Our Process

Museums have lacked the tools and scales, even a vocabulary, for measuring immersion, presence, and empathy and how and whether those elements contribute to learning outcomes. HG&Co and the Chicago00 team examined how these digital projects advance the Chicago History Museum's goals, and how to measure both cognitive and affective outcomes of these intense emerging experiences in order to develop more substantive and memorable encounters with history through this experimental digital platform.

The team interviewed and surveyed hundreds of participants, and developed a novel Experience Evaluation Rubric (EER) to examine, in depth, how individuals experience immersion and presence within AR and VR environments. VR and AR is at heart a spatial technology, the viewer feels like they are in physical spaces, or in the case of AR, that computer generated content is in real space with them.

Immersion itself is an umbrella term encompassing everything from traveling in time to a flow-experience to tele-presence. The EER allows a team to disaggregate the various aspects of immersion to focus on the specific salient elements of immersion users experience, and how those aspects of immersion and presence influence experience outcomes.

We tested the EER in multiple experiences within Chicago00, and this rubric is now available for other institutions to use to examine their own AR/VR experiences. The evaluation report executive summary and the full final report are available here.

www.Chicago00.org
Executive Summary
Visitors responded overall to the World’s Fair Experience. The majority of users said they:

- Found the experience to be enjoyable
- Learned new facts
- Could recall specific visuals
- Noticed specific details
- Wanted to know more
- Would tell others about what they had seen

Over 80% were very interested in seeing more of the Museum’s displays on the World’s Fair after their VR experience. Users had little experience with VR, they seemed to be intrigued by the experience and wanted to try other VR experiences. Despite the fact that the experience ran twelve minutes participants felt it was not too long.
Background
The Chicago00 Project is an ongoing series of published new media experiences created by the Chicago History Museum (CHM) in collaboration with filmmaker Geoffrey Alan Rhodes. Each immersive experience draws images from the Museum’s photography collection to connect users with critical events from Chicago’s past. Through augmented and virtual reality apps and offshoot internet publications, the project shares aspects of the single largest source of pictorial information for the Chicago metropolitan area, CHM’s Prints and Photographs Collection.

HG&Co has been working alongside the CHM team to co-create a framework for examining visitor reactions to the Chicago00 project, with the goal of developing a scale to measure both cognitive and affective outcomes of these intense experiences, and further to examine where digital advances the museum’s goals.

Chicago00: World’s Columbian Exposition is a VR experience that focuses on the site of the fair’s Midway, where millions of immigrants came together to gawk at a pageant of luxury, entertainment and exoticism. The VR experience engages headsets and earphones, so participants hear narration, sound effects, and music, while watching a 360-degree world of historic images overlaid on contemporary photographs and video footage of Jackson Park and Midway Plaisance.

Methodology & Sample
The Chicago00 team wished to understand how people responded to the VR experience, specifically how they experienced and articulated presence, immersion, and sense of place. To do so, we conducted a public VR testing, with a survey following.

On January 28, 2020, a total of 75 individuals1 participated in VR testing at the Chicago History Museum. Testing was concurrent with a bustling, well-attended History Happy Hour themed around the World’s Fair. Participants were recruited through social media campaigns2, and signed up ahead of time for a 30-minute slot during the Happy Hour.

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1 Participant age was evenly spread. There were the same number of people in their 20s, 30s, and 50s, with slightly fewer people in their 40s. Only three people in their 60s attended. Ten staff members of CHM were part of the test.

2 CHM’s Facebook invitation said, “Chicago 00: 1893 World’s Columbian Exposition will take you on an immersive tour of the world’s fair known for its dazzling White City and eclectic Midway Plaisance. Experience Chicago’s past and present in 360 degrees and fly 264 feet in the air on a virtual ride of the world’s first Ferris Wheel.”
They knew they would be taking a paper survey afterwards, and were given a free museum pass for their time. Every slot was filled in advance, and wider interest was apparent by the number of people who milled around the area during testing, asking to participate.

Chicago00 staff carved out a small ‘theater’ of stools in a quieter, dimmer section of a nearby exhibit. Testing was broken into two segments: the VR experience - with brief introduction by Chicago00 staff - and the survey following. Groups of 8-10 participants experienced the VR together. They then moved to a set of gently lit tables with pencils and paper surveys. The next waiting group of testers saw them in headsets and earphones, as they had seen the group before them. In this way, testers developed a common visual expectation of what the externalized VR experience would be.

To understand the internal/personal experience of the VR, we developed an Experience Evaluation Rubric (EER), with twenty-five statements for visitors to react to, on a scale of 1 (‘not at all’) to 7 (‘completely’). The survey also included five open-ended questions, a multiple choice about the length of the VR experience, and an option to provide their year of birth (survey attached following report). HG&Co was on hand to chat with participants about their experience as they handed in their surveys. While the primary intent of the testing was to gauge what visitors learned, felt, and remembered from the VR, it was also an opportunity to test the language of the rubric itself. In the future, the Chicago participants should be able to complete the survey in a minimally facilitated or mediated setting. This memo-report details the findings and implications from these testing sessions.

**Findings**

A significant thread of investigation throughout the survey explores presence and immersion. What makes people feel that they are in a virtual world? Do they feel they are part of a narrative, or part of the action? Do they remember specific visuals, facts, or feelings? To see emergent trends, we combined a qualitative examination of participants’ open-ended survey responses with quantitative analysis of their EER ratings.

Participants were surprised by the physical experience of doing the VR; many were pleased it did not make them sick or dizzy. They regarded the stitched/overlaid historic photographs with intellectual interest, and gained a sense of the size, layout, location, and architecture of the fair. About a third of participants took note of broader humanities themes. Very
few mentioned any specific visuals or the humans they saw. For the most part, participants were in an ‘observing’ mode … until they experienced the movement of the Ferris Wheel.

The ‘Newness factor’ Was at the Forefront of Participant Attention

Most participants in the testing were unfamiliar with or relative novices with the VR technology. Only 1% said they had frequently used this type of technology before. This finding biases the results towards the novice user; more frequent VR users might have rated the other items differently.

**Figure 1: Not Many Frequent VR Users**

Question: I have frequently used this type of technology before

![Bar chart showing the distribution of responses to the question.](image-url)
The novelty of the experience also drew participant attention towards the functionality of the experience. Many participants mentioned that they were surprised to see images in 360 degrees, especially that they could move their heads around to affect a broader landscape and a wider view. Participants were surprised by:

- How responsive it is with movements
- Really being in the 360 and looking up and down
- Didn’t know I would need to twirl around on the stool to see everything
- The "verticality" of it - the height of the buildings that required me to look up.
- That the images were behind me!

Similarly, the physical experience of wearing a headset and earphones was new to almost all of the testers.

**Participants were widely split in their existing knowledge of the World’s Fair**

While most considered themselves moderately knowledgeable, 16% of participants reported they were ‘not at all’ knowledgeable, and 11% felt themselves to be quite knowledgeable.

![Figure 2: Prior Knowledge of World Fair Varied](image-url)
The Experience Piqued Visitor Curiosity

Visitors responded overall very well to the World’s Fair Experience. Seventy-five percent said they found the experience “extremely enjoyable”. The majority of users said they:

- Learned new facts
- Could recall specific visuals
- Wanted to know more
- Would tell others about what they had seen.

Visitors did not feel the experience was highly emotional.

Participants were interested in getting deeper into the content, and were seeking more to extend the experience. For example, their quotes:

- Smooth transitions would be helpful. State exact locations, streets, etc. Tell us more about the history.
There are so many fun facts about this Worlds' Fair I wish there were more mentioned here. It would have been more helpful to have an introduction to the purpose of the World’s Fair.

It was really cool! I would have liked to learn more.

Great Event - glad I got to experience this. Wanted more details.

State exact locations, streets, etc. Tell us more about the history.

It made me want to learn more about the World's Fair!

Participants generally felt undistracted and they could move naturally in the virtual world.

Visitors also interested in Doing More VR

Users had little experience with VR, they seemed to be intrigued by the experience and wanted to try other VR experiences.

Figure 4: VR was Natural and Not Distracting

| I felt distracted by things happening in the real world | 36% | 16% | 8% | 14% | 12% | 7% | 7% |
| Moving around in the virtual space felt unnatural | 31% | 26% | 16% | 14% | 8% | 3% | 2% |

Figure 5: Not Many Frequent VR Users

| I was really interested in the details within the virtual world | 9% | 15% | 72% |
| I want to try another VR experience about a different topic | 5% | 8% | 76% |
A ‘Window’ On the Past, With Moments Stepping Out Into It

One aspect we were examining was visitors’ sense of presence during the experience.

Similarly to the newness of the VR experience, many of the participants commented on the novel use of photographs. This self-aware act of looking at a photograph and commenting on its use corroborates the high number of visitors (68%) who felt they were observers in the narrative. They generally did not feel they were part of the ‘action’, but roughly half had a sense of being “at” a real remote location or having traveled in time. Participants were intrigued by the photographic overlays, and appreciated seeing the past in this enjoyable way.

How it felt looking back at time, although the images were static.

I felt like this really embodied the “fly on the wall” perspective.
I didn’t get as disoriented as I’ve felt using VR headsets in the past. This is probably due to being seated the whole time and the perspective of being an observer rather than a participant.

When does a photograph become something that you are looking at, to something you are looking from? In other words, when does seeing a photo of a mountain shift into the sense of standing on that mountain? For some participants, they really felt they were ‘in’ the photographs.

The most surprising part was being in the basin when it first turned to 1893. I’ve always loved these images, so it was great to be ‘in’ them.

Superimposing the 1893 photographs with the current imagery was the surprise. My surprise was more of an "ah-ha!" or "Eureka!" moment of connecting with the past.

The odd feeling of connection to the images around me. Seeing the city as it was, for a short time, for this event.
The World’s Fair VR Experience Served as a Transporter

More than half (63%) said they had noticed other living things in the world (a rating of 5 or higher). Forty-two percent felt they were “there” personally (as Sally or Anisha for example), rather than as an anonymous viewer. Nearly three-quarters (72%) felt they were in the virtual world, and 36% felt they were in a physical place where 26% felt that virtual place was more real or present than everyday reality. Over two-thirds (67%) felt they were not in the virtual world with the other testers.

<table>
<thead>
<tr>
<th>I noticed other living things in this world</th>
<th>13% 8% 8% 7%  22%  22%  19%</th>
</tr>
</thead>
<tbody>
<tr>
<td>It felt like <em>I</em> was there-- as opposed to an anonymous observer</td>
<td>7% 8% 15%  29%  21%  9%  11%</td>
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<tr>
<td>I felt I was in the virtual world</td>
<td>4% 12%  11%  34%  24%  14%</td>
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<tr>
<td>I felt I was in a physical place, not viewing a set of images</td>
<td>8% 11%  16%  29%  16%  19%  1%</td>
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<tr>
<td>The virtual world was more “real or present” than everyday reality</td>
<td>12% 19%  17%  27%  11%  11%  4%</td>
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<tr>
<td>The other testers and I were all together in the virtual world</td>
<td>39% 17%  11%  15%  7%  7%  5%</td>
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The Ferris Wheel Stimulated a Sense of Physical Presence
The Ferris Wheel brought participants out from behind the window pane, into the historic world itself. For most of the experience, participants did not feel that they were part the action of the narrative. However, 58% of testers specifically said the most memorable experience was the Ferris Wheel. As mentioned above, descriptions of the VR experience
almost exclusively used distancing/observing language like, “I loved looking at the photos of the fair” or “seeing a part of history was remarkable.” The notable exception was the Ferris Wheel. Testers described those few moments in real-world terms. They described the feeling of moving, or “riding,” the wheel, as if they were actually on it.

Being in the Ferris wheel going up that was the highlight of the experience.

I loved the sensation of riding the Ferris Wheel

I felt I was in a virtual world only when the Ferris Wheel moved. I felt I had travelled in time only when the Ferris wheel moved.

The Ferris Wheel experience and how it felt like I could reach out and touch everything around me.

More moving visuals would create more of a connection.
Some Participants Visited the Chicago History Museum World’s Fair Exhibit Beforehand

Approximately one-third of participants had spent time in the World’s Fair section of the exhibition prior to trying out the VR experience. Over 80% were very interested in seeing more of the Museum’s displays on the World’s Fair after their VR experience.

Figure 8: Some Users Spent Time at the World’s Fair Elements of the Museum Before Trying the VR

Figure 9: Most Users Wanted to See More of the Museum’s World’s Fair Content
One-Third of Participants Had Solid Recollection of the Historic and Cultural Implications of the Fair
As mentioned above, over 80% of participants felt they had learned new facts, and one third mentioned specific historic themes and cultural elements within the experience, including how the fair both introduced Americans to a wide range of international cultures, and yet continued to perpetuate stereotypes. Participants summed up those experiences in the following comments:

The use of the fair to continue stereotypes.

The World’s Fair introduced white Americans to foreign countries and customs, albeit in a way that was problematic. The Fair led to the development of some of Chicago’s museums. The fair introduces a new type of consumerism to the world

The simultaneous oppositional ideas of humanizing other cultures while also stereotyping them. That the exposition was both historical and colonial/capitalistic. Yet still sort of awesome.

The celebration of Columbus’ voyage, a celebration of various ethnicities throughout the world

Understanding the cultural importance of the midway, and seeing some of the fair ‘first hand’. I appreciated the tone to the midway. Underscoring how it was both problematic and ‘informative’

The fair used stereotypes but provided visitors a real experience of people and other cultures. People were able to truly experience new things at the fair like riding high on the Ferris wheel

One-Third of Testers Said a Main Idea was Feeling What the Fair Was Like for Those Who Attended
A sense of being there, of understanding what the Fair felt like to be there was the main idea for many participants. Their quotes included:

Transporting patrons to what once stood in modern Jackson Park

Putting yourself in the literal point of view of someone who attended the World Fair.
What it was like to go to the Fair

Being able to experience the past

Going back in time

The experience took me back in time

The main idea was feeling being part of the Fair Culture

**Testers Said They Recalled Specific Visuals**

A full 76% of participants rated the EER statement, ‘I can recall specific visuals within the experience’ with a 6 or 7. Some noted specific examples of what they recalled, but most commented on the visuals of then vs now.

Close up of images of some of the pavilions. I was most familiar with overall views of the fair.

Showing the contrast between the Fair and the present by overlaying the visuals, but also remembering how they are connected through the audio.

Ways people dressed - that it was "hot" hence the "black" umbrellas.

The rear view of the mechanical innards (of the Ferris Wheel) heightened the connection.

The images of specific signs and performers - that level of detail really stuck with me.

**Testers Remembered the Look and the Scale of the Physical Space**

19% of participants said they felt strongly that they were at a real remote location (rating the EER statement 7). Participants commented more on the size and layout of the space. There were only singular mentions of Jackson Park, Hyde Park, and the Basin by name, but ten participants mentioned the Midway.
The juxtaposition of contemporary Hyde Park and where the stuff was in the Fair. Like I've always wanted to understand where things were in reference to what I know about the area. Even though I've looked at maps of the Fair, this was what I wanted to physically experience geographically.

I never knew how many different parts of the fair there were.

Getting a better sense of the Fair as an actual place and time rather than just a concept.

Showing you where the "White City" was and how the parks are using this land today.

The details of the Fair and the scale of the whole thing. I had read/seen a lot of it before but this made me understand how massive it was.

**Twelve Minutes was Just the Right Length**
Participants expected a VR experience, and came to the museum specifically to engage in this activity, so it is understandable that most did not find the length too long. Only 3% said the VR was too long. 25% said it was too short.

Participants want more ways to connect with what they are seeing.

**Narration and Audio Helped the Feeling of Immersion, Participants Want More Guidance**
The music, background sounds, and narration were central to making participants feel part of the World’s Fair.

I thought the music/sounds enhanced the visual.

It was maybe the narrator spoke slow. It gave us time to look around and take it all in.

It was easier to get into the experience. The sounds made me feel connected.

There were so many parts of the story and I liked the audio walking me through where to look. Feeling completely immersed was also a surprise.
Others Requested that the Narration Connect More With What They Were Seeing

I wish there were cues about where to look to sync up with the audio.

Maybe have audio guide to look left or right to see specific events

I would have liked it if the pictures were moving with the video

A Handful of Participants said the Narration Could Have Been More Exciting

Music could be better (lacks emotion)

I wish the narrator had a more local accent

Yes. I think the voice could have been more exciting but it was a great guide for what we were looking at.
Appendix A: Survey Used in the Testing
Chicago00: 1893 World's Columbian Exposition Questionnaire
*(highlighted are questions the participants noted were confusing)*

Thanks for taking the time to test our VR Experience this evening. We would love to better understand what it was like for you!

Q1. On a scale from 1-7, where “1” is “not at all,” and “7” is “completely,” please rate the following statements by checking the box with the appropriately number, based on your experience with this VR.

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<th>Experience</th>
<th>No, Not at all</th>
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<td>I know a lot about this topic</td>
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<td><strong>I was at a real remote location</strong></td>
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<td>I felt I had traveled in time</td>
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<td>I was part of the action of the narrative</td>
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<td>I was an observer in this narrative</td>
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<td>Moving around in the virtual space felt unnatural</td>
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<td>I am noticing the real-world space around me different after using this</td>
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<td>I can recall specific visuals within the experience</td>
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<td>I learned new facts from this experience</td>
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<td>This was an emotional experience</td>
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<td>Seeing this makes me interested in learning more about the topic</td>
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<td>Seeing this makes me want to re/visit the World’s Fair activities here at the Museum</td>
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<td>I want to tell others what I have seen</td>
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<td>I found the experience to be enjoyable</td>
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Q2. Did being “in” the headset influence your experience? In what ways?

Q3. What will you remember most about this experience?

Q4. What surprised you about this experience?
Q5. In your own words, what were some of the main ideas in this experience?

Q6. Do you have any other thoughts or feelings you would like to share?

Q7. In your opinion, was the experience...
   - Too Long
   - Too Short
   - Just Right

Q8. What year were you born?  ___________________
Introduction
The Chicago00 Project is an ongoing series of published new media experiences created by the Chicago History Museum (CHM) in collaboration with filmmaker Geoffrey Alan Rhodes. Each immersive experience draws images from the Museum's photography collection to connect users with critical events from Chicago's past. Through augmented and virtual reality apps and offshoot internet publications, the project shares aspects of the single largest source of pictorial information for the Chicago metropolitan area, CHM's Prints and Photographs Collection.

Funded by the National Endowment for the Humanities, HG&Co worked alongside the CHM team to co-create a framework for examining visitor reactions to the Chicago00 project, with the goal of developing a scale to measure both cognitive and affective outcomes of these intense experiences, and further to examine where digital advances the museum’s goals. The team is sharing this rubric with the hope it will be useful for others within the museum field.

Purpose
This rubric is designed to build a shared vocabulary and specificity around AR and VR experiences. As the rubric evolves, we also aim to use the second, user-based portion to assess the impact of the experience. Depending on the experience, we might wish to ask some questions and omit others, we would also likely include specific-content related questions.

Over time, data from these questions can be analyzed for emergent patterns, such as what type and context of experience provides what type of impact. Museum digital
producers and educators would then be able to develop informed decisions about what type of content, technology, and context works for different types of impact. The rubric supports efforts be more precise about vocabulary such as presence and immersion.

Background

Our work here draws heavily on a number of academic research papers, especially:


In Slate and Wilbur, they define immersion as an objective description of aspects of the system such as field of view and display resolution. Presence, on the other hand, is the subjective phenomenon such as the sensation of being in a virtual environment.

Other papers use the term immersion to refer to the subjective phenomenon. For this rubric, we adopt the Slater and Wilbur formulation above where the designer describes the objective (immersion) aspects of the system and the user rates the subjective (presence) elements of the experience from their viewpoint.

The Schuemie article describes multiple elements of presence, noting within immersive VR presence is when people report a sensation of being in a virtual world. Co-presence is the sensation of being together in a virtual world.
Describing the Experience

This section is for designer(s) to fill out.

This section is for designer to fully document and categorize the experience provided, and additionally to develop a common vocabulary around describing AR and VR. This can be used as a living document during development, to record experience design decisions. The factors listed are only a beginning for description.

Physical & Digital Environment

Setting (Choose all that apply)
- Museum
- Home
- Field Trip
- LBE - Location based VR experience (mobile VR integrated with stage setting like The Void’s Ghostbusters)
- Leisure/Commercial (stores, VR arcades, etc)
- Outdoors
- Indoors
- In Situ

VR/AR Delivered on:
- Phone
- Tablet
- Monitor (Web VR, 3D monitors)*
- Projection-mapping AR
- Phone VR Headset (cardboard, Gear VR, Daydream, other)
- Dedicated Headset - mid-range (Oculus Go, Oculus Quest, PlayStation VR, other)
- Dedicated Headset - high-end (Oculus Rift, Vive, Index)
- Dedicated Headset - AR (Hololens, Magic Leap, other)

Realism
- 3D Photographic through light-field cameras
- Photographic (space created by photographic capture)
- Photorealistic (complex models almost indistinguishable)
- Realistic modelling (without full details, ie Low-Poly)
- Volumetric captures
- Laser or Photogrammetry scans
☐ General Abstracted
☐ Cartoon/animation (not trying to look realistic)
☐ Artwork (stylistic interpretation)

**Length of Experience**  ______ Minutes/hours/days

**Perspective of VR**
☐ Single point perspective
☐ Explorable environment via controllers
☐ Explorable environment via movement
☐ Mixed

VR only: Description of Virtual Space (ie, small and intimate or large and expansive)

_____________________________________

**Level of Interactivity**
☐ Choice of order of experience
☐ Ability to influence the experience
☐ Ability to choose where to look
☐ Guided on where to look
Sensation of touch

**Interactivity Through (Choose all that apply)**
☐ Gaze triggering
☐ Controllers
☐ Gesture Recognition
☐ Bodily Movement
☐ On-screen controls (AR)
☐ Location triggers (AR)
☐ Target triggers (AR)
☐ Image recognition (AR)
☐ Other (eye tracking, voice recognition, multi-sensor, sensor embedded objects):
Please describe real-world sensory-setting this experience takes place in, with attention to temperature, smells, noise, etc. (For example, are the participant inside or outside? Is it loud and crowded, or serene and solo? Is it chilly? Windy?)

Content

Experience Intention (Choose all that apply)
- Increase interest in Informational/educational content
- Teach Informational/educational content (eg Google Expeditions)
- Visit a different point in time
- Make kinesthetic an abstract concept
- Conduct an experiment
- Witness an events (eg Al Gore’s Melting Ice)
- Set an affective/emotional mood (eg Carne y Arena)
- Build personal connection to individual stories (eg For My Son)
- Other: ________________

Style/Metaphor
- Publication
- Journalistic
- Cinematic
- Game-based
- Travelogue
- Advertising/promotion
- Other: ________________
Presence Factors of the Experience + Impact

The goal of this section is to ask the user about their prior context and knowledge, their reactions to the experience, their perception of presence, and the impact of the experience. These questions may need to be further tailored for each experience.

| Concept (These terms for internal use only, not shown to the user) | Question | Scale 1-7  
1=Not at all and 7=Completely |
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Prior Experience</td>
<td>I have frequently used this type of technology before</td>
<td></td>
</tr>
<tr>
<td>Prior Knowledge</td>
<td>I know a lot about this topic</td>
<td></td>
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<tr>
<td>Absorption</td>
<td>I was in the virtual world, I was enveloped by, included in this space</td>
<td></td>
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<tr>
<td>Social Presence</td>
<td>Other living things were in this world</td>
<td></td>
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<tr>
<td>Co-Presence</td>
<td>We were together in the virtual world</td>
<td></td>
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<tr>
<td>Telepresence</td>
<td>I was at a real remote location</td>
<td></td>
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<tr>
<td>Agency</td>
<td>I was part of the action of the narrative</td>
<td></td>
</tr>
<tr>
<td>Observation</td>
<td>I was an observer in this narrative</td>
<td></td>
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<tr>
<td>Personal Identity</td>
<td>It felt like me specifically who was there-- as opposed to an anonymous observer</td>
<td></td>
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<tr>
<td>Time-travel</td>
<td>I felt I had traveled in time</td>
<td></td>
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<tr>
<td>Captivation</td>
<td>I was really interested in the details within the virtual world</td>
<td></td>
</tr>
<tr>
<td>Vividness</td>
<td>Virtual world was more “real or present” than everyday reality</td>
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<tr>
<td>Distraction</td>
<td>I felt distracted by things happening in the real world</td>
<td></td>
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<tr>
<td>Physicality of place</td>
<td>I felt this was in a physical place, not a set of images</td>
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<tr>
<td>Naturalness of Motion</td>
<td>Moving around in the space felt unnatural</td>
<td></td>
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<tr>
<td>Perceptual Shift</td>
<td>I am noticing the real-world space around me different after using this</td>
<td></td>
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<tr>
<td>Recall</td>
<td>I can recall specific content within the experience</td>
<td></td>
</tr>
<tr>
<td>Learning</td>
<td>I learned new facts from this experience</td>
<td></td>
</tr>
<tr>
<td>Affective</td>
<td>This was an emotional experience</td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>Seeing this makes me interested in learning more about the topic</td>
<td></td>
</tr>
</tbody>
</table>
Additional Suggested Open-Ended Questions:

What, if anything, surprised you about the content in this experience?

What new information did you learn from this experience?

Does using this change how you look at the space around you? In what ways?

Additional content questions should be added.