Using Working Examples to Bridge Research and Practice with Digital Media and Learning

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Abstract: This panel joins K-12 and higher education researchers and practitoners demonstrating "working examples" as a new form of scholarship informing research and practice. Together their presentations illustrate the successes and failures of current research-based digital media initiatives in school. Drawing on theory, and grounded in concrete instances, authentic examples are presented as a means of creating an interdisciplinary "participatory culture" (Jenkins et al., 2006) around digital media and learning (DMAL). Revealing, and then discussing, the complicated task of moving from research to practice with DMAL opportunities proposes a collaborative approach serving to further expertise. Recognizing the changing definition of literacy, fueled by practices with technology, necessitates rethinking traditional beliefs around schooling and *scholarship* serves as the backdrop for this conversation.

Introduction

Traditional forms of scholarship and publication around new media and learning, while theoretically plausible, often fail to translate into meaningful transformations within educational practice. Complicating the ineffective or absent interpretation of research impacting practice, is a current generation of academics and practitioners experiencing an historical shift in methods and modalities for communicating and building understanding. Social media and emerging technologies shift the definition of literacy and relocate expertise (Fahser-Herro & Steinkuehler, 2010), suggesting the future of literacy and scholarship will ultimately be influenced by acceptance of what Gee (1996) refers to as Discourses—socially recognized ways of using language to construct meaning inclusive of gestures, semiotics, and thinking— and through modes, logics, and affordances influenced by screen and image (Kress, 2003). These new literacy practices and ways of knowing will be influenced by participatory cultures being formed online in shared spaces. Cultures of participation support meaningful creations and contributions in socially-connected spaces, often facilitating informal mentorships between experts and novices (Jenkins, Clinton, Purushotma, Robison, & Weigel, 2006). The shifting definition of literacy, its impact on knowledge creation, dissemination and understanding, and the desire to move forward in the field of digital media and learning (DMAL) compels educational researchers to consider the impact of participatory cultures on *scholarship.*

In response, the call to transcend typical print-based and centrally controlled forms of scholarship in DMAL, a new invitational form of scholarship, "worked examples" or "working examples" is emerging as a way to solve well-known problems, advance generalizations and reveal reasoning via authentic illustrations (Gee, 2009). Purposely this panel poses, "working examples" affirming the in-progress nature of their work. This model of scholarship joins various theorists, disciplines, and approaches illuminating or "working through" explicit, multimodal examples in an effort to provide context, advance collaborative discussion and further the potential for ongoing work. These examples of authenticity purposely select instances, data, descriptions, and design to describe, discuss, and advance scholarly understanding (Barab, Dodge & Gee, n.d.).

With the goal of facilitating collaborative, participatory discourse and sense-making regarding the feasibility of incorporating worthwhile game environments within educational practice, this panel brings together K-12 and higher education practitioners and scholars utilizing authentic working examples to illuminate the "thinking, practices and values of a discipline overt and public for newcomers" (Gee, n.d.). Together they share the theoretical underpinnings, design, process, barriers and limitations, and successes of integrating game-based learning in real classrooms. Prototypes and exemplars are offered as a means of focusing the field of DMAL on meaningful conversation towards establishing a "common set of standards and values", which may become the foundation of DMAL (Barab, Dodge & Gee, p.18). This session and the research of the panelists, is a work-in-progress reflexively seeking audience critique and dialogue.

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Working Examples in K-12 Classrooms: Creating a Culture of Participation with Social Media and Games

The objectives of this presentation include (1) detailing working examples of gaming and digital media offered as curricula in a K-12 school district, (2) outlining supporting structures to build a culture of participation around digital media and learning (DMAL), (3) acknowledging challenges, limitations, and barriers to implementation, and (4) engaging in discourse with symposia participants overtly sharing assumptions, influences, and approaches (Gee, 2009) as a means of garnering expertise and furthering research and practice with DMAL.

Creating a culture of participation (Jenkins et. al, 2006) supporting teacher and student practices with new media literacies is a complicated task. Sustaining transformations in knowledge-building, design, implementation, and experiences for students utilizing technology requires a research basis (Mouza, 2009) and “a socially-interactive reflective community of practice” (Angers & Machtmes, p. 4). Furthermore, meaningful leadership with technology includes being mindful of the changing definition of literacy *and schooling* while “considering how the contexts for learning need to change” (Collins and Halverson, 2009, p. 140). Working examples provide researchers and practitioners the needed dialogue to *understand and discuss* digital media and learning (DMAL) research and its relationship to learning theory, select appropriate content and methods offering opportunities for social practices and collaborative work, and learn with tools and in online spaces (Barab, Dodge & Gee, n.d.).

Chronicling a K-12 districts’ pursuit to establish a culture of participation around social media games, and emerging technologies, I offer authentic working examples aligning policies, professional development, resource allocation, curricular initiatives, and technical support necessary to support staff and student engagement with games and other forms of media. Through digital media demonstrations of innovative, in-progress implementations and invited critique, this discussion offers a tangible approach towards connecting research and practice with DMAL. Threading social media, mobile devices, and games or environments such as *Quest Atlantis, Gamestar Mechanic, Conspiracy Code*, and a newly created high school game design course into daily curricular offerings allows students daily opportunities to discuss, play, and design games; sharing the process, curricula, and student-produced work offers researchers and practitioners a concrete method of considering the potential of their work.

Curriculum, student work, teacher and student perspectives, and policies are presented as in-progress working examples, evidencing both the success and failures of social media, games, and emerging technologies in practice. Data sources in this context are exemplars and models of practice needing revision; both instances benefit from interdisciplinary discussion.

Participant dialogue around the examples presented may result in curriculum design iteration, novel approaches to addressing digital media and learning in-and-out of school contexts, and contribute veracity within the emerging field of DMAL. Rich digital media learning environments, games in particular, rarely exists within K-12 classrooms or curricula. Bridging DMAL research with the realities

of teaching practice in the context of discussion surrounding in-progress initiatives and examples holds promise for researchers directing future DMAL study, and teachers wishing to consider effectively incorporating gaming and emerging technologies into schooling.

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Bringing in the Games: An Example to Work From Perspectives and Objectives

While research suggests the potential of games to promote academic oriented learning, many of these studies have been based on after school (i.e., Squire & Durga, 2008; Steinkuehler & King, 2009) and informal play spaces (Gee, 2003). In contrast, the culture of formal education embodies unique expectations and challenges for integrating games not experienced in the informal learning space (Gee, 2007), not only for the teacher but potentially for the leaner as well. This study was designed in two phases; at the onset inquiry was intended to provide a cross-case comparison between a game-based course and non-game-based course centering on course preparation, implementation, and the nature of the student experience, surpassing specific academic outcomes. During the second phase, findings and Implications were compiled into a working example format (Gee, 2009) has allowed this study to serve as a tool for sparking dialog and critical discussion among teacher education students and practitioners interested in games based learning.

Case study methodology (Stake, 1995), was used to compare two high school entrepreneurship courses, one (n=21) integrated with a commercially available video game, The Sims2 Open for Business, the other (n=25) was non-game-based and had been previously taught for three years using project-based-learning methods.

Data were collected through instructor and staff field notes, students' daily reflective journals, collection of student work, pre- and post-test results and formative and summative student feedback. The capstone project for both courses was a business plan evaluated by a panel of outside experts, which also served as an evaluative data point.

The working example features three prominent thematic findings: 1) Outcomes: Pre and post tests revealed only subtle difference in student outcomes. 2) Student Experience: Student feedback provided the most distinct differences between the courses. Negative feedback from a grouping of students in the game-based course indicated varying degrees of tension with students' epistemological framework of what constitutes learning, particularly school-based learning, versus playing a video game as a route toward learning. This was particularly strong among students identified as "good students" in other courses. 3) Course Design and Management: In the game-based course, each student played the same game, but individual engagement and in-game progress was quite individual. This required a stronger reliance on formative assessment techniques to gauge learner progress, as well as just in time learning strategies, including peer-to-peer teaching, to capitalize on teachable moments.

Transitioning from considering course preparation as *planning lessons to deliver content* toward *staging learning experiences* is a notable shift in the role of the teacher. This involves considering the course as a designed experience for learners rather than a collection of successively complex lesson plans concluded with an assessment, which is a departure from the traditional practices where daily lesson planning is preeminent. Learner feedback should remind us that the current grammar of schooling has worked for many students. Where learners' epistemological frames associated with school-based learning cause tension with innovative teaching strategies or interventions, care must be taken to orient the student to new methodologies and scaffold them toward developing new learner dispositions.

Compiling findings in to a working example format provided a case-based approach for pre-service teachers to consider the implications of integrating games into the classroom and particularly the cultural challenges students may encounter when asked to port outside of school practices into the formal setting of school.

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Spaceship Artemis: Learning to Play and Playing to Learn

The purpose of this working example is to use a particular instance of game-based learning to illustrate the relationships and tensions between "learning to play" and "playing to learn." The example is based on analysis of student reactions to the computer game Spaceship Artemis in an undergraduate course on games and learning. The example demonstrates how design elements of the game and the structure of the overall learning experience supported both anticipated and unanticipated learning outcomes, particularly related to the students' ability to engage in meta-level reflection about the game and their learning. While games themselves are have become widely accepted as learning tools, much focus has been on the game itself rather than the conditions in which the game is used. This worked example illustrates the importance of both choosing an appropriate game and designing an appropriate context for game-based learning (Squire, 2011).

The focus for the example is a week-long sequence of activities organized around the game Spaceship Artemis. Artemis is a multiplayer, networked computer game that simulates a spaceship bridge, with players taking on positions such as Helm, Communication, Engineering, and Weapon Control. Over the course of a week, students were asked to (a) research the game prior to gameplay and write about their expectations for the gaming sessions (e.g., what did they think would be challenging), (b) play in small teams during two class sessions, and (c) reflect individually and collectively on the experience in an online class forum and blog. They were also asked to read several articles that addressed the social dimension of gameplay. Concurrently, the students also were playing World of Warcraft as an out-of-class assignment. Evidence used as the basis for this example included field notes from game play and class discussions as well as students' written reflections, compiled throughout the week.

Artemis was in many ways a success as a collaborative learning experience. Students quickly became engaged in gameplay, were intent on improving their teamwork, and became immersed in their roles. There was evidence of the development and use of distributed knowledge, a shared vocabulary, and enhanced ability to coordinate their efforts (Gee, 2003). The game also proved to be effective in supporting students' learning about teamwork, demonstrated in student reflections on

topics such as the importance of communication and the role of an effective leader. Their understanding of how the game's design features supported or inhibited knowledge-building and successful game play was also evident in suggestions for "modding" the layout of the game space, for example, moving the computers so that they could see each other's screens, or positioning the captain at the back rather than the front of the group. Notably, however, the students did not relate the game to other experiences they had in collaborative gaming, even though prompted to do so, and despite the fact that they were also playing WoW as an out-of-class assignment. Indeed, students only mentioned WoW when referring to one of the course readings focused on WoW.

In general, this example suggests the need for balance between "learning to play" and "playing to learn." While learning to play was crucial in providing students with a shared gaming experience that could serve as a basis for reflection, moving past the specifics of the game to broader insights requires perhaps more extended engagement than we provided in this instance. In fact, while we initially dismissed the students' requests for more Artemis game sessions as simply a desire for more play time, we realize now that further gaming, scaffolded appropriately, would likely be crucial to support their ability to think more deeply and critically about the game, its affordances, and more general models of learning in multiplayer games.

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Improving Game-Inspired Structures In University Instruction

Recently, games and learning scholars (e.g., Squire, 2011; Gee, 2003) have advocated the use of games and game mechanics not as "teaching machines" (Skinner, 1958) to deliver academic content, but as tools to transform curricula. Motivational structures and decisions within games may help to move from an inordinate "content fetish" toward situating learners in forms of practice (Gee, 2004). This presentation presents a worked example (Gee, 2009) in this vein—an application of game-based learning to an undergraduate classroom, with the intent of determining how the application of gaming structures may affect the motivation of students, furthering discussion on appropriate uses of gaming as instruction.

Some have altered classroom structure itself to be more game-like (see Sheldon's, 2010, substitution of "experience points" for grades). Often, "games" are instantiated as reward structures or conflated with forms of credentialing ("badges" and "achievements," but not as valuable player practices). How can we best foster complex mechanics, multifaceted decision-making, and rewards tied to real consequences? In this worked example, the author builds on theoretical perspectives from game design (e.g., Salen and Zimmerman, 2003; Schell, 2008), which strongly direct that games are be not considered only as motivators, but also as structures for decision-making. The perspective explored through this case is one in which valuable game-based learning is hypothesized to help build motivation by providing students with increased agency and consequence.

As a worked example (Gee, 2009), this presentation illustrates a curricular redesign of a collegiate undergraduate course where elements of games were incorporated into course participation. Specifically, a "participation tree" system (analogous to the "talent tree" customization systems that are part of many contemporary digital games) was added (building on Author, 2011). Student participation translated to a course grade but also to an "in-course currency" used for customizing course requirements (e.g., excused absences and changing the weight of assignments). Ultimately, the system was a failure (Author, 2011)—structures implemented in order to foster student participation had the opposite effect. Rather than participation, the system engendered a sort of "min-maxing" behavior, in which participation decreased when goals in the "participation tree" system were met.

And yet, this failure was a productive one, which will be further developed in this session. I present an assessment of the intervention's design, and "work" this example by exploring alternate configurations of fostering participation and assessment through the employment of game-like structures. That is, if we care about adapting game elements to non-game contexts such as instruction, care must be taken to determine which elements of instruction should be "gamified." Practitioners must understand the

dynamics of the system they are implementing (in this case, course participation), and through the exploration of potential modifications to these participation and assessment structures, it is the hope that a more nuanced understanding of game-based instruction (beyond simplistic "gamification") can be learned. A worked example provides the opportunity to take this initial attempt and iterate it, in public, with the intent of revealing productive new avenues for future research.

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