Lessons down a rabbit hole: Alternate reality gaming in the classroom

Shira Chess[1], Paul Booth[2]

Chess, Shira, and Paul Booth. "Lessons Down a Rabbit Hole: Alternate Reality Gaming in the Classroom." *New Media and Society* 16, no. 6 (2014): 1002–1017.

Abstract

Alternate Reality Games (ARG) can be used to reinforce classroom knowledge by encouraging collective learning practices and focusing on new media literacy skills. An ARG creates a game space from real-world locations by relying on information, both online and offline, to physically involve players in a game 'space'. While the majority of large ARGs, to date, have been used as part of marketing campaigns, an increasing number of faculty teaching topics in digital media, technologies, and game studies have begun to employ the alternate reality game in the classroom. We argue that the affordances of ARGs are best integrated within a 'play-revise-design' format. By appropriating this emerging format in classroom spaces, we hope to teach students concepts such as new media literacies, the values of 'safe failure', and social learning, while giving students the tools for interactive storytelling..

Keywords

Alternate Reality Game, Media Literacy, New Media, Technology, Game, Play

[1] University of Georgia, USA
[2] DePaul University, USA

In recent years, there has been a growing interest in how one uses gaming to mobilize new kinds of learners (Whitton and Moseley, eds., 2012). The Alternate Reality Game (ARG) is one method that many educators have begun to consider as a tool to reinforce classroom knowledge by encouraging collective learning and focusing on new media literacy skills. Most of these studies have focused on how ARGs can be used to teach specific ideas and lesson plans, such as research skills, library skills, and social engagement skills. While we agree that this is a powerful tool for education, this article advocates that the *deconstruction* and the *creation* of Alternate Reality Games in the classroom also engenders students' more meaningful interaction with the course material. We argue that the affordances of ARGs are best integrated into classes within a 'play-revise-design' format. Students should be introduced to ARG creation by playing an ARG that focuses on student/instructor interaction, and then deconstructing that ARG.

As a means of teaching safe failure, social learning, and new media literacies, ARGs offer both students and instructors a magic circle of their own in which to complicate and enliven learning spaces. Yet, just as ARGs problematize the notion of 'real world' and 'game world', so too can their pedagogical use problematize classroom authority and student autonomy. In this article, we employ Participatory Action Research to explore three different case studies which each articulates these tactics in different ways, and then ultimately compile a list of 'innovative practices' for these pedagogies, taking into account how new media technologies affect the culture of the classroom. We encourage other instructors to develop and share their own innovative practices as well. We argue that by studying ARGs in a classroom setting, media studies theorists can learn more about the potential of ARGs, and the scope of how they may be used creatively and effectively.

Alternate Realities, Gaming, and Education

An ARG uses technologies and objects in the real world as game pieces in physical spaces. In other words, ARGs remap the world as a game-space. Martin and Chatfield (2006: 6) discuss the content and possibilities of ARGs, explaining that they:

> take the substance of everyday life and weave it into narratives that layer additional meaning, depth, and interaction upon the real world. The contents of these narratives constantly intersect with actuality, but play fast and loose with fact, sometimes departing entirely from the actual or grossly warping it – yet remain inescapably interwoven.

An ARG creates a game space by relaying information, both online and offline, to involve players from real-world locations in an imagined game 'space'. This game space is not so much a physical space provided by the game creators, but rather a conceptual space that supersedes into the real lives of the game players. For example, upon giving a phone number to the game creators ('puppetmasters'), the player may receive voicemail or text messages from fictional characters, instructing them to specific tasks that may bleed into real world spaces. Similarly, secret codes might lead to GPS coordinates, ISBNs, or other physical manifestations of virtual information. The power of the ARG is in how it allows players to coordinate information, transforming non-physical interactions into physical actions.

The ARG is an emergent form of storytelling and design. Early ARGs, such as *I Love Bees* and *The Beast,* were primarily advertising campaigns for media products, such as video games and films. Larger ARG campaigns can vary in length and scope, and many occur internationally over a span of several months. Barlow (2006) suggests that there are currently five main categories into which ARGs fall: promotional, grassroots, productized/commercial, single player, and educational. The promotional ARG is a high profile advertising campaign often linked with releases of mainstream video games, films, or television shows; grassroots ARGs are primarily volunteer-run ARGs created for and by smaller communities; productized ARGs are similar to promotional, but are their own commercial products from the outset; single player ARGs are smaller scale and are played by the individual; educational ARGs are meant to teach concepts (Barlow, 2006). It is worth noting, though, that these ARGs are not inclusive of a category that allows for student-created, small-scale ARGs, or any kind of artistic expansion of the genre. In what follows, we propose not only using educational ARGs to teach media studies concepts within the classroom, but also to have students create ARGs to concretize that information. This student-centered approach to applied game creation must be moderated by an instructor, but also rely on student

participation. Furthermore, by creating an ARG in a more dialogic classroom space, there are possibilities of expanding the genre to further categories that have currently not been conceived of. Because much of the understanding of ARGs, up until now, has been primarily concerned with various kinds of commercialism, there have been only a few attempts to expand the categories to new directions.

ARGs are not just for entertainment; there have been serious uses as well. Jane McGonigal (2011: 125) explains that they are, 'games you play in order to get more out of real life, as opposed to games you play to escape it'. McGonigal illustrates how ARGs as a gaming category have the potential to be life-changing for both players and game creators and has begun to operationalize this claim by creating ARGs to raise awareness about social problems. Her game *World Without Oil* tasked players to figure out how to exist in their own living spaces without the comforts brought by oil-burning products; her *EVOKE* crowdsourced playspaces to help solve global poverty, funded by the World Bank Institute. These kinds of uses demonstrate that ARGs are not necessarily just for advertising campaigns – they can be used in more complex, serious ways.

It seems obvious that the ARG presents a reflective practice for experimenting with pedagogies. Dondlinger and Wilson (2012: 155) note that the ARG is ripe with educational possibilities, and in particular they 'distribute game challenges, tasks, and rewards across a variety of media both digital and real' in order to effectively communicate multimedia discourse in courses. It is these very affordances that make it an ideal space to structure educational challenges and urge students to be creative and collaborative in the classroom. Similarly, Olbrish (2011: para. 14) explains:

> ARGs aren't just for entertainment or to address social issues. Because of their unique design elements, ARGs are a perfect solution for organizations that want their employees to not just be exposed to new content in a classroom setting or an e-learning module, but to practice applying that knowledge in an immersive environment.

One aspect of ARGs that makes them so effective in the classroom is their potential use of collective intelligence (Jenkins, 2006). Collective intelligence, one of the key precepts of Jenkins' assessment of today's participatory learning culture, is the harnessing of group knowledge (Jenkins et al., 2009).

Collective intelligence is formed through social relations and is a key defining characteristic necessary for contemporary culture (Jenkins, 2006). Gurzick et al. (2010: 179) suggest that the skills of collective intelligence (which can be part of an effective classroom strategy) might also strengthen student's effectiveness in the workplace. They conclude, 'lessons can be learned from the study of ARG environments that may be advantageous to traditional collaborative workplace. ARGs [are] reshaping our general notions of collaborative information development, storage, and dissemination'.

With a few exceptions (such as the aforementioned 2012 study by Dondlinger and Wilson), discussion on the history and uses of ARGs have focused on how constructing and performing an ARG for a group of people might help them learn. But ARG lesson plans need not be only about having students play ARGs – it is equally beneficial to have students *create* ARGs as a part of media pedagogies. Constructing ARGs can help students learn about affordances and constraints of different technologies, key concepts in game design, and also effective strategies for storytelling. According to Gurzick et al. (2011: 178), 'Stories and storytelling are integral to ARGs. Indeed, a characteristic of the genre is the collection of multiple, overlapping stories that an ARG produces due to ambiguous information and motivated, text-based collaborative decision making'. Thus, just to construct an ARG for students is to limit the scope of what can be taught. Having students construct their own ARGs creates opportunities to teach about effective storytelling strategies, technology usage, and collaborative principles. By employing Participatory Action Research, we have found that students produce higher quality work when they have worked first with their instructor to develop, play, and deconstruct a classroom ARG first.

Beyond ARGs, much research on the use of games in educational settings has shown the pedagogical value of play (Jenkins et al., 2009). As Thomas and Brown (2011: 40) argue, 'in a world of near-constant flux, play becomes a strategy for embracing change, rather than a way for growing out of it'. Literature on the connection between games and learning is vast, mainly because games themselves encourage and develop learning models. The quality of 'play' has become prevalent across cultural systems, in what Booth (2010: 2) has defined as a 'philosophy of playfulness'. This philosophy has developed because of the expanding (social) media scape which is 'rapidly becoming dependent on a

culture of ludism'. One of these areas that benefits from a culture of ludism is formal education. Although Gee (2003) has shown that video games can offer learning opportunities outside of the classroom, using games in the classroom has demonstrated engagement, attention, and accomplishment (Colarusso, 1993). As Jenkins and Squire (2003: 10) noted in an early article about video games and education, 'games promise to stimulate the imagination, spark curiosity, encourage discussion and debate, and enable experimentation and investigation', all of which are powerful tools for use in the classroom. Furthermore, in their discussion of learning in a 'new media' culture, Ito and Bittani (2010: 196) demonstrate that 'games provide important opportunities for learning in practice'. In the creation of the Quest to Learn, an all-game-based curriculum for students, researchers led by Katie Salen developed ten core practices for creating game-based learning environments, each of which demonstrated the clear connection between *play* as a characteristic of games and *learning* as a characteristic of the classroom. Among others, the most relevant practices to our study include 'Taking on identities', 'practicing in context', 'interacting with others', and 'inventing solutions' (Salen et al., 2011). These practices centered on engaging students with innovating teaching practices, but none of their 'Ten Core Practices' used the type of apprenticeship model demonstrated by the ARGs in our case studies. Although our study was aimed at college students, we believe that principles of design and implementation of ARGs need to be guided by demonstration as well as innovation.

Our argument, that both the *play* and the *creation of* Alternate Reality Games provides a space of mutual learning in the classroom, partially stems from these practices. There are three characteristics of games and education that are relevant to our particular study of Alternate Reality Games. The first is that games in the classroom allow for *safe failure*. The second is that games in the classroom encourage *social learning.* And the third is that games in the classroom create safe spaces in which to practice and learn *new media literacies*. These three characteristics roughly match what researcher Moseley (2008) has also cited as the three major benefits of using ARGs in the classroom: increased engagement, more developed problem solving skills, and peer/community support.

Failure

Play is useful pedagogically because of the psychological freedom it permits students to experiment, to develop, and to learn from not succeeding. As indicated by Economides and Moridis (2008), one of the biggest impediments to student learning is *fear of failure*. Students are hesitant to raise their hands, to volunteer critical thinking, or to generate discussion topics because of a fear that they may be incorrect and fail at answering the question correctly. As Juul (2009) illustrates, failure is one of the key components of any game: failure adds meaning and nuance to gameplay which allows individual players to feel more fulfilled once they triumph over the failure. Perhaps most importantly, failure in a game is also *safe* (Jenkins et al., 2009). One expects to fail in a game, and the consequences for said failure are minor, as opposed to failure in the classroom (restarting a level in private, versus, say, having others in class think you haven't done the readings). Envisioning the classroom environment as a game – or creating games out of work within the environment – allows students to see failure not as a negative consequence of incomplete learning, but rather as an obstacle over which they can become victorious. In a classroom ARG, the course *becomes* a game, deepening the role of play in the classroom and integrating Alternate Reality Games as class pedagogy: This allows students more opportunities to learn from failure without necessarily feeling pressured to *not* fail.

Social Abilities

A further consequence of integrating ARGs into the classroom is an increase in the social abilities and structures of the students in the class. In a world where we are increasingly physically separated from others, games offer a space of almost forced sociality. For example, Piatt (2009: 317) describes an ARG designed for her University's library that encouraged students to develop research skills. One of the greatest successes of the game, she notes, is at the social level. Furthermore, Squire (2003: 10) shows how gaming is 'situated in social and cultural spheres that are perhaps more important than the game itself', leading to the conclusion that *use* of games is actually more a significant variable of social engagement than the game that is played. Playing games with others teaches not only social skills, but also how to

engage in the constantly changing world around us (Thomas and Brown, 2011: 47). In addition, by working in groups to construct and to play ARGs, students learn important group dynamic skills that may prove effective in future social situations.

New Media Literacies

The final characteristic that games in education provides, as relevant to our case studies, is an increase in new media literacies in the classroom. Technology has rapidly developed over the past few decades, and classrooms are finding it difficult to keep learning contemporary with what technology students can engage with outside of formal learning environments. Henry Jenkins et al. (2009: 4), have shown that *play* – defined as 'the capacity to experiment with one's surroundings as a form of problem-solving' – is the one of the most important new literacy skills. Salen's (2007: 303) work with designing RPG (role-playing games) in the classroom has led to her assessment that teaching game *design* enables 'a type of reflection in action that supports good learning' across different media and technologies. Alternate Reality Games in particular – and games in general – provide opportunities for students to engage with and demonstrate knowledge of new technologies while providing pedagogically sound educational opportunities. In the aforementioned study of ARGs in the library, Piatt (2009: 315) used an ARG to introduce new students to university systems. Using the web and various social media technologies, students found 'codes and cryptic content that were hidden within "normal" information about the featured service'. The result of this 'treasure hunt' style game was that it 'provides some evidence that the alternate reality game/treasure-hunt format can provide an interesting alternative to existing mechanisms for introducing students to certain types on information or services' (Piatt, 2009: 321). Only by harnessing multiple literacies together could participants complete and learn from the game.

Participatory Action Research

In order to understand how classroom concepts of safe failure, social abilities, and media literacies might be employed in the classroom, we used Participatory Action Research (PAR) to study and evaluate our use of ARGs in the classroom. PAR is applied research that involves collaboration between researchers and the communities being researched. In short, these methodological approaches attempt to democratize knowledge (Whyte et al., 1991). According to McIntrye (2007: 1) PAR-based projects intend:

> (a) a collective commitment to investigate an issue or problem, (b) a desire to engage in self- and collective reflection to gain clarity about the issue under investigation, (c) a joint decision to engage in political and/or collective action that leads to a useful solution that benefits the people involved, and (d) the building of alliances between researchers and participants in the planning, implementation, and dissemination of the research process.

Because of the personal nature of our research – working with our own students in our classes – and the student's willingness to be collaborative partners in this pedagogical consideration, PAR seemed to be an ideal methodological approach. With this scope in mind, we collected student data wherever and however available: primarily through observation of student behaviors and projects, through collection of student materials, and through in-depth class analysis of the activities that had transpired. While each of the ARGs discussed below were enacted in different kinds of courses (and at two different universities) we feel that our collective experiences in using transmedia storytelling to engage students, they all contain commonalities that shed light on both ARGs as well as learning pedagogies.

Using ARGs in the Classroom

Ultimately, while the use of games in the classroom has been well-documented, the role of Alternate Reality Games has not been. ARG researcher Whitton and her colleague Hollins (2008: 227) demonstrated that using virtual gaming worlds – spaces like *Second Life* or Massive Multi-Player Online Role-Playing Games (MMORPGs) – can be cumbersome or expensive to implement. They recommend using ARGs instead, as the flexibility and open-endedness of the ARG 'gaming environment … is fit-for-

purpose, customizable and relatively inexpensive'. Especially for the college classroom, ARGs provide a useful pedagogical tool for increased student attention, motivation, and achievement. Importantly, we found that they also enhanced the instructor's ability to connect and bond with the students in the class as well as to effectively teach the topic of the course. In what follows, we outline three sample ARGs that we used in the classroom, each of which provide critical commentary on practical methodologies. Each sample ARG approached the game differently, and garnered different results. For example, the first ARG (as Transmediation) did not ask students to revise the game. Instead, they were asked to create their own with no knowledge of how to do so. We look at this game as a failure. The second ARG (as Play) did ask students to deconstruct the classroom game, but did not provide necessary instructor feedback to demonstrate proper game design. We look at this game as a tempered success. The final ARG (as Media Technologies) made use of both student-centered design as well as instructor-led feedback. We look at this game as a success. Following this, we have also created a list of 'innovative practices' for using ARGs in the classroom, drawn from these experiences.

ARG as Transmediation

As an example of class-based ARGs, we believe this ARG did not succeed in communicating the course material as it relied too much on students' own work without instructor feedback. However, as a 'safe failure', it provides a useful heuristic against which we can judge further ARG development.

In the Spring of 2011 Paul Booth taught a class that focused on transmediation, or the way a single narrative can be spread out amongst multiple outlets. A one-day, scavenger-hunt-type ARG designed for this class demonstrated how different media technologies could be used together to tell one cohesive narrative. Specifically, Booth was interested in showing students how 'in the most ideally balanced example [of transmediation], all texts would be equally weighted, rather than one being privileged as "text" while others serve as supporting "paratexts"' (Mittell, 2012: para. 13). In this attempt, we believe the game ultimately failed. However, through its failure there is much to learn about what worked and how it could be implemented for such a pedagogical intent in the future.

For the first hour of class, there was a discussion of the concept of Alternate Reality Gaming in a narrative context. One concept discussed was that of the 'Rabbit-hole' – the point of entry into an ARG. Booth made sure to highlight this notion using a powerpoint image of *Alice in Wonderland* as a 'tier' to push them into the classroom ARG (Dena, 2008). The second hour of class was intended for the students to play the game and the third hour to discuss the results. In addition, students were expected to take notes on the process of *playing* the ARG in order to implement its design principles into their own final project, which was the design of a 10-step ARG as advertising for a television program.

In a previous class, students had been assigned to teams for their final project. The ARG began with carefully hidden envelopes in the classroom, each containing different information (a code word and three numbers). This led to the instructor's cell phone number, to which the code word needed to be texted. The goals of this step were for social learning and new media literacies.

After the code was texted, Booth responded with a message containing an image of a particular location on the floor of the building that the class was held. Hidden at each location was another envelope, this time containing a photograph of another group and one half of a rebus puzzle. The goal was to have each group find its 'sister' group and put their rebuses together. When spelled out, the two rebuses created a trivia question which, when solved, led the two now-combined groups to different locations (bookstore/library) on campus.

At each location Booth enlisted the help of a worker to give the group a third envelope that contained a final clue. This clue was a math problem that consisted of trivia questions they could solve with their smart phones using Wikipedia and Google. For example, to get the answer of 303.48, the clue was: '(Zach Snyder's muscular film, plus number of sheets to the wind a drunkard is), plus (The decimal equivalent of Jack Bauer's show divided by Curtis James Jackson III).' When combined with solutions to the other problems, the entire clue enumerated the ISBN of a book that they could ask the bookseller/librarian for. In addition to each ISBN, three numbers were included on the puzzle that corresponded to page number, line number, and word number (e.g. 150/15/5 was page 150, line 15, word 5). The team that texted that word first, won the game.

As with any classroom experiments with new media, not all elements played out as Booth expected. Initially, the students did not notice the *Alice in Wonderland* image on the screen and waited for the instructor to return. From that halted beginning, the class worked in their teams throughout the first two puzzles. Once the game began, the excitement of the groups was palpable and students could be heard running through the hallways to solve clues. It also took the teams far longer to get through the game than intended. An hour of class time had been budgeted for gameplay; as it turned out, it took the groups over two hours to finish. Booth hadn't taken into account 'safe failure', as the puzzles and problems took the teams longer than anticipated to solve. The concept of 'safe failure' applied to the ARG itself, as the failure of this class project sparked revisions in the activity for the future.

For their final project in class, students were expected to work individually to create an ARG based on a television program. Each step needed to include a puzzle and in total at least five media technologies needed to be incorporated into the game. The goal of this final project was to allow the students to demonstrate their game design skills and to integrate the 'transmedia' aspects of class by integrating the multiple technologies into one narrative. The course material became heavily emphasized, as the multiple media had to function together in order to produce a cogent narrative. However, in practice the student-designed games did not fulfill those goals. No student used a coherent narrative and thus the basic course material based on 'transmediation' was moot. In retrospect, focusing on a created narrative might have provided more incentive for the groups to finish their puzzles faster; additionally, it would have tied into the overall focus of the class. Further, given that the students had not deconstructed the in-class game (due to timing), there was no basis for comparison. Although this ARG did demonstrate problem solving at varying levels as well as potential for large, active community, two characteristics defined by Moseley (2008) as key pedagogical qualities of ARGs, there was no critical reflection on these practices, and thus the student-centered games failed to elicit the qualities of game design necessary for ARGs in the classroom.

ARG as Play

The second time Booth used ARGs in the classroom, it was in a class themed for it. He designed a class called 'Games and Communities', which was intended to explore Alternate Reality Gaming explicitly. The class looked at games as media – it explored play as a concept, analyzed types of games, and interrogated 'gamification'. Students were expected to play an ARG and later in the course to design their own ARGs, each of which was supposed to take place in the community. The class made use of all three learning goals: Safe failure, social learning, and new media literacies. It also suffered from an imbalance between classroom authority and student autonomy.

The ARG designed for this class was intended to illustrate the notion of 'play' as it relates to games. In *Rules of Play,* Salen and Zimmerman (2004: 304) articulate a number of conflicting definitions of the term *play*. They explain that play can be concrete or nebulous, can apply to a specific (game) text or to a general feeling. The class used their definition of play as 'free movement within a more rigid structure'. Booth wanted to engage the students by exploring the implicit structures of scholastics as well as the explicit boundaries of the 'real world' and the 'game world' in the classroom.

In order to demonstrate how Alternate Reality Games factored into the 'play' schema of the class, Booth asked the students to play an ARG over one weekend early in the quarter. Learning from the previous experience, this game used a stronger narrative to the game: their professor had been kidnapped, and his cherished coffee mug had gone missing. As the game unfolded, students learned that the coffee mug was the true object of the kidnapping; their professor was just collateral damage. The game began through Twitter, when Booth tweeted about being stalked en route to class. After five minutes with no professor, the class was greeted by the TA, who distributed manila envelopes which had been given to her by a 'mysterious man'. Each envelope contained a business card with a website on it, a Latin phrase, a business logo, and the name of a person. These clues linked to social media profiles, each of which gave more information about each fictional character. In contrast to the one-day ARG designed for the narrative class, the opening of this longer ARG included detailed background information. The intent of this background, which students were expected to spend an hour or so investigating, was to create a playful 'other world' populated with realistic characters.

Unexpected, the teams learned safe failure at the start of the game. A social media profile used a quotation from Shakespeare, which was referenced later in the game. However, students interpreted this quotation as a chance to search the library for the *Collected Works of Shakespeare* in the University library. This 'failure' may have cost time, but gained students experience in learning the library system as well as understanding the game characters more in depth. Students learned new media literacies by dialoguing with different 'people': progress in the game was measured by emails from 'the police', who claimed to be following the teams' communication with each other. Students thus knew when they had completed the days' work if they received the email from the fake officer. Finally, students experienced social learning through interaction with real-world people. On the second day of the ARG, the teams had been instructed to meet a stranger on a train platform in the city (a graduate student in the department). The basic instructions given to the teams were to approach the man in the t-shirt and speak a code phrase. Once they gave him the right answer, he was to give each team an envelope containing clues for the third and final day.

What was most notable was that participants in the game took their roles more seriously than expected.. The graduate student not only played his part, but also enlisted the help of two beefy gentlemen to play the roles of 'protection' – which caused the teams (who didn't know this wasn't planned) to treat him like royalty. They bowed in front of him, kissed the rings on his fingers, and asked permission to speak. None of this acting was planned, but illustrated perfectly the role that social 'play' had in deconstructing the boundaries of the game world, the fictional world, and the real world.

In a subsequent class session, Booth spent time with the students deconstructing the ARG. The class examined each of the games and they fit together to create a narrative. He used a Prezi animation to illustrate the steps that he had envisioned for the three-day game and encouraged the students to rewrite the puzzles to discover different methods for outlining the clues. The deconstruction provided an avenue for students to use those key ARG precepts of safe failure, social learning, and new media literacies as classroom pedagogies before engaging with them in-game as well. Additionally, the deconstruction allowed students to voice concerns with the way the narrative of the game developed and to offer

suggestions for improvement, which they could also integrate in their own ARG creation. The use of the classroom deconstruction contributed to the students' learning and also allowed a more robust understanding of ARG construction for their own games.

However, numerous problems and issues plagued the final project, in which students created their own ARGs. Students were asked to design a two-day ARG that integrated a local non-profit organization, and also play another teams' game during the week before finals. Additionally, after playing each other's games, students were asked to write a paper 'reading' both games (theirs and the other team's) against each other. One team, for example, created a game where animal poachers were trying to steal animals from the local zoo and the character 'Nigel Raspberry' enlisted individuals to help stop them. Another group focused on a boys and girls club in the area and asked players to visit and learn about the history of the group.

Four factors contributed to negative reactions and the failure of learning goals for this game design. First, timing the game for the week before finals meant that students were (understandably) pressed for time and did not want to complete a two-day game. Second, although the teams created social media profiles for each game, there was not enough time for them to give backstory and create a deep narrative: Nigel Raspberry has but four followers on Twitter (and each team had seven members). Third, the puzzles created by the students appeared to be too difficult for other players to solve – and some, like a team's crossword puzzle – had misspelled an answer, leading to much confusion. Finally, students were being asked to do too much with the game on their own: although Booth offered advice and help throughout the process, the actual gameplay was unmonitored and students seemed unmotivated to follow-through with each others' teams. This lead to an imbalance of classroom authority and student autonomy. By *not* playing the game with the students, Booth asserted authority over the projects, but conversely allowed the students too much autonomy in how to play the game. Students saw the game as unimportant because of their increased autonomy.

ARGs in Media Technologies

Shira Chess decided to use the ARG approach to her 'Media Technologies' course. Students in Media Technologies learned the cultural ramifications of technological progress and the implications of technological change within the spectrum of multiple media technologies. Students were asked to study several technological trajectories, and consider the affordances and constraints of each technology. In order to achieve this goal, Chess employed an ARG to help students understand how technologies might be combined together to relay complex narratives. In contrast to Booth, Chess focused less on 'narrative' and more on technological affordances. Several of the key foundational concepts already discussed – failure, social learning, and media literacies – still played a large role in the outcome of the course.

Rather than starting with a large ARG, students were given group-based 'technology challenges' over two- to three- week periods. These challenges were specifically worded in such a way that students could loosely interpret the assignment to maximize the creative potential of the storytelling. Technology challenges included: (1) Use a technology to tell a lie, (2) Use a technology to tell a joke, (3) Use a technology to convince at least two people to do something they would not ordinarily do. Students were instructed to post their chosen technology on the course blog, and once a technology was 'called' other teams could not use it. This allowed students to be exposed to the affordances and constraints of several technologies. Additionally, they created an opportunity to experiment with working with one another as teams, and were encouraged to change teams throughout the course of the semester, allowing them to 'fail' in a safe environment, and use those skills to apply to subsequent work. Social learning was a key practice in all of these exercises, and students slowly got used to their classmates, and which ones were most effective at different aspects of production. Finally, new media literacies were at the core of these exercises – because technologies could not be duplicated, the idea was to have students exposed to the largest possible number of media technologies.

At the mid-semester point, Chess surprised the students by running a 24-hour ARG. The ARG, in many ways, balanced out some of the difficulties – particularly regarding narrative – that Booth had experienced with his shorter classroom ARG, but also did not span the amount of class time as the second

ARG project that he ran in his other class. This exercise quizzed students on course material, but primarily functioned as a brief model of the kind of interactive storytelling expected for the final project.

The class ARG began with students being emailed by an Artificial Intelligence, which introduced itself as their new instructor by telling them that due to budget cuts, their professor had been replaced. Over the subsequent day, the students continued to receive emails from the AI, instructing them about changes to their syllabus. Through a variety of clues at various points on campus (as well as online) students utilized several technologies that had been discussed over the course of the semester. ARG content lightly quizzed students on course material, but was mostly meant to give them an idea of how a transmedia narrative functioned – simultaneously giving them the opportunity to critique it.

Overall, the ARG was successful. Students were enthusiastic and excited to start their own ARGs after completing the one created by Chess. Furthermore, she suggested to them during class discussion, that the ARG had used a technology to tell a lie, used a technology to tell a joke, and used a technology to get them to do something they wouldn't ordinarily do. This helped students understand that the projects that had been doing earlier in the semester – the technology challenges – were all leading up to a larger project. Some aspects of the ARG were more successful than others. One issue was that there were two many passwords (three total) which was confusing for many students. Additionally, having not had enough caffeine the morning of the ARG, Chess mistakenly handwrote one clue incorrectly, making one team understandably disgruntled. But even with these issues, the project created an energy that flowed into their final projects, gave them an opportunity to start experimenting with social learning, allowed them to experiment with failure, and ultimately gave them ideas for experimenting with different kinds of media (leading to better media literacies).

The class' final ARG assignment was as follows. Groups were told that they needed to create an ARG that used a minimum of five different technologies over the course of at least two weeks. They were required to document everything that they did, down to where and when they posted signs. This use of a variety of media types and documentation fostered new media literacies pedagogies. Finally, they were told that if a clue didn't work to 'jump ship' – they were not to continue down a path that they did not feel

would be successful. This built in the concept of 'failure' as previously discussed, and allowed them to not think of failure in a negative way. Students were permitted to provide clues by any means necessary. The final end-goal was the same for all of the class – each group had a pre-assigned location at which they were asked to get as many people as possible to distribute cookies to strangers. This final flash mob outcome was voted and agreed upon by the entire class.

The resulting projects varied wildly in terms of both continuity of storytelling and empirical results. Group narratives used themes such as superheroes and ghosts in order to engage students across campus. One group successfully got over 150 Twitter followers in less than two weeks (and over 100 YouTube views). Having students *create* their own ARGs helped teach the concepts of media literacies, failure, and social learning, but such student-centered creation hinged on students playing and deconstructing an ARG created by someone else. Students were able to experiment with failure, as they realized that one media or another did work or not work. For example, one group left packets of cookies with QR Codes on them as a rabbit hole, but quickly learned that many people are dubious of food left around by strangers. The group that had 150 Twitter followers did an excellent job of virtually engaging strangers, but could not get them to act in the real world.

These aspects of failure were best articulated in an assigned postmortem where the students were asked to analyze what they did well and what they would do differently. Rather than grading them by the success or failure of their ARG, Chess graded students by how well they analyzed those successes and failures. This, similarly, helped to support the media literacies aspect of the ARG projects. By considering the affordances and constraints of each of the technologies used, students were given a new perspective on using these technologies outside of the classroom. Finally, by learning (together) about the complexities of getting *others* to learn as groups, the teams were able to better understand social learning from a variety of perspectives.

In all three of these case studies, students encountered ARGs within the classroom. Whereas the ARG as Transmediation game did not rely enough on game deconstruction and the ARG as Play game relied too heavily on students' own construction of the game, the ARG as Media Technologies approach

balanced game design principles with an interactive teaching method. Through these different approaches, we advocate game creation as a pedagogical practice. Introducing students to ARGs by playing an ARG is an essential first step. We also believe deconstructing that ARG in class offers a more robust method for learning course materials. In the next section, we outline some innovative practices we've implemented in our ARG courses.

Innovative Practices for Using ARGs in the Classroom

The following are some of our recommendations for both creating and assigning ARGs as classroom projects.

1. Run your own ARG for the class, but encourage the students to 'deconstruct' it. Particularly for those trying get students to create their own ARGs, it is important to have them play first. Explaining an ARG can be confusing for some students, but once they have played one they will have a better idea of what the instructor is looking for.
2. Design game challenges that enrich narrative develop and create a safe space for failure by submitting your own game for critique. No classroom ARG will be perfect. Just as you expect students to critique their own work, it is useful if students are able to pick apart the ARG that the instructor has made. This, additionally, reinforces the concept of 'safe failure' to the class and helps students understand that failing is part of the process.
3. Schedule ARGs before finals. While large projects are often completed at the end of the semester, it is key to have student ARGs run slightly earlier. During exam periods or when the campus is busy, it will be more difficult to find players and students are less likely to put the right amount of effort in this seemingly 'fun' project.
4. Build in flexibility. In order to allow for failure, encourage students not to get too hung up on one method, technology, or storyline. Encourage them to quit and try alternatives if things are 'failing'. This provides a safe space for failure and pushes them to analyze while they are producing the game.

5. Have student write up postmortems on their projects. In order to get students to analyze and critique their own media literacies, ask them to write up a 'postmortem' of the project. In a few pages, the students should analyze everything they did wrong (and right) and how they would do it differently if given enough opportunity. By properly weighting the grade on this assignment, one can get fantastic analysis out of students.
6. Have students 'playtest' portions of the ARG before releasing. As with any game production, playtesting is essential. Try to poke holes in aspects of the game. For example, if students want players to find a book at the library, quiz them on what will happen if that book is checked out. Have students bring versions puzzles to class to see whether they are too difficult (or too easy) for other students to follow.
7. Play the games with the students. Students become more engaged with the material when the instructor demonstrates an interest in the subject. Not only can your expertise be drawn upon to solve more difficult puzzles, but students will want to participate (even if only for visibility and class credit). Further, students see the social learning at the heart of ARGs when instructors become embroiled in the game as well. If play as a concept can be seen as free movement within rigid structures, then blurring the boundaries of student and instructor encourages more interactive learning.
8. Make interactive and image-based visualizations of class ARGs. A simple outline cannot fully encompass the multiple structures and varied pathways an ARG can take. Especially if you are going to have students rewrite your ARG or playtest their own in class, offering a fully interactive visualization of the game – either through Prezi, through a wiki, of even through powerpoint – provides students with a better understanding of the forking-paths and possibilities of ARG gameplay.

Conclusion

As a still developing mode of storytelling, the ARG is a format full of possibilities in the classroom. In this article, we have highlighted three main uses for ARGs in the classroom: having students play instructor-created ARGs, having instructors and students work together to deconstruct the in-class game, and also having students make their own. While, in the past, the majority of classroom-based ARGs (and studies on them) have focused on the former, we argue that the latter two – deconstruction and creation – are equally useful. Furthermore, we argue that the ARG does not need to teach one specific topic but rather can be used to teach more general concepts about storytelling as well as a means for teaching students about media literacies, failure, and social learning. We learned that using the ARG to teach specific concepts – transmediation or play – can be overwhelming for students. A more general approach – looking at media technologies and affordances, e.g. – can engage students more fully. These concepts are not merely embedded in the games created for students, but are also part of the instructional process of having students create alternate reality games of their own.

Furthermore, students creating and experimenting with ARGs creates opportunities for expanding Barlow's (2006) categories of what an ARG is capable of being. As a new mode of storytelling we have only potentially scratched the surface of its possible uses. By integrating ARGs into education and allowing for safe spaces for students and faculty to experiment with the form, we expand the genre into directions that have not yet been fully realized. We recognize that we are far from alone in using ARGs in the classroom, and look at this work not as the definitive word on ARG pedagogy, but as a call to continue this work. We encourage other instructors to develop their own innovative practices. While students may learn important lessons from going down a 'rabbit hole', classroom use of the ARG creates the possibility that the rabbit might learn some lessons, as well.

Authors Biographies

Shira Chess is an assistant professor in the Grady College of Journalism and Mass Communication at the University of Georgia. Her research has been published in several journals, including *Critical Studies in Media Communication*, *Feminist Media Studies*, and *Information Communication & Society*.

Paul Booth is an assistant professor in the College of Communication at DePaul University. He is the author of *Digital Fandom: New Media Studies* (Peter Lang, 2010), *Time on TV: Temporal Displacement and Mashup Television* (Peter Lang, 2012), and *Media Play* (University of Iowa, forthcoming), and the editor of *Doctor Who: Fan Phenomena* (Intellect, 2013). He is currently enjoying a cup of coffee.

Bibliography

Booth, P (2010) *Digital Fandom: New Media Studies. New York, NY: Peter Lang.*

Colarusso CA (1993) Play in adulthood. *Psychoanalytic Study of the Child* 48: 225–45.

Dena C (2008) Emerging participatory culture practices: Player-created tiers in alternate reality games. *Convegence* 14(1): 41–57.

Dondlinger MJ and Wilson DA (2012) Creating an alternate reality. *Thinking Skills and Creativity* 7(3): 153–164.

Economides AA and Christos NM (2008) Adaptive self-assessment trying to reduce fear. In: Dini C and Dascalu S (eds.) *Proceedings of the First International Conference on Advances in Computer-Human Interaction* (ACHI 2008) Martinique, 10–15 Sainte Luce, Martinique*, IEEE Computer Soc. Press*: 158–163. (accessed 13 Feb 2013) Available at: http://doi.ieeecomputersociety.org/10.1109/ACHI.2008.28

Gee JP (2003) *What Video Games Have to Teach Us about Learning and Literacy*. New York: Palgrave Macmillan.

Gurzick D, Landry B, White KF (2010) Alternate reality games and groupwork. Proceedings from *International Conference on Supporting Groupwork*: 303–304. (accessed 13 Feb 2013) Available at: http://dl.acm.org/citation.cfm?id=1880121&CFID=284274584&CFTOKEN=96411249

Ito M and Bittani M (2010) Gaming. In Ito M, et al. (eds) *Hanging Out, Messing Around, and Geeking Out: Kids Living and Learning with New Media*. Cambridge, MA: The MIT Press, 195–242.

Jenkins H (2006) *Convergence Culture: Where Old and New Media Collide*. New York: New York University Press.

Jenkins H, Clinton K, Purushotma R, Robison A, and Weigel W (2009) *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*. Chicago: The MacArthur Foundation.

Juul J (2009) Fear of failing? The many meanings of difficulty in video games. In: Wolf MJP, Perron B (eds) *The Video Game Theory Reader 2*. New York: Routledge, 237–252.

McGonigal J (2011) *Reality is Broken: Why Games Make Us Better and How They Change the World.* New York: Penguin Press.

Martin A and Chatfield T (2006) Types of arg. In: Martin A, Thompson B, Chatfield T (eds) *2006 Alternate Reality Games White Paper* (accessed 21 February 2013) Available at: http://archives.igda.org/arg/resources/IGDA-AlternateRealityGames-Whitepaper-2006.pdf

McIntyre A (2007) *Participatory Action Research*. California: Sage Publications.

Mittell J (2012) *Complex TV: The Poetics of Contemporary Television Storytelling*, pre-publication edition, MediaCommons Press.

Moseley A (2008) An alternative reality for Higher education? Lessons to be learned from online reality games. Paper presented at ALT-C 2008, Leeds, UK. (accessed 25 February 2013) Available at: http://moerg.files.wordpress.com/2008/10/moseley2008a.pdf

Piatt K (2009) Using alternate reality games to support first year induction with ELGG. *Campus-Wide Information Systems* 26(4): 313–322.

Salen K (2007) Gaming literacies: A game design study in action. *Journal of Educational Multimedia and Hypermedia* 16(3): 301–322.

Salen S and Zimmerman E (2004) *Rules of Play*. Cambridge, MA: MIT Press.

Salen K, Torres R, Wolozin L, Rufo-Tepper R, and Shapiro A (2011) *Quest to Learn: Developing the School for Digital Kids*. Cambridge, MA: MIT Press.

Squire K (2003) *Video Games in Education*. International Journal of Intelligent Simulations and Gaming (2) (accessed 12 February 2013) Available at: http://website.education.wisc.edu/kdsquire/manuscripts/IJIS.doc

Squire K and Jenkins H (2003) Harnessing the power of games in education, *InSight* 7–33 (accessed 25 February 2013) Available at: http://website.education.wisc.edu/kdsquire/manuscripts/insight.pdf

Thomas D and Brown JS (2011) *A New Culture of Learning: Cultivating the Imagination for a World of Constant Change*. Amazon.com: CreateSpace Independent Publishing Platform.

Whitton N and Alex M, eds. (2012) *Using Games to Enhance Learning and Teaching: A Beginner's Guide*. New York: Routledge.

Whitton N and Hollins P (2008) Collaborative virtual gaming worlds in higher education. *Research in Learning Technology* 16(3): 221–229.

Whyte WF, Greenwood DJ, and Lazes P (1991) Participatory Action Research: Through Practice to Science in Social Research in Whyte WF (ed) *Participatory Action Research.* California: Sage Publications, 19-55.