Game as Inquiry: A Diffractive and Experimental Approach for Games with a Message

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ABSTRACT

This extended abstract proposes the lens of game as inquiry to envision a game design process that sits at the intersection of educational games and humanistic understanding of games. It is both a theoretical proposal as well as a recounting of authors' experiences leading the game design team in a funded initiative named EDIT-STEM, seeking to develop interventional (T)echnologies around the issues of EDI (equity, diversity and inclusion) in STEM (science, technology, engineering and mathematics). While the field of educational games lends itself to this goal, the authors are also engaged in bringing in works exploring racial, gender, and other social justice topics within game studies. Game as inquiry is the authors' attempt to synthesize these distinct scholarly communities. Notably, both the initiative and game as inquiry approach are still in early stages. The authors will recount lessons learnt from early efforts within EDIT-STEM, and propose approaches and lenses to inform ongoing works.

Game as inquiry complicates the question "what exactly is the intended effect/perspective/message of the game?". Many educational games are often designed after their messages are chosen, and such intention is typically not related to its ludic form. This approach frames games as mainly a communicative medium where the design of the medium orients around the efficiency and clarity of transmission. In the field of HCI, Harrison et al. (2007) would identify this approach as the second paradigm of HCI, where design and user cognition are framed around "information processing". While this model is undoubtedly valid and important, it leaves much room in terms of how game design itself can transform the intended messages, while still oriented by well-defined aims, themes and beliefs. Feminist philosopher Karen Barad's concept of diffraction grounds this view to the larger technoscientific practice in general, where knowledge is diffracted and "materialized differently through different practices" (Barad, 2007, p.90). Instead of seeing games as mirroring pre-established knowledge from existing EDI materials, articles and books, we see games as a practice that helps surface different knowledge both in its form and content.

To think about game making as producing new EDI-related knowledge begins with seeing existing materials as important but incomplete. While research for existing knowledge is central for a rigorous representation of EDI issues, the knowledge is also

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created for a specific context and in a specific format, such as public infographics, training materials and academic articles. A game designer has to interpret the materials with consideration of the game genre that the designer is working with. For example, a story-driven game will have to consider how to represent issues through characters and plots, thus pushing the designers to dive deeper into how EDI issues may manifest psychologically and socially in order to create more believable and dramatic scenarios. In addition, the knowledge can sometimes be ambiguous, open, and even contested and evolving, especially within the academic context. Take an existing EDIT-STEM game project as an example, where the game aims to encourage bystander intervention for microaggression. Infographics and training materials such as the 5Ds framework (The 5ds, no date) are designed to be informative but also open enough for the readers or trainees to figure out how it applies to their own situations. Factors such as the specific social context (e.g. microaggression in a bar or in a classroom), the power dynamics at play, the victim's reaction, and bystander's own personality are often left ambiguous. While the openness is intentional in the teaching materials, their absence can become rather glaring when presented in a game format. This was reflected in playtester feedback of the EDIT-STEM game, where players asked for more difficult and realistic scenarios, demonstrating that the difference between the contexts also asks for new ways of thinking about and representing the issue of bystander intervention. More examples in the EDIT-STEM initiative, based on reflective sessions between the authors and the designers, will be offered in the talk.

Game designers thus become thinkers of social issues in their own right, having to sift through the diffractive encounter between EDI knowledge and games. They elaborate, complicate, re-distribute, and re-emphasize the knowledge as needed. This also helps us think about EDI issues such as gender and race not as "preformed categories of the social" (Barad, 2007, p.87), but as processes undergoing constant construction through different practices.

Beyond game design, game as inquiry also sees the act of playing as itself a form of knowledge production. This becomes relevant when we acknowledge that the message of the game is constantly under negotiation and revision by the player. How a particular knowledge applies to the player depends on many situated, non-generalizable factors such as personality, history and culture. This changes the philosophy behind design. In addition to communication of knowledge, design is also envisioned as creating the conditions for the player's own inquiry. Harrison et al.'s proposal of third-wave HCI also frames design as "an element of enquiry [...where] the understanding or construction of the situation is the core of the design" to probe "the local, situated practices of users" (Harrison et al., 2007). One way to understand this is to design for openness, where games have to create a space for a diversity of understanding around their materials. This is echoed independently by both Jagoda's definition of experimental game as moving "from the realm of problem solving towards problem finding or, more properly, problem making" (Jagoda, 2020, p.113), and the tradition of critical pedagogy to envision games as fostering "dialogic" and "problem-posing" education (Freire, 1996). While not yet concretely realized, many ideas to create conditions for player inquiry and experimentation can be suggested, such as more qualitative evaluation, discussion activities after play, open-ended responses, multiple playstyles, poetic devices to invite interpretations, foregrounding designers' own subjectivities through commentaries, and "generative themes" that are timely and affectively saturated (Seal et al., 2025). The end goal is for the players

to realize their own capacity in knowledge generation in order to imagine an equity-minded world together.

Keywords

educational games, experimental games, critical games, EDI, STEM, Karen Barad, third-wave HCI, critical pedagogy

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