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Paper Title Engaging Youth as Game Designers Through Storytelling

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Session Title Exploring How Identity and Epistemic Engagement Shape Learning

Session Type Paper

Presentation Date 4/12/2024

Presentation Location Philadelphia, Pennsylvania

Descriptors Out-of-School Learning, Qualitative Research, Situated Learning

Methodology Qualitative

Unit SIG-Learning Sciences

DOI <https://doi.org/10.3102/2110582>

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“What’s making the creatures sick?”: Engaging Youth as Game Designers Through Storytelling

Abstract

This paper investigates storytelling as an approach to co-design research with diverse middle school-aged youth. Using microanalytic methods of interaction analysis (Jordan & Henderson, 1995) and positioning theory (Goffman, 1981) to analyze data from online play-testing and co-design sessions with youth, the paper explores how storytelling enabled youth to navigate and shift between the dual roles of game player and designer, (re)configuring elements of the existing game and incorporating their own stories. This paper advocates for the inclusion of storytelling as a fruitful co-design method in the creation of identity-aligned gaming experiences and more immersive and inclusive virtual worlds.

1. Objectives

Digital games are important contexts for STEM learning and identity development (Gee, 2000). Game based environments, particularly those that offer dynamic, socially rich environments and foster interaction, emotion, and relationships with game characters or other players, have the potential to engage more diverse learners in STEM domains (Herman, 2020; Richard, 2021). Our project seeks to engage youth in co-design of an identity-aligned, collaborative, data-rich virtual game world, called “The Isles of Ilkmaar”, to promote middle school-aged youths’ interest and aspirations in data science. In the first phase of the project, we aim to design the game world that reflects the goals, motivations, relations, and identities of cis-girls¹, gender-expansive² youth, and those from BIPOC communities.

We join others in the field of game design who have sought to engage youth as essential co-designers and content creators (e.g., Benton et al., 2014; Giri, N. 2020; McRoberts, et al., 2019), and aim to contribute to guidelines for the co-design of inclusive game narratives that represent diverse youth stories, motivations, values, and interests (Benton et al., 2014). However, most approaches to involving youth in design engage them at the outset of a project, rather than continuously throughout the entire course of the development and production of a game. This means that youth are typically asked to design “from scratch” in a way that isn’t constrained by or tied to game development timelines. Instead, in our design-based research project, youth are engaged in playtesting and giving feedback on an early version of the game, while imagining its future design possibilities.

This paper explores how the practice of storytelling during dual playtesting and co-design sessions can activate youth expertise and imaginations as game players, and then leverage those for participation in design. We show that storytelling can both support youth participants' transition from *game players* into *game designers*, and invite them to imagine worlds that reflect their gameplay motivations, values, and interests.

2. Theoretical framework

Situated learning and player and designer as enacted identities

Engaging youth in the design of educational games requires shifting their positioning from *game players* to *game designers*. We approach knowledge as power-laden positionalities (Haraway,

¹ We use “cis” to denote a person whose gender identity corresponds with the sex registered for them at birth.

² We use “gender expansive” to denote a person whose gender identity does not correspond with the sex registered for them at birth and who may otherwise not be confined to one gender narrative or experience.

1988) embedded in sociocultural, historical context (Lave & Wenger, 1991). Learning, therefore, is both shifts in participation in a community of practice and increasing engagement in the values, discourse, and tools of that community (Lave & Wenger, 1991). Participation involves negotiation of action and meaning within the local context of activity, given goals, resources and constraints. We take up Gee's (2000) conceptualization of identity work as dynamic enactments, which places analytic focus on performances in context(s). From this perspective, people have multiple identities, and they are connected to *performances in society* rather than static, internal states (Gee, 2000, p. 99). Thus, identities are contextually situated, non-neutral social constructions.

Negotiation of positioning during storytelling interactions

Participation frameworks (Goffman, 1981) describe how participants negotiate their speech production during interactions, to both navigate positionalities as speakers and to communicate about an existing and imagined world. These frameworks serve to position participants in relation to each other and the interactional context but are flexible and may change throughout the interaction. Participation frameworks can be illuminated by two key aspects: footing and figuring.

Footing is the alignment or stance that speakers take towards themselves and others within the interaction. The animator is a functional role, the entity that delivers the utterances. The author, however, plays a social role by composing the words that the animator voices, although they can be the same person. For instance, changes in the participation framework may occur when participants are engaged in activities such as playing and telling stories, representing attempts to negotiate their positioning as specific types of participants.

Figuring, the second key aspect, is centered on the stories that participants tell during the interaction. Figures refer to narratives of characters who "belong to the world that is spoken about, not the world in which the speaking occurs," (Goffman, 1981, p. 147). In the context of co-design research, we ask youth to take on the role of game designer, and within it to (re)figure the existing game world to tell their own stories.

In this paper, we investigate said storytelling as supportive of narrative building and game co-design with youth. We ask:

1. How do youth navigate the dual roles of game *player* and *designer* during playtesting and co-design sessions?
2. In what ways do youth (re)figure elements of an existing game and incorporate their own stories?

3. Methods

Co-design Sessions and Data Collection

In dual playtesting and co-design sessions, we gave youth an initial prototype of the "Isles of Ilkmaar" game to play, and asked them to share their screen while they explored the gameworld and treated characters ("creatures") in a mini game called The Potion Clinic. Players were tasked with caring for sickly creatures by making them potions from ingredients they had collected in the world. The reason why the Ilkmaar creatures were sick had been left intentionally undecided. We engaged with youth in narrative design using questions that prompted them to tell stories

about why the creatures were sick and to develop backstories about the presence of human avatars on Ilkmaar.

We conducted 23 one-hour playtest and co-design sessions virtually over Zoom with 13 individual youth, nine of whom did two sessions, and one sibling pair. Data includes field notes, audio and video recordings, and still images of participants' screens. Prior to the co-design sessions, participants had also completed two online surveys that asked questions about graphics and art, a temporary background story of the game, and as well as participants' gaming interests.

Analysis

In order to answer our research questions, we selected episodes that contained storytelling - when youth were asked to make up a story about something or someone in the game. We used microanalytic methods of interaction analysis (Jordan & Henderson, 1995) to trace talk and action within youth storytelling audio/video episodes. We also drew on grounded theory methods (Charmaz, 2006) to capture the emergent ways that youth negotiated identities and communicated gaming motivations, values, and interests.

In our microanalysis, we applied Goffman's (1981) conception of footing to understand how youth navigated between various identity enactments during the co-design process. Tracing the roles of author and animator (Goffman, 1981) throughout the interactions allowed us to investigate how youth positioned themselves within co-design. These shifts represented attempts to negotiate their positioning as specific types of co-design participants, either as a player or designer. The analysis also focuses on participants' figuring, and is centered on the stories that participants tell during the co-design process. By tracing and analyzing their acts of figuring, we explored the "structurally differentiated possibilities" (Goffman, 1981, p. 137) of the worlds they imagined. These storytelling moments are the context for sharing their vision, and as such, provide invaluable insights into the game elements that resonate with youth.

4. Findings: Negotiating roles and storying relations

For the purposes of this proposal, we share one storytelling episode, divided into two parts, from a co-design interview with Beatrix, a Latina, female-identifying, 11-year-old. We first show how Beatrix and the researcher negotiated Beatrix' positioning as player and game designer across the co-design activity. Then we attend to what her storytelling revealed about gaming motivations.

Prior to this episode, Beatrix had spent half an hour exploring the world, interacting with creatures, and playing the clinic mini-game. As the episode began, the researcher asked Beatrix to tell a story that connected the clinic to the game.

Table 2. Episode transcript

Turn #	Talk and ((Action))
1	Researcher: So right now this clinic is sort of on its own. It's not in the story yet, but we're thinking about adding it. I'm wondering, like, from your perspective, could you tell me a story about the game? Like what do you think might be happening on the island that's making the creatures sick, that's making them need to go to this clinic for treatment?
	((Beatrix: Moving around the clinic, treating creatures with potions))

2	Beatrix: ((Continues to move around the clinic and interact with creatures in the waiting room.)) I think that maybe they're, there's like different creatures invading, and since they don't know if they're passive or not, then they're kind of like, uh, they wanna ((Stops playing the game)) protect their land. So:: ((Removes hands from the keyboard and mouse)) they have like a, and they have a little fight ((Starts moving the cursor around the screen, not clicking on anything)) and then they have to come here. (4 second speech pause, continues to move cursor) But to figure out like where they, where the other creatures come from, some of these patients ((uses cursor to circle the creatures she is referring to)) have to go there an::d ((Clicks "Treatment #2" on the screen to send a creature for care)) see for themselves and:: that's where, uh that's why they got hurt. ((4 second speech pause, continues to interact with creatures in the waiting room)) That's what I think.
3	Researcher: So it's other creatures, like they're fighting each other? ((Beatrix: Clicks mouse to send a creature to a waiting room))
4	Beatrix: Yeah. ((2 second speech pause, follows creature into the treatment rooms) Or like, not necessarily fighting, but like arguing about something.
5	Researcher: Hmm, gotcha. Just like decreasing their health. ((Beatrix: Clicks mouse to treat a creature with a potion))
6	Beatrix: Yeah ((Moving around the clinic treatment rooms))
7	Researcher: Got it. ((5 second speech pause, watches Beatrix play)) And where do you think like these other - I'm just like trying to get into your like, designer brain. Like where do you think these other creatures could come from? Like do you think they come from other islands or like other worlds? ((Beatrix: Treats patients))
8	Beatrix: ((Continues to play)) I feel like both. Some, some of the creatures come from ((Enters potion room)) other islands just to like see what's going on and:: then::: There's like:: another world or like another::, not necessarily another ((Stops moving cursor)) Galaxy, but like another ((1.5 second speech pause, moves cursor without clicking anything)) place where ((5 second speech pause, returns to playing) they could like, wher::e, oh wait, oops. ((3.5 second speech pause, returns to playing)) I'm sorry. Uh:: ((Stops playing the game, removes hands from the keyboard and mouse)) where they could just like meet up. And they're like arguing about something or fighting about something. I still dunno what yet.

As the episode began, Beatrix moved around the clinic, playing the mini-game. The researcher used the pronoun “we” to frame who was doing design work and then invited Beatrix to build on that work (e.g., “from your perspective,” and “what do you think,” [1]). In this invitation, the researcher shifted Beatrix’s footing from a play tester giving feedback to a designer who could imagine parts of the game that did not yet exist.

Beatrix accepted this positioning, authoring a story of “creatures invading” whose presence caused Ilkmaarian creatures to “protect their land” and in the process they “got hurt” [2], figuring new creatures and a storyline into existence. Shifting fully out of the player role she removed her hands from the keyboard and mouse [2]. As she continued her storytelling, now as a designer, she re-engaged with the mouse this time using it as a tool for referencing existing game characters (“these patients,” [2]), and figuring them into her own story. Beatrix authored a relationship between the Ilkmaar creatures and the land on which they lived [2]. The importance of this relationship was emphasized as worth injury/illness, “they have a little fight and then they have to come here [the clinic],” [2]. In her story she authored the theme of conflict/conflict resolution. This can be seen when Beatrix began to wiggle the mouse around when describing the creatures’ “little fight” [2]. Additionally, she imagined the clinic as a place “they have to come,” [2] after resolving potential conflict, supporting a secondary game-play theme of creature healing/care.

Then her story began to slow, pocketed with pauses and verbal hesitations, “patients have to go there and see for themselves and:” [2]. Finally, she signaled to the researcher that her story was complete, “That’s what I think,” and fell silent but became active in gameplay - repositioning herself as a player. In [3] the researcher offered an interpretation of the story. Beatrix first accepted this interpretation, “yeah,” but after a brief hesitation changed her mind, signaled by the repair (Schegloff, 1991) “Or like, not necessarily fighting, but like arguing,” [4]. In this set of utterances, Beatrix further enacted her positioning as a designer in her resistance to the researcher’s interpretation. This repair, a downgrading of conflict intensity, is her further authoring the theme of conflict/conflict resolution - figuring into the story the intensity of conflict between the creatures. The researcher accepts Beatrix’s claim to the positioning of designer evidenced by the offering of a second interpretation [5] - which Beatrix accepts.

After a few moments the researcher made another effort to direct activity back to storytelling. With the utterance, “I’m just trying to get into your designer brain,” the researcher again attempted to shift Beatrix’s footing, positioning her as a designer and a resource for game design [7]. Beatrix accepted this positioning, evidenced by both her reply and her pauses in game play [8]. She built on her story, authoring the origin of the creatures as, “another world or like another... not necessarily another Galaxy, but like another... place,” [8]. In a moment of participation framework collision, before finishing this story, Beatrix began playing again - shifting her positioning to game player and making a game-play error. She apologized to the researcher and as a repair, shifted back to designer and completed her story.

5. Discussion and Significance

In this paper, we explore *storytelling* as a generative approach to game co-design for youth. Our analysis suggests that storytelling facilitates the transition of the youth from game players to assume the ‘power-laden positionality’ (Haraway, 1988) of game designers, and enables them to author and animate imagine new futures for the game that express their values and concerns relevant to gameplay.

These findings contribute to the literature on developing structures of co-design with children (E.g., Guha, et al., 2004) that can extend their creative contribution from the game design phase into the development and playtesting phases. Second, we have shown that storytelling around an existing game can support youth in imagining possible futures of a game design, providing insight into narrative elements and themes that resonate with youth.

Research on diverse youth motivations, values, and interests in gameworlds can lead to more identity-aligned and engaging disciplinary game-based learning environments, specifically for cis-girls and gender expansive, nonwhite youth. Ultimately, this paper advocates for the inclusion of storytelling as a fruitful co-design method in the creation of identity-aligned gaming experiences and more immersive and inclusive virtual worlds.

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