GAMES FOR CHANGE

XR FOR CHANGE

Impact Report

Results of Impact and Engagement Research and Comparison Study

gamesforchange.org/XR4C

About Games for Change

Games for Change (G4C) leads a global community of creators, developers, and innovators using games and immersive media to empower their communities and drive real-world change. It partners with technology and gaming companies, nonprofits, foundations, academic institutions, and government agencies to run a wide array of programming, from world-class events and educational programs, to executive production and impact productions of best in-class games and XR projects.

Events	Engaging with	Programs Impacting
5K+	**127**	**25K+**
Attendees per year	**Countries**	**People per year**

Games for Change is a registered 501c3 organization.

About XR for Change

Launched by Games for Change in 2017, XR for Change is developing a community of practice to address real-world challenges, create empathy, and drive social change using Augmented Reality (AR), Mixed Reality (MR), and Virtual Reality (VR).

There is a wide range of practical applications for XR technologies invested in social impact — particularly in education, healthcare and mental health, and workforce development.

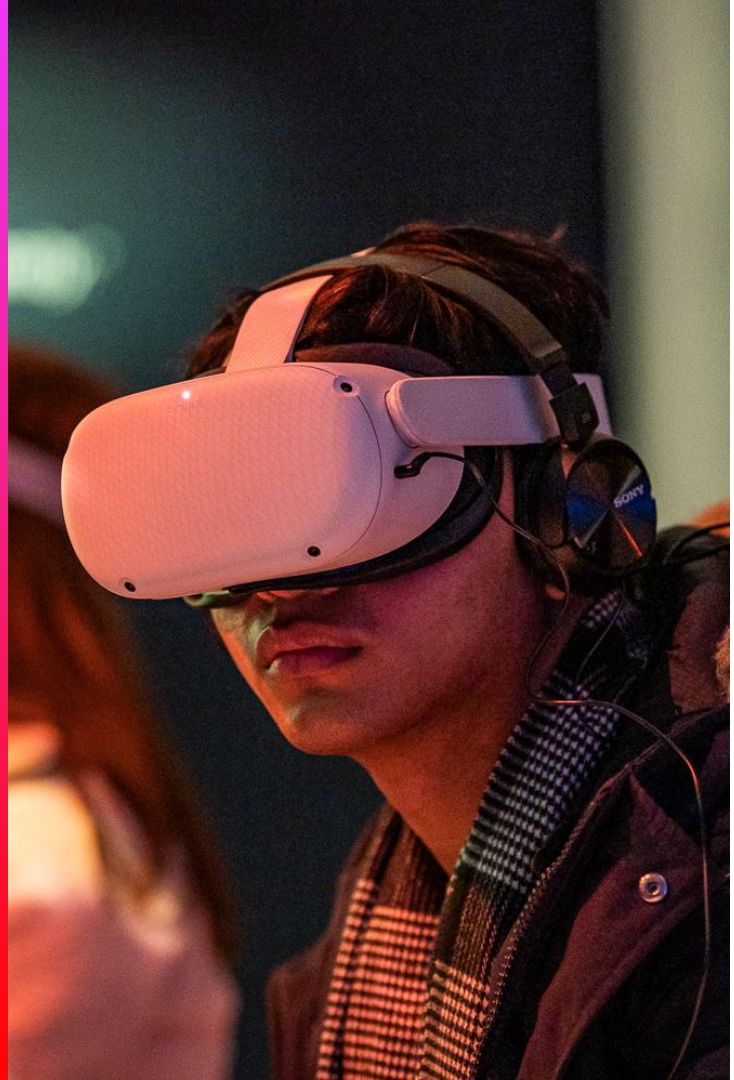
The initiative seeks to encourage dialogue; foster collaboration between content creators, industry, and cause-based organizations; advance equity and inclusion; and inspire creative use of these emerging technologies.

About the On The Morning You Wake Impact Campaign

On the Morning You Wake (to the End of the World) is a three-part VR documentary that captures the voices of the people in Hawai'i who experienced the real and imminent threat of nuclear weapons through a ballistic missile notification. Produced by the award-winning studios Archer's Mark and Atlas V, *On the Morning You Wake* (OTMYW) is at the center of a long-term impact campaign, led by G4C, with the goal of inspiring people around the world to take action to shape the future of nuclear weapons policy.

The impact campaign, developed by G4C's Impact Producers, Michaela Ternasky-Holland and Erinn Budd, consisted of producing multiple activations around the world that included screenings, surveys and discreet activities depending on audience.

To address the lack of research data on the impact of VR activations, Jan Plass and Bruce Homer conducted research to evaluate impact and audience engagement using OTMYW and its robust impact campaign as a case study.



Activations

OTMYW's impact campaign was featured at over 20 locations and events, selected on their ability to support our research process and help us identify audience impact and engagement. These events were broken down into the following types of venues:

- **Free Experiences Open to the Public:**
  - Oregon Shakespeare Festival | Ashland, OR
  - Media Immersive Experience (MIX) Center | Mesa, AZ
- **Dedicated Museum Installations**
  - The Museum of the Moving Image | Queens, NY
- **Private Events**
  - PlayNYC | New York, New York
  - Techonomy | Sonoma, California

Audience

In order to better understand the audience and their characteristics, the research team asked the participants:

- Where they were from
- Their demographics (age, gender, ethnicity)
- The reason for attending the activation
- Their prior experience with VR (on a 1-7 scale)
- Their prior knowledge of nuclear weapons (on a 1-7 scale)
- Their interest in topic of nuclear arms disarmament (on a 1-7 scale)

The number of participants that completed the research optimized surveys:

- Onboarding survey: 1,804
- Aftercare survey: 1,297

Audience Data Highlights

The percentage of participants for each type of event:

- 41% booked an open to the public
- 49% visited a museum
- 10% attended a private event

The places that the participants indicated as their home:

- 68% were from North America
- 17% from Europe
- 9% were from Asia
- 2% were from Africa
- 2% from South America, and 2% “other”

Audience Reason for Attending

A majority of participants attended a VR activation due to curiosity and interest.

A moderate number of participants also answered that they attended the VR activation because they had time and/or heard about it from a friend or family member.

Only a handful of participants answered that they booked the OTMYW activation specifically for learning/education/peace/activism motivations.

Impact Results

The research team measured the impact of the wrap-around materials by analyzing the responses from participants during the onboarding and aftercare surveys. They sought to better understand:

- Their enjoyment of using VR.
- Their ability to learn something new about the topic of the project due to the VR activation.

The overall impact analysis shows that:

- **The amount that the audience enjoyed VR usually coincided with the amount they learned during the experience.**
- **Age was NOT associated with either enjoyment or learning.**

Engagement Results

The research team measured the *engagement* of the wrap-around materials by analyzing responses to the following questions from the aftercare survey:

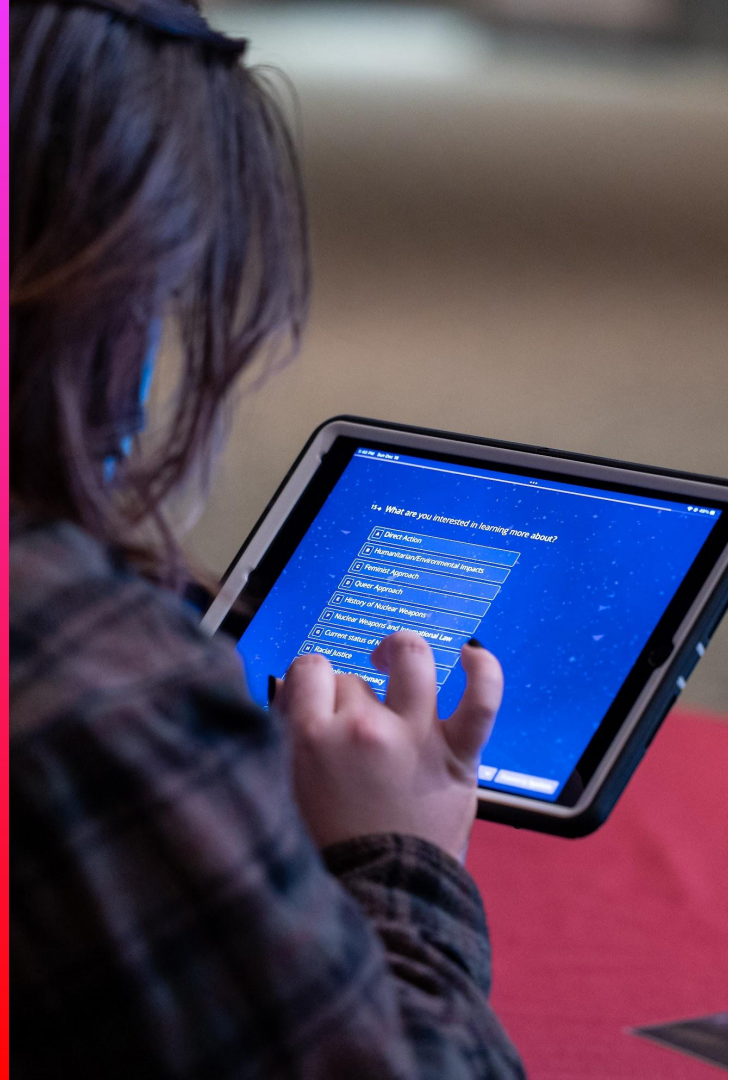
- How likely are you to seek further information about the topic of the nuclear weapons threat?
- What type of action do you feel ready to take after experiencing this VR activation?
- What are you interested in learning more about?

Two-thirds of participants self-reported that they were likely or very likely to seek out more information about the topic:

- 67% at open to the public activations
- 61% at private events
- 63% in museums

A majority of participants reported that they intended to take further action:

- 72% at open to the public activations
- 77% at private events
- 78% in museums



Comparison Study (2D Interface vs. VR Headset)

Main research question:
"Does the level of impact and engagement of the content differ when it is experienced as VR using a head-mounted display (HMD) versus screened on a tablet device?"

The research team conducted a study that compared the VR experience on a head mounted display to the identical 2D tablet-based version of *On the Morning You Wake*.

Based on the G4C staff team's reports from previous activations, the research team hypothesized that the VR-based experiences would invoke stronger and more positive emotional responses in learners, which was expected to lead to a higher level of *impact* and *engagement*.

Comparison Study (2D Interface vs. VR Headset)

Participants Overview

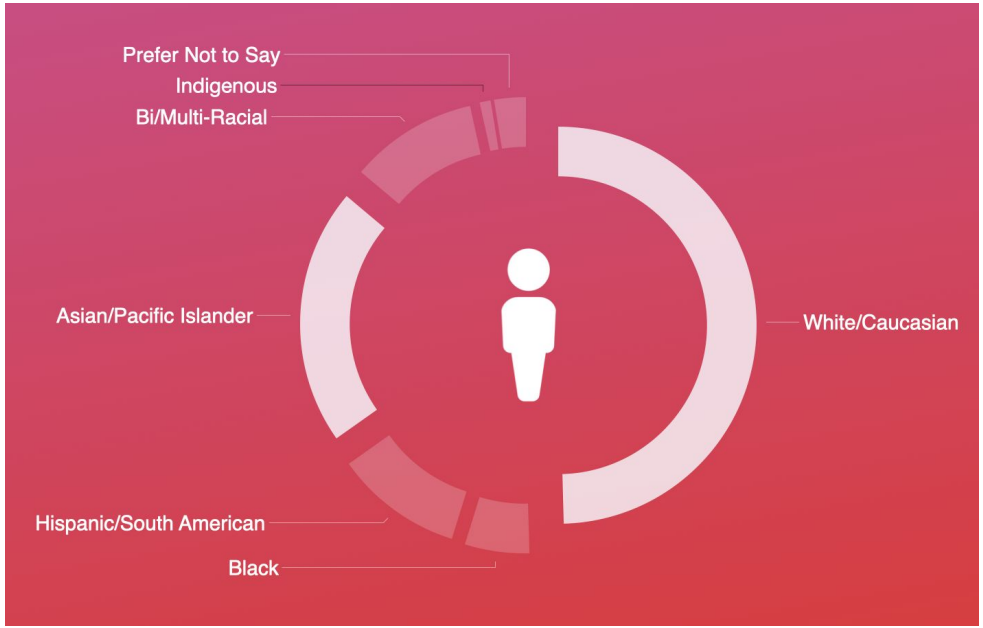
Number: 171 participants

Age range: 18 to 84 years old

Locations:
- Mesa, Arizona, USA
- Ashland, Oregon, USA
- Los Angeles, California, USA
- Tallahassee, Florida, USA

Gender (self-identified):
- 36% female
- 27% male
- 7% nonbinary
- 1% as other
- 29% did not respond or preferred not to say

Audience Demographics



Research Design

Surveys: Revised onboarding and aftercare intakes included:

- Questions about the emotional impact of the experience
- The social connection participants felt with people depicted in OTMYW
- Their overall engagement during and after the experience

Data Capture: Research assistants recorded participants' responses while they were engaged with the experience. This data was collected using behavior observation forms in which they noted the participants' level of engagement and emotional response throughout the experience in five-minute increments.

Comparison Study Results

We compared onboarding and aftercare surveys responses from the VR-screening participants to those from the tablet-screening participants. **Overall, the VR group reported experiencing more positive emotions than the 2D group.**

These emotions were identified during the screening of each group:

- More VR group participants (41.0%) self-reported feeling *inspired* than in the 2D group (22.7%)
- More VR group participants (20.5%) self-reported feeling *energized* than in the 2D group (5.7%)
- The VR group reported experiencing emotions more intensely than the 2D group
- The VR group self-reported a greater sense of immersion than those in the 2D group

Comparison Study: Engagement Results

Average time spent:

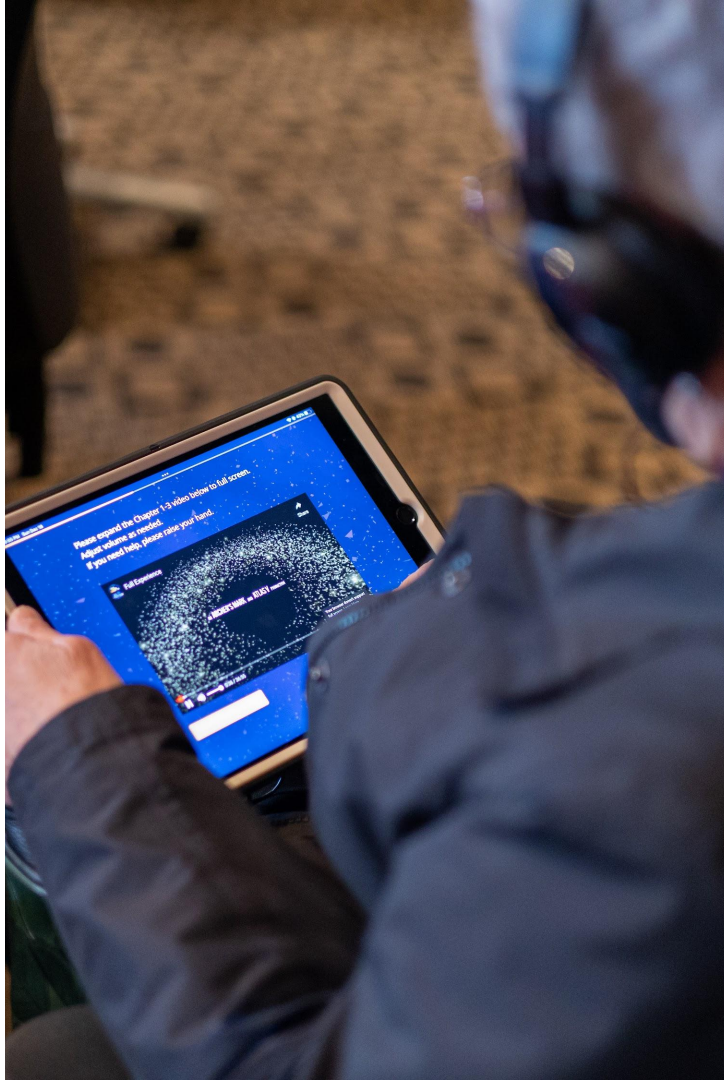
- 2D participants *M*=30.1 min (*SD*=14.4 min)
- VR participants *M*=28.15 min (*SD*=12.21 min).

There was no meaningful group difference in how many participants provided their phone numbers:

- 37% VR group
- 31% 2D group

Most participants reported negative opinions about nuclear weapons before their screening, and those opinions were strengthened after their screening.

There was also no meaningful group difference in how likely participants said they were to seek further information.



Comparison Study: Discussion

Participants rated both screenings highly overall. This satisfaction is also reflected in the high level of self-reported interest and emotion they experienced, and how much they self-reported to have learned from the screening.

However, there were differences in the reported emotions. VR participants self-reported that they experienced more positive and activating emotions (inspired and energized), as well as those emotions being felt more intensely than participants in the 2D group.

One possible explanation for these differences is that the VR group reported a higher sense of immersion in the experience than the 2D group.

These more intense levels of emotions and more positive responses to the VR screening show the potential of VR for impact storytelling.

Conclusion

Our research demonstrated that experiencing intense and positive emotions with the use of VR had a direct impact on attendee’s learning outcomes and produced the awareness that the experience was intended to create.

Learn More

Thank you for exploring *Impact Report: Results of Impact & Engagement Research and Comparison Study.*

We invite you to explore supplemental resources below:

- Deepening Engagement and Learning Impact through Virtual Reality Activations
    - Full 2023 XR4C White Paper that this Impact Report is derived from
- Field Guide: Best Practices for Producing a VR Activation
- 2020 XR4C for Social Impact: A Landscape Review

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Appendix

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THANK YOU!

Learn More

This impact report is part of a larger white paper titled
Deepening Engagement and Learning Impact through Virtual Reality Activations

Other XR4C Resources:

- Full White Paper: *Deepening Engagement and Learning Impact through Virtual Reality Activations*
- Field Guide: *Best Practices for Producing a VR Activation*
- Impact Report: *Results of Impact & Engagement Research and Comparison Study*
- Other Research: *2020 XR4C for Social Impact: A Landscape Review*

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ABOUT XR FOR CHANGE

XR for Change supports the rapidly-growing sector at the intersection of immersive technologies and impact.

SINCE 2017, XR FOR CHANGE (XR4C) HAS:

- researched XR impact production
- fostered collaboration between content creators, industry, and cause-based organizations by hosting an annual XR Brain Jam and XR Summit
- brought together diverse stakeholders and public audiences to learn about XR for impact projects and creators through the XR4C Talk & Plays
- Recognized games and the gaming industry for positive social impact and cultivated cross-sector partnerships and collaboration.

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Activation Types

In order to identify audience *impact* and *engagement* based on venue and type of activation, the team has identified three major categories where OTMYW was experienced:

Open to the public: VR activation was a free experience that would be similar to a *pop-up*.

Private events: VR activations where OTMYW was one of many programming offerings happening throughout the one day or multi-day event.

Museums Installations: These were placed within their own category, due to their VR activations having added production value and ticket sales directly to the museum or directly to screening OTMYW.

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Research Activations

On the *Morning You Wake*'s impact campaign was featured at over 20 locations and events. The venue and events below are the ones where the surveys were specifically designed for research purposes.

- **Open to the Public**
  - Oregon Shakespeare Festival | Ashland, OR
  - Media Immersive Experience (MIX) Center | Mesa, AZ

- **Private Events**
  - PlayNYC | New York, New York
  - Techonomy | Sonoma, California

- **Museum**
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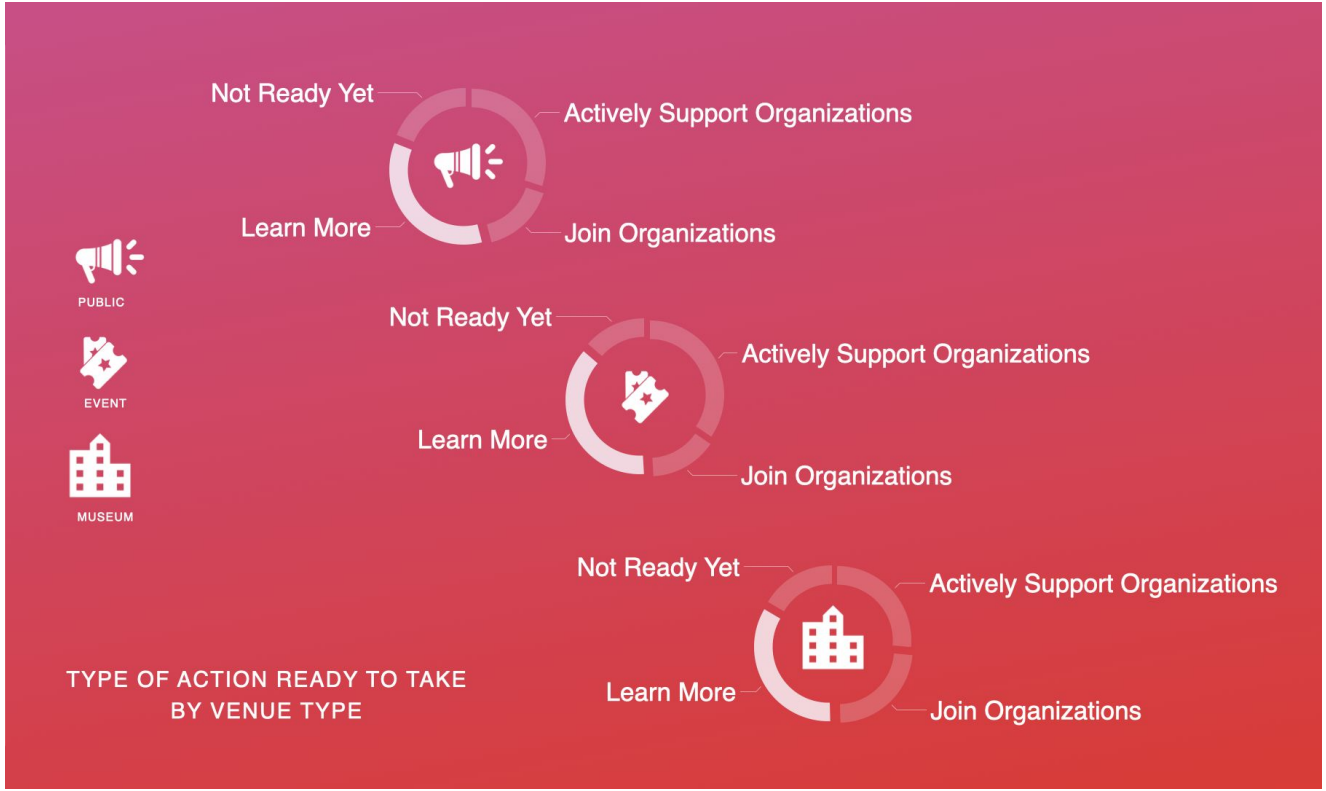
Type of Action