element of active participation is user/player identification with the character and story – this is the dramatic element. Acting requires a "getting into the part" headspace, which involves actually feeling the emotions of a character. This opens up emotional risks for the actor, and the player needs to be protected from the unpleasant aspects of acting to prevent a resistance to participation (Glassner 301). Interface is another critical concept addressed by Glassner, this is meeting point of the system and world interface (301). To make an interactive story come alive and be engaging, there needs to be an alignment between the system and world interfaces. Freedom of movement is what makes a game come alive. Applying principles of user interface design to both the system and world interface will make

more vigorous freedom of movement (Glassner 303). Finally, language and communication play a leading role in engagement. The player needs to be able to communicate with the virtual characters of the story. Considering that computers do not understand the vast nuances of language, using symbolic language becomes key in allowing for the system interface to match the world interface's interpretation (Glassner 321).

We see that interactive-narrative is well entrenched in the lexicon of gaming. James Paul Gee delves into the concept of games for learning and addresses the use of narrative in games (353). The player in a narrative game experiences someone else's story and has a portion of control in the outcome. By navigating the constructed scenario, the player learns and identifies with a story other than their own, which allows for an investigation into another world and begs a response to this "reality" different from their own (Gee, 357). This specific form of participatory storytelling allows for a different approach to education. Gee argues that gaming offers a better approach to learning.

In his text *The New Digital Storytelling: Creating Narratives with New Media* Bryan Alexander observes that communication technology lends itself to storytelling (5). This text assists in growing an understanding of the nature of stories and the various forms of storytelling. Alexander observes that "The linear nature of stories is crucial to many definitions of story. Events arranged in time, or an event broken down into a temporal sequence: these make intuitive sense" (5). Alexander tries to uncover how a story can exist outside of time; and places engagement as an important factor in storytelling as per Sheila Bernard's definition: "A story is the narrative, or telling, of an event or series of events, crafted in a way to interest the audiences, whether they are readers, listeners, or viewers" (15). Alexander's definition of a story is the following: "a sequence of content, anchored in a problem, which engages that audience with emotion and meaning" (3). According to Landow, hypertext-based narrative calls into question some of these notions (218). The question that then arises is whether hypertext-based narrative can hold any narrative meaning. By emphasising the role of the audience in the making of a story, Alexander answers some of these contradictions. A story has sequence; when placed in an interactive environment that uses hypertext to construct

the narrative, sequence is thrown into question. However, Alexander explains that "an audience can turn a single item into a story through the process of reception" (13). He marks sequence as the glue that joins pieces of stories into a narrative and attributes this role to the audience within an interactive structure (Alexander 13). It is the audience's duty to build the sequence during pauses in the narrative that strengthens engagement and draws the audience into co-creation. Allowing the user to participate in the co-creation of a story illuminates an enigma of interaction. Marie-Laure Ryan defines this oddity as "the interactive paradox" (53).

2.4.3. The Interactive Paradox

In her study "From Narrative Games to Playable Stories: Toward a Poetics of Interactive-narrative", Ryan delves into the murky depths of "the interactive paradox", which identifies a significant problem found in the medium of interactive-narrative (53). This problem is due to the tension between the nature of narrative and hypertext. The nature of narrative is linear and hypertext is a collection of fragments (in this case parts of stories) that can be joined into a linear sequence, but relies on user input. A good story needs certain ingredients – such as a sequence of events played out by connected, thinking individuals, motivated by conflict and aiming at resolution (Ryan 43). As soon as interactivity is introduced there are problems in the mechanism of the story. By allowing the user input, the story might suffer and blow off course, producing problems in the meaning-making. This problem is not something that can be ignored, and the design of the system plays an integral part in finding a working compromise. A participating user demands the autonomy to act and react without explicit authorial constraint. The designer must build in those elements of agency, and ensure that the narrative meaning is not lost in the process. Louchart and Aylett explain this paradox as such: "On the one hand an author seeks control over the direction of a narrative in order to give it a satisfying structure. On the other hand a participating user demands the autonomy to act and react without explicit authorial constraints" (3). It is this tension that will conceivably determine the level of agency present in an interactive-narrative. The success of such an intervention relies on assimilating this balance.

2.4.4. Narrative games and playable stories

Using *Hamlet on the Holodeck* as a yardstick of what a good interactive-narrative might look like, Ryan proposes using three features as a starting point for assessing an interactive-narrative against the devices, interfaces, and design philosophies of implemented forms of narrative games and playable stories (47).

1. Natural Interface: Environments in which the interface and scenarios feel natural and realistic to the user, making them feel at home and comfortable to express their choices freely.
2. Integration of user action within the story: Transportation, story construction, engagement and emersion – with an emphasis on the user constructing the story. The actions of the user move the plot forward. The creation of narrative (constructed by the user's choices) is facilitated by interpersonal relationships; the progression of choices write the life story.
3. Dynamic creation of the story: Using two different approaches: bottom up (playable) or top down (narrative gameplay). A more "bottom-up" approach is favoured by playable stories, as used in the "Holodeck narrative machine", where every action of the visitor affects the life of his fictional persona. In this kind of design, storyworld takes precedence over story, and the satisfaction comes from enacting a sequence of events. This differs from the "top-down" approach more typical of narrative games; the gameplay is wrapped in a storyworld, and contains choices to facilitate interactivity. Each approach has pros and cons and is not mutually exclusive, but does add to the paradox of interactive narrativity.

Ryan suggests that the solution lies in a combination of top-down and bottom-up design (53). However, she asserts that more excitement and mystery happen when a bottom-up approach is used (Ryan 48). These three elements guide my assessment of the case studies, as they are important elements in finding a balance between the purely narrative elements and the specific nodes of interactivity, for optimal engagement. In addition to the three elements mentioned, Ryan also looks at the importance of *active engagement* in interactive-narrative instances, for both ludic and narrative-based games

(13). While viewing ludic and narrative as competly seprate and opposing concepts is problematic, Ryan's approach to levels of immersion are critical to an enjoyable and satisfying experience:

1. Spatial Immersion: Experiencing space through movement. This can be easy to achieve in a digital environment as digital technology invites an embodied experience. It is much trickier to achieve this effect with pure hypertext, which grants instantaneous jumps from node to node and can therefore bypass the spatial journey. The exploration of space in storyworlds forms a critical component in the pleasure of playing games.
2. Epistemic Immersion: The mystery of the story; where non-interactive-narrative is embedded in an interactive game world in which the player enacts the narrative and unravels the story.
3. Temporal Immersion: This is shown to include three narrative effects: curiosity, surprise and suspense. Suspense is more difficult to achieve because, like epistemic immersion, suspense is created by an intense desire to know, while epistemic immersion concerns events that already happened, suspense is focused on the future. People experience suspense when they can foresee two or more possible developments; this evokes a fascination with which path the story will actualise. But when players can determine the path through their choice of action, the uncertainty is lost. And if the system generates an accidental event to prevent the player from fully controlling the outcome of the events, the effect will be surprise rather than suspense (Ryan 55).
4. Emotional Immersion: Empathy; understanding and relating to someone else's emotions. This is easier to achieve by using a "bottom-up" approach, where the user's choices affect the outcome (Ryan 56). A "top-down" approach can allow user agency, but the outcome is predetermined. This would compromise feelings of empathy.

Understanding these qualities of immersion is helpful in my analysis of the interactive-narrative case studies. There is a specific end goal to HIV Education Interventions. The above-mentioned aspects of immersion could be checked for against the case study instances, when multiple elements are present and strong in their

iteration, the intervention's success will be affected. These four facets of immersion talk directly to agency and choice.

2.5. Agency

Janet Murray positions agency as one of the most alluring characteristics of electronic environments (126). She defines agency as "the satisfying power to take meaningful action and see the results of our decisions and choices" (Murray 126). Computer-based interactions can dynamically alter the virtual world with user participation. It is the feeling of being in control of the system and seamlessly navigating through the interface that arouses the feeling of agency. Murray highlights the difference between the interactivity of just moving a joystick or clicking a mouse, and the pleasure of agency in an electronic environment (128). Murray asserts that "Activity alone is not agency" (128). Authentic interaction takes place when a higher degree of agency is present; the quantity of interactions alone is a poor indicator of the pleasure of agency. Higher degrees of agency develop when actions are profoundly autonomous, and user-driven choices are numerous and directly influence the course of the game. Agency reaches beyond both participation and activity – "As an aesthetic pleasure, as an experience to be savored for its own sake" (Murray 128).

2.5.1. Agency in freedom of movement

Murray explains another form of agency: spatial navigation, which is the pleasure of moving around and discovering the paths of a maze (130). This refers to the exploratory element of the experience, unrelated to specific tasks; it is the pleasure of moving through a space in an exploratory way which is a satisfying and empowering experience in both real and virtual environments. The advantage of electronic environments is the affordance of two different types of pleasure, both the "solvable adventure maze" (130) as well as the "tangled rhizome" (132). Adventure mazes are apt for digital environments because the story is tied to the navigation of space: "As I move forward, I feel a sense of powerfulness, of significant action, that is tied to my pleasure in the unfolding story" (Murray 132). This type of pleasure is in essence the feeling of

winning, however, if the narrative structure is not a "win/lose" contest, the progression sparks a different feeling – a pleasure derived from enacting a meaningful experience both consciously chosen and surprising. While both these types of interactive experiences can be pleasurable, mazes can interfere with agency because they are usually aimed towards a specific goal, which may leave the user feeling limited and constrained. Agency is strongest when the interaction thrills the user with a deeply branched and open road and more than one way to get somewhere.

2.5.2. Agency in freedom of interpretation

A "Tangled Rhizome" also lends itself to Agency. "Rhizome" referring to the philosophical concept developed by Gilles Deleuze and Félix Guattari. This theory compares knowledge to the botanical rhizome root system. This root system is unlike the hierarchical tree structure that starts at the roots, flows into a trunk, then into branches and into leaves. A rhizome plant does not have a bottom or top, it grows in any direction it pleases and can be broken off or regrown at any point. When used as a theoretical concept, the Rhizome describes a non-linear, rootless process, there is no beginning and no end; instead there are connections between multiplicities. Murray uses the term "Tangled Rhizome" to describe postmodern hypertext narrative (132). She calls it an "unheroic and solutionless" digital labyrinth (Murray 132). This type of system liberates text from the tyranny of the author and instead affirms the reader's "freedom of interpretation", allowing a story to be explored from multiple points of view (Murray 133). Agency will be felt more strongly when the user explores the story and takes multiple paths. A feeling of comfort is drawn from the knowledge that there is no right or wrong path, when a particular path does not uncover meaning for the user, they have the freedom to explore a different path and outcome. While an endless story might lead to frustration, the endless possibilities are enthralling and lead to empowered feelings (Murray 134). This element of agency is derived from the freedom the user feels in creating their own meaning and interpretation, by journeying through a "Tangled Rhizome".

2.5.3. Agency in controlling the outcome

In the study “Eliciting Behavior From Interactive-narratives: Isolating The Role Of Agency In Connecting With And Modeling Characters”, agency in interactive-narrative is explained as the control of an outcome, which manifests itself as the exertion of control over media content in the areas of choice, arrangement, and exploration (Dillman et al. 77). Within the context of a narrative, choice is what drives the narrative and defines the narrative experience. The control over some or all of the character’s choices, behaviour and development influences the evolution of character (Dillman et al. 78). This study conducts a series of experiments that affirm that agency can strengthen the connection a user has with the character. The connection formed by the choice and freedom becomes the mechanism that facilitates engagement. Agency is highlighted as a key factor in the level of empathy that will be experienced by the user, which means that the level of emotional immersion will be greater when user choice is preferenced.

In their article "Interactive-narratives: Processes and Outcomes in User-Directed Stories", Melanie Green and Keenan Jenkins share similar ideas to those presented by Murray and Ryan in the texts I have discussed. They propose a conceptual model of interactivity effects, specifically in the interactivity of branching stories as opposed to traditional linear-based narrative. Three key elements are named as the mechanisms of interactive-narrative: “Transportation, Identification and Realism” (Green and Jenkins 479). The possibilities of exploring and choosing alternative paths is highlighted as the key ingredient in achieving narrative immersion (Green and Jenkins 483). This model reiterates the importance of agency in interactive-narrative. Agency in Transportation is the freedom of movement experienced in space. Agency in Identification is the freedom of interpretation, when a story can be explored from multiple points of view. Users can find their own voice in the story and thereby identify with the character producing higher levels of empathy. Empathy can be felt in traditional narratives, but interactive-narratives create a stronger sense of responsibility in terms of the consequences and outcomes experienced. The users consciously choose the character’s actions, enhancing feelings of control and that felt-responsibility for the story events

could influence the reader's attitudes. Agency in realism fits into the ideas of "anchored instruction" presented by John Bransford, for successful technology-based learning. This plays a crucial role in understanding the importance of agency in interactive education interventions.

2.6. Technology-Based Learning

"Anchored instruction" is a major paradigm developed by John Bransford, for technology-based learning. In his paper "Video Games in Education", Kurt Squire suggests that Interactive storytelling might be one way of "anchoring instruction" (9). I aim to show that interactive-narrative does this particularly well. The basic principles of anchored instruction is that learning should be designed around a realistic problem, an "anchor", and bend to a more constructivist, less didactic approach to learning. The Cognition and Technology Group at Vanderbilt's (CTGV) article "Anchored instruction and situated cognition revisited" lends some very interesting observations about learning transfer. The study highlights that "What if" questions promote flexibility and engagement, and deepen understanding (CTGV 60). "What if" scenarios are part and parcel of interactive-narrative, which makes it the perfect medium to successfully achieve learning transfer. When one considers this type of agency, which I will name "agency in freedom of interpretation", in conjunction with the "agency of realism" found in anchored instruction, we have a great medium for affording learning.

Psychologist Mihály Csíkszentmihályi's idea of "Flow" is also an important concept in interaction for educational interventions. His approach relates to the Taoist concept of *Yu* – wandering, spontaneously, with no goal. This is what we would call an "immersed experience" in an activity. He goes on to describe flow as "the gradual focusing of attention on the opportunities for action in one's environment" (Csíkszentmihályi 151). R.F. Bowman advocates games as an augmented environment for learning, because it allows for user control in the learning process, which better engages learners in states of "flow" (14-17). Many educational approaches place the learners in active roles, pursuing goals meaningful to them. Bowman highlights the stark difference between classroom or curriculum-based learning and an interactive

gaming environment: the primary difference is the user's control over what and how they learn, a classroom environment lends itself to a more passive reception of the subject, as opposed to a more active engagement. (16)

Ian Bogost addresses the concept of a successful learning experience (317). He looks at various elements that can be found in procedural media (such as games), and exposes how they all point to a learning process. This can only be seen when changes in attitudes happen over time, as this is the only way to truly evaluate whether a learning intervention has been successful. He emphasises that games allow recognition of procedural rhetoric as a way of interrogating the world and thus learning (Bogost 340). This means that the medium can get to the heart of an issue because of the process inherent in it. By allowing this process of decision-making, questioning and choice, agency is provided for, therefore a better-considered interrogation can be carried forward in future experiences (Bogost 339).

With this literature in mind, I will be reviewing the case studies to evaluate the quality of participation and interaction afforded by interactive-narrative, focusing on the aspects of agency offered by these instances.

Chapter 3

Case studies: Interactive-narrative for the purposes of HIV Education

In this chapter I embark on a close reading of three case studies, analysing them individually and separately. My strategy is to prioritise my position as a user or player, engaging with the text deliberately as a person who is confronting this text with all of my positionality intact. My positionality is that of a white, educated, female South African. I mark my point of reference, and note my experience as a first-person player who has engaged with these case studies multiple times. My process was to record myself as I navigated through the interfaces, and then unify my experience of the trajectory through content and platform in a readable summary. Chapter 3 is narrowly focused on the case studies, to highlight the details of each of them. The specificity of the interactive material demands an interaction between the user and content, and for the interaction to be meaningful, it must be experienced. Another player might generate a different experience of the game and interface, and for that reason I specify my positionality here. This forms the beginning of my documenting process, and is followed by my reflection of the content and platform of each study, delivered in a more objective voice, before proceeding to chapter 4, where I begin my thorough analysis and discussion of the various strengths and weaknesses of the interactions in relation to my literature.

Precisely because agency is at the heart of the endeavour, I discuss the different platforms of each intervention to see how they influence the possibility of agency. Learning environments and platforms serve the specific function of education. When interactivity is placed in a school system as a curriculum-based program, quantifiable results are expected, which affects the design of the interaction because there must be a set of criteria on which success can be based, this opens up a significant challenge for a successful intervention. A successful interactive experience entails more than an offering of options; the user needs to want to engage with the system. The theories of interaction and participation formulated by Kuutti, Dunne, Dourish, Murray, Ryan and Henry Jenkins that were discussed in my literature review helped form a considered understanding of the importance of active engagement and embodied interaction. In

this chapter I analyse and evaluate the following three case studies of Interactive-narrative used for HIV education interventions.

1. "You want to do what?" and the older iteration "Actors' Guild"
2. "Generations HIV: The HIV Story Project"
3. "I'm Positive"

3.1 CASE STUDY 1: WSTDtv

You wanna do what? (2005) and *Actors' Guild* (2016)

These case studies are part of an HIV/STD awareness and prevention curriculum for middle and early high school learners. This takes place through an interactive platform called WSTDtv, the platform is research based and developed by a company called Academic Edge, Inc., which is a media research and development company that develops learning tools for children and adults. WSTDtv is comprised of interactive studio activities that are for classroom use. The first iteration of this platform was developed in 2005 and was available on CD. More recently these have been updated and are available online. I will be looking at the module *You wanna do what?* which is the new adaption of the 2005 *Actors' Guild* module. *You wanna do what?* can be found at http://wstdtv.org/. I was not able to obtain a copy of *Actors' Guild*, and I am relying on the description of this module from the study entitled "Development and Evaluation of a Multimedia-Enhanced STD/HIV Curriculum for Middle Schools" by Richard Goldsworthy and Nancy Schwartz of The Academic Edge that was published in 2008 in the *Journal of Educational Multimedia and Hypermedia*.

The initial version of the case study, *Actors' Guild* embodies characteristics of interactive theatre and does so while addressing various forms of pressures related to sexuality in adolescent's lives. from the account by Goldsworthy and Schwartz, and from reviewing the videos of the original version, that this module contains three pre-recorded scenes comprising three acts in which actors practice roles for an upcoming WSTDtv production. The scenes depict situations in the lives of two people who are

struggling with whether or not to have sex. The learners who participate in this module must select three "acts" from the three scenes available. Act 1 depicts external stresses, such as peer pressure and media, while Act 2 showcases an interaction between a couple contemplating engaging in sexual intercourse. Act 3 concludes the module with the consequences of engaging or not engaging in sex, and how those consequences are handled. The multiple paths through the story are constructed to enable the learners to consider how different pressures may have influenced the later scenes, and how those later scenes might have occurred differently (Goldsworthy and Schwartz 424). According to Goldsworthy and Schwartz this module was designed with a strong focus on increasing knowledge about infection, behaviours that result in infection, and ways to avoid these behaviours; as well as addressing beliefs and misconceptions and examining the social pressures and emotions associated with sexual behaviour (Goldsworthy and Schwartz 420). The goals were to provide content that addressed basic facts and terminology, to raise awareness, and to initiate risk prevention. In Goldsworthy and Schwartz's summary it becomes clear that the prototype modules were designed to provide some practice in critical thinking and decision-making, with the intension to provide additional support and extended practice for actual behavioural skills in future projects (Goldsworthy and Schwartz 420). From what I can evaluate given the available materials, this program had a strong emphasis on stories and narrative, from the framing of all of the activities within the back-story of a television station to the design of individual models. The concept of interactive theatre drove the activities in *Actor's Guild* and included many "what if" scenarios surrounding the issues of peer pressure and social influences. With an aim of exploring how "interactive theatre" can be accomplished through a CD or the Web. (421) The current version *You wanna do what?* diverges somewhat from the original iteration. The audience cannot choose the outcome and pathways of the story; instead they watch pre-recorded videos from start to finish and then rate the video against specific criteria. The current version is placed on a website platform rather than a CD-ROM and these interventions take place in a school environment via the new website. The target audience also differs as the interventions are aimed at middle school children rather than high school students.

3.1.1 Description

The interface is made up of rows of content formed in a grid structure. The top row contains the WSTDtv logo. The background of the web page contains a cityscape silhouette in shades of blue, the blue fades into black with a gradient effect as you scroll down the page, leaving the images that follow standing out on the black background.



Figure 1: Home Page of WSTDtv

The row following the logo contains text which explains what the website is about; underneath in smaller text a more detailed explanation follows, explaining that WSTDtv is a research-based, HIV/STD awareness curriculum targeting middle and early high school learners, and educating them through engaging learning modules. This text is followed by a row containing three buttons: 1. Play Game Demos, 2. Watch Videos, 3. Use in your Classroom. I find my eyes are drawn to these buttons, which positively reflects the design usability, and hierarchical structure of the site. The next row contains the words “Studio Activities” in bold, light-blue text, followed by smaller text explaining that there are six interactive studio activities, with a link for those interested in this as a classroom tool. As I scroll down I see six square images. They take up two rows, three per row. These blocks appear to be clickable options for the activities presented on the website. Each block contains the title and description and a small blue ‘play’ button underneath. I am assuming that these are the six studio activities presented in the website. My case study is the interactive-based narrative module *You Wanna Do What?* Scrolling down I see a row of text: “Video Channel”, followed by place-holder text (Lorem ipsim...) I suspect this is an error, but it leaves me with a feeling that this project is not completely resolved. The next row contains images with a title and explanation;

they seem to be factually based animated videos with little (or no) interactivity. These do not relate to my case study and will not be explored. The last row contains a form section to contact the creators for more information about these classroom activities.

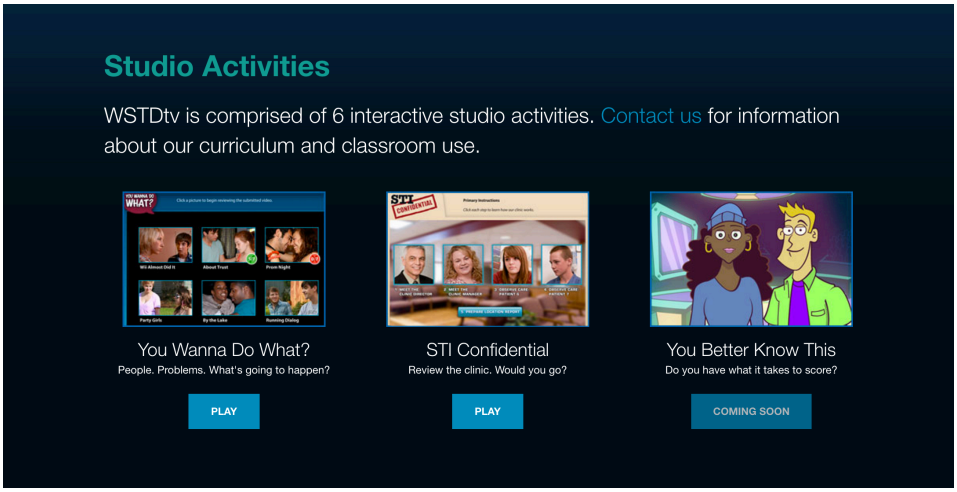


Figure 2: WSTDtv Studio Activities

Since I am focusing on the case study *You wanna do what?* I will follow the path from the home screen to that game. The byline of *You wanna do what?* is, "People. Problems. What's going to happen?" There is a blue 'play' button underneath which I click. A video box pops up, taking up about half the screen – the video takes a few minutes to load, perhaps because of slow internet speed and the fact that it is playing as a flash video. Once it loads, the video begins – a speech bubble pops up with the title of the show *You wanna do what?* in comic-book style. The aesthetic here is age appropriate, and would talk to the young target audience. An animated character takes the stage; she is a woman standing in what looks like a TV studio. A button at the bottom of the page allows the user to skip the introduction. I am not sure if a user would understand what is required without the introduction, but being allowed to skip it would take away the irritation that the user might experience if forced to watch the same video when they are returning to complete a task or explore another path. The medium of interactive-narrative allows for more exciting solutions to this problem, and I am bewildered that this has not been explored. A database would allow multiple introductions to be called when the user returns, and could add to the narrative experience.

The character in the introduction, is placed in a TV Studio setting – I know she is in a TV studio, because of the camera in the background that has a sign on it that says "out of order". The placement in this environment makes sense as it could be an exciting context for teenagers to explore the ideas and information presented. The allure of being in a TV Studio is a great entry point for the conversation that will take place.

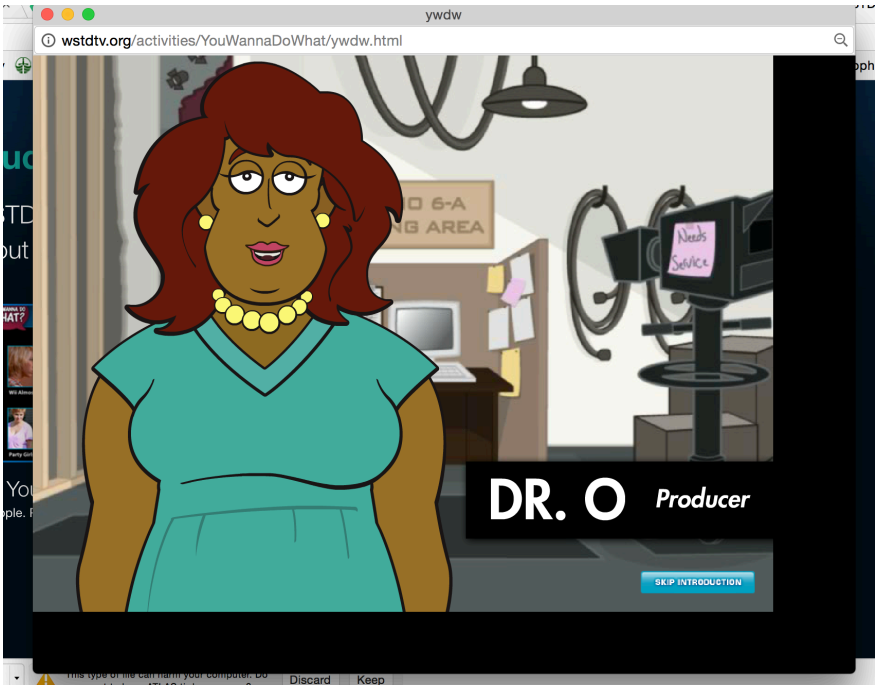


Figure 3: Animation of "Dr O" describing the project

The animated woman calls herself "Geraldine O'Riley" or "Dr O" and explains the show, placing the user as a new intern in her TV studio; she explains the particular program that the intern will be working on and gives some information relating to the show's purpose, stressing the focus on communication regarding sexual health. She explains that people send in videos about friends, family or themselves engaged in communication about relationships and sex; she goes on to say that some are good and some are bad and that the studio's job is to broadcast and rate the videos and then get feedback from the viewers. She ends by mentioning that the audience likes juicy stuff, and that "they also like stuff that helps them communicate better themselves". The intern is told to watch and rate the video submissions against seven criteria:

1. Risk reduced
2. Relationship maintained

3. Participants assertiveness
4. Negotiated well
5. Persuasiveness
6. Verbal communication
7. Non-verbal communication

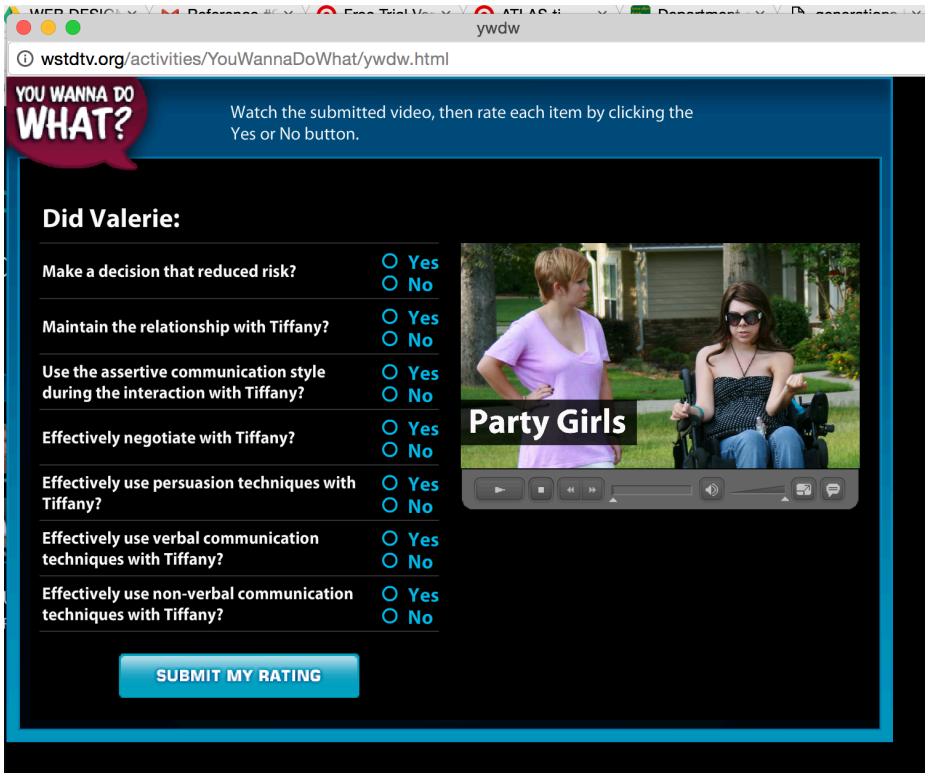


Figure 4: Questionnaire to complete after watching the videos

She explains that she has assigned some more experienced people to review the intern's comments, and that the videos are cued up on the work station for the intern to review. Finally "Dr O" tells the user to "get to it".

The shift between the original *Actor's Guild* and this new version jumps out at me. To start off with, the user's placement in the environment is different. In *Actor's Guild* the user has freedom to explore actors practicing for the show about sex, STD/HIV risks and peer pressure. The user can construct the sequence of the show, and watch the action play out. It is a safe space in which the user has freedom and choice, with no judgment. The current version *You wanna do what?* places the user in a different context. Here the user has to watch a pre-determined scene, and rate them against pre-determined

criteria; for an “authoritative” figure to review. This environment seems to undermine the users, and place them on the back foot. They are told upfront that someone more experienced and senior will review their decisions.

When the user starts their task, six videos appear on the screen: “wii almost did it”, “about trust”, “prom night”, “party girls”, “by the lake” and “running dialog”.

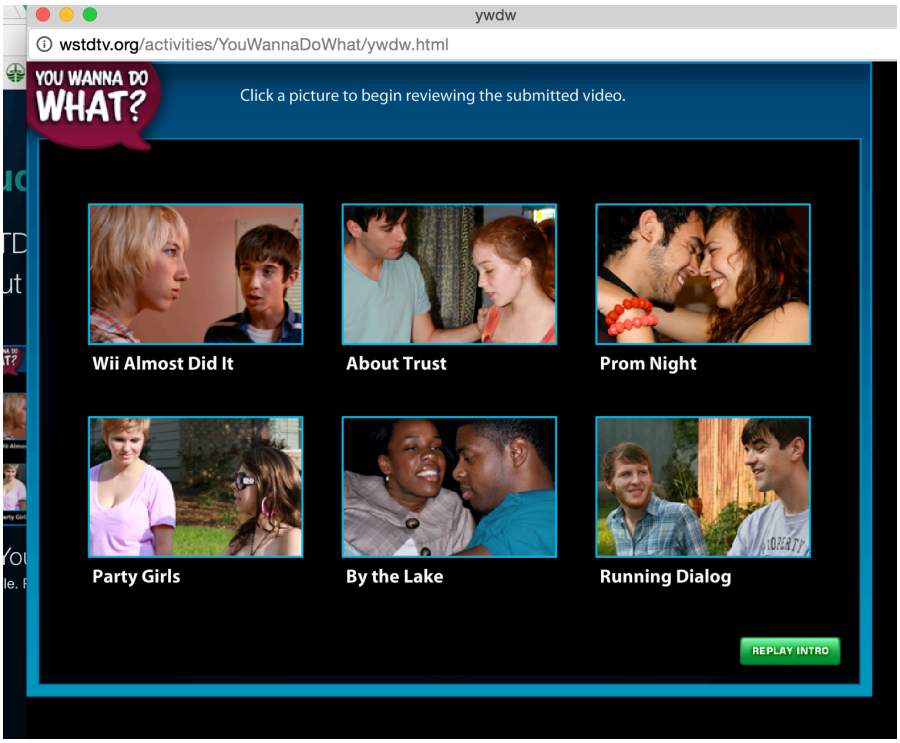


Figure 5: The six availble videos on *You wanna do what?*

The first video “wii almost did it” features the couple Ian and Carly, engaged in a two-player game on the Wii, after which Ian broaches the subject of condoms and STDs. Carly seems reluctant to discuss the topic, but eventually agrees to talk about it. As the conversation progresses Carly gets noticeably upset; she seems to be feeling guilty about not using protection with her last boyfriend, however Ian persuades her to listen to his concerns about safe sex. He references his sister’s advice to talk upfront about these issues. I get the impression that Ian looks up to his sister and I wonder if this more “knowledgeable” source reduces some feeling of autonomy in the thought and decision-making practice. The scene continues with Carly agreeing to practice safe sex, and ends with them deciding to go to purchase the condoms together. While there is a discussion and conversation that takes place, the user is not part of it. The user cannot affect the

outcome of the story, and is purely an outside viewer to the narrative unfolding, with no control over the outcome. Seven questions are posed about Ian's use of communication; the user has to rate it, after which it is compared to the "expert's" rating. If there is something different in the rating, the user may click on it to find out why the expert disagreed. The expert's name and illustrated picture is displayed. The characters in the TV Studio are illustrated, while the videos are of real characters that switch between an imagined and a real space in the same environment. This is interesting, and no doubt affects the three pillars of interactivity – transportation, identification and realism. Not allowing for any form of agency in this experience seems to defeat the very purpose of interactive-narrative.

The second video "about trust" follows the same pattern as the first video – also featuring a teenage couple talking about sex. Here the boyfriend tries to convince his girlfriend that they need to use a condom when having sex; she is not convinced, and feels like such a demand is a breach of trust. The boyfriend eventually finds a way to explain it, comparing it to wearing a seatbelt in a car, even if you trust the driver. The conversation ends with her understanding and agreement. I find this conversation quite natural and real; there seems to be some positive communication taking place. I feel a bit disappointed that there is no room for exploring and expanding the scenario. I am imagining the possibilities of other paths this conversation might take, other ways the boyfriend might explain his perceptions around trust and safety, and even some disagreements.

The third video, "prom night", features a teenage couple during prom making out in a private room. They seem all geared up for sex, but the girl has left her bag in a friend's car – her condoms are in the bag and she insists they stop. This begins a fight about using protection; the boyfriend insists she bend her rules once, as it is a special night, however she is adamant that she will not. He then tries to pressure her by suggesting they might not be good together, which unfortunately is a very plausible scenario. The girlfriend holds her ground and is not negotiable on this issue; she eventually walks out on him. Video four, five and six follow the same pattern: the user is introduced to a scene featuring a teenage couple in a situation where sexual health

needs to be discussed. The scene unfolds, after which the user/intern is asked to rate it against the same seven criteria.

After I completed watching and assessing each video, "Dr O" tells me how well I did. She gives me the impression that she is a demanding TV personality, with no tolerance for mistakes. I did not answer all the questions correctly, and I feel undermined by "Dr O's" attitude, which suggests that the main aim of the interaction is to impress her. There is a noticeable discrepancy between the tone of the videos featuring couples in conversation, and the user's interaction with "Dr O" and the TV Studio. The video scenes are all very realistic scenarios that most teenagers can relate to, and have probably experienced in their own life. The fact that some end positively and some end negatively only adds to that feeling. Unfortunately when the user is brought into the scene as an intern and forced to watch and rate these videos, the video stories take on another meaning. They become "other"; someone else's story that the user must view critically and rate. The user is forced into a position of making choices based on what they think will impress "Dr O". This doesn't really afford the user any agency. The choices seem contrived and forced. I am left with a feeling that I am superfluous in this interaction – with my role being solely to make an authoritative adult happy. This opens up a lot of problems in the meaning that will be made from this experience.

What strikes me as odd is the contrast between the thought process that gave rise to *Actor's Guild* and the new rendition of the module, as *You wanna do what?* I was intrigued by the possibilities suggested in Goldsworth and Swartz's study, in terms of the prospects of meaning that would be made from interactive-narrative in the context of an HIV educational intervention. The idea that the user could investigate and manipulate the scenes and control the outcome, in a safe place with no real-world consequences, allows for a very flexible and non-threatening interaction. The user is not judged and is allowed to make mistakes and go back and fix them. The user is also offered options, and there is no one looking over their shoulder.

3.1.2 Evaluation

This intervention is an interesting study for multiple reasons. There was extensive research and development that went into the creation of this project. Goldsworthy and Schwartz described the process of creating these interventions and the subsequent evaluation of the modules by teachers and pupils (413). It is clear from this paper that much thought was put into many aspects of education and interactivity, and the affordances of interactive-narrative. The project was also scrutinised and documented, and then adapted for the second version – the web iteration that I described. These interventions target a very specific and limited audience – middle school learners – and while it is available on the web, the platform is specifically designed for mediated classroom learning. As such, it has many advantages for my analysis of interactive-narrative in HIV interventions. The target audience is well considered in terms of the aesthetic of the interface and the titles and content of the videos. The website is easy to navigate and the user is given a clear indication of what is to be expected. These are all advantages for an intervention that will take place in a school curriculum environment. The videos themselves are made well, and seem genuine and realistic. They present different scenarios: in some of them the boyfriend brings up the discussion, and in others the girlfriend initiates it, which allows both genders to identify with the characters. The endings are not all "happy ever after" scenarios which adds to the feeling that this is a real-life story. One of the stories is about a same-sex relationship, which assumes homosexual users will identify with this story and ideas presented. This does raise the question of whether or not this type of representation will result in identification by a like-orientated user, and this is addressed later in my discussion.

The intervention falls short when it comes to the interaction that takes place between the user and the interface. The new web intervention seems to move away from interactive-narrative based elements. The only agency afforded to the user is their choice in rating the stories, and those choices are constrained within the context of being evaluated by a superior. The user has no real say in the unravelling of the stories. There is no room to explore what may occur under different circumstances. Different stories do not emerge. The stories are engaging, but are linear and unmoving. The

strength of interactive-narrative is in the engagement and participation that take place when a user is drawn into a story. This version does not seem to pull those elements out: it is interactive and the audience does participate, but the only trajectory they can influence is whether or not the particular video gets aired and whether "Dr O" is impressed. The videos may be watched in any order, but that does not add anything to the experience of the user. When evaluated against the constructivist and less didactic approach to learning advocated by Bransford's paradigm of "Anchored instruction" (9) this intervention intervention is unconvincing. There are not enough "what if" scenarios presented. While there are plenty of questions asked, there is no tolerance for more than one answer. This makes the interaction more rigid and lessens the engagement, which has an effect on the deeper meaning made by the users. There is quite a linear system at play here. The interface comprises questions and answers. The system is limited in avenues of exploration and slanted with simplistic power relationships. The character "Dr O" is placed as an authoritative figure. She is the boss. If you want to get the job, you have to make her happy. To make her happy you need to answer the questions the way she wants you to. The videos themselves are the most engaging element of the experience which is ironic as it is the least "interactive" part in the interaction. This in itself is interesting, because the points at which user action occurs are not that interactive when compared to my earlier definition of interactivity. There seems to be a strange relationship between the game-like elements and videos. The gamification is low, which affects the interaction. This might be more suited to motivate a class discussion, but on its own it lacks a deeper, more immersive, type of engagement.

An education platform or learning environment serves a specific function. When placed in a school system, as a curriculum-based program, quantifiable results are expected. This will obviously affect how the interaction is designed. There needs to be some kind of criteria on which success can be based. This opens up a significant challenge for a successful intervention. A successful interactive experience is not just about allowing the user to choose different options; the user must want to engage with the system. Research has been undertaken on methodologies for achieving this. The theories of interaction and participation discussed by Kuutti, Dunne, Dourish, Murray, Ryan and Henry Jenkins, and appraised in my literature review, help form an understanding of the importance of active engagement and embodied interaction.

3.2 CASE STUDY 2: Generations HIV: The HIV Story Project

The second case study is the *HIV Story Project: Generations HIV*, which can be found at http://generationshiv.org/

In 2009 Marc Smolowitz and co-founder Jorg Fockele were approached to work on a web video project for a local HIV/AIDS non-profit organisation. They produced a much bigger project called *Still Around*, where 15 filmmakers were matched with 15 stories. These stories were shorts that were presented as a feature film. The stories featured people from the San Francisco Bay Area who were living and thriving with HIV and AIDS. This evolved into the HIV Story Project. The interactive *Generations HIV Video Storytelling Booth* was created in 2010. It functions like a photo booth but instead of taking pictures, it records video testimonials about people's experiences with HIV/AIDS.[4] *Generations HIV* focuses on how people from different generations were impacted and affected by HIV/AIDS, encouraging communication between them. For that purpose, participants are asked to identify with one of four age brackets: the generation that grew up before AIDS in the 1970s; when AIDS first appeared in the 1980s; during the epidemic's peak in the United States of America in the 1990s; and since the disease has become more manageable, but not cured, in the twenty-first century.

The booth then offers visitors three pathways of participation:

1. Record a question geared towards a specific generation based on the four-decade demographics. For example: A 20-year-old may want to ask someone who grew up in the 1980s what it was like to live during the height of the HIV/AIDS epidemic.

2. Listen to questions posed by other booth users, and record their answers in response.

4 Smolovitz refered me to an interview he gave: "Fighting Stigma with The HIV Story Project." By Mango Health,

3. Record their story for preservation in the Archive.

The Generations HIV Interactive Storytelling Booth has been staged over 15 times. The booth was also staged in Washington DC at the International AIDS Conference in 2012. Generations HIV seeks to voice the stories of communities who are under-represented, and has fostered strategic partnerships with local and national non-profit health and social service organisations in order to create and support that dialogue.

This digital media experiment allows users to record video questions, answers and stories about HIV/AIDS. The user can be anyone of any sex, any race, and any HIV status. On 5 June 2015, the Generations HIV Online Video Archive went live. This online archive houses the recorded videos from the Generations HIV Interactive Storytelling Booth. Now that it is available on the web, it is freely accessible for public viewing. This is the platform that I will focus on in my study as it is easily accessible to me, but it is important to understand the context of the project as a whole. I will go into some detail to explain what this project is about. I was privileged to have a conversation with the filmmaker and co-architect of the project, Marc Smolowitz, and while this conversation does not form part of my methodology, he shed much light on many elements of this interaction, which supports my analysis.

3.2.1. Description

I am presented with a clean web layout – the background is white with various layout elements that contain content. The top banner contains the logo and is in black and white. The bi-line underneath reads “a digital media AIDS quilt for the 21st century”. The idea of a quilt evokes images of many units woven together to create a unique object, which is interesting because of its domestic and feminine notion.



Figure 6: HIV Story Project home page

The website is designed, as most websites are, in rows and columns. It is set up in a grid-like structure which is quite native to web design. There is a menu/navigation bar, with a gold background. The text for the various menu items is in white or black, depending on which page you are on. This gives me a sense of what is available on the website. Underneath the navigation is a line of text that says “begin exploring the archive by clicking on a user to hear their response, or explore in depth by navigating to the Video Archive.” Next comes the main middle section. It is designed in a grid-like structure of square blocks containing a photo portrait of a person, or in some cases more than one person. Each time the page is refreshed, different portraits appear. This must be from a random call to the database, and adds a feeling of the depth of the archive. Each block containing a portrait is clickable. The portraits are composed of people of different races, genders and ages. This is something that stands out in my mind. It talks to everyone in the target audience – and when looked at in context of the other studies, emerges as being done particularly well in its broad represenation.

When scrolling over a particular block, a gold opaque mask appears over that portrait, with text that gives details about the video. It specifies whether the video is a question, answer or story, and is tagged with keywords. The contributors use hashtags of their choosing, which helps the database to categorise the content. When hovering

over the person's face, a small grey box appears as an overlay with the person's name, year of birth and a number, which I am assuming is the number of that particular video in the database. I feel a sense of dichotomy as I see the number; the portrait makes it intimate but being catalogued with a number suggests something less personal. This is an interesting element, and definitely affected my emotional response in some way. I felt a strong connection and identification when looking at the person in the portrait, and was taken aback when I saw the number. It does give me a sense that the individual stories are single units in a much bigger system. This adds value to forming an understanding of the project. It talks to the idea of multiple units being present. In this case these are pieces of stories that stand alone, but are placed in a bigger framework, and the framework itself affects how these stories will be presented and understood.

Under the main middle section is an area that describes the project:

> This digital media experiment records video questions, answers and stories by people from all walks of life about HIV/AIDS. Whether HIV+ or HIV-, a loved one or a caregiver, we have all been impacted and affected by this global health pandemic, and we all have a story to tell.
> Four decades into the global AIDS pandemic, HIV/AIDS still affects millions of people every day.
>
> Watch their testimonials here.

This emphasises the focus of this project: stories – the stories drive the project; they are stories about real people, affected by HIV in some way. I identify with the narrator, and the stories. I am drawn to the stories, and I want to interact with this system that holds them.

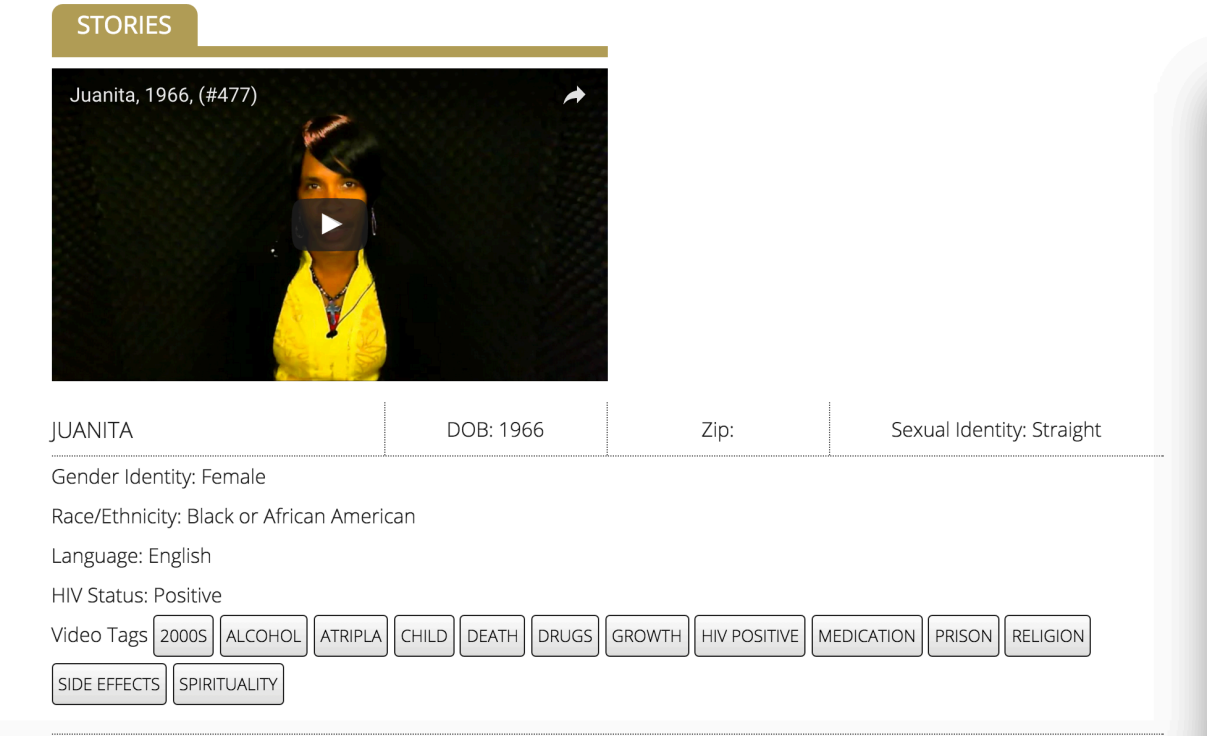


Figure 7: Layout of stories page

The scaffolding on the page is as follows: The top row contains a tab (gold with white writing) that tells one if the video fits into the category of "Stories", "Questions" or "Answers". The next row is broken up into two columns; the video is on the left, while the right side changes depending on whether the category it falls in is a story, question or answer. Stories only have one video on the left side with the stories tab on top, however the questions and answers format contains content on the right side too – another smaller video, with a tab on top – a related video. All questions have a related answers tab; similarly, answers have a related questions tab. A hierarchy is established and guides the user in understanding how the individual parts fit together. I found that the further I went along in the journey on this website, the more clear it became that real thought was put into the layout and user journey of the site. The row that follows gives information about the main video. It is divided into sections: the top section has four areas for text – name, date of birth, zip code and sexual identity, followed by information about gender identity, race/ethnicity, language, HIV status, and a list of the video tags.

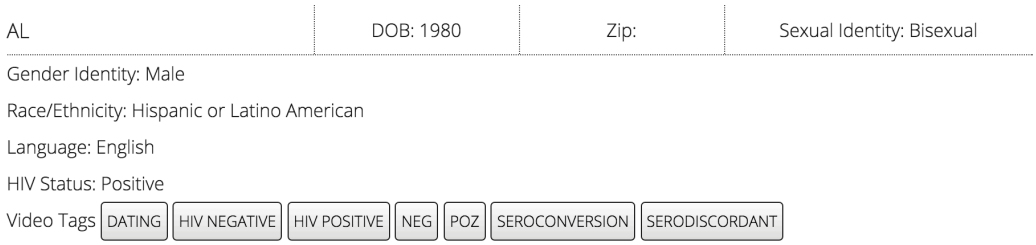


Figure 8: Information about the video

It appears that some of these areas are optional input areas. This is user friendly; it takes into account the needs of the user in terms of privacy and how much information they want to share. During our correspondence Smolowitz verified that the only requirement was the year of birth, as this is the main thread that connects the individual videos. He explained this in a private interview, which will be discussed at length in Chapter 4. Next are "related videos", followed by more portrait boxes, much like it is set up on the home page. It is fair to surmise that there is some algorithm that calls specific videos based on their tags.

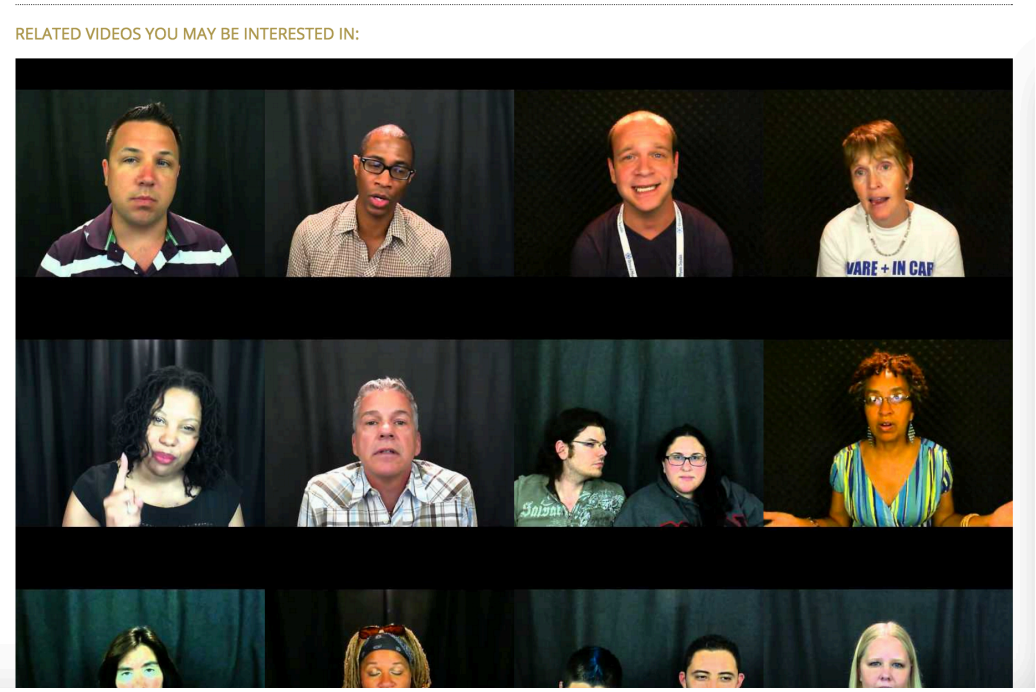


Figure 9: Related videos

The menu tag “Video Archive” allows for searching the archive in specific ways. There are options of searching for “gender identity”, “racial/ethnic identity”, “sexual identity”, “status”, and “generation”. Further filters may be added via the drop-down menu. One can also search by suggested topics. All the tagged words are available in the suggestions, which adds flexibility in the way the user can explore. One can also search based on the “Questions”, “Answers” or “Stories” options. The main area on the right has the tabs relating to those options, followed by the video portraits.

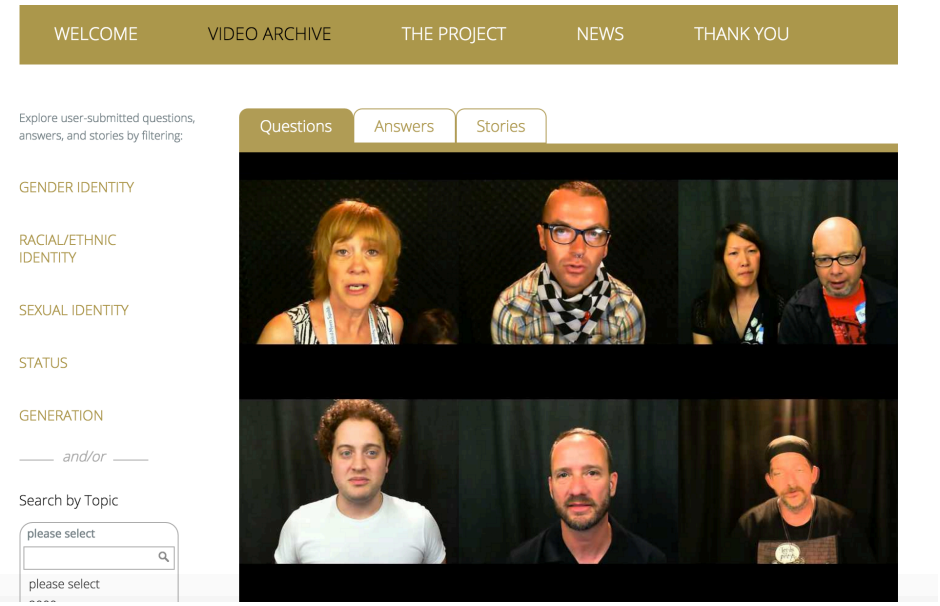


Figure 10: Video archive interface

The entire experience on the site is very open. There are no instructions about how to interact with the interface; the navigation is intuitive,[5] which allows the user to make relevant choices, but does not dictate anything; the user is free to explore in whichever way they would like to. There are multiple entry points, which allows for the sense of control in the experience. At no point in my interaction with the interface did I feel confused or not know what to do next. It feels like there are many possibilities to be explored and that this experience is for the user to determine.

[5] I use this word to describe the seamless experience felt in the interaction, being mindful of context and audience, and presuming that the user is familiar with the web platform.

3.2.2. Evaluation

The website described cannot be seen as its own project as it is part of a bigger project that began as a physical installation. The power of the project is the freedom and flexibility of the interaction. Stories take centre stage here, whether it is in an interactive booth, or on the website. The project may even be developed further to incorporate a public media exhibition. To a large extent the creators relinquish their voice, and the stories can take on a meaning of their own. In our correspondence, Smolowitz thoughtfully deliberated this paradox. He described the juggle between allowing for interactivity, but at the same time not compromising on the construction of meaning. The participant is given a very strong voice, as the audience member uploading content, and as a user interacting or watching the stories. By stepping back the creators have allowed for flexibility in this system. The agency is with the participant, which has allowed for an especially engaging interaction.

The HIV Story Project: Generations HIV is different in nature from the other case studies, the target audience is less defined, it was staged in more than one place, in more than one city; this is due to the intension of the project, which was to create a general awareness of HIV. The web platform is, by nature, open to anybody, and although the other case studies are also technically available via the web, this project was not constructed for a specific target audience. Rather, it was a natural progression from location-based public installations, which were staged in more than one setting, for more than one audience. This is mentioned in more depth when I discuss Smolowitz's insights which were imparted in my private correspondence with him. The nature of the narrative is also much more complex. This is not necessarily because of the platform – interactive video can be used in multiple ways. It is the intention, design and structure of the work that differentiates the user's experience. This project was built as a conversation between audience members. The premise of the project is that the creators step back from the creation process. They design the system, but do not fill it with content. Users supply content, but they do not necessarily need to supply content to interact with it. The website currently has more limitations than the original staging of the intervention and, as a web user, you cannot supply content. This does not undermine the project; it simply changes its modality.

Smolowitz provided me with valuable insight into the germination of the project, and possible extensions going further. It is his intension for this project to evolve to the point that the web interaction allows anybody with Internet access to upload his or her own story through an app. The envisioned project is that all the stories recorded on the app will join the main archive. Smolowitz proposes calling it “booth on the go”; while the physical booth cannot be transported everywhere, this type of interaction would bring the booth to whoever wants to participate.

The participant is afforded a very strong voice. By stepping back the creators have allowed for flexibility in this system. The agency is with the participant, which has allowed for an especially engaging interaction. One example of this is the way the participants actually used the system in its physical booth iteration, this is also clearly visible on the website archive. As mentioned in my description, some of the videos contain more than one participant telling their story. This was not an anticipated outcome of the intervention. Smolowitz confided that this was an unexpected method of participation, something that as creators they had not anticipated as an outcome, yet becomes very meaningful in the narrative and meaning. I believe that this was only achieved because the system left it open to the user to control and interact with.

Another place this becomes clear is on the website. The experience of an online user is very much dependent on their personal choices. The user has to choose how they want to access the stories stored in the archive/database. The system is set up so that the user has to have their own unique narrative experience based on their personal decisions. The user must choose tags as an anchor for their experience. The user can explore the narrative through many pathways, for example, via generational affinities, or those of sexual orientation or race. This makes the experience personal and there is a strong identification and empathy felt by the user. The user does not have to give any demographic details, although it does make the archive more searchable if they do, but the user’s personal choices are considered. The only “forced” input is year of birth, and while it is preferred that the participant/user gives their real year of birth, the only real requirement is to give a year. Smolowitz explained this element as being a joining thread in universal experience. The one and only thing that every human being has in

common is that they were born. The year a person was born in the history of the epidemic informs their understanding of the story.

The internal system of this project is the archive and database. The content takes the form of personal stories, questions and answers. The product of the stories, questions and answers is a "digital quilt". The story components require a central thread to weave them together. The filmmakers chose the year of birth as this central thread because it has universal meaning. This thread opens up the user's agency because it is the only – or at least the main – constraint present, while the content is also constrained to a certain extent (the content must relate to HIV). Being able to ask a question, answer a question or tell a story opens avenues in the narrative, which allows for a freedom of movement. The question/answer format is there as an icebreaker: it is simply a means of engaging participants in the conversation, with the purpose of encouraging and opening up avenues of interaction; it cannot be seen as a constraint. The flexibility and freedom of movement is therefore very strong, increasing a sense of agency.

An interesting element of this interaction is the evolution of narrative. Smolowitz compares it to the children's game "broken telephone" where a message is started and then passed on from person to person; when it reaches the last person in the chain, the message has evolved into something completely different – just from the nature of the journey. This interaction has that same element built into it: there is the question of what will become of the story as it moves around from person to person - everyone unique and different in age, demographics, race and sexual orientation. There are stories from vastly differently demographic groups – African Americans, Latinos, urban, rural, HIV+, HIV-, heterosexual, homosexual, and so on. The story is built on what is heard and how the participant interprets it, and it is moved forward in that way. Affording users the space to interpret and express their version of the story makes the interaction dynamic, and adds to the experience of being allowed to express one's voice.

The HIV story project: Generation HIV, is built as a film documentary, which is traditionally a one-way conversation. However, interactivity is added to this platform, which leads to an interesting study of story content that allows viewers agency in

choosing the method in which they ingest the content, and how they choose to make meaning from it. This case study is particularly intriguing because it seems to go beyond the limitations of the medium. The documentary genre claims truth and reality, which is different in nature to the other fictional case studies, however, even though it is a documentary-style film, the filmmakers do not produce the content, they only edit it slightly to allow for a greater flow. An archive system is employed, which allows for a unique way of storing content. The database is used as a way of calling and then presenting the content. These elements go against the very real constraints of film documentary. This achievement was only possible because the filmmakers themselves stood back and allowed the participants agency in creating stories. By giving the audience a voice, they become an active audience and not just passive recipients as described by Jenkins. Here the audience can take the content, mix it up, play with it and adapt it so that it makes sense to their worldview, therefore, although the interactivity on the web platform is limited to navigation and narrative story construction from pre-recorded bits of stories, the experience is still engaging. There is still a strong sense of agency in being able to choose what stories to view, what order to view them in, what to skip, what to re-watch and what pathway to take. The user may choose the thread they want to explore the interface with, based on their own experiences and worldview. If the project is opened up more to include the recording booth for web users, the agency will only be deepened. It may evolve in unexpected ways, and this is what makes the project so interesting.

3.3 CASE STUDY 3: I'm Positive

The third case study is a game called *I'm Positive* and can be found at http://www.impositivegame.com/play

I'm Positive is an educational interactive-narrative interspersed with quirky mini-games. The user plays as a young man, who finds out from a former partner that he may be HIV positive. The player is then presented with a series of choices to make – he can either get tested and seek treatment, or ignore the circumstances. Throughout

the game, the player learns pertinent information regarding HIV: the misconceptions around it, testing, treatment, disclosure, and the consequences of not getting treatment. This game was designed for the CDC Health Game Jam[6] with the theme of HIV awareness. A Game Jam is an event where people get together for a short period of time to make a game, generally with a theme or some sort of limitation. The CDC chose the team who designed *I'm Positive* to continue working on the game after the initial jam. The game needs to be downloaded, and is available for Windows, Mac and Linux operating systems.

3.3.1. Description

To understand this game, a play-through is essential in this instance. Here my first-person perspective is critical to the meaning-making process. This section is more than a description of what is present, it is a description of what unfolds in the play. I launch the game and am greeted by the opening screen; music is playing in the background. The interface design and music is apt for a game, and immediately gives a sense that there is play here. The screen flashes between a background of bright colours – pink, blue and black – and the text is in a pixelated font, which reinforces the placement of this interaction in a gaming environment.

[6] CDC Health Game Jam was launched in 2013



Figure 11: Game opening screen

There are four navigation buttons: "play", "about", "credits" and "quit". Selecting the "play" button starts the game. The screen changes into an illustrated, 2D-animated basketball court. The graphics here are rather basic compared to the animation and video content seen in the case study *You wanna do what?* and to the documentary-style video footage of the *HIV story project*.

On the screen there is a pair of hands holding a ball right in front of me; clearly representing a first-person point of view. My natural instinct is to move my mouse – the mouse in turn moves the hands holding the ball. This intuitive element of navigation strikes me as being a strong point in favour of the agency given to the user from a navigational perspective, which I discuss further when looking at the elements of navigation. I click my mouse to try and throw the ball, and the ball flies out of my hands, but does not land in the hoop. Just as I am wondering what to do, some text appears at the bottom of the screen - also in a white and pixelated font. The text says "Click and hold to crouch, Release to do a jump shoot". I take a few minute experimenting with this; I now have more control and after a few attempts I manage to get the ball through the hoop. It makes me quite excited when I finally succeed in getting the ball into the net. I am not sure what I am expecting will happen, but nothing exciting happens; perhaps because I know this is about HIV, I am expecting something educational to pop up on the screen. When I realise this isn't happening, I try shooting the ball again. This is fun,

and I get into the game. I forget the interaction is supposed to be for education. After about four successful attempts, the game progresses.



Figure 12: 1st gameplay - basketball court

For some strange reason I feel proud of myself, like I have achieved some kind of goal. The screen changes; it now has a blue background and a phone is ringing – there is a hand holding the phone, indicating I am still in first-person mode, and that I am in the shoes of the player. I have a sense of control. I can choose to answer or not answer the call. My curiosity is piqued and I want to answer the call; the hand on the screen is holding the phone, which is vibrating. It feels like it is my hand, and my phone that is ringing, and that it is my finger that is poised over the phone screen, ready to swipe and connect the call. The message on the screen says: "Rebecca is calling". I naturally swipe the button that says "swipe to answer". I feel almost as if I was really in the middle of a basketball game when my phone starts ringing. I am curious now; who is Rebecca and why is she calling?

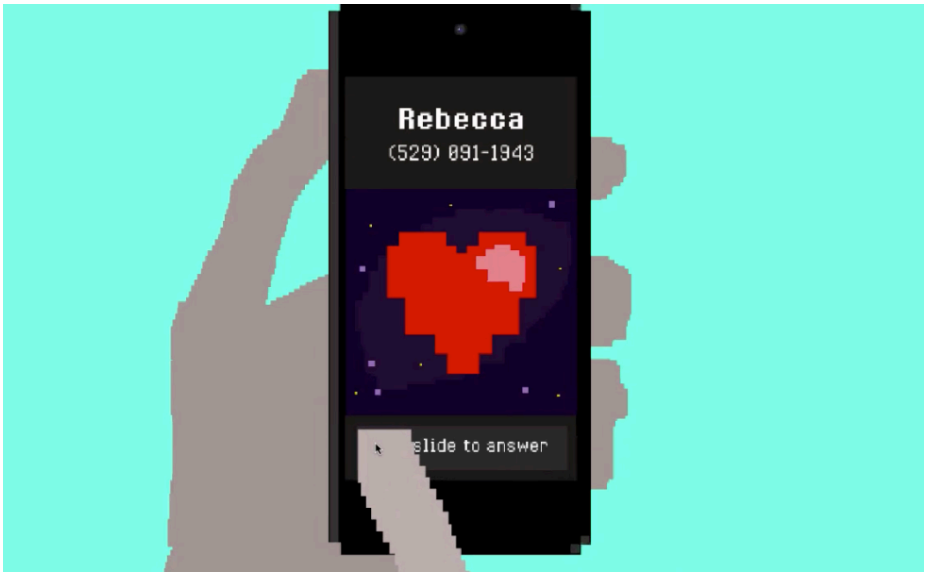


Figure 13: Phone interface with finger poised to swipe

Once I answer the phone, text appears on a black background – only the text is visible on the black background and the text is pixelated. The text appears on the screen letter by letter. The first line says: "It's been over two years since you and Rebecca broke up" (in blue text). Next, in white text, Rebecca's name is in bold followed by a colon, and then by what she is saying. There are two options as to how I can respond.



Figure 14: Dialogue of conversation with choices

From here the interactivity opens up – there are different paths that can be chosen by the user which directly affect the way the story unfolds. I can see that my selections will cause different outcomes in the flow and direction of the narrative. Each step of the way allows me options. Clearly there are branching plots that will unravel according to how, as a user, I choose to travel.

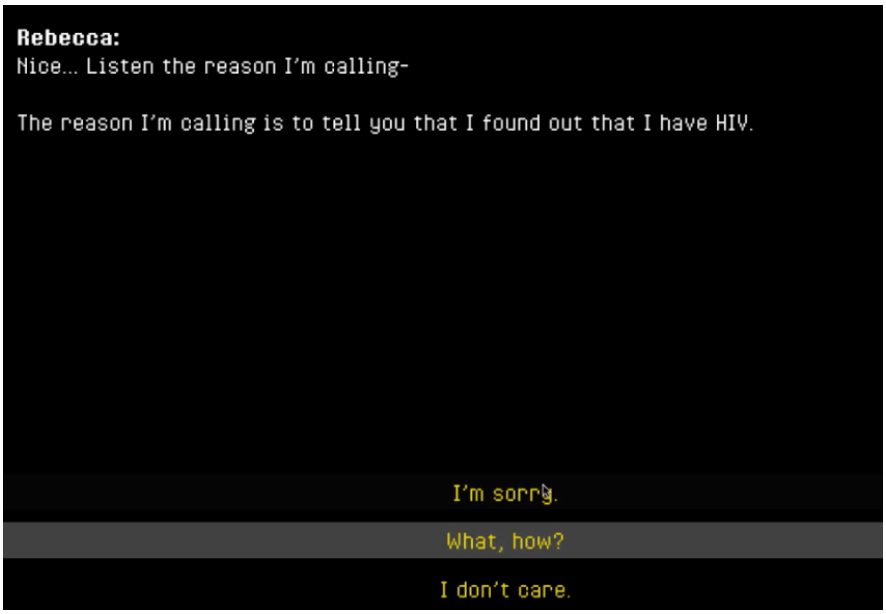


Figure 15: Dialogue of conversation with choices

The main narrative storyline is set – Rebecca is calling me (her ex-boyfriend) to inform me she has contracted HIV. She suggests that since we were former partners, I should also go and get tested. She gives me information about getting tested - the how and where to go. This piece of the story is pre-determined: as the boyfriend I get the call; I can choose to answer it, but if I don't, the game will not proceed. I can choose how to respond to the call, and this is where as a player, I am given a feeling of agency – the choices are obviously constrained to a certain extent as there are set choices to make, but when I play the game, I never feel that I am stuck or controlled. I make choices and they are all valid. I might not like the outcome, but it is my choice to make.

This phone scene ends when I, the boyfriend, hang up the call. There is an option to end the call sometime in the middle of the conversation, but that option is not always available, I only notice this the third or fourth time I play the game, which makes me realise that I feel like I can hang up at any time; I feel I have control and agency here.

The designers have however left room in the structure of the game to allow for the message to be delivered. The next screen tells me how stressed I am getting. I do feel stressed as I read the text – the wording is very emotive and real. I am then presented with the choice to "Take some deep breaths". Even though there is no other choice presented here, it feels like I am given a choice. I feel like I have some control in the progress of the story that is unfolding. While again a pre-designed scenario has been presented to me, I am still given some agency in how I deal with this scene.

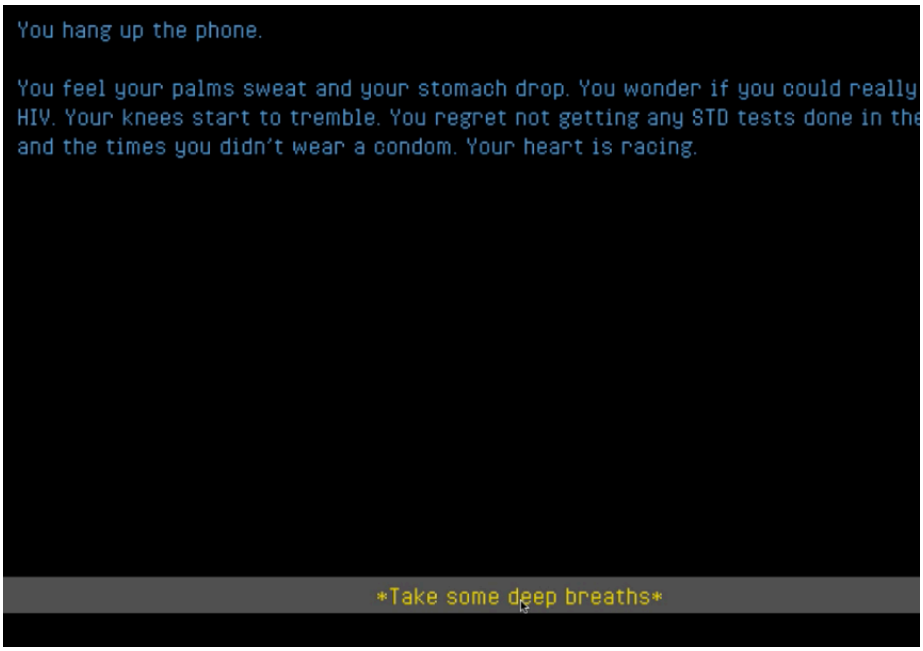


Figure 16: Description of how you are feeling

When I click on the text that tells me to "take deep breaths" – the next gameplay begins. There is an illustration of lungs and a heart. They are pumping fast, and there is sound to match. The text tells me how the game works, what I need to do to slow down my breathing. I must admit I have to try it out a few times until I get it right and the beating heart slows down. Again I feel like I am playing a game and this is a welcoming interlude after the heavy scene that has just unfolded. It puts me back in the headspace of a game environment – it has that ludic enjoyment, and it reminds me that this is a game, and that I drive it. Both the visual image and sound feel real, and only when I manage to succeed in the game, can I progress onto the next step. Strangely, I do feel calmer once I take the virtual deep breaths.

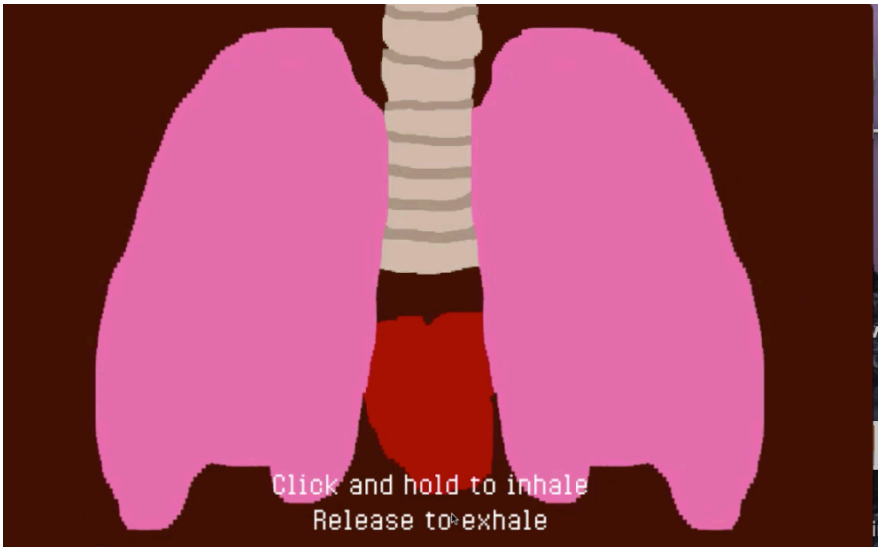


Figure 17: Gameplay to slow down your beating heart

Next I am presented with a screen that says: “You’re able to calm down, you decide to” with three new options presented: “find a clinic”, “buy an in-home test” or “ignore Rebecca’s advice”. I feel empowered again. I know I should probably choose one of the first two options, but I enjoy the feeling that I don’t have to – that no one is forcing me to make a specific choice. I have also been reminded that this is a game, so I know that if I want to explore the option of ignoring Rebecca’s advice, I can. At some point in my exploration I do follow that path, just for fun, to see where I will land up. But for now I follow the path of going to a clinic.

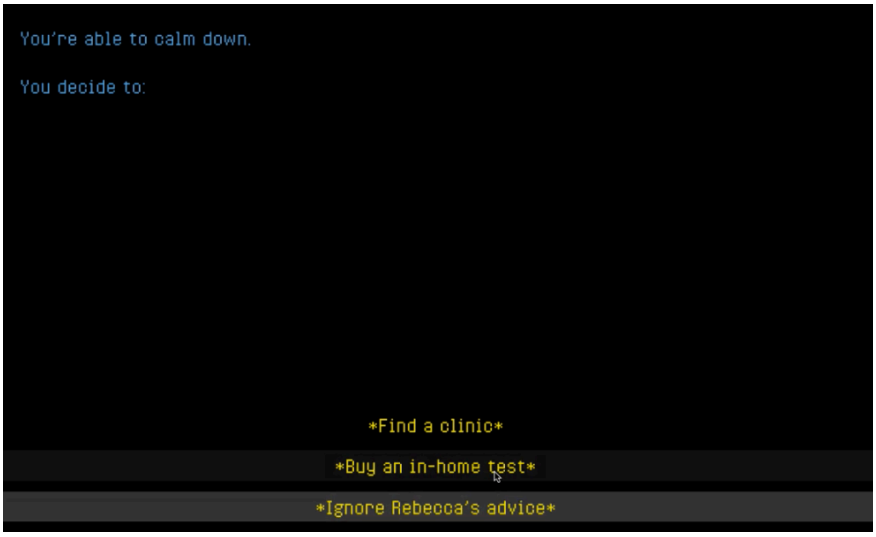


Figure 18: Choices and options

The next scene takes place in a clinic and involves an interaction with the receptionist and nurse. I am told that all the information I disclose is private. I feel like I am in a safe environment. This unit of the story is set, but is not threatening. I tell her why I am having a test, and am asked whether I have had sex with this partner in the last three months. This line of questioning allows the nurse to give me, the user, information about the three-month period in which the antibodies will not show up in a test. I am then presented with the task of taking the rapid test, which is an oral swab test. Here a new gameplay begins. A mouth appears with an ear bud that I need to swipe up and down.

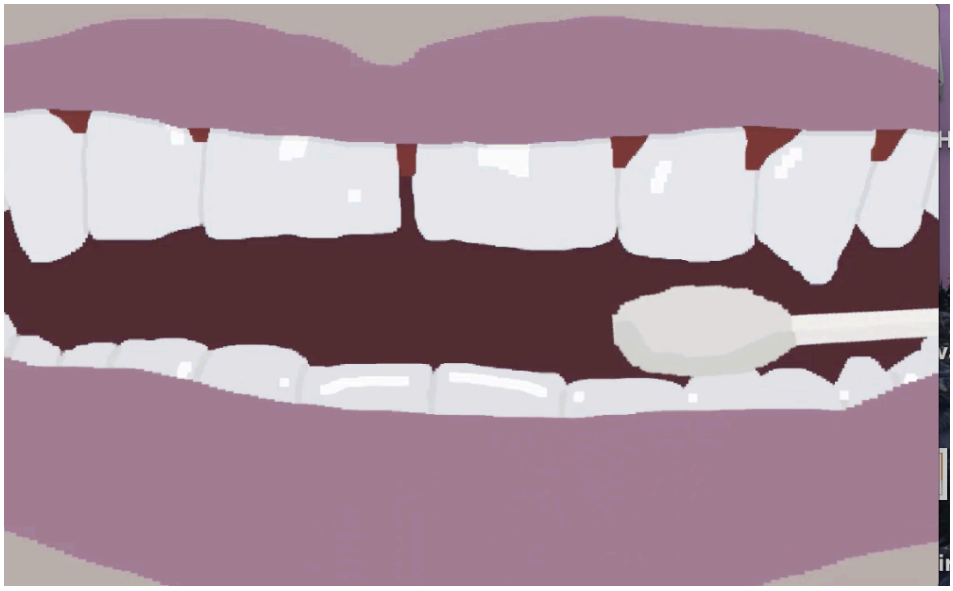


Figure 19: Gameplay - oral swab test

This seems a bit obvious, and there doesn't seem to be much of a skill involved in doing it. I am surprised that it is still fun. Perhaps this is because the game environment has been established earlier on. Following the home-test option also leads me to the oral swab gameplay, followed by the option to go to the clinic. If I follow this path and do a home test first, I will be taken to the clinic scene – but in a different sequence. This element of switching sequence is powered by the logic of a database. The medium allows for these units to be called in any sequence and this intervention makes good use of this power. Just allowing the user to choose the order in which the story unfolds adds to the agency felt.

The storyline unfolds according to an authored narrative. As the player, I am told that I am probably HIV positive. The nature of the selections at this point revolve around choices determined by feelings – pathways to obtain information about HIV are opened up, but the user is left to decide how to respond. This will lead to the next gameplay, which involves having blood taken. Here I have the option of watching the needle go in and draw blood or looking out the window. I move my mouse between the window and my arm: if I move up to the window I have a view of trees and birds flying; if I move down I can watch the blood test in all its gory detail. The blood actually looks like it is being drawn into a vial and it makes me feel a bit squeamish.



Figure 20: Gameplay - blood test

The narrative informs me that I go home after the tests; "my" phone rings and a phone appears on the screen and tells me it is my brother John. Again there is a hand holding the phone with a finger poised to swipe to answer. I notice that there is a dog as John's profile picture. It makes me smile. I swipe the phone to answer. John is calling to wish me happy birthday. He asks me what cake I want for my birthday. New options appear: I see the option of choosing a cake and pretending everything is okay, or the option to explain that something is wrong. Again I feel a sense of control. No one is telling me what to do. As the player here I feel empowered. As this game is a first-player

game, I naturally put myself inside the story. Being allowed to choose makes a difference to the experience I am having. I can go with the flow of the story because and it doesn't put my back up. I am allowed the freedom to just be, to make my own decisions and to feel in control of the situation.

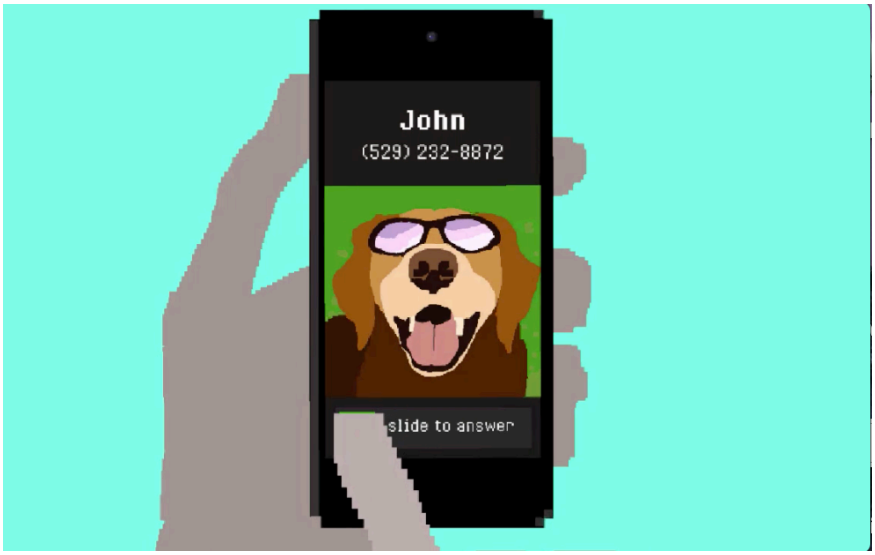


Figure 21: phone ringing

I choose to pretend that nothing is wrong and head over to the birthday celebration. The narrative continues with me heading over to my mom and the next gameplay begins. There is cake with a candle and I have to blow it out. It doesn't take much skill, but it gives me a sense of achieving something. Once the cake eating has taken place, the narrative turns to a family situation and to the usual interactions that I expect to take place in this kind of gathering. There is concern and questions, and as the player I am faced with a choice to tell my family the news or not to. If I choose to disclose, the conversation unfolds as it would probably unfold in most families – shock, questions, and then finally support. But I don't have to tell anyone. I can continue the game without having to deal with this interaction.



Figure 22: Gameplay - blow out candles

The narrative continues with me going back to the clinic, where my HIV+ status is confirmed. Now the treatment side is addressed, I am given medicine and informed about follow-up appointments and tests. Another gameplay begins. I see a weekly pillbox. There is a chart with crosses relating to the days of the week – it seems that I need to match the day on the calendar to the medicine box. If I select the wrong day's pillbox, it appears empty; when I match it up properly, the pills disappear. This gameplay is more like the first two as it requires a bit of skill. The medicine does not disappear unless I click on the exact spot. I also have to get the day right. It gives me a sense of accomplishment when I manage to get them all right.



Figure 23: Gameplay - taking pills

The narrative continues with text on the screen informing me that things are looking up – that I feel okay and that life can go on as it once did, albeit with small changes in lifestyle. After the screen tells me that my life does get back to normal, the opening basketball gameplay starts again.

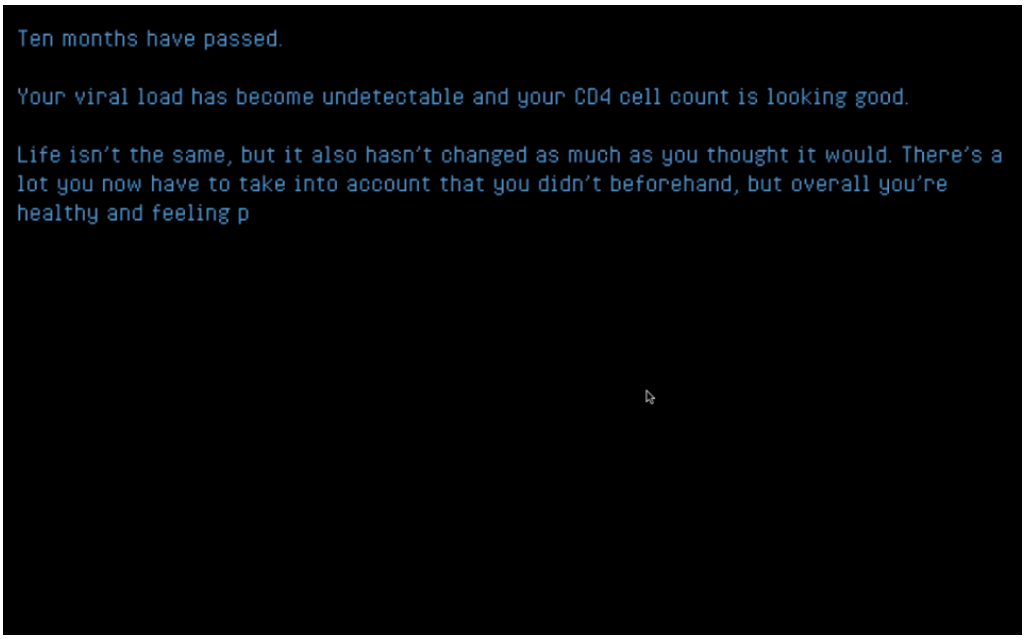


Figure 24: Screen telling you how you are feeling

I note that the game does allow me as the player the option of ignoring the information received from Rebecca. When I go down the full trail of this path I am led back to a basketball game in which everything goes wrong. The screen starts tilting and eventually I fall down – the next screen informs me that I have woken up and still have an option of seeking help, which, if followed, leads back to the scenes in the clinic. The game allows me to go all the way down the path of not seeking help; this path ends with a screen that says "You die!". It makes me laugh for some reason. It's unexpected, and I feel like I am playing a random game that I lost, but at the same time, it hits me that while in the game it might be funny, in real life it is not. It brings home the reality of the message.

3.3.2. Evaluation

The game *I'm Positive* also has a relatively open system. This is constrained by the limitations built in by the designers, but this is part and parcel of gaming. What is alluring about the system is the options available to the user. The game situates the user in an environment that has the elements of "Transportation", "Identification" and "Realism" as per the conceptual model of interactivity effects proposed by Green and Jenkins.

Built into gameplay is the possibility for a player to explore scenarios and outcomes of someone else's story in a palpable way. By playing in first person the user can easily identify and therefore empathise with the character they are playing, but at the same time they can explore quite freely, and are allowed more freedom than a real situation might allow for. *I'm ositive* allows for a flexible experience. When playing the game the first time, I navigated based on what I would probably do in the situation described. I was then tempted to experiment with different responses to see what 'the wrong answer' (to my mind), would produce. Murray expresses that agency is added when problem-solving is joined with active navigation. There is great power in granting users the agency to use real-world logic to solve game problems; it offers a safe place for exploring ideas of real-world importance. (144) The game is very strong in this way. The narrative and choices feel authentic and real when aligned with real-world scenarios: tremendous agency is felt in being able to problem-solve a real-life problem in a game environment that aligns the system and world interface.

When trying to establish some of the possible thoughts and ideas that gave rise to the game, the game developers Ilya Polyakov and Stephen Borden guided me in personal correspondence (during August and November of 2016) via e-mail.[7] They stated that one of the main goals of the game was to encourage people to get tested for HIV. This formed the centrepiece of the game, and in a way it became a constraint. The

[7] They further referred me to their online in an interview with Warren Tong

game system needed to present this element so the designers specifically used interactive-narrative as a way of engaging the players, as opposed to just presenting facts. The players feel like they are going through the process themselves and the realistic choices presented make the game more meaningful. The players have the agency to choose what information they consume, backlighted with the main message of the ease with which they can get tested. This is the reason Polyakov and Borden chose to build the game using easy-to-play mini games that are reflective of real life. The player is playing from the perspective of someone who might be HIV positive and, by being presented with all the options, they get a more real sense of the possibilities available to them in a real-life situation. Allowing for choice in this first-person-type game is a much less threatening form of education. It fits into a more constructivist approach to learning, while still containing it in a contextual format. There are many educational facts presented throughout the game, but the player can choose the questions they are interested in. This makes for a much more meaningful experience, and is more likely to leave a longer-lasting impression. The player can use the game as a platform for interrogating the world to gain knowledge for future experiences, whichas stated previously in my literature review – Bogost argues is the best environment for learning because the medium can get to the heart of an issue by allowing for questioning and choice in the decision-making process (339).

Another interesting element that takes into consideration the audience/players is the female-to-male transmission scenario presented. Polyakov explains that this decision was made to present a less stereotypical perspective to the audience who might feel that HIV is a problem faced by gay men or drug addicts. This narrative lets the players get a sense that everyone can get HIV, and hopefully reduces the stigma, and encourages everyone to engage and become more knowledgeable. Borden endorses the power of choice the medium has to offer and explains how, with more time, more elements of choice can be built in to the game. If given additional time, they plan to build in extra elements of choice such as giving the player gender and sexuality options.

By nature a game platform is interactive. Games afford a much higher level of choice than films or other types of learning platforms. However this is not a guarantee of a good interactive experience. Making an educational game is particularly tricky

because it cannot just be about the play. *I'm Positive* does this particularly well because it subtly gives the players information but at the same time it is a free exploratory environment. There is a lot of information available, and the game can give many answers to many possible questions in a non-sermonic fashion.

Game Studies is an extensive field of research, addressing many topics such as the appeal of games, how digital media has influenced games, motivations in play and the allure of playing games. The humanities approach to games is ethnographic, which is similar to the approach used to understand HCI. This approach provides a context for understanding the core appeal of games. There are different types of games, and there is a historic debate between academics who are trying to form an understanding of the interaction that takes place in gaming – with the primary argument being between those who view games as play, and those who view games as narrative. Scholars such as Henry Jenkins and Murray have suggested methods for finding a middle ground.

In *First Person New Media as Story, Performance, and Game*, Jon McKenzie responds to Henry Jenkins' *Game Design as Narrative Architecture*. He suggests that both Henry Jenkins' and Murray's positions slant towards a narrative approach, and empathises with the ludologist's view that the mechanics of game play are important (McKenzie 119). At the same time he is critical of this viewpoint because of its often dismissive attitude towards the part narratively plays in games (McKenzie 119). He addresses the need for new media to draw on previously existing media forms, and at the same time highlights the problems that arise when it does so (McKenzie 119). He looks to experience design as a preferable approach to finding a more balanced approach to games (McKenzie 119) Experience design refers to the "generation and shaping of actions, emotions, and thoughts" (McKenzie 119). This framework allows for a more encompassing attitude. Looking at how interactions are organised and solicited, how one event flows into another and how the overall experience hangs together. McKenzie suggests shifting focus from finding the "right model" in the balance between story and play, to playing with a lot of different models, so that many possibilities can be exposed (120). Greg Costikyan looks at practical ways of solving the story-play dilemma to create an open and flowing experience. He suggests imposing a defined narrative arc on a game with an embedded narrative, but then allowing the player more agency and

freedom of action between the nodes of the story – “constraining it in one area but freeing it in another” (Costikyan 13).

Chapter 4

Discussion

In this discussion chapter I have used the literature to inform a set of criteria to assess the level of agency present in the case studies in light of my stated aim of evaluating interactive-narrative as an effective tool for HIV learning. Agency can be usefully broken down into the five areas of:

1. Navigability
2. Identification
3. Co-creation
4. Immersion
5. Transformation

These five threads are at heart interwoven. It would be artificial to argue that one takes precedence over the other, or that they can be exclusionary or absolute, however they are useful ways of evaluating how content and platform articulate with elements of agency.

4.1 Agency

Murray talks about the "aesthetics of the medium" identifying Immersion, Agency and Transformation as critical components of interactive-narrative (94). She further breaks down agency into various elements – freedom of movement, freedom of interpretation and freedom in controlling the outcome. I will name these three pillars of agency: navigability (freedom of movement), identification (freedom of interpretation) and co-creation (controlling the outcome). While Murray does not explicitly define immersion and transformation as critical components of agency, I argue that these two components also talk to agency as spatial navigability can directly affect levels of immersion, and transformation slots in with the process of identification. In the sections that follow, I explain how these concepts are interlinked. Glassner's principles of engagement, drama, interface and language are interlaced with these five principles to add a richer understanding of agency.

4.1.1 Navigability

Murray's definition of spatial navigation relates to the pleasure of exploring and discovering in an interactive environment. If navigability is strong, the user feels empowered, for example in the case study *I'm Positive* there is excitement in exploring different scenarios – this excitement originates from the sense of control the various user options allow. HCI lends a hand in identifying the systems that help create that pleasurable experience when navigating an interface. David Benyon highlights the element of exploration in navigation systems, and explains: "exploration is concerned with finding out about a local environment and how that environment relates to other environments" (70). The three case studies discussed in Chapter 3 allow for different forms of exploration, for instance the *HIV Story Project* allows the user to explore the interactive space from various entry points: the user may search the database with keywords or they may navigate from the displayed videos. Determining the navigability of interactive interventions involves an appraisal of how strong the methods of exploration through the interface are.

Principles for good navigation, set out by Scheiderman et al. add a quantifying variable in my assessment of the navigability of the case studies. When a user is exploring an interface, they seek clues for the discovery of pathway possibilities. Clear high-quality links, which are relative to the specific task, will give the user a good indication of the systems pathways (Shneiderman et al. 84). He also emphasises the need for using orderly, structured patterns of HCI such as "multiple ways to navigate", "process funnel" and "internationalized and localized content" as identified by Van Duyne et al. (93). These three case studies all have high levels of navigability based on the above criteria. *You wanna do what?* is designed with sound information architecture, containing clearly marked navigation buttons, and a well-defined hierarchical structure, which clearly marks the steps the user must follow. The *HIV Story Project* is also organised and labelled well, the entry points are clearly visible, and the tagging system organises and displays the information in a readable format. The game environment of *I'm Positive* has clearly demarcated areas for specific tasks, gameplays and choices, giving the user a good indication of the systems pathways. All three case studies have

clear links describing the possible pathways of exploration – as seen in the interface design and navigation system of the websites *WSTDtv (You wanna do what?)* and *HIV Story Project*, and then in *I'm Positive*, where the navigation happens through the interface of a game environment in which the user explores and enacts the play.

You wanna do what? and *HIV Story Project* have multiple ways to navigate. This is more superficial in *You wanna do what?* where the navigation system allows the user to navigate easily, but only in the guided direction, as opposed to the *HIV Story Project* which allows the user to move in more than one direction. *I'm Positive* has a robust process funnel whereby the player is directed through the game process with a series of mini-games and tasks with specific choices that produce the sequence of the narrative. The content is also relevant from a localised, target-audience perspective. *You wanna do what?* is targeted at middle school children and the interface design is relevant to the audience, as seen in the website aesthetic, TV studio context and animation style. The *HIV Story Project* presents relevant content and design aesthetic for the audience demographic. The typologies and categorisation of content reflect a consideration of the audience. *I'm Positive* considers the audience but at the same time only allows for a white male avatar, which might compromise the navigation. The embodied interaction of first-person play does mitigate the problem in this instance. Navigation is well considered for all three case studies, with these nuances influencing the level of navigability experienced.

4.1.2 Identification

The complexities of identification cannot be addressed fully in this discussion; it is the simplified set of ideas and issues around representation – along the lines of gender, race, class and sexuality, with a sensitivity to stereotype and reductive tropes – that I engage with here as these are an important facet in agency. For a user to have interest in an interactive-narrative experience, they must first identify with it. Identification is a psychological process whereby a person identifies with another person to different degrees; this can be a primal identification, where the person

involuntarily has an emotional attachment to another (such as children with parents), or it can be a partial identification, where a person shares something in common with another, and therefore has an emotional attachment on that level (Freud and Strachey; Wollheim).

Jonathan Cohen looks at facets of identification and its important role in media effects. Identification is based upon the audience member's worldview, and extends to the way he or she might relate to the character in terms of attitudes and emotions. When there is a strong identification with a character, recognition allows for association that makes for easier adoption of prescribed roles and information processing. Identification causes the player to process information, with empathic emotions, marked by internalising the character's point of view (Cohen 252). The nature of the characters and environments that drive the narratives in these case studies indicates the levels of identification that will occur. The case study *You wanna do what?* presents various characters. The target audience is middle school children, who are supposed to experience this interaction from the point of view of an intern at a television studio. This target audience is likely to identify with that role, as it is an exciting role to play. The audience will probably also identify with the characters in the videos to various degrees, and therefore identification is reasonably high.

There are also many opportunities for identification in the videos presented on the *HIV Story Project* website. The target audience is primarily adults, and there are stories from African Americans, Latinos, Caucasians, urban and rural people, HIV+ and HIV- people, and heterosexual and homosexual people, which highlights that the lived experience of HIV is tied to identity. This is a much more sophisticated view of identity, and opens up nuanced spaces for identification with the characters. As discussed in Chapter 3, the "documentary" format comes with inbuilt connotations of objective content, emphasising the rational and factual elements, which is a more remote approach than *I'm Positive* with its first-person play methodology.

Built into the gameplay of *I'm Positive* is the possibility for a player to explore scenarios and outcomes of someone else's story in a palpable way. In his article *Representation, Enaction, and the Ethics of Simulation,* Simon Penny notes that the

embodied aspects of simulation feed back onto representation and thereby make representation not inert but interactive (Wardrip-Fruin 73). The active engagement demanded by first-person play naturally cues the player to identify and therefore empathise with the character they are playing. Allowing one avatar character – a white, male young adult, does detract from the identification to a certain extent, but the mechanisms of first-person gaming counterbalance those discrepancies. The player feels like they are going through the process themselves, and the realistic choices presented do make the game more meaningful. These elements of identification shift the experience in a more accessible and relatable way.

4.1.3. Co-creation

Co-creation can mean many things; in this context it is a system allowing a user control over the arrangement and placement of the individual pieces that build an interactive-narrative. The creator leaves room for others to create their own narrative. The agency in co-creation would depend on how much control is given to the user in the creation and placement of the narrative parts. This will always need to be constrained somewhat to keep the narrative from losing meaning. Agency is strong when a user feels they can control the outcome of a story and there is intrinsic pleasure in being able to create. The three case studies differ in levels of co-creation, with *You wanna do what?* falling short in this area. There is no point in this particular interaction at which the user is afforded the pleasure of creation in the narrative outcome.

Caracciolo remarks on the tension between narrative progression and ludic interests (246). The elements of suspense, curiosity, and surprise that are central to the player's experience are mainly achieved when the experience has been pre-structured to a certain extent (Caracciolo 237). His suggestion is that the avatar/character/protagonist serves as the hinge between the real world in which the game play exists and the fictional world where the story exists (Caracciolo 238). In this way, the avatar participates in the ludic play as an instrument of players' agency, enabling players to accomplish their competitive goals through strategic planning. But the avatar is also the character in the story, with a defined identity, past experiences,

personality traits, and motivations (Caracciolo 238). This methodology can aid the players' emotional investment in the game world. These ideas involve making the character, be it the player in a game, or characters in a video, a central feature in the interaction. The point at which the user identifies with the character and feels empowered to make decisions affecting the unravelling of the narrative needs to be central in the constructed experience.

You wanna do what? lacks in this regard too, although the user may identify strongly with the character they are playing – an intern working in a TV Studio – they are afforded little power in the unravelling, direction and outcome of the stories that will be aired on their TV channel. This lack of flexibility severely compromises agency. Identification influences agency when the protagonist serves as the hinge between the game play and narrative, here the user has little effect on the narrative outcome, so while the identification is high, co-creation is low, and this it is detrimental to the agency felt. The videos feature teenage couples in relatable scenarios such as playing TV games together, celebrating prom night, going to a party and on a date, as well as the feasible discussions around safe sex that emerge in these contexts. Each video has different characters in different scenarios, giving the user many opportunities to identify with the characters and situations presented. As the point of entry into the interaction, high levels of agency are present at the outset; there are six videos to choose from, and each video is different; however, as the narrative unravels, the user is pushed into a bystander role and not offered an opportunity to affect the stories or decisions made by the characters. The user may only watch the scenarios play out by virtue of the fact that at the end of the video they are presented only with a set list of criteria to evaluate, as opposed to more open questions or alternative paths to explore.

The *HIV Story Project* has many levels of co-creation available to the user. The vast scope of personalities and stories gives the user a hinge to interface between the characters and themselves. The story blocks stored in the database and presented on the interface serve as anchors of interaction that the user may manipulate at all points in the interactive experience. If there is a character or story the user does not identify with, they can easily jump to another one, without feeling judged or constricted. The physical booth is also a great space for co-creation in which the user/audience member

is preferenced in authorship ability, and even if they choose not to participate in that way, they can still experience a strong sense of agency by joining the content pieces in their own way.

I'm Positive is a game and therefore the tension between narrative progression and ludic interests may agitate agency in co-creation if the elements that drive the outcome are not strong. Here the avatar participates in the play as an instrument of player's agency, which provides for a sense of agency in co-creation as the player is allowed to make choices and plan the next step in the play.

4.1.4. Immersion

Immersion refers to active engagement – the quality of the experience. When a user is actively engaged in the interaction, they feel a sense of agency. Benyon defines immersion as "the feeling of being wholly involved within something, with being taken over and transported somewhere else. You can get immersed in all manner of things (such as reading a book) so immersion is not about the medium; it is a quality of the design" (10). The three case studies are constructed on different platforms: *You wanna do what?* is a classroom intervention, the *HIV Story Project* is documentary-style film and *I'm Positive* is a game. The platform is not the defining ingredient of immersion, as seen in the *HIV Story Project*, where the impersonal documentary-style medium does not dictate immersion; the experience when interacting with this project is intimate and enveloping.

In *New Directions in Intelligent Interactive Multimedia,* J. Gutiérrez-Maldonado et al. describe the term immersion as relating to the stimulation of the different sensorial channels of the user (498). This is usually achieved by means of visual, auditory or haptic devices (Gutiérrez-Maldonado et al. 498). Similarly Alexander describes immersion, specifically in a narrative game environment, as the feeling achieved by a reactive environment – where the environment acts as a feedback loop. (94) He also explains immersion as being "sensual and multimedia in nature" and that a successful immersion should progress over time and not be static (Alexander 94). Elements that can add to feelings of immersion are sound, as well as cut-scenes. Sound can be music,

sound effects, or spoken dialogue – even the way the characters talk (their accents, tone and the rhythm) influences immersion in a story (Alexander 118). Immersion is closely interwoven with active engagement. Glassner notes that active engagement requires exertion on the part of the user/player (293). In order to draw the user into an activity that requires work, they must be receiving something that makes it worth their while – there must be some engagement and pleasure derived from the interaction. (Glassner 293) Ryan looks at the importance of active engagement in interactive-narrative instances, for both ludic and narrative-based games (54). She suggests that immersion may take on various forms: spatial immersion – the experiencing of space through movement; epistemic immersion – the unravelling of a story by the participant; temporal immersion – curiosity, surprise, and suspense; and emotional immersion – the empathy in relating to another's emotions (Ryan 56).

You wanna do what? requires a lot of work with little payback. The user watches a video of their choice, for instance *wii almost did it*, in which the couple are engaged in a discussion about condoms. Tasking the user with the job of evaluating and rating the scenario and characters' choices, with the knowledge that their rating has no influence and will be further audited by a superior, does not induce pleasure and is not fun. It is more like a test with very little reward for doing well. This impinges on the immersion the user will feel when interacting with the interface. Immersion in this case study is very low.

HIV Story Project is not a playful interaction, but it has many elements of engagement and immersion: the emotional immersion is highly evident in the affecting progression over time. As the user pulls the narrative together, there is a deeper engagement. It becomes clear here how the elements of identification and co-creation are inherently knitted with immersion: because the navigation, identification and co-creation are strong, the immersion is more shaded and deep. The ease with which the user can navigate allows the story to build; the identification makes the stories interesting and engaging, and the co-creation elements of the interactivity make the otherwise static documentary-style videos come alive. The user selects what type of stories they receive, and the order in which they receive them, and this makes a strongly active and reactive space.

I'm Positive has balanced the elements of ludic play with the narrative well. The playful elements of the game invite the player to engage despite the heavy nature of the content. The structure of the game pulls the player back into fun mode as soon as the narrative gets serious, and this decreases the resistance the player might start to feel without playful elements. Immersion is intense because of this thoughtful juggle. The somatic cues employed in the game – such as forcing the player to shoot the ball or breathe slowly when feeling stressed – produce embodied physical immersive moments quite different to the intellectual approach of *You Wanna Do What?* or the emotional immersion present in the *HIV Story Project.* Instinctive process is prioritised over abstract cognisance in *I'm Positive*, resulting in a stronger stimulation of the different sensorial channels.

4.1.5. Transformation

Transformation in digital media is the ability for the user to change, shift and morph throughout the journey. It is the pleasure of not being stuck in a particular role, of being able to explore a story from multiple points of view, to retrace one's steps, and re-enact the journey. One of the strategies suggested by Ferrara for using games to support learning is necessitating transformation, which means forcing the players to adopt a new way of thinking in order to succeed in the game (188). This can be achieved by allowing for an examination of the problem so that the player can solve puzzles and progress the story. The puzzles should be designed to have many possible combinations so that players cannot practically solve them by any other means (Ferrara 188).

A transformative interactive experience will leave the user with a better-defined understanding of another perspective that leads to a new way of thinking. Once again this element is strongly linked to some of the other elements of agency. Identification and Transformation will be a strong indication of the transformative experience. A user must first identify with a character before he or she can get into the role. Once the user is in the role, they might have a change of perspective; this is because they are in the head of another character, which forms another perspective, leading to a different mode

of thinking. The level of immersion the user feels will also be highly influential in the transformation that occurs, because without immersion, the user cannot fully identify with the characters and stories, which will inhibit the change of perspective. To complete a full evaluation of the internal process of transformation, surveys and empirical evidence are crucial. However I found through my personal engagement with the interfaces (with a consideration of my own pre-existing preferences and social contextual drivers), that transformation was facilitated by experiencing narrative from multiple points of view, such as seen in the *HIV Story Project*, as well as by the potential for retracing and re-enacting the journey in *I'm Positive*.

You wanna do what? will not necessarily draw the user into another way of thinking – certainly not in the way the content is currently placed – but the videos themselves have the potential to create transformation. There are characters and scenarios that many of the users might identify with, and watching the way the characters deal with these situations can give a different perspective, but this will depend on whether or not there is identification. Transformation is compromised in this instance because, if identification takes place, the user is then redirected into the head of an intern having to make a decision that is not based on their own experience, but is clouded with what will impress "Dr O". There is no room to try on different perspectives or different outcomes this leads to a somewhat less transformative experience. By contrast, the *HIV Story Project* induces transformation: there is not much problem-solving that needs to occur, but the user is given the perspective of many voices. Because identification is strong, empathy follows, and the user becomes immersed in the stories and is transformed by the experience. *I'm Positive* is also transformative, and has the advantage of a gaming platform. The strong elements of story and play which are present provide the right ingredients for transformation, and the elements of choice – joined with the allowance for exploring the story, and then re-exploring it – amount to high levels of transformations.

4.2. Futher research considerations for interactive-narrative based HIV interventions

As stated earlier, this research is focused on case studies that have been developed for a USA based audience, futher research would be valuable to assess interactive- narrative based interventions for HIV in an expanded context, local factors would need to be considered. This research has brought to light the importance of agency in contributing to the possible levels of success that such an intervention might achieve. The background, ideological and cultural contexts of the targeted audience would need to be researched and considered to understand what agency would mean in the specific local context. The five cornerstones of agency, namely navigability, identification, co-creation, immersion and transformation, can be used as a reference point in designing a successful HIV interactive-narrative intervention. These elements need to be viewed through the lens of the local context, preferencing and considering the audience.

4.2.1. Navigability

When creating an interactive-narrative HIV intervention, there are two environments to consider. Firstly the platform of interactive-narrative in a digital landscape must be investigated. This has been done in great detail in the literature review, where the platform itself and the affordances thereof are discussed. Secondly the environment of the user must be considered. By this I do not only mean geographically – the environment also needs to be interrogated in terms of the people, culture and resources. One cannot place a user in an interactive space and expect them to navigate blindly. The assistance of some kind of visual aid or guide is essential. This needs to be something the person can make sense of, and would vary depending on the user's knowledge of the native environment. Glassner's concept of symbolic language would be helpful in this endeavour (321). The interactive-narrative environment for interventions based in alternative contexts need different considerations to a USA-based intervention. The system itself does not need to lead to learning and change; rather it is the pathways and choices that need to be appropriate. To project a strong

sense of agency for the user, the digital environment must make sense in relation to the user's local environment.

4.2.2. Identification

To build an interactive-narrative for other audiences, attention must be paid to the nature of the characters and environments that drive the story. For instance, in the first case study *You wanna do what?* some of the scenarios would be irrelevant in a another context. Not everyone will know what "wii" or "prom night" means, which makes these scenarios not genericlly identifiable, however the relationships themselves might ring true for any audience. The third case study, *I'm Positive,* features a player playing basketball. This sport may not be prevlant in all countries, and the local populance, might not identify with it, however the phone call from a partner breaking the news of their HIV status could be just as easily applied in any context and location. The second case study, The *HIV Story Project: Generation HIV,* would be easier to replicate in other contexts, as the story is left completely open to the user. The users create the narrative parts themselves, and this becomes a narrative based on how another user chooses to link or add to it. The history of oral storytelling is native to many cultures and would make storytelling a preferred method of communication if identification is strong.

4.2.3. Co-creation

Co-creation involves making the character – be it the avatar in a game, or a video personality – a central feature in the interaction, with the agency to control the outcome or progression of the narrative. To implement a successful interactive-narrative in any context, pauses in the narrative, at which decision-making steps need to occur, should be well planned. The user's understanding of interactive interfaces, needs to be researched and understood. Navigability would have to be closely linked with co-creation, and the cues for interaction would need to be apparent. The point at which the user identifies with the character and feels empowered to make decisions

affecting the unravelling of the narrative needs to be central in the constructed experience. Research into cultural and ethnographic background is a necessity for creating stories relating to the local experience, with choices and co-creation intervals in the narrative that are relevant to the audience. This will go a long way in making a meaningful interaction that allows for both narrative and ludic elements.

4.2.4. Immersion

Immersion refers to the quality of the experience. When a user is actively engaged in an embodied interaction, they feel a sense of agency. The audience must always be considered in terms of how the content and narrative will affect the level of immersion. Engagement will become deeper if the audience relates to the characters and environments presented. Here Ryan's definitions of spatial, epistemic, temporal and emotional immersion are helpful – the explorative elements in the journey, added the participant's role in the unravelling of the story, the evocation of emotions, and the identification with the story, must form consistent threads of experience in the design of the intervention.

4.2.5. Transformation

Transformation in digital media is the ability for the user to change, shift and morph throughout the journey. The pleasure is derived from not being stuck in a particular role, and from being able to explore a story from multiple points of view – to retrace ones steps, and re-enact the journey multiple times, deriving new insights at each step. Transformation would entail building an interaction that allows for a change in thinking, with pathways of investigation into the problem. This can be achieved by allowing the user to explore many points of view that they previously may not have had access to. Stories should be constructed from many perspectives – similar to what is seen in The *HIV Story Project: Generations HIV*. The target audience must be considered in terms of the age group of the participants, and their level of competence when using technology. Transformation can be a powerful result of an immersive game, but this platform would only be appropriate for users familiar with gaming.

Context is the key value for creating a successful interactive-narrative based HIV intervention; for such a project to be realised in a different local context,(such as South Africa), further research is critical to establish the nuances of the culture and resources. Methodologies for Identification would benefit from an exploration of storytelling traditions native to the particular culture. Strong navigability requires an investigation of the local understanding of interactive interfaces; cues for interaction would need to be apparent to allow co-creation in the context of cultural and ethnographic factors of experience. Transformation can be achieved by giving the user opportunities to explore other points of view that they previously may not have had access to, but with relevant infused meaning.

Chapter 5

Conclusion

This study has focused on instances of interactive-narrative for HIV in the USA. All three of the case studies offer insight into the possibilities of interactive-narrative as an HIV intervention on different platforms, for different audiences, and with varying levels of agency. While platform and content form a significant element of a successful intervention, it is the elements of Navigability, Identification, Co-creation, Immersion and Transformation that direct the agency. When these are interwoven successfully, interactive-narrative becomes a powerful tool for learning. Interactive-narrative interventions for HIV education allow for a specific type of engagement. The medium itself affords a level of interaction and participation, but it is the five elements of agency that will affect the degrees of success of a specific intervention. An understanding of human-computer interaction aids in driving the definition for successfully achieving high levels of navigability, identification, co-creation, immersion and transformation.

The first case study *You wanna do what?* used a pedagogic approach to learning. As discussed in Chapter 3, this approach would be best suited to a constrained classroom environment, where the purpose of the intervention is to open a conversation with the learners. The more successful elements of the project are the video narratives of "real people" talking about issues around HIV and safe sex. The characters taking part in the narrative would need to be relatable to the audience. The target audience would need to be limited to a school setting. The second case study The *HIV Story Project: Generations HIV* is the most open system, and can be replicated anywhere with local relevance. The lack of constraints both opens and closes pathways for learning. Agency is strong in this intervention from all perspectives, however the content is dependent on the audience and users, so there would be no way to convey a highly specific message. This type of intervention works best when the goal is more about a conversation, and less about conveying specific information. The third case study *I'm Positive* has many elements of agency present. The area of identification has some weaknesses in its current form, but the system could be opened up to allow for a stronger form of identification. The more constrained narrative provides a platform for more targeted educational interventions.

To conclude, the elements of navigability, identification, co-creation, immersion and transformation are important points of reference for assessing interactive-narrative, however I am conscious of the fact that agency is closely related to audience, and the case studies evaluated in this research are built for an American audience. Futher research for other audiences, including the local South African audience, would benefit from a consideration of these elements but should not be seen as explicit instructions to build a successful intervention; rather, these are simply abstracted tools that will need to be reconsidered in the light of the HIV epidemic in other parts of the world, together with educational strategies, resources, and the specific socio-historic and economic context. I believe that a successful intervention should, in principle, afford the user some agency in their engagement with an interactive-narrative HIV intervention.

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