Immersive storytelling:
How 360-degree video storytelling is helping to redefine journalism

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Abstract

The evolution of reporting has seen tremendous change and 360-degree journalism, also known as Virtual Reality journalism, presents an opportunity for audiences to engage with stories like never before. This qualitative study contributes to the limited literature in the field by exploring a western Canadian perspective. It examined the ways in which post-secondary students embrace 360-degree storytelling for journalism. Focus group participants watched a five-minute documentary of Lethbridge College's annual mock disaster filmed in 360-degrees on March 25, 2017. They wore VR head-mounted displays and answered open-ended questions about the individualistic experience. Results found that while the latest technology does attract a lot of attention, the foundation of strong storytelling from an ethical perspective is paramount to journalists embracing this medium. Delivering content through VR can be incredibly powerful; however, knowing how to properly utilize this technology must come first. While much of the literature identifies the benefits, risks, and potential for VR, additional research is needed to understand how this technology can be used by journalists to engage audiences in new forms of storytelling. There is a need to continue to foster this immersive field through education, experiment with the types of stories delivered, and understand and embrace audience reactions to content. As the technology continues to develop and evolve, one can then better understand how it can be used to further the future of journalism.

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Introduction

The media contributes to the social construction of reality (Berger & Luckman, 1967), and it is important that an independent media holds government, corporations and individuals accountable in order to inform the public. As we embrace new technologies, how information is disseminated by new media affects society. In other words, journalism now is as important as ever.

Since the evolution of journalism has not been favourable to traditional media outlets and digital formats like mobile phones are taking centre stage, the ability for media organizations to attract readers to content while making a feasible business model is challenging at the best of times. The integration of 360-degree video – also known as Virtual Reality (VR) within the field of journalism – presents an incredible opportunity to not only attract a dedicated audience, but one that may engage in sponsored content for monetization of this new medium as well as the opportunity to more heavily engage in global issues. Strong storytelling using the core news values engrained into journalists will ensure this new medium is not gimmicky, but sticky, with viewers engaging in content repeatedly.

To identify if new formats of news delivery will be used and embraced in the near future, this study examined the ways in which post-secondary students embrace 360-degree storytelling for journalism. In particular, the study looked at the best way to connect with a younger demographic by examining how a 360-degree story affected them as well as the comprehension of a news story. I looked for what were the best ways to construct a 360-degree story, what decisions are made to create the most engaging and ethically accurate story as well as what does an audience look for in a 360-degree story.

Storytelling in Virtual Reality journalism is a concept that is so new, many people don't understand how a piece needs to be produced. The term VR journalism is used interchangeably with 360-degree video, although they describe two different types of styles. VR journalism is a fabricated scenario that viewers relive, while 360-degree journalism is real footage from an actual event or place. For the purpose of this paper, I will be focused on 360-degree journalism but because the literature blends the two concepts, I will use the terms interchangeably.

When deciding on what direction my capstone would take, my experience working in print and online journalism brought the importance of 360-degree storytelling to the forefront. The introduction of this technology re-invigorates my own teaching methods providing a new way for students to tell stories. Since there is very little literature on the subject, this paper will help to provide a western Canadian perspective of 360-degree journalism adoption.

There were some limitations to this study. For example, participants did not have the opportunity to compare various types of stories that were the most effective for viewing in a head-mounted display, such as sports, editorials, hard news and features. Another limitation arose from the fact that participants were not viewing a *real* news story; the mock disaster featured actors, faculty, and students rather than real people experiencing a real event. Finally, this study did not allow for the opportunity to compare the 360-degree story to other mediums like print, online, radio and traditional television.

This study fits in with the existing literature on VR journalism by explaining how various media companies are starting to experiment with this format. The initial experiences by people who have viewed pioneering pieces like Nona de la Peña's *Hunger in Los Angeles* help to orient the reader to the impact these initial stories have had on the public. This study contributes to the field of VR journalism by exploring a western Canadian perspective. It compares media usage

trends of high internet adoption for a college-age demographic to see if technological adoption is actually helping in the comprehension of global news stories. Examining how 360-degree storytelling can engage post-secondary students in journalism highlights the desire for this demographic to get their current events from social media and how this might impact their worldview. With the disappearance of traditional formats (radio, print newspaper, etc.), it is important to see where post-secondary students may go next to get their news, with 360-degree storytelling one such option.

In my literature review I explore how VR journalism has helped to evolve the industry and attract viewers at the same time. Medium theory helped to shape the understanding of what a new technology brings to the comprehension of a subject. If Marshall McLuhan's (1967) medium is the message and formal properties affect the way a story is told and it affects how audiences perceive stories, then it stands to reason that VR has unique properties and implications that need to be better understood in relation to journalism and storytelling as a form of journalistic practice.

We can make a guess about the nature of Virtual Reality as the next immersive step past the televisual or traditional broadcast style. As Neil Postman (1986) discussed in *Amusing Ourselves to Death*, it is the entertaining medium that lends itself to subjective and emotive storytelling. If Virtual Reality is more subjective in how it portrays journalists' stories, then how does it impact how a story is received by an audience in a world of increasing scrutiny and skepticism?

After I explore the literature my methodology explains how I met with three focus groups to identify what they appreciated about watching a news story in 360-degrees. Focus groups allow for "rich, detailed data" (Carey & Asbury, 2012, p. 15), providing access to perspectives,

behaviour, attitudes, and beliefs. This type of data collection helps to explore complex issues as well as give voice to vulnerable populations. Rich data comes from participants who are eager to be heard, and from facilitators who can manage varying opinions. As Patton (2002) states, "Small purposeful samples yield in-depth understanding and insights rather than empirical generalizations." As well, Krueger & Casey suggest "Focus groups are less threatening to many research participants, and this environment is helpful for participants to discuss perceptions, ideas, opinions, and thoughts (qtd. in Onwuegbuzie, 2009, p. 2). Quantitative analysis, like the use of Likert-type scale surveys, does not provide the detail needed for a study of this nature.

In addition to the information gathered in the focus groups I will detail the decisions made for putting together a 360-degree video for the purpose of telling a news story. As a journalism instructor in Digital Communications and Media at Lethbridge College, this has incredible potential for learning about what decisions students will make as they will be shooting 360-degree videos as part of curriculum. Applied research opportunities at Lethbridge College in 2017-2018 will take this information gathered in this Masters thesis and expand it to two other demographics with the opportunity to create a best practices guide for journalists to shoot 360-degree video across Canada.

This information will be valuable to our industry partners where alumni of our program - Troy Reeb, VP Senior Vice President of News for all Shaw Media properties and Global Television, and Matt Wright, Chief Experience Officer and Founder of Mammoth VR, are interested in the role of storytelling in 360-degrees.

To identify how post-secondary students are embracing 360-degree storytelling, it is best to start with a baseline understanding of how the technology is being embraced now. For example, the *New York Times* has added itself to the latest evolution of digital storytelling with a

significant chapter to an ever-changing field. In the next chapter I look to existing literature on VR journalism that speaks to the excitement surrounding this growing field. While the latest technology does attract a lot of attention, the foundation of strong storytelling from an ethical perspective is paramount to journalists embracing this medium.

Literature Review

In the past two decades, journalism has evolved considerably. While the sales department grapples with how to convince various businesses to advertise on various platforms, editorial departments are trying to identify the best way to attract readers to their content. In the past five years alone, daily newspaper editorial rooms across Canada have been sliced in half, millions of Americans [and Canadians] are cutting the cord to their cable and many people around the world are getting their news on their mobile devices (Brackebush, 2016). The first televised debate between John F. Kennedy and Richard Nixon changed the way people voted for presidential hopefuls in 1960 and it was the terrorist attacks of September 11, 2001 that changed coverage of foreign policy and global conflict.

The latest evolution of the industry occurred on November 7, 2015 when 360-degree journalism became accessible to a wider audience to allow people to see a new form of storytelling. On that day, *The New York Times* provided one million Google cardboard headsets to its loyal subscribers. This give away was not some pithy promotional stunt; it was a strong nudge, if not shove to 360-degree journalism, also known as Virtual Reality journalism.

Since that day, the 166-year-old daily newspaper has generated 360-degree videos through its *New York Times* Virtual Reality (NYTVR) app to showcase a revolutionary new form of storytelling. Because it is so new, many questions remain regarding the power of this medium, especially its impact on core journalistic values like objectivity and transparency, as related to telling stories. My research project begins to explore some of these questions.

The goal of journalism and journalists has always been to bring awareness of local and global issues to an audience. No matter what format journalism takes in the next decade and beyond, one important aspect remains: the importance of storytelling. With 360-degree

journalism, the opportunity to become part of the story suddenly becomes more plausible. Cameras capture every angle of a landscape allowing the viewer to choose where to look while a story unfolds.

My overarching research question is: How can 360-degree storytelling engage post-secondary students in journalism?

To set the stage for exploring this question, I will explore three subset questions.

RQ1: What is the best way to construct a 360-degree story?

RQ2: What decisions are made to create the most engaging, ethically accurate story?

RQ3: What does an audience look for in a 360-degree story?

Marshall McLuhan (1964) said "the medium is the message" (p. 1), meaning the technology used to convey the message is as important as the message itself. It is therefore important to look at the impact 360-degree journalism makes as it is adopted by a wider audience. Current predictions point to an increasing market for VR, with some suggesting that it will reach $70 to $150 billion by 2020 (Holmes, 2016).

An important distinction must be made between 360-degree journalism and Virtual Reality (VR) journalism despite the two terms being used interchangeably in the literature. VR journalism is usually animated footage recreated so a viewer can experience an event that transpired or may transpire. When a viewer experiences 360-degree journalism, it is actual live footage that has been captured. In both cases viewers adorn a head-mounted display (HMD) and are thrust in the middle of a story. In 360-degree storytelling, viewers have the freedom to explore footage a journalist has shot, edited and stitched together. Since the literature is so limited and because the terms are used interchangeably, I will use Virtual Reality journalism to describe both formats.

VR journalism provides an opportunity for viewers to become even more immersed in stories by showing what is happening not only in front, but all around viewers, creating a visceral feeling.

For example, *The New York Times* won a Pulitzer in 2012 for trying to immerse readers in a powerful piece called *Snowfall* by John Branch and an 11-member graphics and design team. This interactive online-only story included photography, video, animation and other graphic elements to make the story come alive engaging readers. Greenfield (2012) notes, "The integration of multimedia video and motion graphics in ways that made them feel like they were part of the body of the story, and not just side bars that you would experience after you were done reading the story."

VR journalism poses a range of questions about its influence as a storytelling medium. Questions include, but are not limited to, how engaged is the audience? Will people watch 360-degree video wearing a headset or will they simply watch it on their phone, and is this the new way viewers will choose to regularly watch the news? While VR journalism is relatively new and news consumers have limited experience of it and its impact, I will look to some of the trailblazing news organizations for their feedback in the generation of content.

Literature Review Methodology

Since Virtual Reality journalism is comparatively new and we have limited experience of it and its impact, I widened my scope for insights into this emerging field. Preliminary research included utilizing the *Communication & Mass Media Complete* database through the University of Alberta to find most of my secondary sources. Because of the contemporaneity of VR journalism, I relied more on trade journals and magazines rather than peer-reviewed academic journals. I also solicited the help of librarians at Lethbridge College's Buchanan Library who

found additional sources based on my three research questions. I then refined the ideas that emerged from this initial reading by identifying keywords like *immersive journalism, empathy, Marshall McLuhan, technological determinism theory, Nancy Baym, 360 video, virtual reality and immersive storytelling*; these all appeared in the literature. This broad searching also helped me narrow the scope of my project which set aside the relationship between immersive video games and their users (which I was originally interested in exploring) in favour of a specific focus on virtual reality as it corresponded to journalism.

One result of my extensive searching was to discover the almost borderless applications of VR as well as its many benefits and drawbacks. While looking at immersive video games quickly appeared to me to be the subject of future research projects, it took longer for me to narrow my scope in other ways. For example, PTSD and empathy seemed interlinked with engagement, storytelling and audience, all of which are currently the focus of my MA. It took many months of me refining my research questions and narrowing my focus to finally decide that PTSD and empathy were simply out of my scope of research. In order to fully engage with these concepts, I believe that a background in neuroscience, psychology, and sociology would be key to exploring these further, and at a level necessary for graduate research. As a result, I narrowed the scope of this project to storytelling in journalism, a field of study that informs my work as a writer, researcher, and college instructor.

After refining my key terms and effective searching techniques, I organized the literature into three major categories, effectively targeting my research questions. To restate them, they are:

RQ1: What is the best way to construct a 360-degree story?

RQ2: What decisions are made to create the most engaging, ethically accurate story?

RQ3: What does an audience look for in a 360-degree story?

This literature review will take up each of these questions in turn by summarizing and analyzing discourse by experts in this field, and will show my unique contribution to these important conversations.

What is the best way to construct a 360-degree story?

When a user straps on a head-mounted display (HMD) to watch a 360-degree story for the first time, he/she may be a little disoriented. At all times viewers direct where they want to look while wearing a pair of headphones. Wearing all this technology can make a viewer feel they have transported somewhere else. After all, the 360-degree story is always above, behind, in front and below them. Without realizing it, some viewers can miss the whole point of a story. Keeping that in mind, there are lots of considerations when constructing a journalistic story. Jake Silverstein, editor-in-chief of *The New York Times Magazine* said, "One of the bigger surprises for us was how challenging it can be to craft a narrative when you don't have any of the typical editing moves. There's no framing the shot. You can't zoom in or out, so we spent a lot of time in the editing suite trying to get it right" (Knight Foundation, 2016, p. 25). What happens to viewers when they consume news in this expansive format, rather than from a controlled point of view?

Nancy Baym's (2010) three dystopian views of technological determinism from her book *Personal Connections in the Digital Age* include the "fear of losing control, becoming dependent and being unable to stop change" (p. 28). Being immersed in VR or a 360-degree story reflects this loss of control especially as many viewers can be unsure where to direct their attention. Secondly, as technology advances rapidly and as VR is embraced by so many industries, the idea

of being unable to stop this technological revolution seems very real. This open-ended delivery of information is tied to twenty-first century digital contexts.

VR yields deeper, more immersive stories that bring viewers closer to events and breaks down barriers between the audience and the event. In an article by The Knight Foundation (2016), VR is described as "hacking your brain" (p. 17), especially since VR makes viewers believe they are somewhere they are physically not. Niko Chauls, director of applied technology for *USA Today Network* says current metrics used for video are not applicable – a new range of reporting will be needed. VR could fill this gap. Many companies are taking notice including *Empathetic Media* in New York who designs content for the Oculus Rift. They turn stories into immersive experiences with news story animation, interactive comics, and interactive documentaries. They also bring data and stats to life with compelling graphics.

Kathleen Lingo, *New York Times* commissioning editor for the op-doc section says, "If you're trying to tell a story, make a movie in VR. If there's a news event, tell it in VR. Like the Paris vigil, that was very immediate. Having the experience of physically being somewhere is totally revolutionary" (qtd. in Evans, 2016). Engaging citizens and providing context, nuance and texture to reported events and issues are all important considerations when looking at VR (Pavlik, 2013). Since the technology is so new, the potential to engage a citizenry is increasingly disengaged from traditional news to provide more immersive information. It appears that immediacy is key to strong VR storytelling.

But as technology advances, Mark Deuze (2003) questions what is lost in VR as we evolve the industry. He states, "Different kinds of journalism online amplifies and affects different kinds of journalism offline" (p. 221). Deuze is hesitant about this new format and VR expert Nonny de la Peña can relate as she wants to be sure she retains her journalistic integrity in

the production of these new VR pieces. In an often-viewed TEDTalk (2015), she says, "I have to be very cautious about creating these pieces. I have to really follow best journalistic practices and make sure that these powerful stories are built with integrity. If we don't capture the material ourselves, we have to be extremely exacting about figuring out the provenance and where did this stuff come from? And is it authentic?" de la Peña identifies the importance of making VR ethical, and questions of ethics are integral to journalistic practices.

Chauls launched a VR news show on October 20, 2016 called *VRtually There.* He called VR a "mind blowing, dazzling experience." Similarly, Joanne Lipman, *USA Today Network*'s chief content officer agrees that VR is innovative storytelling. These writers identify the importance of VR being unlike traditional storytelling; this means it is engaging, and provides viewers with an experience that is more dynamic than established formats.

Another well-recognized news corporation has recently experimented with delivering the news through VR, and identifies some criticisms of the new format. In the past year the *Associated Press* has produced 20 VR and 360 videos. Paul Cheung, director of interactive and digital news at *Associated Press*, said the barriers to produce videos is the expensive technology. Curtis Rose, senior VP and director of creative technology at ad agency *Erwin Penland* has noted a further barrier to effective news delivery through VR. He says the key will be "to compliment [sic] coverage and not inundate consumers with too much information" (qtd. in Brackebush, 2016). Another limit of the technology is evident with close-up shots no longer having the same effect since viewers control the perspective and are constantly choosing what they want to look at. Miles Perkins, a spokesman for *Jaunt*, says VR is the first medium that does not require a viewer's mind to fill in the blanks between contrasting scenes. Viewers have access to all content

at once, rather than relying on the narrative created in an editing room. These are the challenges to VR storytelling that emerged in the literature.

My research shows that what distinguishes VR from traditional storytelling is its immediacy, immersive quality, and ethical considerations. These conversations help to shape an early understanding of the benefits and limitations of VR, and the most effective practices for creating strong VR storytelling. Next, I will explore in more detail conversations around engagement and ethics.

What decisions are made to create the most engaging, ethically accurate story?

One stated goal of journalism is to get people to care about the world around them. 360-degree journalism has repeatedly been said to be a more engaging form of storytelling, based on its immersive quality. This is one of the driving forces behind the first VR experience Nonny de la Peña, CEO of the Emblematic Group created called *Hunger in Los Angeles*. In this VR experience, viewers watch as a man stands in line for the food bank. When he suffers a diabetic coma, many viewers repeatedly reached out to try to provide assistance to an animated character. The experience premiered at the 2012 Sundance Film Festival. The reaction from users who experienced this piece was incredibly powerful. Nuwer (2015) states, "Virtual reality creates an incredible sense of presence that allows people to connect to stories in a way that makes them feel that they are actually there" (p. 23). Those who experience VR journalism say they consider the reality into which they are placed more deeply than traditional television reporting. This may be through some of its experiential characteristics. 360-degree journalism's effectiveness results from the way it "hijacks our sensory systems, blocking out all other input and tricks our minds into processing what we are seeing and hearing as though it were actually happening" (Nuwer, 2015, p. 23). Jeremy Bailenson, founding director of Stanford University's Virtual Human

Interaction Lab, said VR provides experience-on-demand that creates a shortcut to empathy because it tricks viewers into thinking they are witnessing an event. When done well, VR can provide a transformative and potentially mind-changing experience from observing the effects of ocean acidification to standing on a rooftop as Hurricane Katrina's floodwaters rise. For example, a VR video focused on the effects of Hurricane Katrina placed viewers into the devastation in New Orleans, LA. "The Katrina video was not about getting facts across," Bailenson says, "it was about putting someone in that situation and allowing them to get an experience that causes empathy. Stories are remarkably effective at changing people's behaviour and leaving a lasting moral impression" (qtd. in Nuwer, 2015, p. 23). This heightened level of engagement places viewers into situations that they might not physically be able to experience.

Immersive Virtual Environments (IVE) – like those VR offer – provide rich opportunities for the user to experience the world around them like never before. They are powerful persuasion tools that modify and shape behaviours. Ahn (2014) writes, "Using IVEs, users may see, hear, and feel negative future consequences of their present actions as if they were occurring in the moment" (p. 236). In their research Ahn, Bailenson et. al. were more comfortable signing up for courses after seeing a university campus in VR, and they felt ready for emergencies after experiencing a mock immersive scenario. VR offers a level of engagement that lets users experience an environment without necessarily visiting it physically.

In addition, users of one VR experience elicited favourable energy-consumption habits after their VR experience by using 20 per cent fewer napkins after sawing down a virtual tree. Ahn says, "Through embodied experiences, IVEs may serve to extend these pro-social boundaries to improve the well-being of the overall environment that the users reside in" (p. 242). One's locus of control becomes apparent when those experiencing IVE believe they can

influence events and outcomes. “IVEs,” Ahn notes, “are more effective than traditional print messages in closing the knowledge-to-action gap and promoting conservation behavior” (p. 239). I agree with Ahn that experiencing virtual environments is a good way for many to prepare or to anticipate environments they are unfamiliar with. However, expecting individuals to live out that virtual experience in real life may be a challenge.

Several recent VR videos demonstrate the engagement this format can create. In January 2014, Nonny de la Peña worked again with the USC School of Cinematic Arts and showcased *Project Syria* at the World Economic Forum. This experience brought the realities of Syrian refugees to a Western audience. The project was a key example of engagement through presence with VR storytelling and journalism to help the pieces come alive. In the *Columbia Journalism Review*, Erin Polgreen says VR is influenced by gaming and the visceral feeling one experiences really helps to get the user to understand what it’s like to be in that environment (2014).

Highway of Tears is the Canadian Broadcasting Corporation’s (CBC) first VR documentary published in October of 2016. It is a four-minute piece that impacts people through telling a story about an Indigenous woman named Ramona Wilson who went missing at the age of 16 in 1994. The director, Anishnaabe filmmaker Lisa Jackson, says there is a lot of intention in what she needed to show when thinking about presence in VR. For example, breaking the fourth wall of filmmaking and being in a space with the person provides a two-way relationship with the content. In an interview with Anna Tremonti (2016) Jackson says, “VR is simplified storytelling because of the lack of edits and lack of ability to tell people where to look, as a result the message is amplified. The potential for this medium is to get behind the headlines and to humanize issues.” Jackson’s narrative script seems to take on an even stronger role in 360-degree video as it helps the viewer make their way through this challenging content.

Engagement also comes in the form of an impulse to gamify VR. Gamification is the process of creating incentives and prizes to encourage viewers to engage more deeply with content. Kane thinks gamification creates great potential for a new way of storytelling. Gangadharbatla & Davis (2016) says gamification offers the potential to generate stimuli to amplify small wins which generate engagement and user habit, while also feeding a progress loop that leads to social change; this is a possibility for VR storytelling. For example, at the Virtual Human Interaction Lab at Stanford, VR is having positive effects with getting people to act more environmentally friendly as well as even choosing to exercise more. Jeremy Bailenson notes that having a person experience a scene virtually affects people's behaviour stronger than other methods, and that providing incentive can change an individual's behaviour. For example, Stanford marine scientists Fio Micheli and Kristy Kroeker created a virtual reef that users embody. During the experience users demonstrate a change of attitude that endures after the experience ends. Bailenson (2014) says, "Subjects in the virtual reality group demonstrated more empathy for the environment than those who watched a movie about acidification. A week later, that change of attitude endured only for those in the virtual reality group." Jane Lubchenco, former head of the *National Oceanic and Atmospheric* administration said VR is the best shot at saving coral reefs for future generations. It is this high level of engagement that can enact change.

While engagement is one effect of 360-degree storytelling, ethical considerations are integral to this form of communication. When a journalist is creating a 360-degree story, he/she must first consider whether VR is the right format to tell a specific story. Mariana Santos, director of interactive and animation with Fusion says, "not every story is worth or requires being told in VR – so it is a question of choosing wisely" (Knight Foundation, 2016, p. 23).

Joshua Meyrowitz's (1985) medium theory is relevant to this discussion. This theory focuses on the "unusual characteristics that distinguish one medium, or one type of media, from other media" (p. 16). Marshall McLuhan's famous expression – "the medium is the message" – helps to explain the evolution of technology as it is used to communicate messages. For example, print paved the way for radio and television, but the meaning is altered depending on how the message is being shared, and what technology is used to share it. Postman (1985) adds, "A new medium is an extension or amplification of an older one" (p. 83); this highlights the importance of viewing technology as constantly in flux, or in evolution. As 360-degree journalism is on the cusp of adoption, it may not be until much later that we start to see the power VR has in representing a new way we make sense of the world. How a news story is understood is directly related to how it is shared. VR offers a new medium to convey the message.

In his book, *Amusing Ourselves to Death* (1985), Postman notes every type of technology has an inherent bias. He says, "Technology is to a medium as the brain is to the mind. Like the brain, a technology is a physical apparatus. Like the mind, a medium is a use to which a physical apparatus is put. A technology becomes a medium as it employs a particular symbolic code, as it finds its place in a particular social setting, as it insinuates itself into economic and political contexts" (p. 84). For example, television helped to define how the world interpreted political debates where suddenly what one wore mattered more than what one had to say. A possible bias implicit in VR is the placement of the camera. The viewer might control his/her personal perspective, however, a journalist ultimately controls the overarching perspective. Both McLuhan and Meyrowitz seem to suggest that questions about how to create an ethical story are tied to the medium. How does VR ultimately control the narrative, albeit one that appears to be more open-ended than that provided by traditional storytelling?

Dan Coplon of Vrse adds to this conversation about ethics by noting, "the projects we've taken on that deal with real people, places or events are definitely sensitive. Even though we are storytellers and we're crafting VR experiences, we hold ourselves to a self-imposed standard to hold sacred the truth of the moment" (qtd. in Knight Foundation, 2016, p. 23). Watching a violent story in 360-degrees becomes even more graphic for a viewer because there is no fourth wall dividing the audience from content. It is quite possible that a 360-degree experience could trigger recurring nightmares or worse, a PTSD episode. The immediacy and immersive quality of VR could undermine the ethics of this type of storytelling.

For 15 years, Jeremy Bailenson, communications professor at Stanford University, has researched the impact of VR at the *Virtual Human Interaction Lab*. He says, the "immersive quality of this technology leaves an indelible mark on users in a way that still images don't." Journalist Amy Westervelt (2016) reiterates the responsibility in creating a story that has the right effect. She says VR has a reinforcing nature which could be negative when it comes to stereotypes about cultures and gender. She says, "A handful of early research suggests VR embeds itself deeper in our psyche, stays with us longer, and can alter our behaviour longer afterward than any other type of media we consume" (p. 71). Is VR more impactful than traditional formats of storytelling?

Since VR has the potential to manipulate viewers, companies such as Oculus Rift and Samsung Gear VR have placed warning signs on their gear that recommend the technology for children over the age of 13. This could indicate that more research on the effects of VR on viewers (especially younger viewers) is needed. What ethical considerations might this immersive experience necessitate? Consider Eric Hine, executive producer at Vancouver's VR company Archiact Interactive*,* who says the immersive experience allows people to "feel more

when they interact with the medium." Because of the power of immersive experiences, when Joseph Delgado modified Grand Theft Auto V for VR, he felt horrible about doing it: "You actually feel guilty" (qtd. in Holmes, 2016). The graphic violence in this video game became much more realistic and experiential in VR.

University of California researchers found evidence of the effect of this level of immersion when they studied rats in 2014. They discovered that neurons in the brain associated with spatial learning behaved "completely differently" in VR environments with "more than half of the neurons shutting down in VR" (Gent, 2016). Additionally, Michael Madary, a postdoctoral research assistant at the University of Mainz in Germany, is concerned with VR and its effect on children's psychological development, especially since they have a tough time distinguishing fantasy from reality and traumatic events. Madary states, "In VR, you have an entire environment designed by someone who may want to manipulate you, whether it's for advertising, for political reasons or for religious reasons. If you have a child spending a long time immersed in a VR environment where manipulation is going on, it could be seen as a threat to their autonomy and what kind of adult they become" (qtd. in Gent, 2016). Since the way VR is constructed can lead to bias and manipulation, considering ethics is paramount to good storytelling.

Ethics and engagement are intricately tied to the viewer. Discussions about audience and how the message is received when conveyed through VR storytelling is the focus of my final research question.

What does an audience look for in a 360-degree story?

When viewers strap on a head-mounted display the first time, being immersed in the middle of a 360-degree story can be unsettling. For first time users, decisions about where to

look can be difficult to make. But as viewers become more comfortable with experiencing news stories in this format, they may notice cues that tell them to look in a certain direction. These various techniques – visual, audio, and spatial cues – have to be reconsidered in this new medium.

Three examples from various media organizations highlight the feelings that viewers experience when encountering VR for the first time. When first viewing an immersive piece, Jake Silverstein, editor in chief of the *New York Times Magazine*, remarked, "I've edited hundreds of stories about refugees, and I've never had an experience like this one." When viewers encounter pieces by Nonny de la Peña she has observed "the intensity of their emotional connection and feeling." As well, when 11 student interns were introduced to VR through a Juvenile Justice Information Exchange (JJIE*)* Virtual World Journalism project they noticed a greater feeling of presence and more effective storytelling: "It's new, exciting and immerses its audience into a news event, giving the closest version of reality possible, it's a more advanced way to present stories, people react to personal and emotional stories, it shows you like you were a bystander. It makes you feel like you're in the real world" (Bohrer, 2016, p. 36). Taking the position as slightly more than a bystander to significant historical events can engage viewers in stories like never before. If viewers feel like they are there, they may have greater appreciation of a subject, based on the immersive quality of this type of technology. Many VR pieces can elicit this connection, and it is this quality that an audience might look for when approaching this type of storytelling.

For example, one such story created in VR about the prison system had this connective effect on viewers. Francesca Panetta, executive director of VR at the *Guardian* – whose first project *6x9* is a VR experience about solitary confinement – says, "Virtual reality and interactive

content offer an extra dimension to storytelling in journalism" (Mayhew, 2016). For Panetta this extra dimension is all about VR having the potential to showcase journalism in a stronger way. Innovative companies must think about the way that immersive experiences connect viewers to content when putting together a piece. Jaunt is a VR company founded in Palo Alto, California in 2013 that allows viewers to experience cinematic virtual reality. Jens Christensen, Jaunt's CEO and co-founder says, "We think news is just fantastic for VR. You get a truly objective view, it's unfiltered, and you feel like you're actually there. You get a sense of perspective and scale that you don't get when you're looking at a 16-by-9 rectangle" (qtd. In Evangelista, 2015). Many in the Western world have varying rates of apathy regarding global events, based on the distance between themselves and the subject matter. 360-degree storytelling may be a way to reverse that trend. Viewers can learn more about subject matter by being immersed in a different environment.

Even sporting events have the potential to offer an entirely new way to engage with an audience through immersion and connection. When speaking about experiential journalism, Dan Pacheco, chair of journalism innovation at the S.I. Newhouse School at Syracuse University, says "stories can be factual, but they can also be fun. I imagine a future sports journalist … go[ing] over the areas that the public can't go, like press boxes and locker rooms and readers will be able to download these experiences" (qtd. in Kane, 2014). Access to these experiences may be something viewers are willing to pay for, especially if it is something they want to explore. Brad Allen, NextVR's executive chairman, says the NBA sees the potential and is embracing VR with the goal to provide "goose bump" material. "This is a major game-changer," Allen said. "You want to make it so compelling that nobody wants to take their headsets off because they're going to miss something. … Those are the things that we're really excited about" (qtd. in Amick,

2016). Offering experiences that are not available to viewers through a traditional storytelling format might be something that VR can uniquely offer.

When encountering a 360-degree story, research suggests an audience might look for immersion, connection, and access to experiences not available to them through other formats. While this research focuses more broadly on case study material (such as the prison experiment) and on a sporting context, my research examines how VR offers an audience these aspects through local news reporting.

Conclusion

This chapter examines current research in the area of VR, including how it has specifically been utilized in the field of journalism. This research helped me narrow the scope of my paper by usefully eliminating topics related to VR such as empathy, PTSD, and video game study, allowing me to focus on how VR storytelling can be an instrument for new forms of reporting.

As well, engaging with experts in the field allowed me to set parameters for this study by beginning to answer questions about VR's role. For example, when constructing a 360-degree story, immediacy, an immersive quality, and ethical considerations, are paramount for creators of this content to consider. Creating the potential for audience engagement that goes past what traditional storytelling offers is integral to this format. As a result, the ethics of how a story is put together and how it effects an audience are important to consider. Finally, research shows an audience might anticipate encountering the following in VR storytelling: immersion, connection, and access to experiences not available to them through other formats.

For the next stage of my project I plan to look at qualitative research using focus groups to identify what key differences are noted between traditional broadcast and virtual reality

storytelling. This literature review begins to answer my research questions: what is the best way to construct a 360-degree story? As well as what decisions are made to create the most engaging, ethically accurate story? What does an audience look for in a 360-degree story? While this research provides a good framework for my study, focus group research allows me to more thoroughly engage with these questions as they specifically pertain to engaging post-secondary students with journalism in the twenty-first century. Watching VR's expansion into the world of journalism in 2015-2017 – during the duration of my MA study – I recognize there is incredible potential for this industry. Examining audience reception of a VR piece through focus group study answers important questions about the role of the viewer in this new format. Next, I will outline my methodology which sets up the purpose and execution of my focus group research.

Research Design and Methodology

New digital technologies continue to change the way that news stories are delivered. I am interested in investigating the impact of 360-degree storytelling in the field of journalism, as it is utilized more often in twenty-first century contexts. This new technology raises questions about the relationships between storytelling, technologies, and audience, and the impact of this format on news reporting. As an instructor at Lethbridge College in Lethbridge, Alberta, focused on delivering the Digital Communications and Media program, keeping students apprised of new developments in the industry is aligned with our mandate. Research summarized in the literature review provided many key facets associated with VR. My methodology involved integrating these facets into exploratory research design, allowing me to extrapolate from a body of literature that is still in development. My overarching research question developed out of my experience as an instructor, researcher, and journalist: How can 360-degree storytelling engage post-secondary students? This includes also investigating what viewers look for in 360-degree storytelling, and how this affects both engagement and ethics. I conducted focus group research with post-secondary students at Lethbridge College by randomly sampling three groups of 2-7 participants over the course of two days in April 2017. This chapter will outline my methodology in relation to this focus group research, and will include background information, instruments, process, validity, and bias.

Background Information

Every year Lethbridge College hosts an interdisciplinary mock disaster, bringing together students from four programs: Criminal Justice, Emergency Medical Technicians, Nursing and Digital Communications and Media. The mock disaster held at Lethbridge College to prepare students for emergencies after they graduate from their respective diploma programs. Over the

course of several hours, their role is to identify what transpired in the mock event, who is responsible and how the scenario should play out as if it were a real emergency. I have been involved in the planning and running of this mock disaster for five years. This involves writing a script for the event, which occurred March 25, 2017 using hired actors and volunteer students. This year, the mock disaster was about a house party gone wrong, depicting a fentanyl overdose, a fight with two party goers, a stabbing as well as a broken nose and knuckles. Typically, the students I teach in the Digital Communications and Media program write, photograph and film traditional print, online, television and radio stories related to the disaster.

Because of program funding from Lethbridge College in 2017, our department was able to purchase new technology. While the mock disaster has historically been filmed in traditional video, it had never been recorded in this new 360-degree format. This was the first year my students recorded the mock disaster with 360-degree video with a Samsung Galaxy 360 video camera. They filmed from various perspectives to provide a new way of watching this scenario unfold, one that provided access to all aspects of the disaster. This local scenario that involved students from the Digital Communication and Media program provided me with an opportunity to examine 360-storytelling through a research project. This footage was compiled into an immersive video that viewers in my focus groups experienced with a Virtual Reality headset. This became the basis for my focus group research, and provided me with a piece of VR storytelling that participants could respond to, ultimately answering my subset research questions in a variety of ways:

RQ1: What is the best way to construct a 360-degree story?

RQ2: What decisions are made to create the most engaging, ethically accurate story?

RQ3: What does an audience look for in a 360-degree story?

Taken together, this feedback helps me to better understand the impact of 360-degree storytelling and how it can be used to engage post-secondary students. I created my research design around this video, which became the foundation of my focus group research.

Research Design

When engaging in research design I used David deVaus's (2001) *Research Design in Social Research* as a resource. DeVaus says "when designing research, we need to ask: given this research question (or theory), what type of evidence is needed to answer the question (or test the theory) *in a convincing way*?" (emphasis original, p. 9). By creating this design or structure before engaging in data collection I can ensure that "*the evidence obtained enables us [me] to answer the initial question as unambiguously as possible*" (emphasis original, p. 9). For me research design meant filming, preparing and editing the mock disaster 360-degree video so I had a model for focus group participants to respond to. The immersive quality of VR means in order to get the full effect of this technology, participants needed to have an example to experience.

The preparation for the creation of this video started in January 2017 through regular meetings with faculty from all four programs involved in this event. Collaboratively, the faculty decided on the content of the mock disaster, how many participants were needed and the planning that would be necessary to make it a reality. Previously, mock disasters included the aftermath of a drunk driving incident with multiple vehicles, an active shooter on campus and an incident that took place on the border between Alberta and Montana. We arrived at depicting a fentanyl overdose because students in all four of these programs may be expected to understand how to respond to such a scenario. This intense preparation meant that on the day of the mock disaster students were able to focus on capturing the event from several perspectives and angles.

Following the mock disaster, my co-workers and I incorporated interviews with faculty from each of the four programs to model the 360-degree piece after a typical news story. Because I am interested in understanding how to engage post-secondary students in journalism, it was very important that our video was engaging and reflected the type of content that news companies are currently experimenting with and producing in this format. Please see the Appendix for more information about the decisions about why video cameras were placed where they were, how the script was created after the footage was obtained, as well as other post-production decisions about when different scenes should be stitched together to create a strong narrative that ties the storyline together.

Throughout this entire four-month process, I kept a reflective journal that detailed these processes and allowed me to make concrete and abstract observations about what was going on, based on deVaus's account of descriptive research (p. 1). All of this early design and research (through the creation of my literature review) helped me make predictions about how students might respond to such material. I have a moderate amount of familiarity of VR and when I watched the preliminary version of this video, I made the following notes and predictions based on what I anticipated arising in the focus groups:

- Participants would understand what direction to look over the course of the five-minute video.
- Participants would have previously had experience wearing a head-mounted display.
- Participants would have much to say on the experience they had just witnessed.
- The video would elicit a strong emotional response in participants.

I also expected certain key words to arise from discussions in the focus groups. The key words come from my literature review: immersive, immediacy, engagement, connection and ethics.

Since the field of VR research is still relatively new and we do not yet know precisely how this type of storytelling affects an audience, an exploratory design seemed best to carry out my research. Even though I had some preconceived notions of what might emerge, the newness of this technology means I could not predict how students would understand this method of storytelling. This theory testing approach helped me further refine the ways in which I would employ this video, and the methodology that would help me answer my initial questions. While I sought to meet an objective, I also endeavored to allow for new findings and theories. In this next section I will discuss my decision to use focus groups as a way to collect data.

Data Collection Methodology

Focus groups allow for "rich, detailed data" (Carey & Asbury, 2012, p. 15), providing access to perspectives, behaviour, attitudes, and beliefs. They are used to explore complex issues and have the ability to give voice to unheard and vulnerable populations. They are typically organized into one semi-structured session, and stimuli such as guiding questions or photos are often present. Rich data comes from participants who are eager to be heard, and from facilitators who have good people skills and are well-prepared. This type of qualitative research is utilized most in marketing studies, as well as in the social sciences (education, nursing, psychology, social work, and sociology). I explored a purposeful sample of 16 individuals (three groups of varying numbers) gathering the results of observations made by focus groups viewing the 360-degree video filmed for the mock disaster. Carey and Asbury note that focus groups typically include between 5-10 participants (p. 45). As Patton states, "Small purposeful samples yield in-depth understanding and insights rather than empirical generalizations" (2002). As well, Krueger & Casey suggest "Focus groups are less threatening to many research participants, and this environment is helpful for participants to discuss perceptions, ideas, opinions, and thoughts (qtd.

in Onwuegbuzie, 2009, p. 2). It is this rich data fostered by small group conversations that I hoped to collect.

As Carey and Asbury state, good planning is key to successful focus groups. By reading their book *Focus Group Research*, I outlined some key considerations and guidelines for myself as a facilitator. I created a checklist to address my roles and responsibilities. For example, the dominance by one member of a focus group could change the dynamic of the outcome. Secondly, being a strong facilitator means being in control of the conversation to ensure members stay on task. It is these obstacles that I prepared before assembling focus groups.

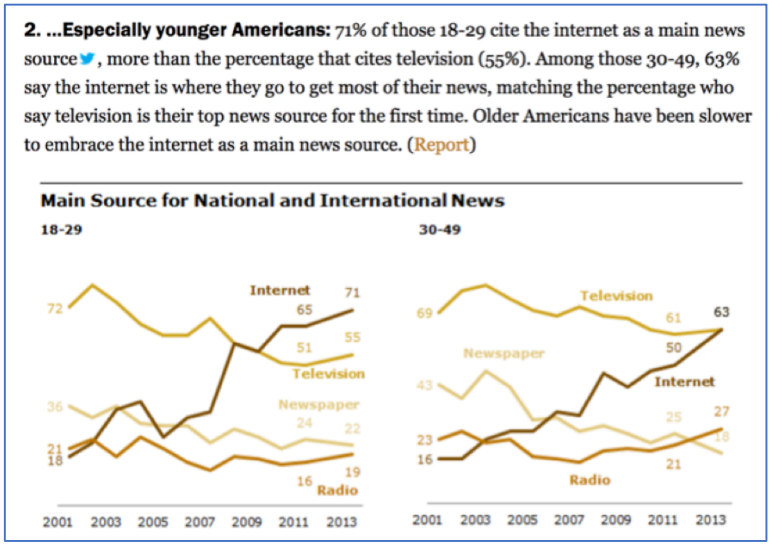
Participants

If participants met the criteria of being a Lethbridge College student and were between the ages of 18-30, they had the opportunity to volunteer to participate in focus groups. They verified their age by showing either a passport, driver's licence or birth certificate. They also verified their enrolment in Lethbridge College by providing their student card. After the semester ended I sat in the Buchanan Library and recruited students in between their final exams. I let students know about the opportunity for involvement in a focus group with the opportunity for free pizza. Carey and Asbury note that food often facilitates good pre-session conversation and also gives participants something to do (p. 47).

Participants had to be able to wear a virtual reality headset also known as a head-mounted display (HMD), as well as have strong vision and hearing. I decided to include post-secondary aged students because trends show they are gravitating to the internet for current events. Using a 360-degree video allowed me to discover what it is about this type of storytelling that engages post-secondary students, and what facets would create further engagement. VR might be a way to get post-secondary students more interested in the news. By choosing a demographic that is

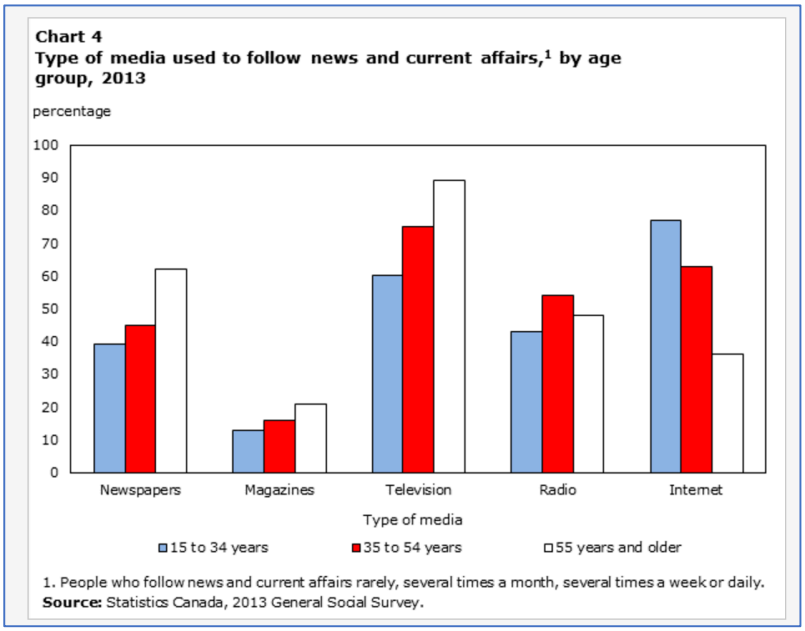
presumably focused on new technological trends in order to share content about current events (which young people are becoming more and more disconnected with), measuring the benefits and drawbacks of VR might help to better answer my research questions. Both the Pew Research Center for the people and the Press and Statistics Canada indicate that more people are getting their news online, especially younger Canadians and Americans. Amongst young people, 71% of those 18-29 cite that internet is their main news source (Pew, 2013). In 2013, Statistics Canada found that those 15-34 use the internet to follow news and current affairs.

Figure 1.



Pew Research Center for the People and the Press, 2013

Figure 2.



Statistics Canada, 2013

The reason I have excluded middle-aged and senior demographics is because I want a narrow single demographic to observe, and especially a demographic accessible to me as a college instructor.

Focus group participants were randomly selected during the spring exam week. This might have excluded programs that do not have final exams including the four programs associated with the School of Media & Design (this is a group of post-secondary students who work with new technologies on campus and might have been more familiar with VR and more comfortable with participating in a study like this). I e-mailed consent forms to participants once they agreed to attend one of the three focus group sessions based on their availability. The number of participants per focus group was determined by their individual schedules. Although I obtained consent, I took Carey and Asbury's advice that consent is an ongoing process.

Setting

This study and associated focus groups were conducted in Lethbridge, Alberta at Lethbridge College. The College has a variety of classrooms that I had the ability to book for free that allows three independent groups to be carried out within a few days. Isolating groups from each other is imperative to a rigorous study. In its research guidelines Duke University says the best way to conduct a focus group is to "arrange for a comfortable room in a convenient location … The room should have a door for privacy and table and chairs to seat a circle of up to 12 people" (Elliot & Associates, 2005). My familiarity with the layout of the classrooms allowed me to be comfortable in the space and know the best way to set up the classroom to encourage participation, something that I am familiar with as an instructor. Using the College as a familiar setting for students is intended to allow participants to more actively participate in the survey and questionnaire without making them feel uncomfortable. As Hatch (2010) states, "Whenever people enter social situations with which they are not familiar, they are anxious to find out the rules for appropriate behaviour in those situations" (p. 73). Other meeting locations in Lethbridge would not work as well because of the cost of meeting room spaces and my unfamiliarity with their Wi-Fi capabilities and associated break out rooms. As well, student transportation might have excluded students who could not get to an off-campus location. I also have access to an IT team at Lethbridge College that could provide assistance if any technological issues arose.

I set up the room so students could observe one another during the focus group, I placed the VR headsets in front of every participant if they wanted to become familiar with it before the session began and I put on each headset to ensure the video was loaded and ready for participants to view. I sat with a chair facing all focus group participants where I could take notes while they

responded to questions. I also made it clear I was recording each of the sessions and my recording device was set up between myself and the participants.

Although I was happy to utilize a familiar setting in a classroom, there is an inherent power imbalance that comes from an instructor being at the front of the classroom, separate from the students (participants). However, I made every attempt to keep the conversation casual to eliminate any power bias between the participants and myself.

Instrument

I created 10 focus group questions to ensure validity by relating back to my overarching research question as well as the three subset questions to ensure I remained focused on my topic. I chose open-ended questions and I created follow-up prompts in case initial questions did not elicit strong responses. With a limit of only a few questions that related to each research question, I made every effort to be concise, direct and focused. One-on-one interviews and questionnaires were not used in my research because focus groups allow for dialogue and interaction between participants and reflection of observation by individual participants to identify if they agreed with others sharing their responses. Gill, Stewart, Treasure & Chadwick (2008) note one benefit of focus groups is the ability for a facilitator to guide, monitor and record the discussion. This can allow for interjections, additional information and facilitation by myself since I have experience in journalism and VR. Focus groups collect many opinions in a short period of time. One-on-one interviews were not possible to elicit this much response. As well, Nassar-McMillan, Wyer, Oliver-Hoyo & Ryder-Burge (2010) state that the rich benefits of focus groups lie in their ability to provide "interview data, coupled with social interaction [which] generate[s] new ideas from the data" (p. 1621).

Participants adorned a head-mounted display to watch a five-minute video of Lethbridge College's mock disaster. I used three focus groups to collect the data. I used the discussion in the focus groups to explore themes of watching 360-degree news. Viewers shared their feedback verbally, I recorded the conversations in the focus group sessions, transcribed them and found nine emerging themes. Using a focus group is the best way to gather information effectively after experiencing a news story because it allows participants to share their own thoughts with what the experience did for them.

The questions I asked in the focus groups were (See Appendix G for more detail):

1) Tell me a little bit about how you usually get your news.

2) Think of a news story that stuck with you and tell me why that story was so memorable?

3) What was your impression experiencing this story in 360-degrees?

4) How do you think your experience of this story would be different or the same if it was in print? On TV?

5) What things did you look at over the course of the story?

6) Is there anything you didn't like about this experience of the story?

7) What do you remember about the story?

8) How often would you like to experience news this way?

9) In your opinion is the VR experience more impactful in terms of how you feel about the story, as compared with other types of media?

10) Is there anything else you would like to mention that hasn't been brought up already about this 360-degree experience?

Data was collected from direct questions in focus groups that intend to provide rich and thick descriptions about people's personal perspectives on the emerging technology. Information

was collected with empathic neutrality. In gathering data, I used deductive analysis to look at patterns, themes and inter-relationships.

Procedures

Below are the steps I used to conduct my study. I chose these steps because of what I think will work best in isolating focus groups to gather information for research gathering. Challenges I anticipated were people who have glasses feeling uncomfortable wearing them with the headset, and if the headset will actually work if their vision is weak.

1. I, (focus group facilitator) recruited volunteers by sitting in the Buchanan Library at Lethbridge College. After signing up, volunteers were sent an e-mail to explain the context of the focus groups, the time and place they should arrive, as well as a consent form they signed. After focus group questions were answered, I promised to provide participants free pizza.
2. Once I obtained 21 volunteers (7 per focus group) to sign up I printed out copies of the background and consent forms and made them available to participants. Kitzinger (1995) says "Focus group discussion of a questionnaire is ideal for testing the phrasing of questions and is also useful in explaining or exploring survey results" (p. 300). I chose 21 participants because Kitzinger refers to an ideal focus group size between four and eight people. I chose the larger number so I could have more robust data. Kitzinger also notes "sessions should be relaxed: a comfortable setting, refreshments, and sitting round in a circle will help to establish the right atmosphere. The ideal group size is between four and eight people" (p. 301).
3. I led focus groups and had two audio recorders in case one of them failed. I was familiar with troubleshooting the Samsung 360 headsets in case there were technological challenges.
4. During each focus group I had enough virtual reality headsets and headphones for all participants. I ensured there were enough seats for everyone and they had strong sight lines

when I asked them questions. Seven Samsung headsets equipped with Samsung Galaxy S7 phones were connected to the college's Wi-Fi and the mock disaster YouTube video was queued up to play in each headset.

5. Before everyone viewed the video, I provided a brief context for what they were doing. Kitzinger states "the facilitator should explain that the aim of focus groups is to encourage people to talk to each other rather than to address themselves to the researcher" (p. 301). When introducing a session, Carey and Asbury suggest sharing information that allows participants to be more comfortable: "Information about the project, expanded from the recruitment letter, includes the purpose of the study, which organization is supporting this project, and why the funding agency or supporting organization it interested in this work. Also described is how the data will be kept, who will have access, and who will transcribe or watch the video recording" (p. 48). The facilitator should also set ground rules for discussion, mainly, that only one person speaks at a time and that all answers are valuable (p. 49). Sessions should include a combination of guideline questions and probing questions, and should end with a last question. It is the goal of the facilitator to help the group explore the topic (p. 66).
6. After asking each focus group question, I encouraged all participants to voice their feedback. I took notes during the focus group to identify participants by numbers without any identifying characteristics. The entire conversation was recorded with audio to assist in the transcribing process. Kitzinger says "ideally the group discussions should be tape recorded and transcribed. If this is not possible then it is vital to take careful notes and researchers may find it useful to involve the group in recording key issues on a flip chart" (p. 301).
7. Once the group discussion was exhausted, I repeated the question and asked it in a different way to ensure all participants were involved.

8. Participants were encouraged to have a conversation with the entire focus group and not engage in side conversations to ensure all ideas were effectively captured.
9. The focus group format was the best format for the collection of qualitative data. Kitzinger says, "focus groups are better for exploring exactly how those opinions are constructed" (p. 302).
10. The discussion lasted one hour. After the questions concluded, I provided pizza for participants and I gathered up the Samsung VR headsets to ensure they were shut off.
11. One of the difficulties and challenges I anticipated was whether I would have enough focus group participants. In the end there were enough participants in the first two groups (7) but only two of the seven members showed up in the final group. I was fortunate that the two participants had much to share on the topic. The timing of the mock disaster had to occur at the end of the semester which changed the timeline for when I could carry out focus groups. Having the focus groups during exam week limited the number of participants available. I was hoping to have students from outside my program participate, but students from some of my courses volunteered. Mathison (2005) states the "hermeneutic tradition also accepts this natural and inevitable tendency but employs reflection on bias and prejudice as a key element in understanding and knowledge creation." I worked hard to be aware of my bias and the personal relationships I had formed with these students over the course of two semesters. I stayed focused on answering focus group questions in the right order, but sometimes did not use the follow-up prompts since participants had enough to say for initial questions. With any new technology, there are challenges to ensure it works correctly. The first focus group was patient while I had to set up the VR headsets with the mock disaster playing in 360-degrees and not a traditional rectangle. Setting up the headsets with Wi-Fi to ensure the videos played correctly and in the right format was challenging and time consuming. The headsets were more temperamental than I

anticipated. Another challenge was when focus group participants volunteered with their friends as they usually echoed each other's responses, "self-censoring and conforming" (Carey and Asbury, p. 33) instead of thinking of original answers.

Analysis

After concluding my focus groups I had data from three sources: my reflection journal, my field notes from the focus groups and an audio recording of the focus group conversations. The next step in my analysis was to create transcriptions of these audio recordings. Rather than hiring a professional transcriber, I spent several days listening to and transcribing the audio clips. This intensive process was mitigated by the use of software that slowed down the speed of the audio, giving me time to ensure accuracy. While I wonder how this process might have looked different with the use of a professional transcriber, my proximity to the data was enhanced by the fact that I could recognize voices and match them to my field notes concurrently. Carey and Asbury note that transcription is a process that can remove some of the data. As well, a verbatim transcription is not necessarily a clear reflection of what happened in a focus group (p. 39). However, by utilizing my field notes throughout I was able to more accurately reflect the synergy and energy of the focus group. This way I was able to focus not only on what was said, but how it was said and to note whether there was intensity to any opinions expressed.

Early in the transcribing process I was concerned about the reliability of the data because of the low volume of the audio recordings. When I imported the audio into the transcribing software, I was able to control the volume to ensure accuracy.

I read the transcripts multiple times before I even thought about coding and themes. I highlighted and circled important terms. I looked for what wasn't there, as well as what was there. I also paid attention to minority opinions as Kitzinger (1995) states, "As in all qualitative

analysis, deviant case analysis is important-that is, attention must be given to minority opinions and examples that do not fit with the researcher's overall theory" (p. 301). I measured it against key terms that came out of the literature review and I immersed myself in the transcriptions. This was so immersive not only because I was doing the transcription process, but because I read through the transcriptions. After becoming familiar with the data I began thematic analysis. Carey and Asbury describe thematic analysis as identifying patterns or themes. It engages with immersion in the data, development of codes, coding the data (merged with field notes), identification of themes and review for refinement (p. 83).

I used Microsoft Excel to separate out nine themes that arose from the transcripts and from there I coded the most frequently used words and ideas throughout. I chose not to use a qualitative data analysis software because I felt more connected to the material. As well Carey and Asbury note that ethical concerns with data analysis usually arise with software and electronics to store data, and considerations about when and how to delete data. My ability to have control and stay close to the data lessened ethical concerns. However, one limitation of my analysis might be not having software that might have picked up on additional themes that I missed. From these themes I was able to engage in inductive reasoning allowing me to move from observations to theory (deVaus, 2013, p. 6).

In summary, as technologies evolve, the world of journalism is changing rapidly. Post-secondary students provide an effective audience to appreciate the changing role of technology. If Virtual Reality is going to emerge from a niche of journalism into the mainstream, then this exploratory research is invaluable. As young people are being pulled in multiple directions with their media consumption, it is worth asking how 360-degree storytelling can engage post-secondary students in journalism. If VR can integrate with online platforms, then journalism will

find new and larger audiences (Pew Research Center and Statistics Canada). In laying out the above background information, instruments, process, validity, and bias, I create one such model of how qualitative research can be used to further the study of VR journalism.

Next, I will outline my data analysis to explain how the results of the three focus groups provide some answers to my research question and subset questions. While there is a need to explore further demographics to understand how middle-aged and senior citizens respond to 360-degree/VR journalism, this focus group study reflects on a model of gathering post-secondary student feedback about this medium.

Findings and Discussion

In this qualitative analysis, I identify how college-age students embrace 360-degree storytelling by watching a five-minute feature news story (See Appendix D for the full script) in a Virtual Reality headset, commonly known as a head-mounted display (HMD). This five-minute feature combines interviews from four faculty members at Lethbridge College, as well as live footage from the Lethbridge College annual mock disaster filmed in 360 degrees on March 25, 2017. My overarching research question is, "How can 360-degree storytelling engage post-secondary students in journalism?"

To explore this question I hosted three focus groups at Lethbridge College with 16 college-age students in various programs in April 2017. In the span of an hour I asked the students (9 female and 7 male) 10 questions beginning with how they consume news on a regular basis. Second, I asked them to have a general discussion about news stories to identify which ones they remember to understand what is important to them and how they make sense of news. These two critical questions laid the foundation for the rest of the discussion. Next, participants watched the five-minute documentary using the VR headsets paired with headphones to make it an immersive experience. After each focus group participant watched the feature, I asked them a series of questions and facilitated a discussion intended to elicit responses in relation to this study's concern with how 360-degree stories are constructed and what viewers noticed.

In this chapter I will provide an analysis of the data collected through focus groups. This will involve the description of nine themes that emerged from coding the transcripts. I will highlight the very dynamic perspectives of the participants before following up with a discussion of my findings. This discussion will return to my research question: In what ways does 360-degree journalism change the way journalists tell stories? I will also address my subset questions:

- RQ1: What is the best way to construct a 360-degree story?
- RQ2: What decisions are made to create the most engaging, ethically accurate story?
- RQ3: What does an audience look for in a 360-degree story?

Findings

In order to explore how the participants responded to my focus group questions, I will examine each theme in turn. I began with keywords and their frequency in the focus groups to generate the nine themes. I looked at what key words were represented and began grouping these based on similarities. After I had a grouping of keywords I connected these to an overarching idea or phrase. These ideas and phrases were then further refined into themes. A summary of these nine themes is present in Chart 1 below.

Chart 1. Themes emerging from 360-degree focus groups

Themes	Positive	Negative
1. News consumption	Various sources	Single source
2. How stories are remembered	How a story brought a community together.	Traumatic experience that haunts them.
3. Comprehension of content	By being in the middle of the action, the story made more sense.	Didn't understand all elements of the documentary, too confusing and/or busy.
4. Feelings	Empathy and/or compassion	Sad, depressed or overwhelmed.
5. Health	No issues watching content, no eye strain, no dizziness	Nauseous, panic attack or heart sped up.
6. Invasion of privacy	Media law says people have no rights once they die.	Watching a crime scene in this format feels like a violation of privacy for all involved.
7. Technology	Watching a news story in this format helped in the appreciation of the content.	Technology interfered with the understanding of the content through slow internet speed, pixelated video and cumbersome wearing of the headset.
8. Control	Participants enjoyed having the freedom to look where they wanted over the course of the story.	Participants preferred guides to let viewers know where they should look at the appropriate time.
9. How often would participants want to watch content this way	Frequently	Rarely or never.

Theme 1: How participants choose to watch the news

To ease into conversations about technology and media, I first asked focus group participants about their own media habits: what they consumed, when they consumed it, and how

they accessed it. This set a comfortable tone as I asked participants to begin by talking about what they know and what they are familiar with. This also provided me with good context for framing questions.

The majority of participants noted that they found news through social media, the internet and their mobile phone. However, participants 8 and 14 noted that they still make use of traditional media to inform their worldview. As Participant 14 said, news consumption was "through social media, watching it online, radio, newspapers, I get a little bit of everything." This wide range of media consumption pointed towards a "digital first" impulse. Yet, participants voiced concerns about the reliability of news found through digital platforms.

For example, Participant 13 hinted at the danger of fake news: "I usually get [news] from television or some social media outlets that I deem trustworthy over a lot of other ones like more accurate news." Participant 9 admitted although they like listening to the radio or watching television with their family (a social pastime), they don't like watching the news. This social impulse came up again in the conversation when Participant 12 mentioned that not only did they search social media for news updates, but it was their mom that kept them updated about current events.

My assumption that post-secondary students would consume news digitally was largely represented by the responses by the focus group participants.

Theme 2: How people remember watching the news

To get an understanding of what participants gravitate to and what the stickiness factor is when it comes to memorable stories, everyone had a different answer. Most of their answers related to something that they are passionate about; that is, there seemed to be a relationship between memory and personal interest. Participant 3 recalled a story in Pincher Creek where

barbed wire was being strung across bike and quadding paths: “It’s just oh my god, crazy that someone is willing to do that and it kind of stuck with me, to remind people to check it before you go.”

Other stories recalled included the golden goal scored by Team Canada in the Vancouver 2010 Olympics (Participant 4): “I remembered where I was, I brought a TV to work at A&W to watch the entire game, it was something huge.” A Lethbridge story about a woman who had 100 dogs in her possession in a residential home stuck in Participant 2’s mind since they adopted a dog from Lethbridge Animal Services. Participant 2 said, “That was quite shocking because I couldn’t think about how many dogs could fit in that house.”

It was a triple murder story that included the murder of a dad and a daughter in the Crowsnest Pass that stuck with Participant 5. This stemmed from that individual’s background and personal experience: “I have a son about that age, so that one hit close to home.” Participant 11 recalled when the large Hadron Collider was turned on for the first time: “I remember that story just all the excitement about it and what it could achieve.” For Participant 8 – who was from a small Saskatchewan town – the news story that stuck best was when their community hosted Latvia and Austria in world junior playoffs. The participant noted, “It was just the whole hype around it. Everybody around town was involved in it, it was pretty cool to see it in the paper as well.”

Yet, the story with the biggest global impact was September 11, 2001. Participant 16 admitted it being the biggest event of her lifetime. She said, “It obviously is salient because it was a really big deal and it was prior to social media, so it was all live streamed on TV…there was not really much internet coverage back then.”

Participants also remember stories they found personally impactful. The concept of injustice resonated with several participants. Stories that dealt with injustice were mentioned by five participants – 100 dogs seized from a single home, someone stringing barb wire across mountain bike paths, a murder of a child by her father, a video game developer receiving unfair treatment and a man who was refused a lung transplant because he smoked marijuana once in his life.

Most of the participants were able to cite at least one news story that stuck with them, some stemming back as far as sixteen years. These memories showed these were clearly impactful, which is one of the most important news values journalists consider.

Theme 3: Comprehension or misinterpretation of content

One assumption I had going into the focus group research was that post-secondary students might have some familiarity with VR, and with wearing a head-mounted display. However, once participants viewed the video and engaged in discussion about the experience, I noticed that this was not actually the case; their familiarity with this technology was very low or limited.

Some had never worn a device like an HMD before so there was some adjustment and fine tuning to get them used to it. When listening to the audio recordings from the focus groups, I was aware of the lag and gap times between the first two questions and the set-up for the video on the displays. I even had to work one-on-one with many of the participants to set up the video correctly in their HMDs.

However, after the initial technological difficulties, positive comments dominated the reactions of participants. They overwhelmingly enjoyed the experience, which was new for many of them. Several participants commented on the fact that they were able to look where they

wanted; their perspective was not limited to the single-camera perspective emblematic of traditional broadcast. One participant commented, "You get to see everything and everything that is happening, as opposed to just getting like the version that people want you to hear," (Participant 8). Participant 5 also appreciated the transparency of the story when it is told in 360-degrees; no information was concealed:

> The news uh, tries to portray I guess people in certain ways, like the stabbing could be portrayed differently, but since you see everything, you can make your own decision about it rather than having the decision made for you.

Participant 3 preferred the perspective offered by a traditional broadcast and would have liked to have visual cues that signalled where to look: "I think it would help if when it cut to like somebody talking like in the stand-up portion, [if] there are like arrows to guide you where you are like looking over and then suddenly there is a bookshelf, well where am I supposed to look?"

Some participants had more difficultly with viewing a news story in the VR format. The actual understanding of what was going on in the story was lost on Participant 6 who noted, "It was very, very realistic, but I haven't done anything like this before, so I'm like, it was hard for me to focus on what was actually happening. It was more trying to figure out how it works, instead of focusing on what was actually happening."

Some participants chose to watch the video a second time and had a stronger sense of what transpired because of that second opportunity. Participant 15 said, "I think I got to get like the full of it now because I could actually, I knew what I was supposed to be looking at." This was a common trend that echoed amongst other focus group participants who chose to watch the piece a second time. If engaging in research like this again – where not all participants are familiar with this technology – I might build in a mandatory second viewing in order to facilitate

stronger comprehension. However, I found that those participants who needed to view the video a second time did, while those who felt comfortable with a first viewing left it at that.

Theme 4: Feelings relating to the content

While understanding the content was part of the experience, the visceral reactions of the participants was also important for me to note. There were strong feelings that came up in many participants as a result of watching the 360-degree video. It was a mix of people appreciating the work emergency personnel do contrasted with others thinking it was too overwhelming. Participant 9 said they appreciated, "how important it was for everyone to be able to work together so you know to make sure everyone is safe and because we are really going to need that in times of disasters." This participant admitted to appreciating seeing this behind-the-scenes focus, which strengthened their understanding of what it is that emergency personnel do.

Participant 14 said watching the piece in this format actually made them relate to the story even stronger: "The thing with print, you don't get the graphic feel of it. With print it doesn't really provide you with emotion as much as VR. You can hear the screams and the crying from people." Participant 10 agreed, stating, "You actually get the emotions of what you would be feeling if you were in that situation."

Yet, other participants were too overwhelmed by the format to engage in content. Participant 16 said, "I actually can't watch certain movies because I … internalize it too much and I can actually throw myself into a panic attack … If it was a real story I don't think I actually could emotionally handle it. Like I am fine with reading because I kind of, I have that distance from it. As soon as I'm there, yeah it is a lot for me." Participant 6 and 7 might appreciate happy news stories in 360-degrees because watching something that was a serious news story could be, just like Participant 16 said above, too much for them.

Emotions ranged from participants feeling overwhelmed to appreciative and immersed in content. For some, the format was simply too overwhelming, and understanding of content was lost.

Theme 5: Health impacts of watching a story in 360

When a VR piece is presented through a HMD, the video appears in each eye to create a three-dimensional aspect. It took some time for some participants' eyes to adjust. Participant 4 said, "Yeah, the VR can be a little bit hard on your eyes, to watch all your news, your eyes would be a little uncomfortable." Participant 8 had similar feelings: "It was a bit of an adjustment trying to take the headset off, like it takes you a couple minutes to adjust." It was Participant 9 that thought even being in the headset was a bit of a danger because of what they could bump into, especially with hearing limited by headphones: "I think there should be an option that you can maybe use your hands to turn …people can get injured, like maybe have an option where you can wave your hand or do something."

Taking this comment a step further, Participant 14 was worried about those who could become addicted to staying in a headset refusing to return to reality: "I like the idea of Virtual Reality, but I think it could become dangerous because if you are not living in your own reality, it might be better to live like in a Virtual Reality thing and take in all of your information that way."

Finally, Participant 16 not only admitted that there was the possibility that watching a news story could throw them into a panic attack (as it did when they previously watched a scary movie), they also admitted that their heart rate spiked as they were wearing a Fitbit (an electronic step counter and heart rate monitor) at the time of the focus group. The same participant said

they were worried about the health effects on a large population who watches a powerful news story: “That could actually cause more trauma to ripple out because of it being told in this way.”

Most participants were able to engage in the news story without health concerns, but the voices represented above show a concern about how this technology could be harmful to their health.

Theme 6: Invasion of privacy

Two participants were very vocal about privacy concerns related to VR, a facet I had not previously considered. Participant 16 was very forward thinking in her belief that 360-degree journalism was going to be a regular occurrence in the future. She said she thinks it is too invasive, and cited concerns of eventually being able to see, through VR, someone dying. She said, “I think my last concern would probably be for the people, like they are involved in the story. What level of privacy are they being given? What option are they being given for maybe having their death blasted on the internet or some traumatic event that they can now relive in 360 for the rest of their life?” Rather than being concerned about her own privacy while encountering VR, she expressed concern over the privacy of subjects of VR storytelling. Did they know what they were agreeing to? Were they aware of how invasive it could be? Was consent being given?

However, Participant 15 differed in her opinion appreciating that if a family member died they would not mind a story on them in this format:

> [If] someone else was responsible for and the news was reporting on that, I feel like I wouldn’t mind too much, just because I love my parents, I love my family. I feel like if you are reporting on something like some wrongful death or something like that … that something happened to them … I think I would be more okay with that than holding back the story at all.

Then, Participant 16 addressed sensitive topics such as sexual assault and how there should be a lot of deliberations before a story on an issue like that is covered in 360-degrees. She said, “There are a lot of very sensitive things, that for me I feel like you don’t need videos of that kind of stuff. Those things should not be out in the world because it’s not necessary and it’s not adding value.”

Opinions about privacy varied, yet these two participants thought it was an important consideration to address.

Theme 7: Technology

When a new technology is introduced, many people gravitate towards it because it is exciting and new, but sometimes the latest technology is a distraction to the story being conveyed. Participant 4 noted limitations of the technology in how it conveys the story: “There is some things that are just kind of pointless to be able to see around you and just, a two-dimensional picture would be able to tell the whole story.” Participant 13 thought the camera positions were not ideal and that was a distraction for him. He said, “It was just from a technical standpoint, I generally liked the video as a whole, but some of the positions of the camera were a little bit off for me.” This type of concern is linked to the technology.

Participant 13 thinks the headsets will be the biggest obstacle for mass adoption of 360-degree journalism. He cited cost as one obstacle to most of the population accessing news stories through VR. He also had an issue with improving the sharpness of the picture using the focus ring: “I couldn’t get it clear enough no matter how much time I tried wiggling the little thing. It was still somehow always fuzzy.” Participant 15 agreed and had to change headsets: “Mine was like blurry the whole time...Is it supposed to be that way? It was very pixelated. Like yeah. I’m not sure if it was the headset. It is kind of where the technology is at right now. Still so much in

its infancy. It reminds me when they started coming out with new consoles in the 90's and seeing the improvements of this technology."

Some limitations with the technology were evident in the focus group responses, and could have impacted data. It is possible that if participants had been more familiar with VR, issues like picture quality might have been avoided.

Theme 8: Control

360-degree video has the opportunity for a media consumer to do something they've never been able to do before – choose where they want to look. Several participants, such as Participant 3, appreciated the freedom:

> I enjoyed it because it lets you, kind of lets you take in the story your own way and look at what you want to see. Instead of being guided, you can be there. You can listen to the person talking, like the voiceover, but you can also go, what is that person doing and you can follow that person and you can see how they are behaving. Like, after the stabbing I looked at the guy who did the stabbing to see what he was going to do in his reaction versus cutting to a different shot.

Participants felt like there was no barrier between them and the story. Participant 5 noted, "Since you see everything, you can make your own decision about it, rather than having the decision made for you." Participant 6 agreed and thinks having the freedom to look around a scene is an important aspect for everyone to experience: "I think anybody and everybody should have an opportunity to experience anything that way … it gives you a different point of view on things." Participant 5 also had an interesting point of view when it came in what the control added to the story, saying, "You are more invested too because you can choose to see what you would like to see, rather than being forced to spectate it from like a certain point of view."

There were others who, because of the freedom, actually missed the intent of the story which was frustrating to them. “There was a few times I would have to turn around just to find the person,” said Participant 1. Participant 6 said it was hard for them to focus on what was actually happening. Participant 3 wanted “arrows to guide you where you are looking,” Participant 4 wanted annotations or a menu, while Participant 6 wanted a practice video to get them used to the technology: “I find like most of the most important things about this video I missed, because I didn’t know where to look or how it worked.” Participant 11 felt the experience could be distracting to viewers on a regular basis. “You could miss the point really easily… it would be hard to focus on one thing.” Participant 16 said they get over-stimulated, and because of that they “had a hard time knowing where to even focus, so I missed a lot of things.”

Because of the freedom of control Participant 16 thought that misinformation could become an issue, especially if news consumers only watched a 360-degree video once: “I think we are going to run into the issue like what are we missing? Like what did you miss? What did you not see? Like are you then spreading misinformation because you missed something very important to the story? Um, but I think it is really great in theory or could be used for great things.”

Control, or lack of control, came up often in these discussions, and again might have been influenced by participants’ lack of familiarity with this technology.

Theme 9: Would participants want to experience news in this format?

When participants were asked if they would want to experience news stories in this format going forward, there were a variety of responses. Participant 4 said it “depended on what type of news” was being shared. The same participant didn’t think politics would be the best

format, but “something visual, a concert, sports, something with action like that would be pretty good.” This aligns with research that emerged from the literature review which showed that VR can offer viewers experiences that are not accessible to typical viewers.

The scope of the event had a lot to do with if Participant 8 would want to check it out in 360: “Maybe for like huge events like presidential elections, that would be really interesting to see through Virtual Reality.” Participant 15 agreed: “I think if it was like something like world news, like something was really important going on and everyone really needed to understand that it was happening, then I think it would be really beneficial. Natural disasters and things like that I think it would be really interesting to experience that first hand.” Participant 15 added that for global disasters like the earthquakes in Haiti, there would be more people around the world understanding the scope of what people went through if they watched that story in 360 degrees: “When Haiti happened, everyone really didn’t understand the gravity of the situation.”

Participant 13 didn’t think they could handle the intensity of a global disaster, noting, “Because this was like all actors [the mock disaster they viewed], like if this was something happening in a war-torn country or it was a disaster or something like that, I wouldn’t want to see it in 360, like maybe that would be a little too much for me.” Participant 16 agreed that the intensity of a news story would be overwhelming to them: “I personally would not, unless it is some you know happy [story], not people dying story. Like, if it is more positive news, I think I would actually really enjoy that, because then I could feel that you know, happiness. Um, anything that is going to sadden me, I think it would be too much.”

Participant 9 said they would want a Netflix-style menu where they could “have the option to pick and choose” what news stories they could watch wearing a headset. Although VR

appears to be a technology that is adopted more readily, many participants are not at the stage where they are comfortable with viewing news in this format on a daily basis.

Now, I will move on to my discussion, where I will relate these findings to my overall research question and my subset question in order to make conclusions about how VR can engage post-secondary students in journalism.

Data Analysis

Procedure. As mentioned in the methodology chapter, my transcripts were analyzed using a qualitative systematic review finding themes that emerged related to my overarching research questions. The themes were identified after looking at the frequency of words and phrases that arose after conducting the focus groups. Focus groups allow for great opportunities for in-depth feedback. Krueger & Casey state, "Focus groups are less threatening to many research participants, and this environment is helpful for participants to discuss perceptions, ideas, opinions, and thoughts (qtd. in Onwuegbuzie 2009, p. 2). The coding and themes were developed using multiple Excel spreadsheets to organize the qualitative data. Figure 5 below identifies how frequently each code was mentioned. I identified the terms that captured how participants felt relating to the question. From there themes arose after coding specific words.

Chart 2: Coding Frequency

News Consumption Habits	Occurrences
Social Media	9
Internet	8
Radio	6
Television	5
Newspaper	4
Mobile Phone	2
Podcasts	2
How they remember stories	**Occurrences**
Injustice	5
Prominence	4
Personal significance	2
Comprehension of subject matter	
Positive	**Occurrences**
See more	21
Being there	9
Interesting	6
Noticing more details	5
Cool	5
Realistic	4
Neat	2
Powerful	2
Intriguing	1
Impactful	1
Invested	1
Engaging	1

Comprehension of subject matter Negative	Occurrences
Missed	9
Hard to understand	6
Pay attention	5
Didn't notice	3
Focus	3
Distracting	2
Difficult	1
Want an article with	1
Arrows to guide	1
Frustrating	1
Confusing	1
Emotional Impact	**Occurrences**
Feel emotions	1
Care	1
Meant more	1
Puts in situation	1
Part of that group	1
Feel like friends	1
Theme of Control **Positive**	**Occurrences**
See	22
Freedom	5
Diff. angles	5
Specific things	2
Extra details	1
Negative	
Miss	10
Hard	5

Validity and Reliability. Joppe (2000) defines reliability as, "the extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability. If the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable" (p. 1). To ensure reliability I interviewed focus group participants of a specific demographic in a public space, I asked them to volunteer their time and if this study was replicated, I would expect very similar responses because it was a strong cross-section of the student population providing a mix of opinions related to each question.

Joppe (2000) defines validity as, "whether the research truly measures that which it was intended to measure or how truthful the research results are" (p. 1). In focus groups I used questions that allowed participants to express their opinions freely without leading them to answer one way or another. This included avoiding leading questions and providing participants with the time they required to express ideas, without giving the impression I was rushing forward to the next question. As a result, some focus group discussions ran longer than others, based on how long participants needed to express their opinions. Additionally, my research questions were provided to my supervisor to ensure their validity in how they were structured.

My research design, data collection and analysis was conducted using quality assessment of qualitative research using by offering an insightful narrative grounded in the data (Dixon-Woods et al., 2006). The aims and the objective of the research were clearly stated, and the research design clearly specified and appropriate for my aims and objectives. I provided a clear account of the process by which my findings were reproduced, I had enough data to support the interpretations and conclusions and the method of analysis was appropriate and adequately explicated. All themes and codes were tied directly to my three research questions. I used a rich,

thick description to convey the findings, I have clarified the bias I bring to the study and I have spent prolonged time in the field (Cresswell, 2014, p. 202).

Discussion

The aim of my research project was to examine the impact of 360-degree journalism and to identify the best way to create a story in this format. As well, I examined the ethical implications of creating such a piece, what decisions are made to create the most engaging story and what an audience looks for in a 360-degree story. My goal was to identify the considerations needed when creating a story of this nature. This project adds to the field of 360-degree journalism in Canada since this area of research lacks in the literature currently available, and it will provide a way for journalists and educators in this field to expand curriculum in this direction.

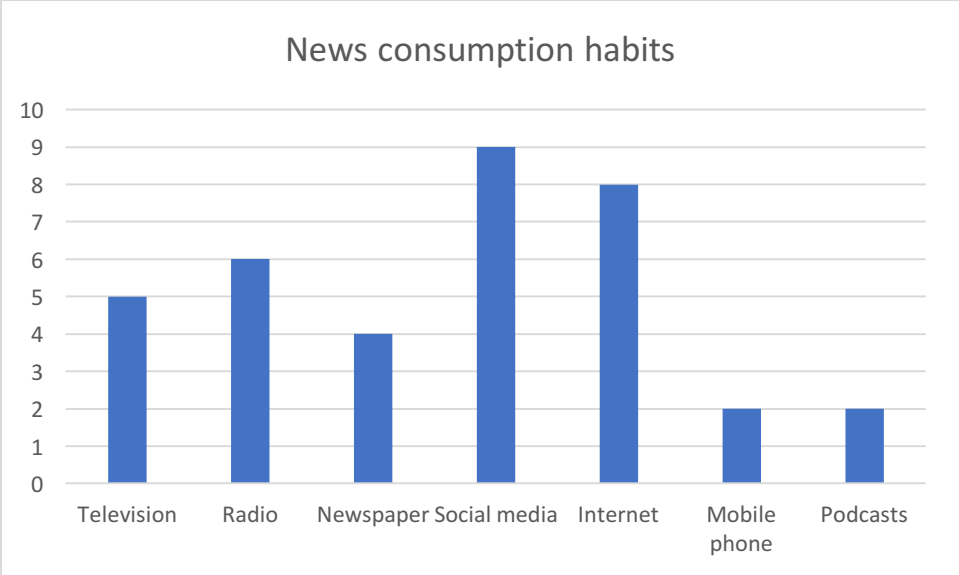
My bias comes with being a journalist for 16 years as well as an educator for the past five years in the same field. However, Bonner and Tolhurst (2002) identified three key advantages of being an insider researcher: (a) having a greater understanding of the culture being studied; (b) not altering the flow of social interaction unnaturally; and (c) having an established intimacy which promotes both the telling and the judging of truth. Further, insider-researchers generally know the politics of the institution, not only the formal hierarchy but also how it "really works" (qtd. in Unluer 2012).

To answer my overarching research question – In what ways does 360-degree journalism change the way journalists tell stories? – I will discuss the findings in relation to my three subset questions: RQ1: What is the best way to construct a 360-degree story?, RQ2: What decisions are made to create the most engaging, ethically accurate story? and RQ3: What does an audience look for in a 360-degree story?

RQ1: What is the best way to construct a 360-degree story?

What was interesting about the consumption habits of the Lethbridge College students who participated in the focus groups is they reflect how traditional media is being overtaken by social media and internet consumption. Of the 16 participants across three focus groups, the majority got their information from social media. This is a similar trend reflected in Pew Research Center and IAB Canada's Canadian Media Usage Trends Study 2016.

Figure 3: News consumption habits



However, VR technology seemed beyond the scope of familiarity for these participants, which made me drastically rethink best practices for putting together a 360-degree video, especially as this technology has not yet been widely adopted.

One of the most surprising findings was that participants valued accessibility over immersion, and were more preoccupied with being able to follow the storyline accurately. When comprehending content, most participants expressed positive feedback in how they understood the 360-degree story about the mock disaster. Individuals made multiple comments about this aspect of the focus group. Of the 88 responses by the sixteen participants about negative and positive reactions, 61 were favourable and 27 were negative (See Figure 2). Participants were

appreciative that they were able to "see more" of what was going on; this came up in 21 instances. "Being there" was mentioned in 9 instances and noticing more details (5) watching a story unfold in this format was noted. Other positive comments like interesting (6), cool (5), realistic (4), neat (2), powerful (2), impactful (1), invested (1), intriguing (1), and engaging (1) came up in the discussions.

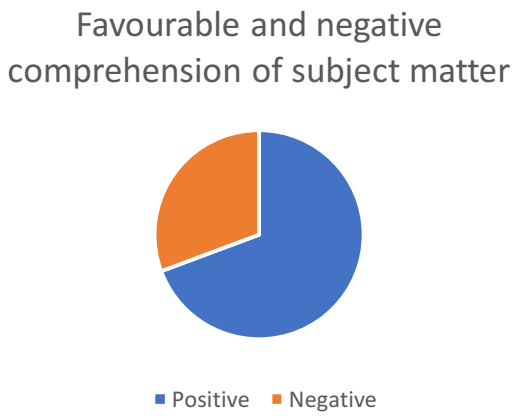
On the other hand, within the negative experiences, the word "missed" came up 9 times among six participants, it was "hard" (6) to understand, challenging to "pay attention" (5) to the right things, "didn't notice" (3) certain aspects of the video and finally three participants struggled with "focus" (3). Other individual words that were mentioned in the struggle for comprehension included the following words and concepts: "difficult," the desire to have an article to accompany the 360-degree video, wanting arrows to guide them where to look through the process, "frustrating," "confusing" and "distracting" (2). The inability to emotionally handle watching a story in 360-degrees paired with misinformation were two concepts suggested because the participant was worried other 360-degree videos may make viewers miss the point of a piece completely.

The space the video was physically filmed in was even mentioned by participants. If a scene occurred in a larger room with lots of activity in different areas, it was more likely viewers would miss important information. Viewers appreciated being inside the back of the ambulance travelling to the hospital because it was a smaller space so there was less opportunity to be distracted by other activity going on around them.

From this evidence, I gathered that one of the most important considerations to make when putting together a 360-degree video is to make it very clear to viewers where to direct their attention and focus. Immediacy as it refers to the ability to be in the same space as the action

wasn't necessarily a good thing for participants, unless they knew exactly where to look. However, this was not always clear. From this, the first consideration of putting together this type of story is ensuring viewers are familiar and comfortable with the technology. A brief training video in 360-degree format before a news story might be necessary to help viewers orient themselves, thus allowing them to more deeply immerse themselves into the story. Without the knowledge and familiarity with this immersive technology, it resonates less with viewers and takes away from the potential impact that VR offers. This was unexpected, yet it has a potentially transformative power in engaging post-secondary students in journalism.

Figure 4: Favourable and negative comprehension of subject matter



RQ2: What decisions are made to create the most engaging, ethically accurate story?

Engagement. When it came to how participants felt after watching the video, it was an interesting mix of positive (28) and negative emotions (25) with 9 instances of neutral feelings that were generated by watching the 360-degree video. The most prominent message that came up was that participants felt like they identified with feeling what the actors and extras were feeling participating in the mock disaster. Participant 10 mentioned "you actually get the emotions of what you would be feeling if you were in that situation." The amplification of being

in that experience helped many to understand the gravity of the situation, however, others rebuked it. Focus group participants were glad to be told that this was done by all actors and it was a completely fictitious scenario. Engagement comes from the ability for viewers to feel closer to the subject matter, much more so than they can get from traditional storytelling.

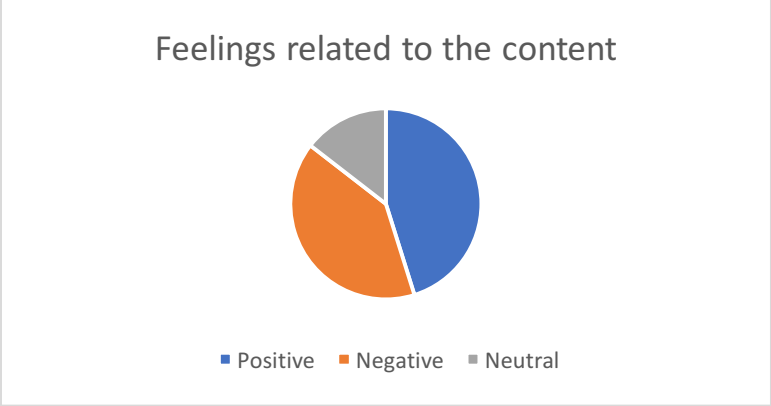
In fact, many viewers appreciated seeing how emergency personnel – from the police to EMT's to nursing staff – care about their patients. One participant remarked, "It is good to see like the paramedics and the nursing students, they all care and they want to help." Additional thoughts included the fact that the piece "meant more", it added emotion "because it really puts you in the situation…you feel like you are a part of that group…they feel like friends." The concept of empathy came up. As a result, participants thought it was important for people who are currently desensitized about the state of the world to watch a story in this format: "For the people who can't put themselves in someone else's shoes, I think that would be phenomenal for them." Interestingly, this level of engagement came from a positive depiction of helpers in this video.

This idea of searching for the positive carried through all focus groups. Participants mentioned they would want to see positive, happy stories or nothing at all. Participant 16 said, "If it is more positive news, I think I would actually really enjoy that, because then I could feel that you know happiness. Um, anything that is going to sadden me, I think it would be too much." Participants mentioned they would rather not see something like this news story in an immersive environment. Comments ranged from it was "depressing", more "intense", "it's so sad", "I would probably cry", to "it would be too much", it was "dark" and they could feel the "tension", even in the selection of the music. Other thoughts surrounded how using 360-degree storytelling could take society down a dangerous path. Comments ranged from, "it could become

dangerous", "never be able to handle news like that", "I internalize it too much", "I can actually throw myself into a panic attack" and "I could not emotionally handle it" were discussed. Also addressed was the danger of "desensitizing people even further" and the concern of going "even further in not caring" where watching a scenario like this "could actually cause more trauma to ripple out because of it being told this way."

These comments to me mean that engagement doesn't necessarily mean intensity. Engagement instead means accessing material that is not too deep, difficult to comprehend, or dark in tone. Participants prefer to be immersed in a happy story, one that makes them engage positively. My research through the literature review helped me to believe that VR could help viewers access difficult and real content that comprises of global news. However, the majority of participants in this focus group did not want to use VR in this way.

Figure 5:



Ethical considerations continued to be paramount in discussions about VR in the focus groups. One theme that arose from Participant 16 was the invasion of privacy of the people being filmed in 360 degrees. While others did not express this concern, it is an important consideration in the context of developing ethical stories for journalists. Participant 16 had a considerable discussion with Participant 15 relating to this concept as well as media ethics: "What level of

privacy are they being given, what option are they being given for maybe having their death blasted on the internet or some traumatic event that they can now relive in 360 for the rest of their life?" Participant 15 replied that media law says people who die do not have rights and had the opposite feeling, even if one of her family members was being filmed after a traumatic event:

This conversation carried on for almost 10 minutes of the focus group, and it brought up some key insights into issues about ethics and invasiveness. Participant 16 was quite concerned with how journalists then pick and choose their stories and noted, "There are people left behind that are affected as well. That could actually cause more trauma to ripple out because of it being told in this way." Since Participant 16 is involved in policy surrounding sexual assault reporting at Lethbridge College, they had a strong opinion regarding what is shown: "There are a lot of very sensitive things, that for me I feel like you don't need videos of that kind of stuff. Those things should not be out in the world because it's not necessary and it's not adding value. Some things I absolutely completely agree with but then how do you pick and choose and who is doing the picking and choosing?"

I did not expect some participants to react so strongly to the ethical considerations of the subjects of the VR video. They considered the ways that filming in 360-degrees could be more invasive than filming in traditional formats. When considering some of the more difficult and sometimes explicit material that is covered in news stories, ethics perhaps would take on a more prominent role for journalists.

Other interesting ethical concerns were raised by participants. For example, many noticed camera placement, and how this affects the role of the viewer in the story. In one scene, participants have a view from above a patient in the ambulance, which gave a participant a "god-like" feeling that made them feel "really uncomfortable." Deciding what stories journalists

should cover in this format became part of the conversation. The negative comments surrounded the possibility of triggering mental health issues of the subject matter with comments that included the choice not to even see something in this format. The words "too much" was mentioned four times alone. Other key words included "dangerous," "never be able to handle news like that," internalize it too much," "couldn't emotionally handle it," and "overwhelming" all indicate the repercussions from watching a serious hard-hitting news story that may take some time to recover from. These very in-depth conversations about ethics show how thoughtful journalists must be in the process of utilizing VR technology.

Similar to how participants reacted emotionally to the content matter, they also cited health concerns related to using VR technology, a stream of conversation I was not expecting. The actual health-related comments included the fact that watching a story in this format was, as one participant put it, "hard on your eyes, your eyes would be a little uncomfortable." Even taking off the headset was "a bit of an adjustment…it takes you a couple minutes to adjust." Because some participants chose to stand when they watched the video a second time in the second focus group, some thought it would be safer if participants could use their hands to turn so they are not bumping into objects. Others felt nauseous, and one participant said VR could trigger a panic attack simply because she can't watch certain movies. The same participant noticed that watching the video in 360 caused her heart rate to spike.

The considerations about engagement and ethics are extremely valid for journalists to consider if they are creating stories in 360-degrees. If they are not careful, the strong repercussions from emotional harm could be felt long after the story is over. Keeping these two concepts in mind also helps to rethink the ways to engage post-secondary students in journalism, and how it can shape new discussions about ethics through this technology.

RQ3: What does an audience look for in a 360-degree story?

For the most part the technology was a disservice to participants watching the 360-degree video with a Samsung Gear 360 head-mounted display. Of the 10 comments related to technology, only one was favourable while six spoke about the quality of the picture as a deterrent. Comments ranged from "I couldn't get it clear enough…it was still somehow always fuzzy," "blurry," "pixelated," "it's kind of where the technology is at right now. Still so much in its infancy" and "this one was like super blurry." Participants are looking for reliable and consistent technology that allows for clear interpretation of the story.

Other comments dove into the technical aspects of filming in 360. One participant noted, "Some of the positions of the camera were a little bit off for me." This comment seems to critique where the camera was placed in the context of the story, and how the perspective of the viewer is altered as a result. Reflecting on camera angles takes viewers out of the story, and makes them place their attention elsewhere.

Another participant mentioned the price of the headsets (a $99.99 Samsung 360 on retail at Best Buy, a $679 Oculus Rift VR headset, and up to $1,149 for an HTC Vive) would prevent people from viewing 360-degree stories in the immediate future. Participants are looking for accessible technology. Right now, the high cost point of many of these VR headsets makes it difficult for a wider audience to practice with and gain familiarity with this technology. An audience might be looking for ease of use, but practice and training with this technology is tied to how well a story is understood. Without the majority of viewers able to purchase and practice with this technology, obstacles to comprehension will remain.

The technology itself was such a leap forward from traditional storytelling formats in print, radio and television for participants that they saw 360-degree storytelling and the ability to

watch it in a headset as "too invasive. You are literally like VR'ing someone dying. It's no different than googling beheadings or stuff like that."

Since it was a college-aged demographic who participated in the three focus groups, one participant was curious to know how the older generation will accept this technology. Because the quality of VR is evolving continually, one participant's final comment considered the quality of the video and even how that can affect the complete understanding of the content: "Are they getting the whole story?"

Control (or lack thereof) was also an important consideration by participants; there were 89 total comments about control in the focus groups. Having the ability to direct their view while watching the 360-degree video was both a positive and a negative experience for viewers. Of those 89 comments spread amongst the three focus groups 64 were positive, 23 were negative and two were neutral in their tone.

The positive comments surrounding control were similar to feedback about how people comprehended the content of the story. It was an appreciation of seeing more, being present in the midst of the action and getting a stronger understanding of what the students in each of the programs got out of the mock disaster. Key words that arose out of this theme included see (22), freedom (5), appreciating the different angles (5), seeing specific things they were interested in (2) and a mention of extra details they may not have noticed in another format. Participant 12 said it was "cool to feel like you were involved in the whole thing." Participant 5 said having the control of where to look was a bonus: "Since you see everything, you can make your own decisions about it rather than having the decision made for you." Participant 3's comments were very similar with the appreciation of understanding the story as it unfolded, noting, "I enjoyed it because it lets you, kind of lets you take in the story your own way and look at what you want to

see, instead of being guided. You can be there, you can listen to the person talking like the voice over, but you can also go what is that person doing and you can follow that person and you can see how they are behaving."

The comments that included both positive and negative reactions had a lot to do with looking in the right direction at the right time. If the viewer wasn't focused on the right things, the comprehension and understanding of the whole story became misconstrued. Participant 16 encapsulated the point perfectly. "I think we are going to run into the issue like what are we missing? Like what did you miss? What did you not see? Like are you then spreading misinformation because you missed something very important to the story? Um, but I think it is really great in theory or could be used for great things." Participant 1 said "there was a few times I would have to turn around just to find the person." Participant 6 agreed: "It was hard for me to focus on what was actually happening." Participant 4 touched on a key point when deciding to embrace the latest technology, is this the best medium to tell this story? If it isn't, why force it: "Some things that are just kind of pointless to be able to see around you, and just a two-dimensional picture would be able to tell the whole story."

For those participants who did not appreciate having full control of where to look, the two most common words that came up were "hard," in that it was hard to understand what was going on and where to look and "miss" when the viewers missed what they thought were critical aspects of the story. Other single mentions of the words frustrating, confusing, didn't notice, distracting, turning and whip back to see what was going on came up.

Audio and visual cues, guidance (one participant suggested the use of arrows that would show viewers where to look), and control mattered greatly to participants, and would have aided audience engagement in and comprehension of the video.

Finally, participants expressed that there was specific content they were looking for as an audience using VR. The most popular type of story participants wanted to watch was sports-related content. The second most frequent comment by participants was having the freedom to choose what type of story they were watching. Other styles of 360-degree videos they expressed wanting to watch were concerts, movie reviews, a political rally or a significant global event.

Three people specifically agreed that watching it in a headset would be a way they would watch the news. Other comments were favourable mentioning "I would like to because it helps out a lot, to like, be there." Another participant said they would like to watch the news in this format "a lot more" while a third said, "more often, but not as my sole news outlet."

When those participants spoke up about not wanting to watch news in this format, their comments varied. Having the headsets as too expensive was one reason and participant 13 said it depends on what type of news is being consumed: "Because this was like all actors, like if this was something happening in a war-torn country or it was a disaster or something like that I wouldn't want to see it in 360, like maybe that would be a little too much for me." Participant 9 agreed by saying "not all the time, it depends on the story. Have the option to pick and choose." Participant 16 was strongly against any sad or violence related story because they could not handle watching a story in that format. But if it was a happy story, they would feel totally different: "I personally would not, I, unless it is some you know happy, not people dying story, like, if it is more positive news. But I think I would actually really enjoy that, because then I could feel that you know happiness. Um, anything that is going to sadden me, I think it would be too much."

Participants suggested that an audience using VR is looking for some element of control over the subject matter, and access to happy, light-hearted stories that might be inaccessible to

them in the physical world. They are also looking for more streamlined technology that will facilitate these experiences. Right now, they do not view the technology as delivering the best quality of content.

Limitations of Study

Price (2004) acknowledges that the limitations of a study are "those characteristics of design or methodology that impacted or influenced the interpretation of the findings from your research" (p. 66). Because this field of research in 360-degre storytelling is so new, there are several limitations of my study. First, participants' familiarity with VR technology is not consistent, and if they are not comfortable with using a HMD, then their understanding of content is going to be limited. As well, the fact that focus group participants were few (16 participants between three groups), participants were all Lethbridge College students enrolled in various programs and were between the ages of 18-30 which also limits the range of possible discussion. Hosting the focus groups in southern Alberta also limits the scope of the study to a western Canadian context. Future studies could include higher numbers of participants from multiple demographics. Research could be expanded through hosting focus groups in various locations for a broader perspective of the evolution of this medium. Being a journalist who is doing self-reported data could also influence the perspectives and biases of the research. Because my employer, Lethbridge College, supports new technologies and the desire to integrate them into curriculum, I may be biased towards viewing more positive experiences with VR than are actually reported. Some participants showed that they struggled with this technology. My data was much more surprising than I anticipated, especially the negative experiences with this technology many participants made note of.

Summary

From these focus groups, the understanding that VR storytelling is an incredibly individualistic experience emerged quite strongly. Viewers bring their hopes, fears and experiences to the HMD. Unlike the social nature of television (often watched in small and familial groups), encountering an individual headset means losing the connection between viewers. This can mean that viewers experience a story more strongly and sometimes in a way that they rebel against. When considering the question of how to engage post-secondary students in journalism, there are many more considerations that have to be made than I ever could have anticipated.

Accessibility of technology and guidelines for using this technology help to create a stronger foundation for subject matter comprehension. Because this is a new technology it makes sense that not all users would be comfortable immediately embracing VR. Integrating training around the technology into post-secondary environments will help to bridge that first step between audience and content. Focus group discussions showed that delivering content through VR can be incredibly powerful; however, knowing how to properly utilize that technology must come first.

Similarly, ethics and engagement were heightened by VR; however, in this case participants were looking for positive engagement over hard-hitting news stories that may be overwhelming or may convey difficult information. Engagement in VR doesn't necessarily mean intensity. Easing students into VR storytelling through more neutral and positive experiences might prepare them for consuming daily news stories in this format. This research showed that engagement needs to be built up over time and dropping viewers into a difficult scenario might turn them away from the technology. As a result, a very strong consideration of ethics is also

necessary to make the VR experience palatable to a viewer. This means thinking not only about the ethics of how a story is constructed, but also how the individuals filmed are represented. Issues around privacy and invasiveness might be alleviated through these considerations.

Finally, in order to engage post-secondary students in 360-degree storytelling, it is important to have visual and audio cues to let viewers know where to look as well as ensure the viewers have full control and understanding of the technology. When constructing a 360-degree story, it is important for journalists to realize that viewers appreciate having an aspect of control when viewing the story.

Since the power of 360-degree storytelling was felt stronger by some participants as mentioned in the three focus groups above, it is perhaps because their idea of the world around them has been altered and it is almost too much for them to bear. Olausson (2011) says that if media discourse is inconsistent with people's experiences, values and opinions, it is likely to be transformed to resemble already established and familiar social representations or to be rejected to avoid any cognitive or emotional dissonance. He says, "We need to acknowledge to a greater extent the power of people's own experiences in the process of making sense of the world" (p. 294). VR brings these ideas much more to the foreground. This perspective provides many directions for future research study, which I will discuss more in the concluding chapter.

Conclusion

Since post-secondary students are moving online for news consumption, utilizing new technologies in order to communicate that news is essential in the twenty-first century. However, VR is an emerging technology, one that has not totally been explored in relation to news delivery. While much of the literature identifies the benefits, problems, and potential for VR, more research is needed to understand how this technology can be used by journalists as a way to engage in new forms of storytelling.

In this study I viewed VR as a technology with the potential to be more engaging to young people. In order to keep their interest up in current events, I wanted to explore the ways that they reacted to this technology, and use what I learned from this study to think more about how to use VR as a tool of engagement to answer my overall research question: how can 360-degree storytelling engage post-secondary students in journalism?

The results of my study were surprising for what they indicated about young people's familiarity with new forms of technology, especially VR. In this chapter, I will summarize my key findings from my focus groups and show how this data answered important questions about the relationship between VR and journalism. I will also discuss my contribution to the field, especially in the areas of medium theory and audience reception, and how professional practice can be advanced through the knowledge revealed in this study. Finally, I will discuss limitations of this study, and possibilities for future research.

After focus groups concluded, there were surprising findings that were not anticipated. First the intensity of the experience did not equate to engagement with the material. Participants spoke about how they would prefer uplifting stories as well as entertaining pieces that included sports, musical performances and access to footage they were not previously exposed to. This is

a major consideration for journalists using this technology. Some content might be better shared through VR than other formats.

As well, ethical implications of how a 360-degree story is constructed is incredibly important to viewers and they think hard about the invasive nature of the medium. What is filmed in this format is important because of how viewers may react to the material based on their field of experience. Experiencing a VR video is an intensely individual experience, and, as a result, viewers' personal experiences change how content is understood.

Findings

The most significant finding for me was the difficultly some participants in this study had using VR technology. When I began this research, I anticipated post-secondary students would be technologically savvy. This was not the case. The technology is so new, some focus group participants struggled with the navigation of the 360-degree story, and while some participants had used the technology before, it was a new medium for most. While the literature focused on how immediate stories told through VR are, I found participants could not fully engage with this immediacy without fluency in this medium. VR can only offer an immediate (and even immersive) experience to those who can navigate the technology.

These findings answer my research question in ways different from what I was expecting. There is a much longer way that VR has to go before it can be integrated into viewers' daily news consumption practices. Participant responses noted that VR can be incredibly impactful when delivering a story, however, there are many considerations that must be made by journalists in order to capitalize on this impact. This led me to think about what these findings may mean for professional practice in the field of journalism.

For integrating VR into daily news consumption, journalists might want to begin with stories that are more neutral or even light in tone in order to ease viewers into this format of storytelling. Journalists might also consider the ways in which viewers can be taught how to use this technology through a short instructional or training video present at the start of VR videos. Giving viewers the tools for comprehending the material is integral to using VR. Journalists also need to think about providing audio and visual cues when engaging in this type of storytelling, perhaps relying more on narration than a production or editing team piecing together a story. One of the biggest challenges will be trying to balance sharing a hard-hitting news story in this format compared to another. Based on the feedback from participants, editors and program directors will need to understand that 360-degree journalism brings you into that environment and that can be very overwhelming for some viewers who relate so strongly to content.

In terms of my professional practice as an instructor at Lethbridge College, this research provides me with ways to answer the question of engaging post-secondary students in journalism using VR. Students need to be given opportunities to experiment with the technology to facilitate familiarity; this can be as simple as being comfortable with wearing a HMD. For my students in the Digital Communications and Media program, who graduate with qualifications to enter the field of journalism through radio, TV, print, and online platforms, I believe there are ways my professional practice as an instructor can be refined to think more about how to craft a VR story. Creating opportunities for my journalism students to share their content with other post-secondary students at Lethbridge College allows for a sharing of resources and expertise, and will perhaps provide another way for students to engage with VR delivery of the news at a local level.

While professional practice is influenced by this research, I believe it also makes contributions to the field of medium theory. I see the contribution to medium theory being that not all journalism stories necessarily belong in the format of VR. That is, today (when the technology is still quite new) some stories are better told using VR, while others are better told using traditional methods. When thinking about how 360-degree journalism changes the way journalists tell stories, I anticipated this new method of storytelling would help to engage younger audiences in content. Since many the focus group participants get their news from social media, 360-degree journalism makes sense as the next logical step. Yet, this was not the case. VR did not engage participants in this study across the board, and many felt overwhelmed by viewing a high-stress scenario through a HMD. Neil Postman strongly feels that the entertainment aspect of television reduces any attempt for TV news or other shows on this medium to be taken seriously. He writes, "Entertainment is the supra-ideology of all discourse on television. No matter what is depicted or from what point of view, the overarching presumption is that it is there for our amusement and pleasure" (Postman, 1985, p. 87). But when it comes to VR, material is shared in a much deeper and more immediate (and personal way), removing the barrier between viewer and content. The experiences participants in this study had underlined just how differently stories are consumed on TV from how they are consumed using VR.

To this point in time, little exploration has been done to explain the feelings associated with being immersed in another environment. Morris explores this even further: "Our reflexive new media activity constructs identities for both the reader and the read, switching between roles in real and virtual worlds, 'spawning subjectivities'" (qtd. in Wilson & Tan, 2004, p. 395). Because this medium is so new, viewers are trying to make sense of themselves in this new technology, and it may take some time to realize people have created a new narrative for who

they are in this medium. This research underscores the importance of thinking about the ways the medium communicates and influences the message, and to consider the best types of messages to share right now using VR.

While my interpretation of the data from the focus group provides me with these perspectives about how post-secondary students engage with VR journalism, it is my bias as a journalist working in the field and as an instructor that shapes my understanding of what was shared. How I interpreted participants' thoughts on their comprehension of a 360-degree story may be completely different than someone who does not have employment in the field. My background made me expect a specific type of result when the findings proved otherwise. This was an important consideration because it identified I was able to remove myself from my bias. I could have interpreted the data differently focusing more on the positive responses instead of the negative aspects that were brought up about this technology. Once VR journalism has been embraced by a wider audience in the not-so-distant future, it will be important to analyze the impact these stories have when told in this format. The psychological impact of watching VR journalism may only be realized after a decade of use and by that time the desensitization viewers experience from viewing a variety of stories told in this format may open up a new way news consumers may need to engage with content for it to be relevant and impactful.

Future Directions

This research provided me with many ideas for future directions for research, and how new research could be enhanced by thinking hard about the limitations of this study. For example, any study of new technologies means considering the context that those technologies are used within. I found that the participants in my study had a very limited experience with VR and with wearing a HMD. This may have been because this study was hosted in rural southern

Alberta, where this kind of technology is not yet the norm, and not yet accessible to the majority of the population. Other considerations are the cost-prohibitive nature and limited accessibility to the HMD units used for viewing VR. In the city of Lethbridge, a community approaching 100,000 people, there are simply not very many businesses where one can purchase a HMD unit for use. As well, in the fall of 2016, the first VR related-business opened in Lethbridge – VRKade. This modern day arcade allows the general population to engage in VR video games locally. This provides individuals with a new opportunity to become familiar with HMDs. Being more aware of these limitations might have changed the way the study was structured, with more emphasis on training participants to use the technology before showing them the video.

In future research, I would focus on teaching participants more about the technology. For example, building in a training video to the focus group, or allowing participants to have an hour of individual practice with the HMD might allow them to become more comfortable and familiar with the technology. This might mean allowing them to practice with other forms of media such as video games, which generally provide users with the information they need to know in order to be proficient users of the game (teaching/training is scaffolded into playing the game).

These types of considerations would allow me to develop my research in the following ways. In the future, providing participants with the opportunity to experience a variety of stories (life/entertainment features, hard news, sports, editorials) could help to rank what style of story resonates the strongest with viewers. Having participants from more than one demographic could also provide a better idea of what adoption of VR technology might look like and if it would change viewing habits for news consumption. In addition to these two considerations, providing participants with different audio and visual cues could help viewers understand and navigate content in a more effective way.

For how 360-degree storytelling engages post-secondary students in journalism, there is much to learn with this new technology. The ability to navigate the technology in a comfortable way is paramount to viewing stories in this format. Once HMD's become more widely adopted and accessible to a greater segment of the population, this may improve. Also, once more VR-related businesses come onto the market, the familiarity with the capabilities of this technology will be comprehended at a greater level. From a journalistic perspective, ethical considerations for the type of story told must be deliberated. Being immersed in a VR experience provides such a strong feeling of presence, that ethical decisions are amplified in this medium. Viewers appreciate the immediacy of stories, yet the intensity of the nature of content does not equate to being highly engaged with the material.

This study will add to the limited literature available in this field as well as add to the exploratory aspect of this technology being adopted for professional practice.

As for the role of VR in twenty-first century news delivery? Jessica Yu, deputy managing editor at the *Washington Post*, states, "I wouldn't go so far as to say VR is the future of journalism just as I wouldn't have said that TV, radio or photography was ever the 'future of journalism' in their early days. Undoubtedly, they were revolutionary and allowed additional facets of stories to suddenly become more real to audiences, but it's not like they ever wiped out one form of journalism or another as a whole" (Knight Foundation, 2016, p. 9). Michael Oreskes, the senior vice president of news and editorial director of NPR said in a memo to his staff back in 2016, "As we experiment with these new forms, we must take care that our excitement with what new technology lets us do, doesn't cause us to lose sight of good standards we bring with us from the old forms" (Knight Foundation, 2016, p. 9). Above all else, the core tenets of journalism are to be followed to create ethical and meaningful content. According to the

Canadian Association of Journalists (CAJ), the Pew Research Journalism Project, and the American Press Institute these pillars of journalism include being relentless, being committed to telling the truth, telling the whole story, being committed to the public interest, storytelling with a purpose, being a watchdog over the powerful, being an independent voice, being essential to democracy, getting answers and creating a forum for public debate (Journalismis.ca, 2015).

How can we engage post-secondary students in journalism using 360-degree storytelling? We need to continue to foster this immersive field through education, experiment with the types of stories delivered, and understand and appreciate audience reactions to content. As the technology continues to develop and evolve, we can then better understand how it can be used to further the future of journalism.

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Appendix A.

Mock Disaster storyline and event schedule

15 people in the party room/music and lighting. Girl enters party room after taking fentanyl.

Dealer approaches girl and sells her a small bag of pot.

Young man #1 approaches dealer and confronts him. They push and shove and the young man punches dealer in face hurting his hand and turns away from him.

Dealer pulls out a knife and young man #2 gets in between the dealer and the young man who punched him. The dealer goes to stab young man #1 but stabs young man #2 instead. Once he realizes what he has done, he runs out of the party room.

Young man # 2 falls to the ground and his girlfriend runs up to him to help him and screams to call 911

Girl with pot also screams, falls to floor, passes out as she overdoses on fentanyl
EMTs enter the room with CJ students

Actors
Drug dealer - Male 25
Drug buyer/Fentanyl victim - Female 20
Young man #1 (Broken knuckles) Male 20
Young man #2 (Stabbing victim) Male 20
Young man #2 Girlfriend – female 20
Young man #3 (Broken nose) Male 20
17 extras - Morning DCM students - Afternoon CJ/EMT/Nursing students

Schedule

9:00

- Make up for all injuries (360/Traditional video shoot)
- Set up party room
  8:30-9:00
- CJ/EMT/DCM Students to staging areas (Shoot Traditional video in all staging areas and 360 in CJ staging)
- Party extras set up in party room
  8:50-9:00
- Student briefings if necessary
  9:00-10:00
- Scenario #1 start – (Shoot Traditional video)
- 9:05 approx. 911 call goes out
- 9:10 CJ/EMT/DCM Students arrive on scene
- 9:40 Injuries arrive at nursing station
- 9:40 CJ spokesperson makes statement for media
- 10:00 – wrap up scenario

10:30-11:30

Scenario #2 - No student involvement just the actors but we will need the ambulance (shoot 360 camera #1 on helmet gimbal for EMT Subjective in the party room and move with injured to the ambulance)

1:00-1:30

Students in staging areas shoot behind the scenes 360 video with camera #1 in DCM staging #2 in EMT staging cameras #3 for fight by bar & #4 by fireplace for broken nose and CJ interviews in party room)
1:00-1:30

- CJ/EMT/DCM Students to staging areas
- Party extras set up in party room
  1:20-1:30
- Student briefings if necessary
  1:30-2:30
- Scenario #3 start
- 1:35 approx. 911 call goes out
- 1:40 CJ/EMT/DCM Students arrive on scene
- 2:10 Injuries arrive at nursing station
- 2:10 CJ spokesperson makes statement for media
- 2:30 – wrap up scenario

Schedule

9:00

- Students in staging areas (shoot behind the scenes traditional video and a 360 camera #2 in CJ room)
- Make up for all injuries (shoot behind the scenes traditional video and 360 camera #1 in Makeup room AN1529)
- Set up party room

9:00-10:00 Scenario #1 (shoot behind the scenes traditional video 3 cameras George/Tyler/ Nick)

10:30-11:30 Scenario #2 (shoot 360 camera #3 on helmet gimbal for EMT Subjective in the party room and move with injured to the ambulance)

1:00-1:30 students in staging areas (shoot behind the scenes 360 video with camera #1 in DCM staging room and camera #2 in EMT staging room and then mount on the ceiling of an ambulance)

1:30-2:30

- Scenario #3 (shoot 360 Objective with cameras #3 for fight by bar and once the victims are transported move camera outside for the media scrum, camera #4 by fireplace for broken nose and CJ interviews in party room)

Camera crew

8am Shoot traditional BTS TE3225 George JVC camera
including Makeup/3 staging areas/Party room/Ambulance/Nursing

Shoot project BTS TE3225 Arjan 4K BMD

Shoot makeup AN1529 Tyler 360 #1
When makeup completed go to party room to shoot scenario with traditional cameras

Shoot CJ Staging TE1228 Nick 360 #2

10:30 Shoot 360 subjective EMT Nelson 360 #1
Shoot in Party Room/Ambulance

1pm Shoot DCM Staging TE3225 Adam 360 #2
and then move camera to Nursing location (???)

Shoot EMT Staging Zoe Lab Zach 360 #4
Including Ambulance with mount

Shoot Party Room fight Tannis 360 #3
The move camera to DCM Scrum once victims are transferred to Nursing

Shoot Party Room Fireplace Joel 360 #1

Shoot Project BTS George 4K BMD

Mics - 4 wireless on 2 audio recorders in Party room

Appendix B.

Follow-up meeting on the mock disaster March 31, 2017

Here is a collection of the media from the public and from our students

- **http://lethbridgeherald.com/news/lethbridge-news/2017/03/26/mock-disaster-provides-skills-training/**
- **https://www.lethbridgecollege.ca/news/all/mock-disaster-provides-hands-training-five-lethbridge-college-programs**
- **http://www.lethbridgenewsnow.com/article/552763/mock-disaster-lethbridge-college-take-place-today**
- **http://lethbridgecampusmedia.ca/mock-disaster-2017-2/**
- **http://lethbridgecampusmedia.ca/mock-disaster-2017-afternoon/**

The mock scenario - It's all about an appreciation for everyone else's roles and understanding students learn from their mistakes.

Here is the link to the mock disaster video focus group participants watched: https://www.youtube.com/watch?v=U1YLNQgDKIU

Perspectives from all four programs: Criminal Justice, Nursing, EMT's and Digital Communications and Media

Coreen – right kind of scenario, not too taxing,

Melanie – loved it, want to come back next year. Added an element of realism.

We couldn't have done it without those actors. They just did research.

George – everything seemed to go well. Some 360 worked, some didn't.

The suspect just left, there was no confrontation and there was not supposed to be any confrontation.

Kate – From a CJ perspective, feedback was a little bit different. It was **too complex** for our students. Our students don't have the strength to deal with that lethal force. Don't teach them to take down an armed suspect. They did love it but a lot of it, it was too much.

There were CJ and EMT communication issues which caused other issues. Some witnesses not injured and did not have anything to do with the scenario. Our role was to interview the students. That lack of communication caused issues for our students.

Ashley – scenario it didn't go perfect, great opportunity to debrief which was great for the students. Nothing goes as it should. Great from NESA and nursing perspective, we had prepped our students beforehand. Didn't give them whole scenario. We need you there, we are a team. Feel free to jump in and assist with CPR. Collaboration went well. NESA students knew for wounds what was coming in. It gave them prep time, what am I going to look for and what am I going to ask. Communication with radios was great. Can't do more than 9 students. From EMT perspective, needed to have another EMT instructor. Have someone else at the scene and someone waiting at hospital to offer the help. EMT students had an issue but students got yelled at. Students at that point felt safe environment was taken away, not sure what they could continue to do. Yelling was about transporting a patient too soon, it was whole interview process. Good opportunity to explain and debrief, understand what CJ's do. Not on the same page, EMT's run scenarios on regular basis and had a strong understanding of what their role was. Scenario was relevant and students loved it. Next year Ashley and Karla don't know the history of students that may bring up other issues. A lot of the traumatic stuff, students won't share that with us either. Place vital signs on patients.

For next year: Snacks or water throughout the whole scenario at hospital, at scene.

Ashley – *students will never forget, couldn't believe how much work the CJ students have to do. Didn't realize how important their job is and if they don't get credit for.*

Melanie - Collaboratively our students learned so much. Students even impressed with how faculty worked together. Thanked for the four groups and how well we worked together. Modelling that collaboration, they noticed and appreciated that very much.

Next year's scenario - Explosion perhaps?

Incident command team - Trying find opportunities to train our team, even communications people where something needs to be managed within residence and staff. We are looking for opportunities to not re-invent the wheel. New people on the team all the time, not extreme. If they don't have training before.

Sheri Wright – make sure to include the Sphere folks because they are doing mock disasters frequently.

Pete – Need to be sensitive to limitations of the CJ students. Expectations, bringing ICT in next year for planning of the event. Design a new scenario so people aren't being stretched to deliver where they have been trained to do so. Make sure they do it well.

Ensure pre-brief of all students- you say you are safe, this is a learning experience, there is nothing that can go wrong that we can't talk about after. They knew that was there. Students were vibrating because so exciting what was coming through the door. Ensure there is a safety whistle. Timing issue, may have to start whole scenario later.

Educating students and instructors as to the roles and expectations of students. Beneficial for students and instructors so we can insist as instructors to guide our students, this is the role of what we want, so direct them back that way.

Debriefing is important- volunteers should debrief separate, they shouldn't be present for the debrief. Volunteers were speaking up when they shouldn't have been saying anything. Didn't think that was beneficial.

Sherry – Can help facilitate the debrief as they do that frequently.

Ashley – would have been beneficial if Kate and Jim to be at meetings before to give us a full run down on what we were looking for. Pre-brief before we go in about how we are going to collaborate together. Our students run through scenarios all the time to let the scenario play out. Felt scenario was being controlled by instructors, they were confused. Some students were yelled at. The safe environment they were used to was taken away.

Ashley - Pre-briefed our students just do what you are capable of, not supposed to do anything above and beyond. Learn from that and what should we do in that situation and what haven't you learned. You don't have to get it right. Talk about the scenario after.

Coreen – Very beneficial to have instructors allowed to be there to help the students, have you thought of this, have you thought of that? In the ER room, with nursing instructors not there, would have been more stressful for the students and not taken as much learning out of it.

Ideas about next time to set it up and what should happen for the whole day so everyone knows what is expected. Instructors are reacting to what students are doing.

Jim – students didn't have enough time to do the course assessments, the interviewing time. Students when they handed in their statements were completely deficient. They spent too much time attending to the actors injured and not being replaced by EMT's. Maybe a more simple scenario so those responsibilities are clear.

Ken – students were doing CPR without anyone talking to them about how to do something. This scenario was not a 10/10, this was a 21/10, I would have rang the doorbell if it got that out of control. I was going holy cow. I thought we were creating bad habits, a lot of scene contamination, a lot of people not working collaboratively and that is bad message. Our CJ students were just over run. They didn't do scene containment, still that level, set police relationships if that was done in real world.

Ken – active shooter is beyond what we do here at the college. If it is third semester, someone is going to faint, okay we have the knife. Let EMT and nurses deal with the knife, deal with drugs, take statements and we are good. Not making it fair for students to make a product.

Jim – make sure volunteer, not an actor's get interviewed next time! Give them more time to get their product. Just deal with bystanders.

Jim - It was an incredible experience. It should happen again.

Martina- students got a lot out of it from a corporate communications standpoint. The public was hammering them, is it a terrorist attack, the public was bombarding them with no relevance to the scenario. They felt that pressure which is what I wanted them to feel. Someone was sent to the scene to figure out how to communicate with the public.

Next year: Importance to label students or have fluorescent arm bands for faculty and students. They got exactly what they got out of it. Expand with updating a fake website and a social media account.

Reminder for next year: Locked down twitter account happened, make sure social media is not happening as it may alert the public.

Pete – valuable from a journalism perspective. Students understand and respect that. Like what our students did. Importance of everyone's role from start to finish may have been lost over the years. We focus on delivering a quality scene and we need to re-visit.

For next year: Shadowing people in other programs to get that understanding of what each department is doing. That was lost this year. Let's re-introduce.

It can also help with the debrief process. So it becomes a level playing field instead of this is my program.

Scanner/ Walkie talkies - Biggest aha moments listening to the operators. With the radios. I was dispatch and I heard someone call from the hospital. Students were listening to hear how the scene was unfolding was great for the students. This is what we think is coming, now plan. 25 minutes until when we got them. Melanie - This was so cool, listening to the radio playout was really enlightening.

EMT's use it as part of their competencies. All nursing students are in for next year. **They were over the moon.**

For next year: Do presentations on all four programs to other groups so a clear understanding of what each department does: Get faculty into various programs so everyone understands each other's roles. Relationship between media and people in the field, how an event shapes down and the respect. This presentation happens every year and take them through with a step by step and how it coordinates with CJ**. Schedule these classroom visits a month before the scenario so everyone understands each other's roles.**

Sheri Wright: Sphere – included nursing and EMT, had six patients, the Wednesday before the scenario. We do these all the time and incorporate NESA students. Only include students Thursday or Friday. To include for next time for a few students and would have four a term for journalism. Love to be involved in future planning of this. We are good at moulaging and fentanyl overdose, alka seltzer for foaming at the mouth, the acting and role playing out through all levels of senses and moulages and smells. Had mental health patients, a drug induced

psychosis that were threatening to kill. She was quite aggressive; knife stabbing was there. We get less than 24 hours' notice, have mass casualty on Saturday and recruit anyone who will help us. Use residence house, a puddle by the bus stop and another level. Next Friday at 10 a.m. is the next scenario.

Ashley – someone was snapchatting the mock scenario. Make sure be careful of what you take pictures. Pre-briefing this is part of the experience; the collaboration you are not going to get anywhere else. Look at how they interact so you can understand how much time Cj's interview before they get to the point to update the media. We had that conversation.

Ken – Best collaboration was with Corporate communications and the CJ's. They worked great and they were very patient.

Ken – control the scene and EMT's will come. Shelby out of control, don't let her get into the ambulance. Did that the second scenario. Did a good thing from keeping her out of the ambulance. A good statement takes 30-45 minutes to capture effectively. Ensure CJ's treat victims of scenario then immediately pass off to EMT. Have supervisor speak to EMT is there anything else we need?

Ashley – EMT and CJ's don't interact usually, I was quite pleased with their interaction.

For next time - EMT's and CJ's should arrive at the scene at the same time.

Traumatic reaction - Students life experiences are; they don't know how they will even react. Students get tunnel vision and avoid the bigger picture. Students very overwhelmed. Great to have a pre-brief in the morning. Everyone here be very clear for next year.

Melanie - Get caught up in the scenario. Asking students, is anyone coming over to follow the evidence, we were telling students typically have someone from the police there watching. Never intended as a criticism. We are career nurses so you default back to the real-life experience. Career first, education second. Especially because it was so exciting and grandiose. Students didn't want the scenario to end.

Melanie – have vital signs for actors. Have a physician on site. Tough to do both act as faculty and have someone to come in to play the role as physician. A lot of students in res did not read their e-mail. They thought it was real and they had no idea it was going on. They were freaking out in residence.

Frank Zappone - The only comment I would have would be to have more signage outside where the event is going on. When giving statements, everyone was outside and passers-by would never have known it was just a drill since there were no signs up near the event. Other than that, great job done by everyone!

Becky Fitzgerald- So sorry I won't be able to attend. It was an amazing event and an awesome learning opportunity for the students. Count me in for next year.

Appendix C.

Lethbridge College's Mock Disaster behind the Scenes March 25, 2017

Before the day of the mock disaster, Digital Communications and Media (DCM) students at Lethbridge College got to play around with the Samsung 360 cameras in their second-year class with George Gallant on March 20. Lyle Ruggles from the Educational Enhancement Team and I joined in as students worked through how to record video, how to set up the monopods with the cameras on them and how the video looked after they had saved it to their accompanying Samsung Galaxy S7 phones.

The day before the mock disaster, April 24, instructors worked with me to set up the room with a foosball table, couches and tables set up for a game of Beer pong. Tables and the area were littered with empty pizza boxes, empty beer bottles and cans, wine bottles. There were three lights set up in the room to help brighten the space.

On Saturday morning April 25 at 7:30 a.m. 360 degree cameras were set up in the moulage room at Lethbridge College where makeup was applied to the six actors hired from the University of Lethbridge's Drama department. These six individuals had a broken nose, busted knuckles, a fentanyl overdose and a knife stab wound for injuries.

Next I met with the second year Digital Journalism students along with the other DJ instructor Pete Gingras where we gave the students a heads up of what they could expect over the course of the morning. A police scanner (walkie talkie) was provided to them so they could hear what the police, paramedics and nursing students were working with in real time.

Next I dropped in on the Criminal Justice students who were getting briefed on what they could expect over the course of the morning and reminded about what tips they should be thinking of during the course of a disaster.

I next walked with George Gallant, my co-worker in DCM, along with the actors over to the location of the disaster, the 30th Avenue Residence Hall.

On the morning of actors were guided through their roles. One student had to practice breaking his nose on the fireplace, another student had to practice fainting from a fentanyl overdose, while another had to re-enact getting stabbed and falling to the floor while yet another actor practiced screaming for people to assist her injured boyfriend.

The start of the event was delayed with getting all the technology set up and ensuring the make-up and fake blood was all ready to go.

The call was made to Ken Sauter in Criminal Justice who acted as dispatch for the morning. He called out the disaster for police and EMT's to respond to a house party gone wrong. Criminal Justice students walked over from their classroom and started attending to the scene. Actors continued to play their roles making the scene challenging for the students.

Cameras were set up in the middle of all the action where the fight broke out and where two actors were talking when one rushes over to fight another.

Criminal justice students focused too long on attending to the victims instead of setting the victims aside and talking to bystanders. EMT's showed up on scene next and started taking people outside to a grassy area where they continued to treat people. Once they identified the severity of injuries, they took trips in an ambulance with their patients back to a mock hospital set up by the nursing students.

In the hospital 360 cameras were set up close to the beds but not in the way of nursing students needing to address their patients.

After the first scenario finished in about an hour's time and the pizza was delivered to all students, the actors were brought back into the scenario to re-enact the scene.

To try a point of view perspective for future initiatives, one DCM student was outfitted with a 360-degree camera on his head with a garbage bag covering his hair so it could be stitched out easier. This first-person perspective was a consideration for down the road and having a choose your own adventure style scenario being played out.

The afternoon scenario played out a second time on a more punctual timeframe. Following the scenario students met in E.C. Fredericks Theatre to share lessons learned over the course of the day. The discussion was moderated by one of the Criminal Justice instructors Ken Sauter.

Appendix D.

Final narrative for 360-degree documentary

Start with

Kris opening clip :56 to 1:12	This mock disaster now featured CJ students, nursing students, paramedics as well as DCM students. Bringing those four partners together was an incredible opportunity for our students to learn from the scenario.
Cate 42 seconds to 1:01	While it may have really tested them and pushed their limits, they felt it was extremely realistic. It made them realize how they would react in real life situations.
Daryl EMS :26-51	The EMT's job during the scenario was emergency based EMS system. they were called out to a MCI multi casualty incident and had to do medical triaging with patients to finding out who was worse off to who was walking with no injuries. Making those decisions they had to transport the patients to the makeshift hospital with the nursing students and interact with them.
Ashley: 2:33- 3 min	When they came through the door the students were expecting the injuries; they weren't expecting the rest of it. So we had kind of thing like the broken nose actor came in and he was hitting on one of the NESA students and that happens, so it was great the nursing student had to work through that.
Daryl 1:56- 2:42	They made it as real as possible, they were crying they were screaming, they made it a loud environment instead of being a quiet classroom. the EMt's had to think on their feet.
Kris 1:13 – 1:41	As far as what the DCM students did for this mock disaster this year it was all about covering the story as if it was actually going on and reporting that to an online environment, a radio station and a television piece they created and they had to do that in a

	span of two hours. If they were an MPA student, they had to create a press release and be a representative for either the LPS or the college."
Ashley 3 – 3:42	How invested the students were, created a bond with the actor AJ, while trying to save him and doing CPR we had it that he would actually die during the scenario. After they coded him and had worked so hard, they were invested, they wanted to know what happened to him and were saddened by the fact that he didn't make it or died and to work through those emotions and was there something else we couldn't have done. You can't teach that in the classroom.
Daryl 1:22- 1:34	The scenario itself ran a little differently than we were planning on doing which was a good learning curve for them.
Cate 1:01 to 1:16	"One student actually went so far to say it actually solidified his decision to become a police officer and to remain in the CJ program. So from that perspective it was extremely successful.

Appendix E: Information and Consent Letter

Study Title: Virtual Reality Journalism and best practices in storytelling

Research Investigator:

Kris Hodgson, University of Alberta

khodgson@ualberta.ca

Background:

You are being asked to participate in this research project because you match the demographic of post-secondary students I am wanting to involve in focus groups related to Virtual Reality Journalism. This study is part of the requirement for me to complete my Master of Arts in Communication and Technology at the University of Alberta.

Purpose:
My research seeks to identify how participants respond to stories in print, broadcast form and in 360-degree styles related to a mock disaster Lethbridge College hosted on March 25, 2017. I will investigate what users can learn about themselves and the subject matter through three separate focus groups that hopes to foster discussion.

Study Procedures:
As a participant in this study I will ask you to participate in one of three focus groups in April 2017. Each member of the focus group will individually watch a 360-degree video with a Samsung 360 Virtual Reality headset and headphones. The focus groups will be done in person at Lethbridge College and they will last up to 60 minutes. I will record audio versions of each of the focus groups and will transcribe my findings after for data analysis. The audio recordings will be kept on my password protected personal laptop, as well as a password protected Dropbox file and hard drive.

Benefits:
The benefit to participants of the focus groups is that they will have a group discussion about the benefits and negative aspects of watching a story in 360-degrees. This critical thinking may help inform their decision making in the future if they witness another news story in this format.

Risk:
There may be risks to being in this study that are not known. Risks may include being overwhelmed with the power of 360-degree storytelling and even having it trigger previous memories.

Voluntary Participation:
I'm very thankful for your willingness to participate but you are under no obligation to continue the study at any point in time. You are not obliged to answer every question.

If you would like to opt out of the study, that is always an option. At that point your data to be withdrawn from the study and destroyed.

Confidentiality and Anonymity
It is my intention to use this research for my capstone project at the University of Alberta, and I would like to publish the findings in an academic journal or use them for research if that is appropriate.

Raw data will remain confidential, but may be reviewed by my supervisor Dr. Gordon Gow if he feels it is necessary.

Your comments will help to pave the way for best practices in Virtual Reality storytelling for journalism courses in the Digital Communications and Media program at Lethbridge College. Comments may appear as direct quotes and there will be no attribution attached to them unless you consent to it.

As per the policy at the University of Alberta, I will keep the data for a minimum of five years. Once it is no longer being used, it will be moved to a hard drive for long-term storage.

Further Information
If you have any further questions about this study, please contact me at khodgson@ualberta.ca or (403) 360-7473

The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

Consent Statement:
I have read this form and the research study has been explained to me. I have been provided the opportunity to ask questions and they have been answered. If I have additional questions, I know who to contact. I agree to participate in the research study described above and will receive a copy of this consent form.

_____ _____
Participant's Name (printed) and Signature Date

_____ _____
Name (printed) and Signature of Person Obtaining Consent Date

Appendix F.

Recruitment E-mail

DELIVERY METHOD: By e-mail and/or letter

TO: Focus Group 1, 2, 3

Subject: Virtual Reality Journalism

TITLE OF E-MAIL MESSAGE: Opinion requested: To identify how post-secondary students at Lethbridge College engage with Virtual Reality

CONTENT:

I am working on my Masters in Communications and Technology at the University of Alberta and I am hoping you will agree to participate in my capstone project that focuses on virtual reality journalism, also known as 360-degree storytelling to identify how people will engage with this new medium of storytelling.

As a journalism instructor at Lethbridge College in Digital Communications and Media, our program is always looking at the latest technology and we are curious about how Virtual Reality journalism will be adopted by the public.

This focus group session should take a maximum of 60 minutes and will be held at Lethbridge College at noon on April 26, 2017 in TE 3225. An alternate focus group session is also scheduled for April 27 from 11 to 12 p.m. and at noon from 1 p.m. All sessions will be held in TE 3225. Please let me know by return e-mail which session is most convenient for you. If you are interested in being a part of this project, please let me know by return e-mail and I will send you an information document.

Thank you in advance for your consideration.

Sincerely,

Kris Hodgson
Cell (403) 360-7473
Kris.hodgson@lethbridgecollege.ca

Appendix G.

Focus Group Questions for 360-degree storytelling

Tell me a little bit about how you usually get your news? **Follow-up prompt** How often? What source (TV, mobile, newspaper, radio, computer)
Think of a news story that stuck with you and tell me why that story was so memorable? **Follow up prompt** What aspects can you recall?
What was your impression experiencing this story in 360-degrees? Prompt – What did you notice? What did you appreciate? What did you not like?
What was the story about? **Follow up prompt** What was the bigger picture that was being conveyed?
How do you feel experiencing a story this way? **Follow up prompt** Was this a good feeling or a bad feeling? Why did you feel this way?
Would you prefer seeing this story in TV, radio, print or online instead? **Follow up prompt** Why? Time constraints?
Did you appreciate not being forced to look in a single direction like television or photography does?

Why would you or would you not want to be immersed in a 360-degree news story? **Follow up prompt** Why?
Would you experience a 360-degree news story again? **Follow up prompt** If so, would you just use your phone or would you want to wear a headset?
Is there anything else you would like to mention that hasn't been brought up already about this 360-degree experience?