

Novices, Gamers, and Scholars: Exploring the Challenges of Teaching About Games

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Abstract

Teaching about games should be easy. After all, students enjoy engaging with course content and have extensive personal experience with videogames. In reality, games education is surprisingly complex. We report on the results of a study that explored the challenges faced by instructors of games studies classes. Our results indicate that learning about games can be challenging for multiple reasons. For example, prior videogame experience often interferes with students' abilities to reason critically and analytically about games. Students also have difficulties articulating their experiences and observations. We describe some solutions that instructors are adopting to overcome these challenges. We also describe common misconceptions about the knowledge of expert players, and provide a characterization of what it means to have a naïve understanding of videogames. Finally, we draw attention to the issue that current game studies courses run the risk of limiting the diversity of people who could become game scholars.

Keywords

games education, game literacy, learning

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Introduction

Videogames are increasingly becoming an important part of people's lives (Byron, 2008; Cragg et al., 2006; Pratchett, 2005). Among some groups, such as college students, videogame playing is virtually ubiquitous (Jones, 2003). According to the Entertainment Software Association (ESA), 75% of heads of households in the US play videogames and the average game player (not buyer) is 30 years old (ESA, 2005). These statistics are strikingly similar in other countries such as Great Britain, where 59% of the population between 6-65 years of age are gamers (Pratchett, 2005). Videogames are undeniably affecting our culture, the way we socialize and communicate, and how we think about the world.

The increasing cultural importance of videogames coincides with an increased demand for knowledge, skills and training for people who have an interest in learning about and studying games. The last five years have witnessed an explosion in the number of universities and colleges that are teaching "game courses" and offering game-related degrees. Colleges and universities are not only teaching classes in game analysis, design and development, but they are also wrestling with how best to do it, what the challenges involved are and what they should expect students to learn.

What does it mean to "understand games"? What does it mean to have a critical discussion about them? What does it mean to be literate, or even fluent, in games? Is the practical, and often encyclopedic, knowledge students have of games useful to them when studying them? These are some of the open questions we have begun to formulate as we consider what the future of the field of game studies may look like. This article examines the challenges and difficulties that students face as they begin to study games seriously.

Asking these sorts of questions and exploring these issues is important to the field of game studies for multiple reasons. Game studies is coalescing around researchers from multiple disciplines and scholarly backgrounds, and the field has only just started to establish its own identity. While the founders of the field may have come from computer science, sociology, media studies, and other fields, there is a new generation of scholars who are coming directly into game studies. Game studies can now be seen as a viable, international academic field (Aarseth, 2001). To the new members of the field who arrive unburdened by baggage from other disciplines, what does it mean to learn and participate in game studies?

What skills should they acquire? What body of knowledge should they master? What are the challenges and the difficulties they will find? Have we created a space where ideas about games can be proposed, created, built upon, and linked to knowledge that has been developed? To borrow from Mäyrä (2005), do we have a "space for contributing deep, critical knowledge about games"? Perhaps more essentially, will game studies converge to a point of consensus or does the trans-, inter-, and intradisciplinarity of games studies negate that possibility?

One possible avenue towards achieving this goal is to explore and understand the challenges faced by students currently taking game studies classes. By looking at the difficulties involved in learning about games, we gain insight into how videogames are perceived and understood as a medium together with how the medium of the videogame affects its study. We hope that the findings of our research will help the larger community of media studies and game studies reflect on, and shape the answers to questions such as what does it mean to understand games?

Methods and Data Analysis

In order to explore the challenges of learning and teaching about games, we performed in-depth interviews with professors and instructors who teach game studies courses. In this study, we used qualitative methods to explore the diverse ways in which game studies courses are taught at the undergraduate and graduate levels.

We took an inductive approach based on general research questions informed by game studies literature as well as some initial hypotheses. In addition to asking for details about the courses instructors teach and the challenges faced by students, our interview protocol includes open-ended questions about what changes they would make to courses, what they expect students to get out of the courses they've taught, what skills and knowledge students are expected to have to be successful in the class, and what role prior experience with games plays in success in the class. Instructors with extensive teaching experience were invited to comment on their experiences in general, as well as refer to specific courses they had taught recently. Interviews were semi-structured to ensure that all participants were asked certain questions yet still allow participants to raise other issues they feel are relevant to the research. The protocol includes questions such as these:

- Tell me about the assignments and class activities you had the students engage in.
- What do students have the most difficulty accomplishing?
- What can you say about the role of students' prior knowledge of games in the context of your class?

As recommended for qualitative research (Glaser & Strauss, 1967), we employ theoretical sampling in which cases are chosen based on theoretical (developed *a priori*) categories to provide polar types, rather than for statistical generalizability to a larger population (see Table 1) (Eisenhardt, 1989). We looked to interview instructors and professors from a variety of institutions of higher learning and who had some degree of experience with research in game studies. We also sought diversity in teaching experience, from those who had taught a game studies course only once to those who had taught multiple courses. Other categories covered the types and sizes of courses taught, ranging from large introductory undergraduate lecture-style courses to small advanced graduate discussion-based seminars. Additionally, we made no attempt to provide definitions of what a "game studies course" was. When asked "Tell me about one or more game studies courses you have taught", interviewees were free to use their own understanding of the field and thus talk about courses that they feel are relevant to game studies. This helps ensure a broader range of courses, which was one of the desired goals. In the next section, we provide a sample of representative courses taught, together with their learning objectives.

Table 1: Categories and criteria for participant selection

Category	Criteria
Instructor	<Novice Instructor, Experienced Instructor> <Experienced Game Researcher, Novice Game Researcher>
Course Type	<Introductory, Advanced> <Required, Optional>
Course Style	<Lecture, Discussion, Practicum, Mixed>
Class Size	<Large: More than 30 students, Regular: Less than 30 students>
Students	<Graduate, Undergraduate, Mixed> <Homogeneous Academic Background, Heterogeneous Academic Background>

We conducted twelve interviews between August and December of 2006. Interviewees represented a total of ten institutions of higher learning from eight countries. Many interviewees reported on multiple classes. Interviews were conducted in person and by telephone, averaging 62 minutes and ranging from 35 to 74 minutes in length. All interviewee names have been changed for privacy (See Table 2).

Table 2: Participant pseudonyms and class details

	Alvin	Bert	Charlie	Diane	Edward	Faye	George	Harold	Iris	Judy	Kirk	Lance
Instructor												
Novice Instructor			X	X						X		
Experienced Instructor	X	X			X	X	X	X	X		X	X
Novice Game Researcher			X						X			X
Experienced Game Researcher	X	X		X	X	X	X	X		X	X	
Course Type												
Introductory Course	X	X	X	X	X	X	X	X	X	X	X	X
Advanced Course	X	X		X	X	X	X					
Required Course		X	X	X	X	X	X	X	X	X	X	X
Optional Course	X				X	X		X			X	
Course Styles												
Lecture	X			X	X		X	X	X	X	X	
Discussion		X	X	X		X				X	X	
Practicum		X				X						X
Mixed					X		X					
Class Size												
Large (more than 30 students)				X	X	X			X	X	X	X
Regular (less than 30 students)	X	X	X		X	X	X	X		X	X	
Students												
Graduate	X	X		X	X	X				X		
Undergraduate	X		X	X	X	X	X	X	X	X	X	X
Mixed											X	
Homogeneous Academic Bkgd.	X		X				X				X	X
Heterogeneous Academic Bkgd.		X		X	X	X		X	X	X		

All interviews were audio-recorded and transcribed. Data analysis was conducted using an iterative process, in which data from one interviewee were confirmed or contradicted by data from others, allowing me to refine theoretical categories, propositions, and conclusions as they emerged from the data (Glaser & Strauss, 1967). For our analysis, we used open coding to bring themes to the surface from deep inside the data (Neuman, 2000). In this process we assigned codes or labels to each interview answer. These codes or labels often overlapped, and individual interview answers often had more than one code or label assigned. Sometimes, as in the case of lengthy interview responses, we assigned different codes to different parts of each response. As we analyzed each interview, new codes emerged and existing ones were modified. This process continued until no further codes emerged. As part of this process we were also looking to identify consistencies between codes (codes with similar meanings or pointing to the same basic idea) that would begin to reveal themes. We report and discuss the relevant themes in the following sections.

General Learning Objectives of Games Classes

Each instructor had experience with a wide variety of game courses, each with their own educational objectives and curricula. Many instructors had taught more than one course, often on more than one occasion. The following sample of representative courses, each with a brief description and outline of the main learning objectives, provides a sense of the variety of game courses being taught. The descriptions and titles of the courses have been edited for privacy reasons. Some descriptions have also been edited from multiple similar courses taught by different instructors. All of the courses described have been taught at both the undergraduate and graduate levels, and in varying class sizes.

Game Design Analysis Course

This course introduces students to the study of games as cultural artifacts and provides an initial background on the approaches to game studies that have been developed over the past ten years. At the end of this course, students are expected to have a basic understanding of the issues in game studies, what it means to study games, and what some of the fundamental questions are.

Game Design Practicum

The goal of this course is to give students a basic understanding of the challenges of creating gameplay and designing a game, and to familiarize them with the processes currently used within the games industry for creating games. In this course, students compare and re-design existing games and also work on a project where they must create their own game design, pitch it to a panel of experts, and write the documentation necessary to guide the design process through the creation of a final game.

History and Culture of Digital Games

In this course, students study the history and culture of computer games. Students begin by learning the history of computer hardware and software, starting with early prototypes from the 1950s, continuing with arcade, console and PC games, and concluding with the current trends in online games and multimodal games. One of the goals of this course is to survey the landscape of changing games and player audiences.

Theories of Games and Play

In this course, students read and discuss the work of theorists like Huizinga, Caillois, Sutton-Smith, and several others who have provided theoretical frameworks and interpretations on the individual meanings and social impacts of play and games. The aim is for students to participate in productive discussions of these theories as a broad framework for considering the role of play and games in our society, focusing especially on theories of digital games.

Nintendo Entertainment System Course

In this course, students investigate the cultural artifacts and technical properties of a computational system, in this case the Nintendo Entertainment System (NES).

Students play and critique a selection of NES games from the perspective of the hardware and software constraints under which they were created while also authoring original programs using emulator software. The goal of this course is to introduce students to the intimate details of the NES for the purpose of creating new games or other digital works on that system, and critiquing NES games.

Findings

Student Background

People who are interested in learning about games come from as wide a variety of academic backgrounds as researchers in game studies. Faye says, "you have computer science students, there's people who come because they love games, there's visual design students, I get a large number of film students, students from the business school, or students from any number of backgrounds, anthropology, psychology, etc." Most share an interest in games due to prior and current life experiences. This prior interest is what helps draw many students to these classes. Edward, who has a mix of art and CS students in his classes, notes that "I'd tell people about the course, and they'd get excited just out of a general interest. Games are so hot in the pop cultural sense, particularly with college students, that I was able to get a nice mix of students into the class."

Many students also register for these classes because they aspire to work in the games industry. Lance describes how "they're here because when they come out [graduate], they want to work on games." Other students, especially at the higher levels of education, want to complement their already games-related professional lives. Some are professional game designers, journalists, or musicians with years of practical experience. For them, applying to games-related programs or taking games classes is a way of "linking their passion and expertise in games with what they do professionally" says Bert. Perhaps surprisingly, some do not have what we would call a formal education. Judy describes her experience: "I'm teaching a masters course and I've got a really big diversity of people in the course. Some people have only worked in industry and haven't done an undergraduate program. Other people have come from art programs. There's a woman who's just finished a degree in English at Yale, another guy comes from acoustic engineering, and a few people come from computing backgrounds." Lance's experience in his undergraduate classes is similar, "90% of them are high school graduates. The

other 10% are usually people who, for whatever reason, didn't go to school or something like that. All of a sudden they've decided to come back to school. They're much older, like 40 or 45."

The most common differentiator, especially at the undergraduate level, is the academic background of the students. Most often, students come from technical backgrounds (computer science, engineering) or the humanities (media studies, art, or film). Iris says, "Generally, they come from science and engineering backgrounds, including computer science, as well as other areas. Every other semester I'll get a big group of humanities majors. These last few semesters have been more balanced, and I've been told that word is getting out that I teach a lot of videogames stuff in my class, and people are just signing up."

What effect does this variety of interests, background and expertise play in the context of a single course? First, it makes it harder to establish a common level of academic discourse in the class. When you have people with different backgrounds, the common denominator becomes quite low. Harold describes the issue as "if I try to make it very basic, then, of course, some people would be bored and find the level too low. Half the class wants one thing, and the other wants another. It can be quite frustrating for all parties involved." Judy describes this challenge as "I find that I have to outline basic theories. I'm sort of providing a basic toolbox that I wouldn't have to do if they had all come from similar backgrounds. The ones that know that, well, they sort of get frustrated."

On the other hand, particularly in design-focused classes, the heterogeneity of the students provides them opportunities to experience different perspectives and move away from their areas of familiarity. Kirk notes that "everyone has a certain background, whether it's computing, or visual design, or something else, like a literary background, or what have you. They all have different interests, goals, and also different trajectories. So there's a kind of a richness of different texture that they bring. These differences often create conflict. This is great because we can have actual conversations about those issues and show them [the students] that reconciliation is actually not the goal." Also, student heterogeneity can allow them to bring multiple skills to bear in their design projects and practice the communicational and management skills that will be useful to them in the workplace.

Role of Prior Experience with Videogames

Literature in education and learning has highlighted the important role that prior experience can play in learning (Bransford et al., 2000; Kolodner & Guzdial, 2000; Lave & Wenger, 1991). In particular, it is important to establish personally meaningful connections with what is to be learned (Papert, 1980). For example, the creation and design of games, considered personally meaningful to kids, has been explored as a productive means for learning computer programming (Bruckman, 2000; Kafai, 1995). We hypothesized that students' extensive personal histories with videogames would be an asset in learning about games.

Our results suggest that prior experience with videogames can have a positive effect in the students' motivation, commitment and dedication. Charlie describes how "they realized that their passion could transform into something more serious. Even if they do not want to be involved in game studies or industry, they realized that gaming is not just for nerds, or for losing time, but something that deserved particular attention." Also, students' personal game histories provided them with a rich source of knowledge to draw from.

"[Students] regularly come up with really good examples that aren't discussed in any of the class materials. They rely on their own experiences, memories, and the expert knowledge they have of some genres. They can highlight the complexities that are involved in an issue rather than have this kind of uniform understanding of some received wisdom. We regularly ended up with this kind of varied and multicolored idea of the multiple points of view related to all the various aspects of games, their features, their role in social life, culture and so on." – Bert

However, many respondents reported that the role of personal game playing experience, especially when it was significant, was often negative.

"Their personal experience with games is actually a hindrance. It would be far better if they were coming at it without any experience in games. I find that what I do most is peel away what they already think they know from playing these previous games. So that's the biggest problem: peeling that 'knowledge' away." – Lance

In many ways, being expert videogame players interferes with their abilities to step back from their role as "gamers" or "fans" and reason critically and analytically about the games they are studying or designing. As Diane describes, "it's hard for them to break out of being a fan. It's even that much harder to take an objective step back, because they just have so much fun playing games." Edward comments that, "it's harder for them to step back objectively and get past the [idea that] I like games, I like to approach it as a fan, I wanna like a game... anything else either doesn't interest them or they can't seem to get around it."

"Students who know every game often have preconceptions about what games are, and I have to break those preconceptions. I have to find ways to make them see that games are an aesthetic form that hasn't been exhausted. Just because these are certain games or genres in existence, and this is the way things are... This is not the only way it can be! And so, breaking that down is sometimes more difficult than starting from scratch with someone who's maybe a casual gamer or just curious" – Faye

Students also find it harder to accept new ideas about games when their judgments are clouded by false assumptions about particular genres, titles and even the era a game is from. For example, they often assume that an Atari 2600 game, due to its simplicity in graphics and archaic hardware platform¹, isn't worthy of in-depth analysis or can't have any artistic or cultural meaning. Kirk describes how, "I think that students often have issues with the conceptual idea of playing, let's say, a vintage arcade game carefully. The very notion that there's something in there, more than they can see from a single glance, is much more difficult for them than, say, admitting that Grand Theft Auto has some subtleties of meaning that they could tease out." For students, the apparent complexity of a game and the meaning they might be able to tease out often seem at odds.

Students are also challenged by having to shift from treating a game as a "consumer media good" to a cultural artifact that can have embedded meaning and ideas. Playing a game as a child over countless weekends with your friends creates a strong and lasting emotional experience that is difficult to overcome. Games that have been played in the past are viewed with nostalgia, and students have to come to terms with, in Alvin's words, "separating the memories of the good old times they had with the harsh reality that 90% of retro games are just rubbish."

The diversity of the prior videogame experience students have also plays an important role. Harold comments that "they [students] don't know enough about games when they start studying games. They don't know enough about the history of games, not only computer games, but other types of games as well. One way of putting it is that they haven't played enough games, to be more precise, they haven't played enough different types of games." While students often have over ten years of experience playing videogames, that experience can be limited in diversity. It is typical for students to have a specialized understanding of a particular game genre, like first-person shooters, but be completely ignorant, in terms of experience, of other genres like puzzle or sports games. George describes that "there are often people in my classes who have just played one genre of games. Maybe they've only played tabletop role-playing games, or maybe its just first person shooters and nothing else. These students have problems in the course because they can't relate to a lot of the material." These students' knowledge and experience is so ingrained in particular genre conventions, that taking alternate viewpoints and discussing other phenomena becomes much harder. This difficulty is often met by students with disbelief and strong emotional reactions. Lance describes how students "actually get angry, 'cause they think that they *know* games. They really get confused, angry, and frustrated, because they've been playing games all their life!"

Students often react by antagonizing the instructor when faced with the thought that they may not be as well-educated as they thought. As Iris describes, "some of them are convinced that they already *know* videogames. They already have an opinion and you can't teach them anything about a game they already played. In their minds, they're already experts. Their attitude is that you can't correct me." Students also question their teachers' gaming credentials: Who are you to tell me this? What games did you design? Have you played all the games I have? What games do you know?

Sometimes student's attitudes can also negatively affect their relationship towards the university itself. Instead of being a place where they can learn, the university course simply becomes a necessary step in the process of getting a diploma or a means for learning specific software tools they think are needed to get a job. In their minds, they are already qualified to work in the game industry, and everything else simply becomes an obstacle towards meeting that goal. As Lance mentions, "they think they already know how to make the best first person shooter or the best strategy game. So, their attitude is to demand that I just show them the 3D tools so they can start making them." Edward's experience is similar "I've noticed that in the last five or six years students come in with a sense of

entitlement. They treat their games education like a service and they're the customers. Their attitude is very much like 'I pay tuition. That doesn't mean that I'm a student, it means you should give me what I want'. This can get complicated when you need to push them in a different way, which can be quite often with students in [the program] I teach."

Practices and Discourse of Play

A lot of experience with videogames can also help confuse two issues: playing for fun and entertainment with playing for critical analysis and understanding. Kirk describes how "[students] mistake being successful at the play of the game, being a good player, as being a clever player...or a player with insight. The ability to perform in the game is not the same as being able to read or think about the game carefully." For some students, analyzing a game is equivalent to listing all its features together with their opinion: is it cool or not? "A lot of times people, when they get right down to it, sort of slip into feature reviews. It's one of the most difficult things to break, that kind of loose judgment on whether something is working or not", says Faye. George provides additional insight "If they're comparing two games, for example, they usually haven't thought out the reasons why they want to compare them. So, what they do is take two games they like, and then they just describe them. If you're lucky, they might tell you why they are like each other, and why they are different from each other. But they don't have a purpose for it, they just do it mechanically."

Edward describes how new modes of playing and thinking about games "sort of pushes them [the students] out of their comfort zone. I really wanted them to think more critically and to really push them to do it in a standard academic way. They really struggled with that. It was a masters level course, and I still had to really push them to work on their critical analysis." We found that it is common for students to have problems expressing ideas about gameplay or articulating their experience with games. Our research suggests that students are generally lacking in models of what an in-depth analysis or a game critique look like. Diane describes that "they might have opinions about things, and they are often extremely valid and interesting opinions, but it's also difficult for them to square that with using a methodological framework for thinking about a particular problem or addressing a certain issue." Judy mentions that students will typically "write reviews, so they say this is a really good game. I think that that's because most of the things that they've read have been games journalism, so they're kind

of following that mode." Unfortunately, game reviews, which are written to help consumers decide whether or not they want to purchase a certain game (Klostermann, 2006; Stuart, 2005), are a poor referent for the kinds of in-depth analysis and critique which are often expected of students studying games. Ernest Adams, a professional game designer and consultant, comments that "reviews only compare games to other games; they don't analyze games in their larger cultural context (Friedl, 2002)."

While students often have a very good feel for gameplay aspects, they can have difficulties articulating what these aspects are and how they interact with each other to produce a game experience. Edward describes "they're very savvy about picking up a controller and figuring out how to play a game pretty much instantaneously. They get the general, 'Oh, here's how you interact with this game', and they can do that immediately. Sometimes it's magical watching them do it. So, that learning curve has already been attained just by their history playing games. That unbelievable familiarity makes them experts, but what's interesting is when you ask them to talk about games. They kind of devolve into likes and dislikes. So, they'll say things like, 'I played this game and I liked it because...' or 'I really enjoyed the...'. Understanding what they're trying to say gets really muddy because there is no sense of exactly what they're saying outside of that they like it, or don't like it." Faye describes the issue as one of lack of vocabulary.

"We don't have a strong vocabulary for understanding what happens when you play. It's difficult to open up emotionally and describe what you feel. We experience games at a very visceral level and don't have, as a culture, a strong literacy in discussing games. You might go to a movie and someone who's not a filmmaker can discuss with you, at a deep level, the character motivations, or the editing of the film. The same can't really be said about gameplay. People can discuss the technology, but that's not what I'm interested in. I'm interested in how gameplay affects the human being, how the emotional experience is playing out." – Faye

Faye's comment raises another issue. Are these challenges unique to students studying games? Alvin mentions some of the differences he sees between film analysis and game analysis assignments. In his view, the idea that you can talk about games in a serious and academic fashion hasn't really moved beyond academia. Thus, students aren't aware of what "appropriate" models of discourse surrounding games are, and end up writing in the same style as what they read.

"When I force them to write a game analysis, students often fall back into a style that I call talking about 'the fun world of games.' Basically, it's really horrible writing about games. A lot of journalistic writing about games is like this. Students think they can get away with the same level of analysis that they get from these publications. They'll write stuff saying, 'You have a really big gun that is pretty cool and shiny'. This even happens with the grad students! When I give the same assignment for film analysis, the results are different. People know that you could fill five libraries with books about film analysis. Students know they can't just analyze a scene by saying, 'he comes from the left, and then he shoots the guy to the right, and it's really cool how he does that!' You don't do this in a film analysis, and students are aware of this tradition. In the case of games, the publications they read very often do that, so this carries over towards the analysis." - Alvin

So, in what ways do course instructors deal with these challenges of lack of critical vocabulary and appropriate models of discourse, problems articulating ideas and insights, and the challenge of playing games for analysis and critique rather than fun? Course instructors have adopted a variety of approaches to help students engage in the sort of discourse that is expected. George describes, "I provide a vocabulary and framework for games, both game design patterns and the game ontology project², so that they can look at a game and see the kinds of parts which are used when you describe what happens during a game, what are the structural components in a game, and so on." Charlie, who also uses game design patterns and the Game Ontology (Björk & Holopainen, 2005; Zagal et al., 2005), illustrates, "with these tools they recognize things that they might know, and then transform their language together with their comprehension of games."

Students are also often asked to write journals or take notes of their experiences playing games. These self-reflective, often story-telling, experiences help students, in Faye's words, "get into their emotional state and try to understand what they're feeling and thinking." Also, as Judy points out, "they [students] can begin to illustrate an argument or analysis with concrete examples of how a particular aspect of something is managed. Instead of going into a generality about a game, they are thinking about it in more specific details."

Issues of the Medium

Fully experiencing a videogame is comparable to being skillful at playing it. Can you push the buttons fast enough to gain access to the final area? Iris describes how a student once confided, "I no longer play videogames because I don't understand the controls. Give me a NES controller [referring to the Nintendo Entertainment System, released in the US in 1985] any day, but these new ones with all those buttons? I don't know what to do with so many buttons!"

"The idea of being good at something, especially in a videogame, where we don't really have random access to every page, we can't skip around, means that in some games there may be certain aspects of the game that are unavailable to you. You know, unless we use saves or all these sorts of tricks that we can use to see parts of the game. But you might, whether through frustration or just through inability, not really unlock the game's secrets...even if you're very adept at uncovering them once you find them." – Kirk

This problem of access poses a challenge to students and instructors on multiple levels. Students who are unfamiliar with a particular game have to acquire and practice the skills necessary to be proficient at it. This entry barrier makes it harder to establish a common reference point for all the learners in a class. Harold describes his experience with a student unfamiliar with first-person shooters, "We were playing Counter Strike, and it was painfully clear that [the student] did not know anything about how the game worked, or how any first person shooter works." While you could assume that most students are familiar with first-person shooters, the same cannot be said of other genres. The breadth of games, despite their potential value as objects of study, becomes limited by their exclusion due to lack of students' familiarity with them. Also, playing games is time-consuming, and often, playing all the games that are assigned in a class is simply impossible. George describes that "In order for them to do their assignments in the amount of time they have in the course, they really need to understand the game. So, I encourage them to choose games they've already played. The course isn't long enough for them to have time to go home and play a game sufficiently to be able to analyze it. So, at least in this class, there's a general assumption that if you're taking a game related course you're supposed to know about games or played a lot of games before." For other classes, where the educational objectives may include exposing the students to certain games they may not otherwise know, the issue becomes more complicated.

"Say you have twenty different games you want the class to have exposure to. Now imagine how many hours of play that would take!" – Judy

There is no easy solution. Some classes take a broad, yet shallow, approach where it is assumed that the students will play all the games, though none for very long. In other cases, individual students are nominated as the "expert" for a particular game. They are expected to devote a significant amount of time to playing and understanding a particular game. Then they give a presentation, including a demo, of important aspects of the game. Some classes implicitly assume that students are already experienced and intimately familiar with the games that will be studied.

Technology can also play a problematic role when studying games.

"It's really difficult to teach a class across the spectrum of historical platforms and the evolution of interface languages. I mean, it's just difficult to make sure that you have a working version of the original Super Mario Brothers when you only have one and I have to bring in my own machine to play it. The lab doesn't, you know, have every old game console available." – Faye

The problem of providing students with access to games that are important to the history of videogames is not about curiosity or nostalgia. As Edward describes in the context of his game design class, "We're having to consider going back so that they don't re-invent the wheel every time they think of a game design or how a game could work. It's about knowing what has been done or also, what good experiments and innovations have occurred." These difficulties often lead to students blindly pursuing ideas that have historically proven ineffective or impoverish their chances of capitalizing and building on prior knowledge and experience.

Role and Influence of the Field of Game Studies

Most of the study participants reported difficulties wrestling with what "the basics" of an introductory game studies course should be. As Kirk puts it, "if you look around at the world of introductory game studies classes, you'd find that

while they may share publications, all of them are all over the map". There was also genuine curiosity of what other instructors were doing, what pedagogical techniques had proven valuable, and how they dealt with the challenges they faced.

Bert poses a fundamental question: "Do we really have enough research in this field [game studies] that our teaching has some solid foundation?" Other fields, with hundreds of years of research, have figured out, to a certain extent, what the fundamentals are. In the case of game studies, instructors are figuring out what to borrow from fields like media studies, sociology, and social psychology among others. At the same time, so many new phenomena are emerging that while they're teaching, they're doing research. Despite the challenges, teaching game studies was reported as fruitful and rewarding.

In what ways does the relative youth of the field influence the students who are learning about games?

"Film analysis has all kinds of references. Game analysis is a bit less clear. There are maybe two or three books that might be references, but the context is still growing. You can't stand on the shoulders of giants in game research. There's missing work that hasn't been done yet, and that makes it harder for the students to contextualize what they do." – Alvin

The field's lack of established canon can be problematic for some students, particularly those from science or engineering backgrounds. They often expect to encounter problems with clear-cut solutions. Instead, they face a field whose fundamental questions are still being explored. George describes that "the most common question I get about the assignments is that the task they're given is not well defined. They have a problem with them because the questions are so open. This is actually frightening to some people, because then they don't know if what they're doing is good, or bad. They're used to doing something, and being able to immediately determine if it's wrong." Diane provides an example, "we spend some time talking about the ludology versus narratology question, and some students wonder why we bother. Like, isn't this resolved? They think that problems get solved and we move through them, and I don't know that any problems have really been solved."

"Game studies has been such a self-reflexive field that it further problematizes this issue. When someone writes an article about how they shouldn't write an article about something, it can be disorienting for the new student who doesn't really understand where the field is at." – Kirk

While engaging in a new field can be daunting for students, it also provides a unique opportunity. Bert describes that "people feel this pioneer spirit. It's not only students, but also we, as teachers, are pretty excited about being able to go into this field and speak about games. It's very exciting to go where no one in our university has gone before". Contrary to other fields, students feel greater liberty to question and criticize what they read and learn. As students come to terms with the fact that game studies is new, they often engage in the dialectic and fluid nature of the field.

"They have this tremendous opportunity to play a central role. This is a ridiculously new field that's quite accessible for participation and even publication. Most of the time, in a class, you wouldn't have direct access to the top scholarship. They have that opportunity! They just have to want to do it." – Kirk

The state of the field, together with a positive affective relationship with games, is a determining factor in the high motivation that students often show. Charlie reports that his students are often self-motivated to "start reading a lot of essays about game studies, even if they were in English or in other languages they didn't know. Every week we discovered some new authors and engaged their ideas with a lot of passion."

Discussion

Where education is concerned, games can be motivating when it comes to learning (Malone, 1981). However, it is dangerous to assume that learning will be easy, fun, or happen felicitously simply because the subject matter is games.

Challenges of learning about games

Our analysis shows that teaching and learning about games can be challenging for multiple reasons. Often, the extensive prior experience students have with games is counter-productive to their learning goals. Students often have problems stepping back and viewing the medium critically. Also, while they may have a specialized understanding of a particular game genre, they are often ignorant of other genres. Their knowledge is ingrained in particular genre conventions, and taking alternate viewpoints and discussing other phenomena becomes much harder. Essentially, they are challenged by having to shift from treating a game as a "consumer media good" to a cultural artifact that can have embedded meaning and ideas. This often results in students confusing playing for fun and entertainment (as "gamers") with playing for critical analysis and understanding (as future designers or game scholars). In this way students often mistake being successful at the play of the game, with being a player with insight.

Learning and teaching games can also be challenging due to the medium itself. Playing games is time-consuming and students who are unfamiliar with a particular game have to acquire and practice the skills necessary to be proficient at it. Fully experiencing a videogame is comparable to being skillful at playing it, thus studying games can create an entry barrier that makes it harder to establish a common reference point for all the learners in a class, or exclude students who aren't able to master the skills necessary to be sufficiently successful at a game. The rapid evolution of technological platforms used to play games also conspires against the study of games. As platforms become obsolete, it becomes increasingly challenging to provide students with access to games that are important to the history of videogames. Also, student judgment can be clouded by false assumptions and nostalgia. Old games with simple graphics aren't necessarily simple games, a point that is often lost on students.

Novice Players and Gamers

Our research also suggests that there may be important differences, in terms of challenges faced, by students that are novices to games and those that identify themselves as "fans" or "gamers". Students who don't have much prior experience playing games generally seem to face two main challenges: (1) issues of accessibility to the medium, and (2) assumptions of prior gameplay experience on the part of course instructors. Depending on the course, these challenges may not be an issue. For example, in courses where instructors provide time for students to

familiarize themselves with the games they're expected to learn about. Students that are "fans" or "gamers", however face a different set of challenges. The main challenges faced by "gamers" can be summarized as: (1) Difficulties stepping back from role of "gamers", (2) problems articulating and describing gameplay, (3) problems assuming different viewpoints and perspectives on games. There are, as described earlier, other issues that may apply to both types of students, or even differently amongst the same types. For instance, some "gamers" may have broader experience with games than others, thus potentially having fewer issues assuming different viewpoints and perspectives on games. It is also possible to "level the playing field" between non-gamers and gamers by encouraging students to play games from genres they aren't familiar with. However, in order to better address these questions, further research would be required.

From our analysis we characterize some of the misconceptions that game instructors may have with respect to their students that are expert videogame players. Summarizing:

1. An expert player isn't necessarily more insightful, and might even be less so than a novice player.
2. Expert players are often unaware of the broader issues of videogames.
3. Player's expertise is often very specific, limited to certain types of games, and often full of gaps.
4. Expert players aren't often comparable to each other due to the wide variety of games, game types, skills required to play, and technological platforms they are familiar with.

Additionally, our analysis shows that we can take a first step towards characterizing what a naïve understanding of games is. Summarizing, someone with a naïve understanding of games will often:

1. Confuse being insightful about a game with being successful at playing a game.
2. Describe a game superficially.
 - Focus on the features of a game over describing the rhetoric of a game or the experience of playing it (e.g. "this game has hi-res graphics", "the game has a ton of maps to play").
 - Describe a game judgmentally rather than analytically (e.g., "this game sucks", "this game is cool").
3. Assume that people experience a game the same way they do.

4. Be familiar with specific genres or types of games, but have a narrow view of the medium.
5. Think they can't learn anything new from games they've already played.

Conclusions

Prior experience plays an important and valuable role in learning (Bransford et al., 2000; Schank et al., 1999). This is particularly so when the learner has personally meaningful connections with what is to be learned as the learner will then engage more attentively (Papert, 1980). Thus, students' extensive personal histories with videogames can be an asset in learning about games. However, this research shows that we cannot assume that learning will be easy, fun, or happen felicitously simply because the subject matter is games. As we have shown, games education is more complex than it seems. In particular, games instructors find that it is not straightforward to help learners leverage their experiences and personal gaming histories to achieve a deeper understanding of games. So, how do we help learners better leverage their personal experiences with videogames?

Educational research suggests strategies for leveraging experiences such as encouraging reflection and providing new contexts where knowledge from experience can be applied (for a review, see Bransford et al., 2000). Professors and instructors of games classes are actively exploring ways to do this. Encouraging students to keep journals of their gameplaying activities seems to help them better reflect on the nature of games as well as encourage articulation of their experiences and observations (Zagal & Bruckman, 2007). Providing students with theoretical frameworks for the discussion of games seems to help improve the quality of game analyses as well as enrich their vocabulary (Holopainen et al., 2007; Zagal & Bruckman, 2008). Finally, in-class game playing sessions and in-depth presentations of games can help broaden students' experience.

Although these results are encouraging, further research is still necessary. For example, it is not clear how critical experience in other media, like film or literature, may transfer to understanding games. This can be important when considering learners who are interested or curious about games, but don't have significant prior experience with the medium. Due to the challenges posed by the medium, many classes make assumptions about the game experience of incoming

students. Students are expected to be intimately familiar with a lot of the games they will study because there isn't enough time in class to play or analyze them. This assumption could have unintended effects on the diversity of people who could become future members of the field. Implicitly requiring incoming students to have years of experience with certain genres of games marginalizes those who don't. When it comes to learning about games, what should be taken for granted and what should not? Should game scholars be required to have been previously gamers?

While we may be just beginning to explore what it means to learn about games, we need to examine the issues and challenges faced by learners, both experienced with games as well as not. In what ways are their needs addressed? What tools and skills should they acquire? What effects will these decisions have on games studies? Also, how can we do this while maintaining the features that currently make learning about games so invigorating and exciting? We need to focus our efforts on helping students get more from their experiences with games, and help them better leverage what they know to establish a deeper understanding.

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¹ The Atari 2600 is a video game console released in 1977 that featured a microprocessor and popularized the use of cartridges that contained game code. It was a commercial success in the late 1970's and early 1980's. (Perry & Wallich, 1983)

² Game design patterns and the game ontology project (<http://www.gameontology.org>) are frameworks that provide concepts and vocabulary for describing and analyzing structural elements of games and how they relate to each other.