Frames at Play: Situated engagement with research ethics games

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Abstract: Scholarship in educational research has argued games are promising learning tools because players take on fictional identities and roles to build new knowledge and skills. Analyzing usability data from a detective game about research ethics called Murky Misconduct, this paper argues that players use situated and overlapping "interpretive frames" (Bateson, 1972) to formulate responses to in-game controversies. Drawing on data sourced from "think-aloud" verbal reports, this paper argues that player-testers, who are graduate students in STEM disciplines, take up shifting interpretive frames as they confront in-game controversies related to research ethics.

Introduction

Academic and research misconduct appears to be increasing in prevalence among graduate students at research institutions (McCabe et al, 2001). Graduate students in science, technology, engineering and mathematics (STEM) often lack a rich understanding of proper ethical research practice, especially in the domains of falsification and fabrication of data, and plagiarism (FFP) (Leonard et al., 2010). The 2007 America COMPETES Act and recent initiatives of the National Science Foundation have emphasized the importance of education about responsible conduct of research to enhance STEM research practices. The Gaming Against Plagiarism (GAP) project attempts to offer an experiential and context-driven model of research ethics education that allows students to explore issues of responsible conduct of research (RCR) practices in game-based settings.

Analyzing user testing data from a detective game about research ethics called Murky Misconduct, this paper argues that players adopt "interpretive frames" (Bateson, 1972; Goffman, 1974) - toward in-game controversies. Similar to what others call "evaluative stances" (Lemke, 1998), these frames shape how players construe meanings about, and formulate responses to, play-based points of contention. Further, we argue players' frames of interpretation draw on both their existing knowledge schema and the context of game play.

Theoretical Framework

Scholarship in educational research has argued games are promising learning tools because players take on fictional identities and roles to build new knowledge and skills (Shaffer et al., 2005; Barab, Gresalfi & Ingram-Gobe, 2007). According to this view, game players assume a "projective stance" relative to their character – partially assuming the values, practices and knowledge of the character's roles and contexts (Gee, 2003). Ethical controversies embedded within the "safe space" of game play can support players' development of a critical capacity for ethical decision-making (Simkins & Steinkuehler, 2008).

Elsewhere, we have called in-game activities that contravene expected social conduct "transgressive play" – actions that might be considered controversial in the real world. We have hypothesize that transgressive play may prompt a player to reflect critically, because of the cognitive dissonance or projective identification associated with a given game context, on her real world actions. This paper investigates how game players' construct interpretive frames for controversies from a socially-situated perspective (Brown et al., 1989), emphasizing the importance of social and material contexts - tools, roles and activities - to the practice of learning (Lave & Wenger, 1991).

In this paper we look at playability tests of a research ethics game and investigate participants' construction of interpretive frames (Bateson, 1972)) that shape their response to controversial ethical play. Frames are cognitive structures of expectation that make interpretation possible (Goffman, 1974) and result in dynamic predictions about the relationships between events, objects and people. Speech acts and other verbal reports constitute "surface evidence" of the cognitive schema and scripts underlying an interpretive frame (Tannen, 1993). In this paper we examine the organized expectations of players about the game, events in game and their activities (testing/playing) as they are evidence in the players speech acts during game play.

Methods

The user testing sessions employed “think-aloud” protocols to ascertain players’ thoughts about the game. “Think-aloud” protocols (Ericsson & Simon, 1984) ask participants to issue a constant stream of verbal reports that describe their moment-by-moment thoughts while performing an assigned tasks. Players were asked to talk constantly about what they were thinking, without planning or deliberation (Jourdenais et al., 1995). Ericsson & Simon (1984) contend that these verbal reports allow observers to make grounded inferences about a user’s cognitive processes relative to a given task.

Frame analysis and situated learning

Frame analysis examines the multiple, overlapping frameworks of meaning-making that people employ to make sense of the social and materials interactions in a given context (Goffman, 1974). A pediatric physician examining a child in a mother’s presence, for example, has to balance an ‘examination frame,’ in which she diagnoses the child in the scientific language of medicine, with a ‘consultation frame’, in which she builds rapport with the mother and answers her question using ‘everyday’ language (Tannen & Wallat,1987). These frames, according to Goffman, are revealed in the *footing* that participants assume in a social context. Footing is the social stance that, through the emotional and informational content of their utterances, a speaker adopts in a setting. These stances are revealed through elements of speech acts like evaluative language, repetition, inferences and moral judgments (Tannen, 1993). In this paper, we look at the way players employ different interpretive frames as they describe their game play.

Data sources

Part of a research project on research ethics and trangressive play, the data analyzed comes from the talk of two usability testers, called Player 1 & Player 2, as they participated in the “think-aloud protocol” as they play a game. The two usability testers were graduate students in a STEM discipline at a major research university. Both students were males between ages twenty and thirty: one was an international student from South Asia and one was European-American.

The usability testers played a mystery game prototype that is the last game in a three-game series about research ethics. In this game, the main character is a research ethics detective who is on a mission to uncover a researcher who, through his unethical practices, is threatening the reputation of the university and its students. In performing their investigations, players must uncover and evaluate evidence related to research misconduct. The evidence must then be used to support a theory about a person’s guilt or innocence (see Figure 1). A distinguished professor who is often cruel to his graduate students turns out to be the real culprit. In user testing, students, professors and stakeholders have found this process of accusing the professor to be controversial (see Figure 2).

Figure 1: Examining a text for evidence of plagiarism.

Figure 2: The distinguished professor slanders his student.

The data presented below comes from transcriptions of the two players' verbal reports at a point in the game where they began discover the truth about the professor's research misconduct. In the game, the professor tells the player that his graduate student, named Megan, had engaged in data falsification in order to cover up his own research misconduct. The player's' character initially suspects the student, and the player must discover and assemble evidence into an argument that exonerates the student (see Figure 3). Upon her exoneration, the student hints that the professor might be involved.

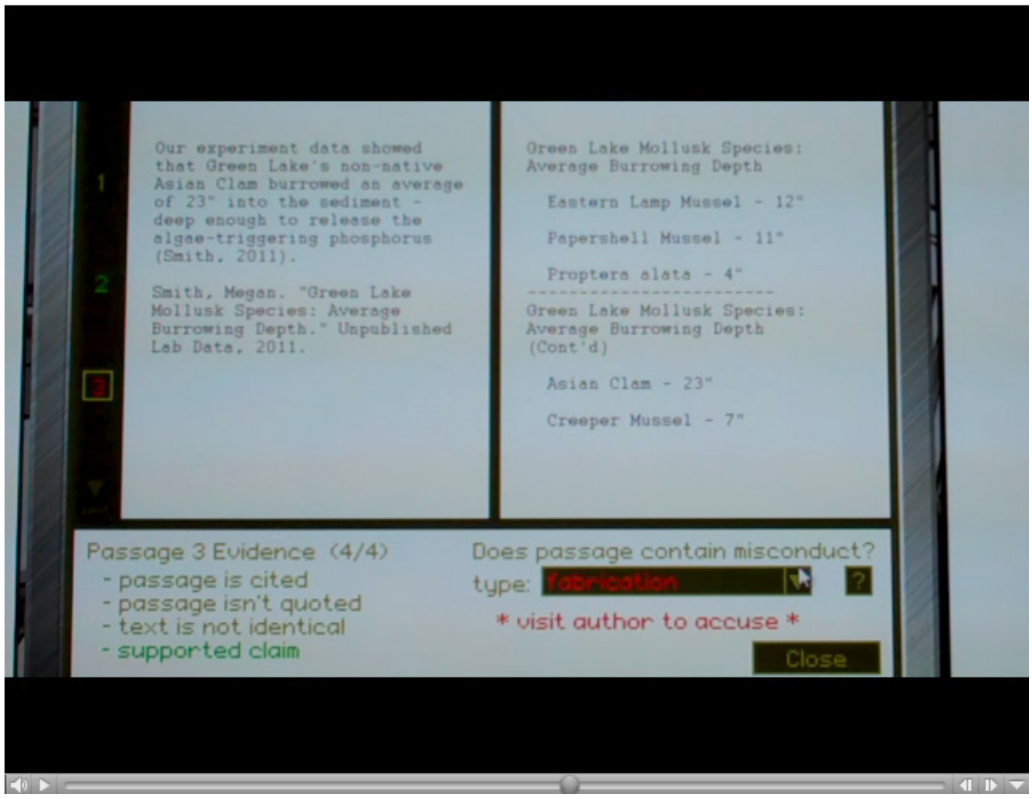

Figure 3: Player 1 uses evidence to argue for Megan's innocence.

Results

As player-testers of the game, Player 1 and Player 2 adopted very different footings toward the controversial play of accusing a professor. They took up these distinct footings in order to negotiate three overlapping interactive frames of the testing activity, which are: a) playing as a Character in the game; b) Testing a game; and c) Being a (graduate) Student. The Character frame entailed inhabiting the role of a character, unraveling the game's narrative, and overcoming challenges to accomplish goals in the game. The Testing frame involved evaluating and critiquing the game's narrative, interfaces and mechanics. Players, at times, shifted into the Student frame by speaking about their perspectives as a student and discussing a students' real-world dilemma compared to game-based situations.

Interactions: Proving a student's innocence

Player 1 and Player 2 adopted very distinct footings as they exonerated the wrongly accused graduate student. Player 1 very quickly took up the footing of an *expert tester* who understood the already complexities of research misconduct, and evaluated the efficacy of the game at simulating them. This was evidenced by his verbal report of the encounter:

> P1-24:55: [Addressing the proctor] Ohhh we have the-the thing here, where Professor Gibbons sabotaged her data. Which is an issue that we talked about in our grad group, of professors doing and so forth. Alright I liked that because Professor Gibbons asked you to accuse her instead of him to draw attention away from him. Whatever.

Player 1 began by addressing the silent proctor of the usability test, and composing an abstract that summarized what he was reading on the screen. He then related that in-game event back to real-world situations that he had previously discussed with other graduate students, exhibiting that he had background knowledge of the controversial event. He then evaluated his feelings about this event relative to the game's design. In doing so, he referred to the game's main character in the second-person rather than the first-person, thereby distancing himself from in-game persona.

The expert-tester footing of Player 1 privileges the evaluative work of the Testing frame, but leverages the projective work of Character frame and the experiential knowledge of the Student frame to support his performance of expertise. His habit of speaking to the proctor seems to convey that he is speaking to the designers and researchers who worked on this game. Throughout the testing session, Player 1 employed this discursive strategy often in his verbal reports - summarizing game events, distancing himself from the game, evaluating the game, and supporting his evaluation.

Player 2, meanwhile, shifted into the footing of an *engaged player* who was immersed in the character's narrative. When the fictional graduate student suggested that the professor might be at fault, Player 2 reacted in an interesting way:

> P2-32:35: [Reading the screen] I knew I had recorded that data. Although now that you mention it. [Addressing the screen] Yeah it did. Maybe PROFESSOR GIBBONS is the REAL plagiarizer. [Reading the screen] Since I used it as a source. Maybe you should check it for plagiarism. [Reacting] Niiice. I like this. Going straight to the top.

Player 2 alternated between reading the screen (see Figure 4), addressing the student character and exclaiming to himself, which shows his a footing as an engaged player. His out-loud reading of the screen demonstrates a close attention to events in the game that mirrors his exclamatory address of a fictional game character. The quickness and dramatic emphasis with which he addressed an in-game character, albeit in a silly way, signifies a tongue-in-cheek engrossment in the game's narrative. In this way, his footing foregrounds the Character frame, as he focused mostly on the literal events of game play. In contrast to Player 1, his enthusiastic evaluation indicates the manifestation of his thoughts as a player, rather than his critique as a tester.

Figure 4: Player 2 discovers the professor's culpability.

Conclusion

Scholarship often argues that learning in games is in part a process of identification, of coming to understand a new role, knowledge and values in the world. This process of identity transformation is often characterized as driven by the experience of inhabiting an in-game character. While further research may prove this to be true, it seems that this body of research has overlooked the way that the interactive frames that players construct serve to structure how they interpret their play and draw on existing knowledge schemas. How, for instance, might adopting a Tester frame heighten learners' reflective capacities? Or how might an engaged-player frame persuade a learner to try harder? As we continue this study on ethics, identity and controversy, we seek to address these questions and others.

Drawing on research emphasizing situated nature of learning (e.g. Lave & Wenger, 1991), the designers of learning games often attempts to embed contexts for learning *entirely within the game* (Gunter et al., 2008) in an effort to integrate conceptual knowledge with social practices. The game world, in other words, is thought to be *the context* for learning. The data presented in this paper suggests, alongside other research (see DeVane & Squire, 2008; DeVane et al. 2010), that players of "standalone games" actively construct an interpretive frame around game play, assembling a social context of learning that encompasses the game world. Players, in these limited cases, assumed distinct stances and frames for evaluating and processing game play; they drew on fairly heterogeneous knowledge schema regarding game play and prior knowledge of research ethics. Even as players were speaking only to a camera and silent proctor, their evaluative stances were *heteroglossic* (Bakhtin, 1981), reflecting multiple or quickly-changing discursive voices and assuming complex orientation-interpersonal meanings (see Lemke, 1998).

Perhaps the distinction between the interactive frames, which we use to interpret, know and act on the world, and the games we take-up as structures of desire is more tenuous than previously thought What if games are not separate spaces, but simulations of social life that borrow haphazardly from its unspoken rules? Fine's (1983) ethnography of fantasy gamers noted that researchers often view player's in-game and in-world selves as separate entities. Rather, Fine claims, players various frames and selves - e.g. expert, enthusiastic, student, critic - are often activated simultaneously on worlds of meaning, even in games. The player-testers of Murky Misconduct certainly seemed to do so, acting at different times as expert, student, moral authority, and defender of the downtrodden. The ways that players act, interpret and identify in learning games could be said to be the product of interlocking fictive and non-fictive interactive frames whose distinction is sometimes blurred. Researchers investigating play and learning would do well to keep this in mind.

Endnotes

(1) This material is based upon work supported by the National Science Foundation, under Grant EESE IIS #1033002. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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