# Designing an Adventure: University of Southern California's Experiment in Using Alternate Reality Games to Educate Students and Inspire Change

Anahita Dalmia

*Abstract*—There has been a recent rise in 'audience-centric' and immersive storytelling. This indicates audiences are gaining interest in experiencing real adventure with everything that encompasses the struggle, the new friendships, skill development, and growth. This paper examines two themed alternate reality games created by a group of students at the University of Southern California as an experiment in how to design an adventure and to evaluate its impact on participants. The experiences combined immersive improvisational theatre and live-action roleplaying to create socially aware experiences within the timespan of four hours, using Harry Potter and mythology as themes. In each experiment, over 500 players simultaneously embarked on quests -a series of challenges including puzzle-solving, scavenger-hunting, and character interactions- to join a narrative faction. While playing, the participants were asked to choose faction alignments based on the characters they interacted with, as well as their own backgrounds and moral values. During the narrative finale, the impact of their individual choices on the larger story and game were revealed. After the conclusion of each experience, participants filled out questionnaires and were interviewed. Through this, it was discovered that participants developed transferable problem-solving, team-work, and persuasion skills. They also learned about the theme of the experience and reflected on their own moral values and judgment-making abilities after they realized the consequences of their actions in the game-world, inspiring some participants to make changes outside of it. This reveals that alternative reality games can lead to socialization, educational development, and real-world change in a variety of contexts when implemented correctly. This experiment has begun to discover the value of alternate reality games in a real-world context and to develop a reproducible format to continue to create such an impact.

*Keywords*—Adventure, alternate reality games, education, immersive entertainment, interactive entertainment.

## I. Introduction

IN recent times, there has been a rise in immersive, 'audience-centric' storytelling. This indicates that audiences are interested in experiencing real adventure with everything that encompasses: the struggle, the new friendships, the skill development and growth. This paper aims to evaluate an experiment conducted by a group of students at the University of Southern California to design an adventure by building two-themed alternate reality games and to evaluate its impact on participants.

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Adventures consist of many elements that are appealing to people. Particularly, these include using personal skills to overcome challenges and the sense of gratification that comes with it. It includes forging and strengthening relationships, whether romantic, familial or friendly. It means learning and, most importantly, it means growing. Humans largely consume adventures through stories and experience these developments vicariously through the characters in books, television and movies. However, it seems that society is reaching a point that experiencing adventures just through these media portals is no longer enough.

New immersive companies— such as those offering Virtual Reality, Augmented Reality, Alternative Reality, Live Action Role Playing and Immersive Theatre experiences— have doubled since 2015 [1]. This suggests that there has been a rise in the desire and ability to make people part of a story, indicating an interesting shift from 'storytelling' to 'story-living'. This has paralleled the rise to the "experiential economy" and become popularized by the evocation of "fear of missing out" on social media. The focuses of these companies have been wide and varied, including medical, promotional, educational and recreational services. What is most fascinating is that these experiences can serve all of the above purposes by putting the audience in the middle of the action. This paper, however, focuses specifically on their educational value and ability to evoke change in participants.

One of the earliest, formal 'immersive' forms was The Theatre of the Oppressed by Augusto Boal. For him, the "dual meaning of the word 'act', to perform and to take action, is at the heart of the work" [2]. This substantiates that the birth of this genre was to make a difference. Boal started two of the very first forms of 'Immersive Theatre': Invisible Theatre and Forum Theatre. In Invisible theatre, public audiences are "participants in the action without their knowing it. They are the 'spect-actors', the active spectators, of a piece of theatre, but while it is happening, and usually even after the event, they do not know that this is theatre rather than 'real life'". For example, two actors will go and publicly start a fight on the ethics of tipping in a restaurant and encourage passerby's to participate. Considering the fact that the spectators do not know this is staged, Invisible Theatre is further pitched as 'real-life', because it is "actually happening, the people are real, the incidents are real, the reactions are real" [2]. On the other hand, Forum Theatre allows audience members of a formal theatre show to interrupt a performance and change it by deciding what actions the actor should take in a situation

World Academy of Science, Engineering and Technology
International Journal of Educational and Pedagogical Sciences
Vol:15, No:2, 2021

and see it play out. They could also go back and change the actions of the actor based on the consequences. Boal said it resulted in "a pooling of knowledge, tactics and experience," in what Boal calls a 'rehearsal for reality.' The intention was to enable people "to become the protagonists of their own lives" [2].

It is commendable that even when people knew in Forum Theatre that the situation was not real, their emotions and reactions still were. This is because "knowing and feeling are separate functions under the control of separate brain systems. Emotions are unconscious and instantaneous, bypassing consciousness" [3]. Therefore, even though participants consciously knew that this was not real, they were able to feel the actor's experience as if it was. This character of human emotion has been described by others as an evolutionary mechanism that "sweetens death and banishes its terror so that one can live a life replete with real and imaginary risk-taking in the tranquil certainty that death is neither real nor permanent" [4]. Freud understood this very well, writing, "One's own death is beyond imagining, and whenever we try to imagine it, we really survive as spectators …. At bottom, nobody believes in his own death" [5]. Still, "adventure, whether indoor or outdoor, requires an element of real or perceived risk to which the participant is exposed through their engagement in an activity. This risk can be physical, emotional, intellectual or material. To be an adventure, an experience must have an element of uncertainty about it. Either the outcome should be unknown or the setting unfamiliar" [6]. Overall, these statements highlight the importance of creating stakes to get buy-in—but is also a reminder that, despite the perceived risk, humans are unable to imagine real risk, making simulated risk a credibly effective way of making a point.

The 'venture' part of the word 'adventure' "implies the element of travel, with or without a purpose" [7]. One of the most compelling genres when viewed as adventure is Alternative Reality Games (ARGs), as they create extraordinary circumstances for people to discover and participate in—transporting people much like travel does, and hopefully transforming them as a result. Corin Overland defined ARGs as "an immersive mixed reality experience that uses a low-cost mixture of live actors, social media and other forms of communication that allow people to mirror reality more closely than the point and click interface" [8]. It also emphasizes that "ARGs establish an extended work of comprehensive narrative fiction in which outcomes and storylines adapt dynamically according to the actions participants take (or do not take)" [8]. Participation in an ARG "superimposes a mythos over the everyday reality of the participants" [8]. It encourages immersion by "blurring lines between the fictional environments and that of the real world", allowing people to act in a natural way [8]. Consequently, ARGs are the epitome of experiential learning, which inevitably "involves the 'whole person', through thoughts, feelings and physical activity. The recognition of this 'whole environment', both internally and externally, is important" [7]. Since ARG's are so purpose-driven and based off of real-

world dynamics, they require engaging the whole person on a visceral level. It is also suggested that there are many ways of taking a role and ARG's can organically involve them all (Table I).

TABLE I
ROLES IN AN ARG

| Role | Description [a] |
|---|---|
| *Theatrical* | "[A]n actor plays a role as defined by the playwright and the director. The actor repeats over and over certain words and actions in a predetermined manner" |
| *Sociological* | "[T]he usual behavior of a people in particular societies and how they act under circumstances in a formal way; it had been used in the sense that all social behavior represents a playing of culturally determined patterns" |
| *Dissimulative* | "[P]eople play roles with the intention of deceiving or creating an impression contrary to their real feelings" |
| *Educational* | "[T]he subject roleplaying is an action of spontaneity procedure which takes place under contrived circumstances" |

Adapted from [9].

Effectively designed, ARG's incorporate all of these elements, as: (1) there are real actors, (2) people are put in sociological situations where they end up taking real, functioning roles as they interact with actors and other participants, (3) sometimes players can be asked to be deceptive as a part of the game, and (4) the entire experience can have educational goals and results.

As people take on many roles, they still must be driven by purpose and "experiential thinkers such as the Norwegian Fridtjof Nansen suggest that if we take to, or do adventure, it should be in order to see the 'land beyond', explore what is hidden, and to respond to the call of the unknown including the nature life or the like" [7]. This emphasizes the importance of discovery in adventure, both internal and external. Overland also says that some adventures "tend to be completely set in a fantasy world, or they might involve moving from the real world to the fantasy world and back again. This often requires some form of trigger between the fantasy world and the real world; for example, in The Lion, the Witch and the Wardrobe, people walk into the wardrobe and into the land of Narnia [10]. A secret code might be hidden in a cave, and there might be a 'quest'. Many of the characters in children's fantasy go through rites of passage, with helpers 'guiding them' into maturity: they learn to believe in themselves, and their lives are enriched from the experience of the quest" [7].

This paper examines the efforts of students at the University of Southern California in investigating the possibility of incubating an adventure—with everything that entails. How do such experiences impact a person's sense of power outside a narrative world? Do the participants learn something? Do they feel like they grew? To evaluate the value of this kind of experience, the students deliberately created an experience with all the elements of an adventure and used participant feedback to analyze its effectiveness.

## II. DESIGN

To achieve that goal of creating an adventure and evaluating its value, the students designed two ARGs as experiments in creating an adventure. To gather data and make

World Academy of Science, Engineering and Technology
International Journal of Educational and Pedagogical Sciences
Vol:15, No:2, 2021

it a realistic simulation of reality, they adapt the concept of ARGs—which are typically small and niche—for larger audiences in a physically contained and timed experience, publicizing it as an event and making it considerably more accessible. The experiences had an element of 'live-action role-playing' since they were advertised as a themed event and not as a game; as such, the expectations of participants were primed to make reactions more organic. After they arrived, the unfolding of action was meant to be as realistic as possible, in that each narrative development appears as a consequence of the actions of the participants. As suggested by Beard, the designers used a trigger such as a door or portal to transition between the real world and the fantastical. Both events were a three-tier experience where on the surface it was a party, then there was a competitive element and, finally, there was a participatory narrative element which people could access through 'quests'. Quests were a series of challenges—including character interactions, games and puzzles—that revealed the narrative background of the event and allowed people to establish a role within the story.

It is important to remember the value of a good adventure is that it results in a good story. However, as Beard elaborates, "Flow or 'optimal experience,' is necessary for a good story and can be broken down to its constitutive parts" [7]. He then lists the seven 'conditions of flow' identified by Csikszentmihalyi: "challenging activity requiring skills; clear goals and immediate feedback; merging of action and awareness; concentration on the task at hand; the paradox of control; loss of self-consciousness; and the experience is autotelic" (meaning it has an internal purpose) [11]. The designers included all these conditions while developing the experience, ensuring that participants were given an objective on the onset and that the characters gave them feedback and guidance enabling the merging of action and awareness. As participants had to fulfill tasks to further advance in their 'mission', it was intended they concentrated on the task at hand. While each participant did have the power to make a difference, the major characters who were driving action were still actors which resulted in the paradox of control. And finally, because of the immersive environment and task-oriented approach, it was aimed to create the suspension of disbelief and loss of self-consciousness.

In the first year, "Alohomora: Unlock the Magic" was born. Harry Potter was used as a theme to draw attention to this initial experimental experience and to capitalize on the desire to 'visit the Wizarding World.' On the surface, the event was a 'Tri-Wizard' tournament and 'Yule Ball.' It had food, live music, games—masked as the tournament—which would earn people points that they could retrieve for prizes, as well as the real underlying story. There were two rising factions in the story that participants could join (or not join): the light army and the dark army. The light army was being put together by the headmaster of Ilvermorny, the American Wizarding School, who threw an international Tri-Wizard as a cover for the secret recruitment of an international army to protect the Wizarding world from rising dark forces. Meanwhile, an immortal survivor of the Salem Witch Trials had infiltrated the competition as a sponsor—but she was planning to overthrow the current administration because she was disgusted by the Wizarding Community's acceptance of the no-maj, after all they did to the wizarding community. She used the tournament to secretly recruit her own army. The event culminated in a battle-like game in which people's contribution determined which of the two armies would win.

The second time, a more risky theme of mythology was chosen and the event was called "Ascend: When Myths Fall, Heroes Rise". Then, it was decided to not just focus on one mythology, but four: Greek, Egyptian, Maya and Chinese. To accommodate some other cultures, three additional trickster figures —Anansi, Loki and Krishna—were included as a pantheon of their own. While the designers initially considered branding it like the Olympics, they pivoted because of the modern implications of it and decided to call it a Godly 'family reunion', a choice which significantly impacted the tone of the story and wove in a lot more humor. The skeletal structure of Ascend was much like that of Alohomora. There was a surface reason that participants were invited, which was the family reunion in Ascend and the Tri-Wizard tournament in Alohomora. This cover gave participants a purpose at the beginning. Both experiences included non-narrative entertainment such as live music and food. There was a level of non-deep narrative competition in both experiences that motivated people to play: the inter-pantheon competition for which participants played 12 'family games' such as themed versions of Set, Battleship, Werewolf and the Maya Ball game in Ascend and the Tri-Wizard tournament in Alohomora. And, finally, there were quests that participants discovered by finding a riddle on a tree or speaking to particular characters in both experiences.

To increase impact in the story-world, specific quest lines were designed to affect the finale based on the number of people who played them. The basic overarching story was that head gods from different pantheons were being attacked: Ra and Ares went missing so Zeus called this family reunion to convince Demigods from across the world to defend him. Many Goddesses—such as Athena, Ma'at, Isis—and a few Gods, however, were planning a revolution to overthrow the current administration. To fix world problems like war, poverty, discrimination, and environmental damage, they want to take away human free will and, with it, the ability to make bad choices. Both sides were operating in moral grey areas—much greyer than last time. Furthermore, we chose elements that would impact the end. As such, the finale was a battle against defending the Gods of particular sides. Leading up to this, there were quests in which Demigods were poisoning and healing the Gods and, depending on the numbers at the end, the Gods would get more or fewer lives in the finale and act out varying states of intoxication. Another side story was the getting together and breaking apart of Colel Cab, the Maya bee goddess, and Antheia, the Greek flower goddess. The reason for this was that Ares was captured in Pandora's box—and this artifact was hidden on the prize table that Antheia was running. Depending on whether the trickster wanted to steal or protect the box, then, they were encouraged to distract Antheia

World Academy of Science, Engineering and Technology
International Journal of Educational and Pedagogical Sciences
Vol:15, No:2, 2021

or discourage distraction so she could focus on protecting the box. Depending on the number of people that did both quests, Antheia and Colel Cab would actually get together or break up.

To increase agency in the adventure, there were also moments integrated where the participants made choices on which quest path to follow depending on their interests; these choices, then, would lead them to different sides. For example, they could choose to talk to either Hunahpu or Xblanque from the Maya twins, but they were warned that the twins had different political beliefs. Another time, there were propaganda posters that lead to both Zeus and Krishna. Zeus' included things like "The Order Wants You" while Krishna's said things like "The Solution is Revolution"; so, depending on who participants approached, they got drawn into very different stories.

## III. DISCUSSION

To test the effectiveness of the design in incubating and adventure, data were gathered from the participants of the experience through feedback forms, interviews, and observational studies following the event. Questions that are focused on while examining the feedback are as follows:

1.  Did people realize they have *agency*? How did that make them feel?
2.  Do these experiences build *empathy* and how do they compare to other forms of narrative form that perspective such as books or movies?
3.  Do people feel like they themselves had an *adventure*? Is that valuable?
4.  Did this prompt any *action*?

All the responses from the participants were analyzed to determine whether or not felt agency was valuable and what that means from an educational standpoint. Considering participants were literally the heroes of the story, it was anticipated that they would feel invested in the conclusion of the story and that they would recognize that their actions were relevant in the unfolding narrative. The goal was that this experience leads to some self-reflection on their larger personal narrative—what their values are, what compelled them to make the decisions they made, what skill sets made them important, and if the adventure lead to any growth. The idea of growth can be very broadly defined but we will directly assess if it led to a greater ability to empathize, better identification of their own strengths and weaknesses, or any new relationships; additionally, we can then consider the implication once they step back into 'ordinary' life. As such, this analysis attempts to examine how this chapter becomes a part of their larger story.

Feedback forms asked participants how challenging they found the quests, to address the risk-taking component of having an adventure, as well as to assess if it prompted personal growth. In the Short Alohomora Feedback Form (Appendix A), 50% of people found the quests challenging but 39.3% found it simple—however this was not considered much of a problem (Fig. 1). Adriana, a participant, said "The quests were simple. Some bits were slightly challenging, but

that's what made it even more fun." This is emphasized by the response to Ascend in Ascend's Short Feedback Form (Appendix C), where the experience was simplified even further to decrease the challenge but that seems to have decreased the reward as well. Participant satisfaction seems to come largely from being challenged— and it appeared that Ascend missed that mark as 24.2% thought the quests were averagely difficult and 62.1% thought they were easy (Fig. 2). Viola relayed "Overall gameplay mechanism is pretty brilliant! I think if players (us) could be more at risk, it would've been more exciting and engaging." Viola specifically mentioned the risk, which was previously discussed in the design research, thus demonstrating its importance in creating a thrilling experience. Furthermore, Aaron said, "The puzzles, games, and riddles were extremely simple to the point that I didn't feel a true sense of accomplishment." Nick also mentioned this when he remarked, "I liked the stealing an item part… but it was really easy, my gf walked up and just grabbed it right in front of the actress. She's not a very good thief." As such, simplifying it this time was ineffective, as a part of the adventure is to feel challenged. This goes back to the idea of an adventure, because if the path was too easy it would not be rewarding to go through it; it would take the thrill of achievement out of it. Garrett explicitly said that it was the thrill of achievement and "levelling up" that caused more immersion for him, which is a narrative mechanism stolen from gaming and recognizes that certain people need to be doing things and be validated to deeply commit.

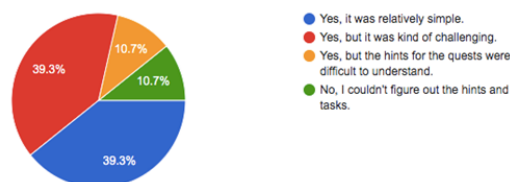### If you participated in a quest, were you able to figure it out?
28 responses



- Yes, it was relatively simple.
- Yes, but it was kind of challenging.
- Yes, but the hints for the quests were difficult to understand.
- No, I couldn't figure out the hints and tasks.

Fig. 1 Alohomora Feedback

### If you participated in a quest, were you able to figure it out?
58 responses



- Yes, it was relatively simple.
- Yes, but it was kind of challenging.
- Yes, but the hints for the quests were difficult to understand.
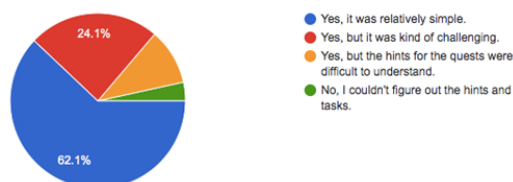- No, I couldn't figure out the hints and tasks.

Fig. 2 Ascend Feedback

It was also discussed that the immersive, task-oriented and exploratory approach was effective. This is substantiated by Adriana, who says about Alohomora, "I loved how creative it was! From searching for clues, dueling, collecting dragots, meeting new people, etc." Adriana listed some other

World Academy of Science, Engineering and Technology
International Journal of Educational and Pedagogical Sciences
Vol:15, No:2, 2021

components previously described as essential for an adventure: exploring, engaging and socializing. In Ascend, instead of trying to infer the degree the event felt like an adventure, the question was directly posed in the feedback forms (Fig. 3), where, 92.1% of participants who responded said that it felt like an adventure. This is as per design, since not everyone is equally important in a story and not everyone has an equally exciting, adventurous journey. On the scale, 7 was labelled "I was a hero", which reveals a lot about how people felt: important. The words adventure and hero came up repeatedly in the feedback too. Julia said "I had great expectations after joining the similar Harry Potter-themed event last year. I expected an adventure with an overarching quest that featured lots of mini-games," while Mary said she "wasn't entirely sure what to expect since I've never been to an event like this but I thought it was going to be an interactive adventure. I didn't know how much I was going to like it though but I ended up loving so much. I felt like I was playing as one of the heroes in my video games." This shows that people felt like they themselves were relevant to the story. The limitations of a first person perspective, then, can actually be a strength of the format—as each person is important in a way that they don't seem when the narrative is examined from a larger group sense, and it is their limited knowledge that allows them to hold this perception.
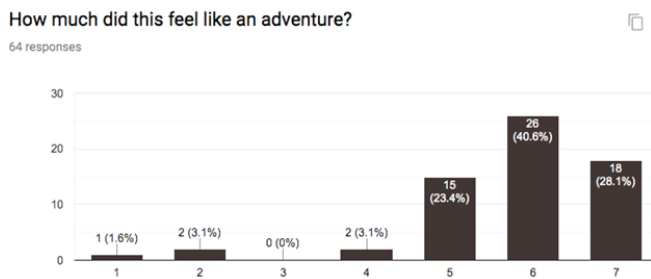


Fig. 3 Ascend Feedback

Even though our participants were the center of their own stories, no story is complete without other characters and interactions. Participants did not just feel invested in the cause; they also felt connected to and invested in the characters which led to a very strong emotional impact at the conclusion. In Alohomora, Julia, who was on the dark side, said the characters' "motivations and backstories were clear and upon learning more, it really blurred the lines between what was good and what wasn't. It was easy to empathize with the characters we interacted with." This emphasizes the educational point of empathy and ambiguity that we hoped to make because she genuinely felt for the characters and was conflicted because of it. Through the quests, Garrett developed a personal relationship with many of the characters too and this caused him to say "I felt fairly connected to all of the characters—but Miao Shen's death or "loss of free will" really wrenched my stomach. I'd never been so impacted by a death scene in my life; though partly due to my emotional investment in this character, my reaction to the death scene was compounded by my physical proximity to the actors (which is usually absent)." By creating physical intimacy and repeated interaction with the characters, it seemed to feel more like someone you know was getting hurt than someone you know of. This is also demonstrated when Tommy said in the long Ascend Feedback Forms (Appendix D) "For the most part. I think we were more connected to the individual love stories as opposed to the sides. We ended up on the 'light' side and that felt quite arbitrary because of who we first talked to. Since it felt random, we weren't really connected to the full outcome of the narrative, yet felt supportive of the characters we interacted with most". This is one of those things that really separates this form of storytelling from more traditional formats, as it is not important for the audience to identify with, like, or even care about the characters in those forms. As such, ARGs allow participants to build a very intimate form of empathy, especially with characters they might have dismissed in more passive forms of story. Here, it is their interactions that establish that intimate connection—as the participants are not exposed to all the characters and they choose the extent that they interact with each one.

It also increases their 'buy-in' to the world, investment in the cause of the story and their personal sense of self-worth. Someone else said Kai, one of our characters in Alohomora, "did a very good job of instigating the mission of the Dark Army and making me and my friend feel like we were a valuable asset to the team in terms of furthering their cause". Nick also pointed that out saying that he had "interacted with the non-golden child twin and was connected to his motivation because he asked me about my life and if I could relate". Through questions such as these, the actors created a similar sense of identification and connection between the participants and themselves but they key difference is that the actors were not just being heard by the audience member — they were also listening to them. And this made the conflict all the more real for all of our participants, showing the value of personal connection in the narrative to cause investment and how that can be leveraged in interactive live experiences and increase pay off. Because they cared about the cause in this way and the experience is connected to their real-life and past, it is more likely that it will impact their future.

It was also fascinating seeing how people navigated the world they had been presented with, as they were neither in a video game where their options could not be limited, nor in a theme park where there was no purpose except to get through all the rides. Instead, we created a world that was somewhere in between—where they were allowed to explore a landscape but there was a larger narrative with characters trying to influence their decisions and actions. Some people were aware of the sides and made deliberate decisions to seek a side out. For Alohomora in the Long Alohomora Feedback Form (Appendix B), Jess said "As soon as I walked in, I walked up to an actor I knew, and was immediately given the impression that she was playing a bad person, as she kept telling me about all the poor wizards who were killed by Muggles"; therefore, she took control of her story by going around to find characters whose ideas resonated with her more and ended up in the Light Army instead of the dark army. That did not

always work out for everyone, as in the case of Janine, who said, "Everything was wonderfully set up and the characters were totally on-point. Did quests, found them simple, 'kind of' wanted to get into the Dark army, but couldn't find where to start so I just did the Light quest." There would have been several ways to navigate this situation from a game design standpoint; the easiest is to ask a character that seemed "dark". This led to an important revelation which was reinforced going through the feedback for both years: the immediacy of the experience disorients people into a false sense of helplessness. While most people understood their choices were taking them to wherever they were, they could not problem solve larger issues because they did not feel like they had enough information. Instead, they complacently went along with whichever situation they were thrown into, showcasing a key difference between what we were doing and passive narrative. That is, in what we were doing there is no guarantee that one will ever learn everything, just like real life, whereas in forms such as books, movies and theatre all will be revealed if the audience waits. Steve says that in his roleplaying exercises, there is a facilitator and "The skill of the facilitator here is in extracting real learning from artificial situations" [12]. It is worthwhile for the designers to consider such mediation techniques for educational reasons, so that people's ignorance within the game world does not prevent them from learning outside of it.

As intended, Ascend impacted participant lives outside the fictional world through the process of developing transferable knowledge and skills. Participants said that they learned more about mythology, and several of them said they felt like a part of the show/game. Some participants, however, had more life changing breakthroughs. Garrett said that "I didn't become a character through the course of the event. Instead, I became myself—and what happened during Ascend has now become raw material to see what potentialities lie dormant in my own personality when its allowed to run without (or at least with less of, or a different kind of) a filter." Due to his importance in this experience, Garett felt empowered to be more social— he said he "cracked wisecracks and made sarcastic jokes," which he usually felt uncomfortable doing due to his introverted nature. On a less transformative level, several participants were inspired to research the lore. On feedback forms, Max said he "felt inclined to talk about it and research the world outside the event. I saw many people were so engaged that they still consider themselves as the character in the game after the whole game is finished, and I'm one of them". Furthermore, for each participant, the other participants functionally became a character cast that they had to interact and journey with. One participant said that they "asked around multiple times in order to complete the quests. I don't think we would have been able to figure it out if we didn't get help". This compulsion to ask around forced participants to interact with each other and make new friends thus makes the story more interesting by causing more interactions, intersections and opportunities. Another participant also talked about how his friend "pointed out the cocktail napkin, conveniently just about the time my wife and I finished scarfing down our

sushi". This demonstrates the unique community aspects of this format; unlike many other narrative formats, you *cannot* progress alone as you immerse yourself. Because now they automatically have an element—a friend who will stay past the magic of the night—this is key to making our experiences the participants' story rather than the story participants are witnessing. This also encourages collaboration, an important transferrable skill that will serve them once they leave the experience. By encouraging collaborative interactions in this way, however, we are also causing conversation. For Julia, her experience had impact outside the event since it spurred "lots of outside conversation. We talked about the pivotal moment where our choice, which seemed natural to all three of us, led us to the dark side and how sometimes there is no clear "dark" or "light" side, not only in this story, but in other situations as well". By having another participant with who one has shared and conversed about the experience, it then becomes more likely that we stimulate reflection and catalyze the learning process. This kind of ability to create a conversation is not unique to this kind of agency-driven immersive narrative—but what is different is that conventional forms of media pose questions that you can only answer in hypotheticals since you are not personally going through the experience detailed in the book or movie. Unlike traditional theatre, movies, and books which aim to replicate the best of reality, then, we design a fantastic reality. We created a world where we were able to hold up a mirror and tell our participants "this is what you did. These were the consequences. Now you can think about why". This enables participants to consider their own values and potential instead of just considering through other people's perspective of 'what they would have done in a situation.' And this, as previously mentioned, is highly conducive to personal growth.

Overall, then, it is not only apparent that there is a growing thirst for people to participate and make a difference in the stories they consume, but also that there is undeniable value in this activity. Though difficult to assess the tangible impact these experiences have had on an educational level and its ability to make change, it is possible to record participants for longer periods of time to discern whether this made a difference. However, internal differences are difficult to measure—and it is even more difficult to attribute credit of a particular shift in perspective, behavior, or skill to one particular experience. Often, these experiences build on top of one another, like bricks, until there is a sudden, measurable difference and a wall is now a house. These experiences will always have impacts that will never be discovered, just as stories always have a ripple effect. This industry and research are both very nascent and rudimentary, but hopefully, the preceding experiments will help guide others in making impactful experiences and have provided suggestions on how their impacts can be measured as we enter a new era of entertainment and, consequently, edutainment.

APPENDIX A: SHORT FEEDBACK FORM ALOHOMORA

Link to short feedback form from Alohomora where direct participant response can be seen:

World Academy of Science, Engineering and Technology
International Journal of Educational and Pedagogical Sciences
Vol:15, No:2, 2021

https://docs.google.com/spreadsheets/d/1h_Z46MTnaxWbr0x
FRLbKmApBiipIhNbxbU2gFSaqtjs/edit#gid=219424014

## APPENDIX B: LONG FEEDBACK FROM ALOHOMORA

Link to long feedback form from Alohomora where direct participant response can be seen: https://docs.google.com/document/d/1Sd2oOrkpeM2qfKkK_ w1jsoOfUHfUXEp-kxMDLiUqjNA/edit

## APPENDIX C: SHORT FEEDBACK FORM ASCEND

Link to short feedback form from Ascend where direct participant response can be seen: https://docs.google.com/spreadsheets/d/17v3idWe0btc0IajzUy f9owfMYA4xH2JN2DkH5sPxYlg/edit#gid=2104157771

## APPENDIX D: LONG FEEDBACK FROM ASCEND

Link to long feedback form from Ascend where direct participant response can be seen: https://docs.google.com/document/d/1j5ETTheUR_9eFAbjFG -eldsxFgreRww9GHYNX56YlB4/edit

## ACKNOWLEDGMENT

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