Ahoy!: A Dialogic, Discovery Outline Intervention Game

Vanessa M. Stewart

Northwestern University

INTRODUCTION

Successful communication in the 21st century demands flexible writing skills. Writers must be able to adapt quickly to diverse audiences with diverse purposes while navigating the rules of new genres and new platforms that are continually emerging. Allen, Snow, and McNamara (2016) have found that "Writing proficiency, in other words, is partially characterized by an individual's ability to assess the context of their writing task and flexibly call upon various linguistic tools, given their knowledge of the constraints and demands of that surrounding environment" (Allen, Snow &McNamara, 2016, p. 913). In her report on writing, past NCTE President Kathleen Blake Yancey has claimed one of the biggest changes in composing in the 21st century, in fact, is the role of the audience: "writers are everywhere, yes, but so too are audiences" (2009, p. 5). Unsurprisingly then, many students struggle to develop flexible writing habits because they fail to consider these new audiences and appropriately *think like a reader*; that is, they fail to consider the ways readers must process or make sense of their texts (Traxler & Gernsbacher, 1992).

While thinking like a reader is itself a complex, time-intensive task as it requires deep investigation of other perspectives, the academic essay predominantly used in secondary English classrooms may be exacerbating the problem as it privileges an authoritarian voice that is inhospitable to the viewpoints of others (Pirie, 1997). In other words, the writing structure students are asked to use discourages students from investigating the points of view of their peers in favor of clarifying their own positions. In his essay, "'Mind-Forged Manacles': The Academic Essay," Bruce Pirie explains that while there is nothing "inherently wicked" by these thesis-driven, hierarchical essays, they are not "as natural a vehicle for human thought as we might think"; the academic essay is merely an organizational pattern, which like all patterns has its "blind spots and distoritions" (1997, p. 83). Pre-writing strategies that facilitate interactions with writers and readers may offer a means to address these *blind spots and distortions*.

In their systematic analysis of writing instruction in middle and high schools in the United States, Applebee and Langer (2009) noted that major patterns in the composition process included making changes to fix mistakes and writing more than one draft. Pre-writing is a less common strategy, but Applebee and Langer did document a slight rise in the use of planning in the last 23 years (p. 25). They found that strategies requiring interaction with others (i.e. brainstorming, working with others in pairs or small groups), on the other hand, are still underutilized. (p. 24).

Outlines are one type of pre-writing activity, which could use an infusion of interaction with others. Outlines materialize in a variety of forms but typically involve the writing of a thesis statement, main points supporting the thesis, and evidence supporting each main point. If completed on one's own, the outline merely reinforces the monological thinking that currently plagues the academic essay, for it does not require writers to engage with and learn from their peers. This paper seeks to revamp the outlining process by presenting the design of an outline intervention game that makes room for dialogue between readers and writers, which, if genuine, opens the possibility for the writer to be transformed by the reader (Pirie, 1997, p. 83) and so better think like a reader while drafting, which, in turn, may lead to increased writing flexibility.

If this outline intervention is successful, it may legitimize more design research into the ways we might reconfigure other aspects of writing instruction to include more student interaction so that the next generation of writers are equipped to write more flexibly as they grow up valuing the perspectives of others to enrich their writing over the isolation of their own perspective so as to gain supposed "authority."

THEORETICAL FRAMEWORK

In this section, I use Louise Rosenbaltt's transactional theory of writing and reading to articulate specific characteristics of thinking like a reader, which will become the design goals for a proposed outline intervention game. I then anticipate potential obstacles to reaching these goals and use Jim Gee's active learning principles in addition to Matthew Berland's expectation violation theory to justify design characteristics that appear later in the design argument. While I do not intend to suggest that games provide the only solution for transforming outlining from a monological process to a dialogical one, I will argue that games are a worthwhile avenue for exploring potential solutions because they are well suited to address the particular challenges of thinking like a reader.

Rosenblatt's Transactional Theory: **Unpacking *Thinking Like a Reader***

Writers who think like readers, firstly, *understand* the "polysemous character of texts--that there is no one absolutely 'correct' meaning of a text" (Rosenblatt, 1988, p. 6), for readers and writers pull from different linguist reservoirs informed by different sets of past experiences (Rosenblatt, 1988). Written communication, therefore, is not merely the process of transferring a stable message from sender to receiver through a text. Writing, rather, involves anticipating a potential transaction with readers; in other words, writers must become readers of their own texts to understand "what others might make of the text" and how those takeaways fit with the "writer's own inner sense of purpose" (Rosenblatt, 1988, p. 10).

Secondly, writers who think like readers must be able to anticipate how their texts will be decoded (Traxler & Gersnbacher, 1992, p. 2) and, thirdly, *check* in with readers regularly during the writing process to monitor the meaning being constructed. Louise Rosenblatt (1988) cautions that for this process to occur, the writer's own stance and purpose must be firmly established, so that writing does not become dominated by the reader's authority and so lose the voice of the writer. Table 1 provides a summary of all three skills.

Table 1
Thinking like a reader skills

Skill	Description
1	*Understand* the importance of anticipating what a reader will make of a text
2	*Anticipate* a reader's meaning-making during composition
3	*Check* in with a reader regularly during the writing process to monitor meaning-making

Potential Obstacles

Skill 1: Understanding. For learners to truly arrive at skill 1's understanding of the importance of anticipating meaning, I contend that learners will require an authentic discovery moment as opposed to merely being told that a reader's perspective is important by a teacher. Simply telling a student that a reader's perspective is important follows a transmission or banking model of education that dehumanizes learners, preventing them from unveiling reality for themselves and coming to know it critically. In *Pedagogy of the Oppressed*, Freire advocates instead for co-intentional, problem-posing education, for teachers and students attain knowledge of reality through "common reflection and action, they discover themselves as its permanent re-creators. In this way, the presence of the oppressed in the struggle for their liberation will be what it should be: not pseudo-participation, but committed involvement" (1970/2012, p. 69). This committed involvement in discovery is in line with research that has found discovery learning is preferable to more expository teaching approaches for it fosters transfer, problem-solving, creativity, self-regulated learning and often "promotes a more positive attitude towards teachers and schoolwork than does traditional instruction" (Ormrod, 2008, p. 469).

Games are uniquely positioned to achieve this type of discovery moment. Gee (2003) argues that there is no such thing as general learning. We are always learning in a specific context. When we consider what learning is meaningful, then, we need to consider what semiotic domain, or system of meaning, is being entered into, whether that domain is a valuable, and whether learning is "learning simply to understand ('read') parts of the domain or also to participate more fully in the domain by learning to produce ('write') meanings in the domain" (p. 22). Gee asserts that learners are not actually learning if they are merely passive receivers of content within a domain; rather, learning happens when learners become active and critical contributors (pp. 22-23). He names three components of active learning: "*experiencing* the world in new ways, forming new *affiliations*, and *preparation* for future learning" (p. 23). Two additional components produce critical learning, according to Gee: learning to see the domain on a "meta" level and being able to innovate or produce meanings in the domain that are "novel or unpredictable" (p. 23). Gee argues that games can lead to active and critical learning when their internal design contains these five ingredients and when the affinity group surrounding the game encourages reflective metatalk about the game (p. 46).

If I am interested in building deeper understanding as opposed to passive reception of content, then a game, according to Gee, could prove useful. The game would need to allow players to experience the world in a new way as a reader. It should allow the player to form affinity groups with readers by giving writers the opportunity to actually interact with them. By interacting with the reader and gaining an understanding of the importance of the reader's perspective, the student should be well set up for future learning during the drafting phase. Berland's (2016) expectation violation offers a more specific method for how to build value for the reader's perspective in the mind of the writer.

Expectation violation is a component of a larger argument Berland (2016) makes around tinkering being a valuable activity because it allows learners to try out quick fixes to problems and receive rapid feedback. Berland summarizes expectation violation theory: "to learn something new, it both must be based on current knowledge and understanding must somehow

violate the predictions of that current understanding" (200). In other words, players in my game will need to first experience feeling confident in their outline's ability to persuade readers of their argument. Then the game must allow them to see that expectation violated: they must experience readers' failing to grasp their intended argument. This is consistent with cognitive dissonance theory in communication, which suggests that people undergo mental discomfort when they experience inconsistency with beliefs or opinions that do not fit with other opinions that they hold, so they will seek to reduce the inconsistency (Griffin, 2009). In this case, players will experience mental discomfort when they realize the message they thought was clear was misinterpreted by the reader, so they will seek to reduce the confusion.

Skill 2: Anticipating. The major obstacle that prevents learners from attaining skill 2--anticipating a reader's perspective--might sound obvious: lacking an opportunity to get to know readers. If writers have no way to educate themselves about a reader's perspective, then writers cannot hope to effectively anticipate those perspectives. Games, however, provide this needed interaction, for they allow players to interact with what Gee (2003) calls affinity groups or "the people associated with a given domain" (p. 27) in an engaging way.

Gee argues that when people interact with an affinity group, they can begin to recognize the "ways of thinking, interacting, valuing, and believing as more or less typical of people who are 'into' the semiotic domain" (p. 27); thus, interacting with affinity groups composes Gee's second principle of active learning. Peers in the English classroom form an affinity group of readers. They have a shared way of thinking, interacting, and valuing texts produced in the English classroom. Writers simply need exposure to their very own classmates, their readers, to begin to understand and anticipate ways of thinking within the domain of the English classroom. An appropriate game design, therefore, must allow for reader and writer interaction. One might ask why a game, as opposed to another intervention, should facilitate this interaction, which leads us to a major obstacle to skill 3.

Skill 3: Checking. Students may find skill 3--checking in with readers during the writing process--difficult as it requires sufficient trust be built up between the reader and writer. The act of viewing one's work through the eyes of another can be intimidating, for it involves risk and vulnerability because it opens the writer up to criticism. As writing expert Peter Elbow writes, "The basic idea, then is a simple one: when an audience is safe you put out words more easily, when it is dangerous you find it harder" (1981, p. 186). For this reason, a game presents itself as a practical solution, for games can build trust and encourage risk-taking by eliciting a playful spirit that turns the audience into a safe one. Resnick and Robinson (2017) argue that playfulness leads to "experimenting, taking risks, trying new things, testing the boundaries," and such playfulness "requires a combination of curiosity, imagination, and experimentation" (p. 127). Gee's concept of the *psychosocial moratorium* sheds light on how exactly games are able to elicit such risk-taking behavior.

Gee recognizes that learners identities will always be implicated in learning because entering a semiotic domain means trying on a new identity. He argues that video games are particularly good at motivating learners to enter a semiotic domain because they entice "learners to try," entice learners "to put in lots of effort," and enable learners to "achieve some meaningful success

when he or she has expended this effort (pp. 61-62). Video games are able to accomplish these three feats, in part, because they establish a "*psychosocial moratorium*--that is, a learning space in which the learner can take risks where real-world consequecnes are lowered" (pp. 62-62). He discusses features of games like saving, customizing the level of difficulty, choice, low costs of failure, and high rewards of success. Therefore, to provide a psychosocial moratorium so that students feel safe enough to try, an effective game design will need to attend to features that lower real-world consequences.

Table 2
Summary of game design features

1. Opportunities to experience the world in a new way
2. Opportunities to interact with affinity groups
3. Preparation for future learning
4. Meta-thinking
5. Opportunities to innovate
6. Expectation violation
7. Cultivation of playfulness through curiosity, imagination, and experimentation
8. A psychosocial moratorium

DESIGN ARGUMENTS

Overarching Goal

Ahoy! is an outline intervention game that aims to help high school English students who want to write clear and compelling arguments by engaging learners in a fun and low-risk experience that exposes them to their peers' literary interpretations through dialogue and discovery during the outline phase so that they can enter the drafting phase with a clearer understanding of how to craft an argument that appeals to their readers' perspectives, unlike typical outlining processes in which students may not gain deep or authentic understanding of their readers' perspectives.

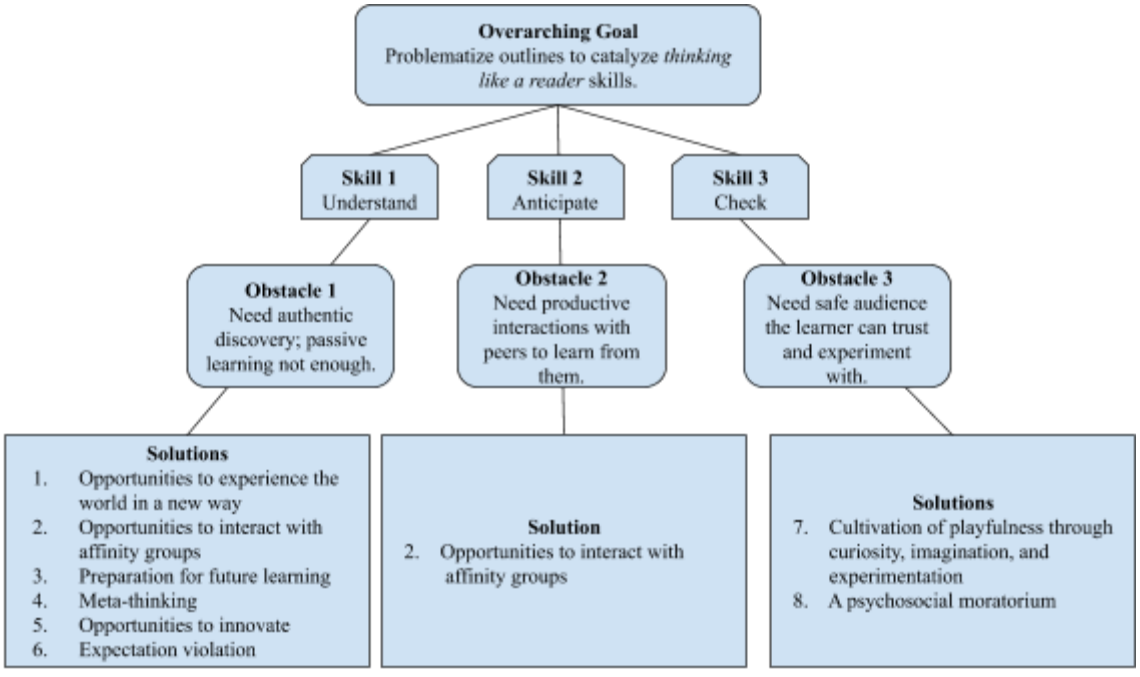

Figure 1. Ahoy! outcomes, obstacles, and design solutions.

In plainer terms, the game will problematize learner's outlines to catalyze the learner to engage in *thinking like a reader* skills. *Figure 1* breaks down this overarching goal into its three target skills with their corresponding obstacles and proposed design characteristic solutions. I then explain how each solution meets each desired skill outcome.

Design Solutions

Obstacles 1 and 2: Authentic discovery and interactions with peers.

Solutions 1 and 2: New experience of the world with peers. *Ahoy!* engages players in authentic dialogue with peers by affording players, first, the opportunity to work with a peer during the outline phase, and, second, the opportunity to experience their peer's viewpoint in a non-traditional way. Typically, students do not share their outlines with peers. If they do, they certainly do not leave holes in the outline to make their readers guess the evidence used based on the arguments presented. In *Ahoy!* writers are limited to single-sentence topic sentences as clues to enable their readers to guess evidence from a range of tiles.

The limited communication caused by restricting clues to single topic sentences imitates the ways papers are also limited: they must speak to readers without a writer nearby to explain concepts that the reader struggles to understand. The experience of this struggle helps learners grasp the importance of the first skill of thinking like a reader: *understanding the importance of anticipating what a reader will make of a text*. As writers witness their readers either struggle or succeed to select the correct evidence from their clues, they are learning what combinations of arguments and evidence are more persuasive for their readers. There is also an opportunity at the completion of the game for writers to interrogate their teammates, asking more directly why the teammates selected certain evidence over others. These learning opportunities should make it easier for the writer to later *anticipate* their readers' perspectives while writing the draft.

Solutions 3, 4, and 5: Future learning, meta-thinking, and innovation. Having learned about their readers' perspectives in terms of the evidence that their teammates do and do not buy, the games should enable future learning and innovation as writers can choose to switch out evidence or refine their arguments at the end of the game before heading into the drafting phase. This activity of zooming out to consider the readers' reactions to the writer's evidence during the game and then back into the outline to tweak evidence prompts metacognitive thinking about the writing process overall.

Additionally, since the writer plays one game as clue give, using his or her own pre-selected outline information, as well as one game as clue receiver, using his or her teammates pre-selected outline information, the writer gains experience as a reader, too, who must navigate another's argument. Recognizing the unclear argumentative logic or unpersuasive evidence of another's work is just as informative to the learner as analyzing his or her own writing. The learner has to work hard to anticipate how the other writer is connecting evidence to arguments and so is learning about the experiences of readers by being one.

Solution 6: Expectation violation. Understanding the importance of anticipating a reader's mindset is also learned through the expectation violation that the game aims to create. Learners

may feel confident that they have chosen compelling evidence to support their arguments and clear topic sentences that convey their arguments, and yet a teammate may still incorrectly guess a tile, violating the clue giver's expectation of having sent a clear message. The teammate reflection phase after the game allows the clue giver the opportunity to investigate why the clue or evidence was unconvincing to the reader and builds appreciation for knowing a reader's point of view.

Obstacle 3: Trust within a safe audience.

Solution 7: Curiosity, risk-taking, experimentation. This game inspires curiosity, risk-taking, and experimentation to create a social and playful learning environment that helps learners develop the third skill of thinking like a reader: *checking in with a reader regularly during the writing process*.

Rather than present a set-in-stone outline to a peer, this game presents multiple possibilities of evidence and so builds curiosity on the part of the clue receiver, who wants to deduce which evidence belongs to his or her teammate, and it builds curiosity on the part of the clue giver, who wants to know whether his or her clues will assist the teammate in selecting the correct evidence tiles as quickly as possible. The *close call* and *stormcloud* tiles add an opportunity to play with wild ideas that a traditional outline does not allow. These wild cards add to players' burgeoning curiosity, for player's cannot be sure whether what they interpret to be a storm cloud might actually be another player's strongest piece of evidence until the tile is selected and revealed. Essentially, the players are learning to want to know how their teammates are thinking.

All of this curiosity is amplified by the risk involved in the tile selection, for an incorrect guess may mean the loss of a turn, the selection of the other team's evidence, or the loss of an opportunity to gain a correct evidence tile for the team. So successful game play means taking on another teammate's perspective to intuit how the teammate may be interpreting clues and tiles. The risky yet playful experience of imagining how a clue giver or clue receiver is interpreting the evidence tiles and topic sentence clues is fun, but, more importantly, it also mimics the way writers yearn to experience how their language is affecting readers, leading them to check in with them during the writing process.

Solution 8: Psychosocial moratorium. This game uses an imaginative stranded-on-an-island scenario to create a fun and low-risk environment so that students feel safe sharing their thinking, another obstacle to the third skill of *checking in with a reader regularly during the writing process to monitor meaning-making*. The higher-level goal of getting one's partner to quickly select the right evidence to win the game replaces the more anxiety-inducing goal of having a teacher or peer declare the outline as "good" or "not good" as is typical for most outline reviews. Additionally, because the game takes place when students have not yet written a complete paper and so have not exerted significant effort, (they have merely captured topic sentences and points of evidence without developing them), lower stakes are involved when a peer finds a piece of evidence lacking or a topic sentence confusing. These are issues that the game identifies so that players can more readily address them during the drafting phase that is to follow.

Design Characteristics

Ahoy! is an outline intervention game. The ultimate goal of this game is to prepare students to write a rough draft that takes into account their knowledge of a reader. To get started, students enter outline information for a paper they will write in class. After playing this game, students should be able to revise their initial outline by switching up arguments, tweaking topic sentences, changing evidence, and/or knowing what troublesome aspects of the evidence to explain more thoroughly in the rough draft. The game is played on a web-based application and uses the game CodeNames as its conceptual approach.

Game scenario. Players are stranded on an island and need to communicate with the mainland to be rescued. Players communicate to their teammate(s) on the mainland through clues in the form of topic sentences that relate to evidence tiles on a game board that the teammate(s) must correctly identify. Whichever player get their teammate(s) to guess all of their evidence tiles gets rescued from the island, and their team wins.

Set-Up. Individual students digitally enter their thesis, topic sentences, and evidence. Players are also prompted to enter "close call" evidence, which is evidence that somewhat supports their argument, but not as persuasively as the evidence they have selected, and "stormcloud" evidence, which is evidence that is unrelated to their argument or obfuscates their point. The teacher uses the submitted outline information to make teams and opponents prior to game play. Each team must contain a minimum of two players. As an example, I present a hypothetical scenario in which Team 1, comprised of Player A and Player B, plays against Team 2, comprised of Player C and Player D. We will say both teams are writing about William Golding's novel *The Lord of the Flies*. To cover each player's outline, a total of two games are played.

Game Play. In Game 1, Players A and C are clue givers. A grid of tiles comprised of Player A's and C's evidence, close call evidence, and stormcloud evidence is visible to all four players. They should use a shared screen or board so that discussion can occur.

Evidence (C)	Close Call (A)	Evidence (A)	Close Call (C)	Stormcloud (A)
Evidence (A)	Close Call (A)	Evidence (C)	Evidence (A)	Evidence (C)
Evidence (A)	Evidence (C)	Close Call (C)	Evidence (C)	Close Call (A)
Close Call (C)	Evidence (A)	Evidence (C)	Stormcloud (C)	Evidence (A)

Team 1 goes first in Game 1, so Player A would give a clue to Player B first. Player A would provide a topic sentence clue followed by a number that represents the number of evidence tiles on the board that support this topic sentence. For example, "William Golding's *Lord of the Flies* shows that, if given a chance, people will make themselves feel better by degrading others. Two." Since Player A has signified "two" tiles, Player B potentially gets two opportunities to guess a tile. Player B selects evidence by tapping on a tile. If the selected tile is in fact one of Player A's piece of evidence, the tile would change color to Team 1's Color, which we will designate as red.

Evidence (C)	Close Call (A)	Evidence (A)	Close Call (C)	Stormcloud (A)
Evidence (A)	Close Call (A)	Evidence (C)	Evidence (A)	Evidence (C)
Evidence (A)	Evidence (C)	Close Call (C)	Evidence (C)	Close Call (A)
Close Call (C)	Evidence (A)	Evidence (C)	Stormcloud (C)	Evidence (A)

Player B now gets a second turn to attempt to locate the second piece of evidence that supports the same topic sentence. If Player B, selects another correct piece of evidence. Team 1's turn is over, and Team 2 can now provide its first clue. Player C offers a topic sentence clue to Player D, like "Golding uses the character Simon as a symbolic Christ-like figure. Two." Let's say Player D does not select any of Player C's evidence tiles and instead selects a close call evidence tile--which could be a close call tile from either Player A or C. The selected tile would change to a neutral color, but Team 2 would still receive another opportunity to guess a second tile, since the original clue designated two tiles total. Let's say Player D, does select a correct piece of evidence on the second turn, so the tile would change to Team 2's color, which we will designate green, so the board would look like this:

Evidence (C)	Close Call (A)	Evidence (A)	Close Call (C)	Stormcloud (A)
Evidence (A)	Close Call (A)	Evidence (C)	Evidence (A)	Evidence (C)
Evidence (A)	Evidence (C)	Close Call (C)	Evidence (C)	Close Call (A)
Close Call (C)	Evidence (A)	Evidence (C)	Stormcloud (C)	Evidence (A)

Next, it would be Team 1's turn again. Player A would provide another topic sentence clue, like "Golding portrays Jack as consumed by the struggle for power. Two." Let's say Player B selects a stormcloud tile--it could be either Player A or C's stormcloud--on the first guess. The stormcloud tile would turn black and Team 1's turn would automatically be over, even though the initial clue implicated two total tiles. So the board looks changes again:

Evidence (C)	Close Call (A)	Evidence (A)	Close Call (C)	Stormcloud (A)
Evidence (A)	Close Call (A)	Evidence (C)	Evidence (A)	Evidence (C)
Evidence (A)	Evidence (C)	Close Call (C)	Evidence (C)	Close Call (A)
Close Call (C)	Evidence (A)	Evidence (C)	Stormcloud (C)	Evidence (A)

On Team 2's next turn, the clue giver, Player C, could provide a different topic sentence to locate a different set of tiles or refine the previous topic sentence in a way that will better enable Player D to guess the originally intended pieces of evidence.

The teams would continue taking turns to provide clues until one team successfully identified all of its evidence tiles. Players would then get an opportunity to discuss the game and interrogate their teammates as to why certain clues did or did not work. Teammates would then complete a reflection form together to answer the following questions: (1) Which evidence tiles were easily guessed? (2) Which evidence tiles were difficult to guess? (3) Which topic sentences, if any, need to be tweaked? To what? (4) Which evidence, if any, needs to be changed? To what? (5) Which evidence is strong but may need to be explained? What aspect needs to be explained? (6) What, if any, additional types of arguments or evidence came to light?

At the completion of the Game 1 reflection, a new grid would appear with Player B and D's evidence, close call evidence, and stormcloud evidence. Game 2 would proceed in the same way with Players B and D now providing clues while Players A and C select evidence tiles. Team 2 would go first in giving clues since Team 1 began Game 1.

PROTOTYPE DESCRIPTION

In prototyping my design, I used Google Forms to collect topic sentences and evidence quotations from game players and transferred that information to index cards to serve as game tiles. One side of the index cards contained quotations. The other side revealed which players' evidence the quotation belonged to and what type of evidence it contained (evidence, close call, or stormcloud).

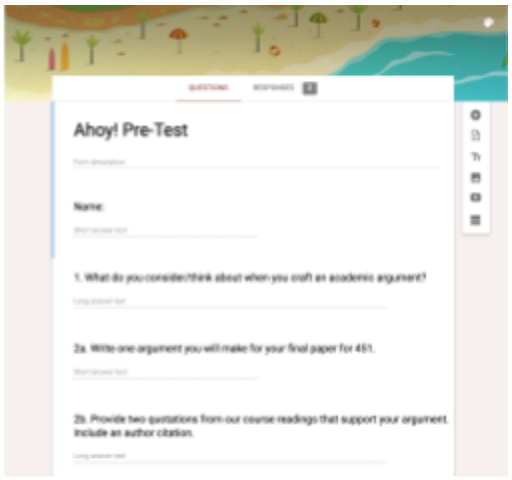

Figure 2. Pre-game Google Form collects evidence to create game tiles.

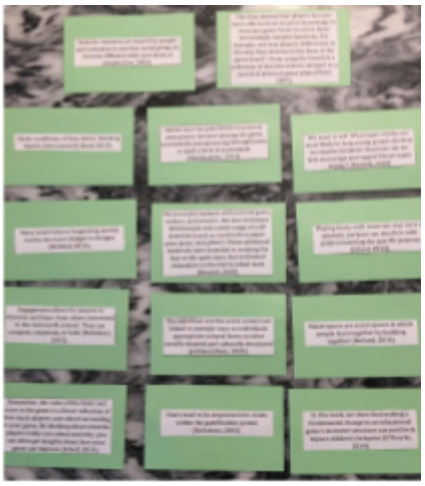

Figure 3. Paper prototype.

I tested my design with four second-year Learning Sciences Ph.D. candidates who had concomitantly taken a course on playful learning environments, and so were familiar with the readings and the final paper assignment for the class. Two of the participants completed Google Forms, entering in arguments and evidence that they would use in their final papers for the class a week before the game was played. The other two participants joined the test during the game play phase, once the paper prototype was complete. I explained the rules of the game, recorded the conversation that occurred while participants played out the game, and took notes.

FORMATIVE FINDINGS

Observations of participants' game play suggest promising results in terms of engagement and expectation violation, major goals of the game. Participants were deeply focused throughout the game, suggesting it was placed at just the right amount of difficulty. Towards the end of the game, participants casually noted that this game would prompt a more enjoyable class than one in which they were merely typing up a paper from an outline.The game not only engaged players but also challenged their thinking. One clue giver mentioned, after re-reading the arguments and evidence he had previously entered into Google Forms, "Did I really say these things?" He admitted that seeing the evidence on the game board made him rethink the type of evidence he would want to use to most persuasively sell his point. The guessers, too, experienced moments of expectation violation. Both guessers expressed feeling highly confident in their guesses at particular points only to find out that they had not selected the clue giver's intended evidence.

The testing also provided useful feedback that will direct future design iterations:

- The original outline should be made available for clue givers.
- A method is needed for clue givers to make notes after each round or else replay tile selections at the end of the game so that they can reflect on why particular evidence or argumentative clues failed. Clue givers mentioned wanting to switch out evidence during the game, which the game could not support. But a reflective activity after the game in which players did edit their original outlines could meet this need.
- Clue guessers should be encouraged to explain their thinking before they guess. These explanations allowed the clue giver to gain insight into their teammate's perspective so that they could adjust later arguments.
- Once tiles are selected, the tiles should reveal the type of evidence and the team to which it belongs, but it should also retain the original quotation. Both clue givers and clue receivers liked seeing what evidence had already been selected and so needed to flip selected cards back over. This will be easier to implement in a digital version.
- The close call evidence cards were either too similar to actual evidence (so clue guessers should not have been penalized for selecting them) or else more like stormcloud evidence in that they were not close to the real evidence at all (so one team was at an advantage as the close call evidence made it easier to select the correct evidence). Players recommended having a ranking system instead of the evidence and close call evidence. This would enable better conversation after the game when teammates could debrief about why they had differed in their ranking of evidence.

Moving forward, I will use this feedback to continue to iterate on my design. I hope to build an online version that takes into account these findings. The hardest challenge will be to continue to test regularly and in authentic environments, so that the design is informed by real users.

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