Game Analysis as a Signature Pedagogy of Game Studies

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ABSTRACT

Teaching game studies has proven to be difficult. There is a marked difference between the fairly uniform professional and fan culture perception of games, and the scholarly perspective that most teachers will foster in a classroom setting.

I argue that game analysis has the potential of being the signature pedagogy of game studies; that is, the practice through which students acquire theory in practical usage. However, in order to make this happen, we must develop the pedagogic aspect of game analysis, that is, we must understand how the skill is best acquired in an educational context.

This paper is an attempt to critically examine the practices of teaching the skill of game analysis, a skill that is at the same time practically useful and conceptually difficult. Based on an online discussion with academic teachers involved in university level teaching in game studies, I discuss the methods that currently are in use and evaluate them against present knowledge in university pedagogy. My investigation shows that while all the participating teachers have developed practical and inquiry-based methods, the practices are still too diverse to form a signature pedagogy.

Categories and Subject Descriptors

K.8.0 [**Personal computing**]: Games

General Terms

Your general terms must be any of the following 16 designated terms: Algorithms, Management, Measurement, Documentation, Performance, Design, Economics, Reliability, Experimentation, Security, Human Factors, Standardization, Languages, Theory, Legal Aspects, Verification.

Keywords

Education, Game Studies, Game Critique, Game Analysis, University Pedagogy

1. INTRODUCTION

Only recently have universities begun to develop courses and educational programmes about games. Some of these courses and programmes are directly targeting the constantly growing games industry, primarily educating game designers, developers, and content artists (audio and graphics designers). Others are devoted to the cultural and aesthetic study of computer games, motivated by their central role in modern culture, and educate game critics, journalists, and academic scholars. Many courses integrated the two purposes, or are freestanding volunteer courses available to a wide range of students with a strong interest in games. From the university perspective, many courses programmes are motivated by the relative ease in attracting students (see e.g. [8]) – there exist an abundance of youths who wish for no else than to make their favourite past time a subject of study as well as their profession. Although the academic research on games is not always used in the more practical educations, most educations include some introduction to game studies, at least as a counterpoint to more practical knowledge. This is not surprising as academia tends to foster a knowledge-based learning ideal also to practice-oriented vocational training; students should not only learn "how, but also why*"* [22].

However, academic courses that integrate game studies into their curriculum face particular challenges. Unlike established disciplines (such as medicine) that have well established teaching strategies for integrating theory and practice, academic game knowledge tends to clash with the students' perceived utility of the subject. Consequently, scholars face an acute challenge concerning not only how, but also *why* they teach what they teach. It is thus essential to establish methods and teaching material that is able to bridge the gap between theory and practice in a way that also is meaningful for students.

A candidate exercise for bridging this gap is the practice of *game analysis*; the application of various theoretical concept to the analysis of an individual game. Due to the practical nature of such analysis, the approach is a natural choice when creating concrete exercises in academic game courses, and consequently some element of game analysis is already included in a vast range of courses and educational contexts. It is possible that game analysis could develop into a signature pedagogy [22] for teaching game studies, that is, a well-established teaching method that combines theory and practice into a whole. In this article, we explore what is already being done in university teaching of today, to identify potential obstacles and solutions towards the establishment of such a practice.

2. BACKGROUND

2.1 Signature pedagogy

The concept of 'signature pedagogy' was introduced by Shulman [22], and describes the overall pedagogical practices in a discipline. Shulman describes such practices as providing learning at three levels:

> "A signature pedagogy has three dimensions. First, it has a surface structure, which consists of concrete, operational

> acts of teaching and learning, of showing and demonstrating, of questioning and answering, of interacting and withholding, of approaching and withdrawing. Any signature pedagogy also has a deep structure, a set of assumptions about how best to impart a certain body of knowledge and know-how. And it has an implicit structure, a moral dimension that comprises a set of beliefs about professional attitudes, values, and dispositions. ([22], p. 54-55)"

A typical example of a signature pedagogy is the bedside teaching in medicine, in which the med student and tutor engages in a dialogue at the side of a patient. Shulman emphasises the interactive nature of a signature pedagogy, in which students and teachers engage in a situated dialogue, so that the exact content of teaching is adapted to the situation at hand.

Signature pedagogies seem to emerge in disciplines where the central difficulty lies in bridging the gap between theory and practice. The major advantage that Shulman sees with signature pedagogies is that they help students develop habits (of mind or hand or other skills). As Shulman (p. 56) puts it, "the routine of pedagogical practice cushions the burdens of higher learning".

There are many reasons why there, as yet, exists no signature pedagogy for game studies. Firstly, the pedagogical practices that Shulman analyses are not designed but evolved, and Game Studies is simply too young to have developed its own signature pedagogy. Secondly, signature pedagogics are more typical for professional disciplines (such as medicine or law) than for more theoretical academic disciplines, as they are intrinsically tied to the particulars of the profession. Shulman discusses the example of bedside tutoring that is regularly practiced in medicine, which evolved in a time when patients were regularly hospitalized for extended periods giving ample opportunity for tutoring. Game Studies is an academic subject taught for many professions, and as such, a rather more theoretic discipline than the practical professions that Shulman studies.

Still, I would argue that much speaks for the conscious development of a signature pedagogic of game studies. Below, I will discuss the documented difficulties associated to the subject in terms of bridging theory and practice, and the difficulties students encounter in adopting a less normative and more deconstructive understanding of games than what is common in the commercial culture surrounding computer games. The latter can be compared to Shulman's example of law school practices, where a difficulty arises on a deep, implicit and ethical level. Law must be understood as a formal rather than moral system:

> "We observed several interactions in which students questioned whether a particular legal judgment was fair to the parties, in addition to being legally correct. The instructor generally responded that they were there to learn the law, not to learn what was fair–which was another matter entirely." ([22], p. 55)

The example shows how the interactive nature of a signature pedagogy can help in gradually re-learn also deep valuations.

Signature pedagogic comes at a cost. By forcing learning into a limited range of teaching practices, they distort teaching. This becomes a problem in particular when the professional practice changes, as the pedagogy runs a risk teaching a routine that can only be applied within the academic setting. As professional scene for game academics is in constant flux, this must be taken into account in proposing a signature pedagogy for game studies -any such proposed practice must be fairly resilient to such changes in the professions.

2.2 Game Analysis

Game studies has grown into a cross-disciplinary field "with researchers and academics from a multitude of other areas such as computer science, psychology, sociology, anthropology, arts & literature, media studies, communication, and more[1]" as Wikipedia states it. The field has no overarching epistemology, and employs a multitude of methods ranging from theoretical discussions to controlled experiments.

Still, although there are many examples of general theory development, comparative studies, and studies of more generic gaming phenomena, the perhaps most important method in game studies has to date been to perform some kind of experiment, study, or theoretical analysis related to individual games. In fact, this approach is already so well established that the selection of which games to study is an issue in itself. Becker [2] voices the concern that as an academic practice, game studies need to become more careful with how, and why, certain games are chosen for study.

In this article, I will use the term 'game analysis' as a widely scoped term for such practices. The concept of 'game critique' has also been proposed [11,23]. The latter concept applies more strictly to a literary review practice for games, the game correspondent to literature critique. Game critique can be seen as a particular form of and purpose for game analysis.

Aarseth [1] is a bit more precise on the purpose of game analysis. He frames game analysis as 'a methodology for the aesthetic study of games'. Aarseth is adamant in emphasising the role of *play* in analysing games. He argues that, in addition to tapping into all sources available for the game in question, the analyst must also always be a player. As Aarseth puts it, 'any theoretical approach to game aesthetics implies a methodology of play', prioritizing practice over any theory:

> " Game analysis is not just a critical/theoretical practice; gamers do it all the time. The primary objective/meaning of most games, how to play well and win, demands an analytical approach."

However, games are multi-layered phenomena, and the play activity will only render visible some of these layers. In framing the game critique as a method of game analysis, Konzak [11] suggests that any game critique must deconstruct phenomena at more than one level:

> …"seven different layers of the computer game: hardware, program code, functionality, game play, meaning, referentiality, and socio-culture. Each of these layers may be analysed individually, but an entire analysis of any computer game must be analysed from every angle. Thereby we are analysing both technical, aesthetic and socio-cultural perspectives."

Hence, although the personal play experience lies at the core, game analysis may also involve other methods such as lab studies, reading code, doing interviews or surveys with players or designers, visiting game events, gathering online discussion material from blogs and web forums, et cetera.

[1] http://en.wikipedia.org/wiki/Game_studies

Aarseth suggest a framework of three (rather than seven) layers of meaning that since his original proposal has become widely adopted. Aarseth named these 'game-play, game-structure, and game-world'. The first of these focuses on the game as experienced by players and includes also activities and phenomena that arise in a play community. The second is concerned with the game as a system, and includes its regulatory (including legal) as well as technological basis. Finally, a game-world analysis would focus on the game as a cultural construct, including its aesthetic and rhetoric qualities and its relation to culture in general. Aarseth's division is almost identical to the way Salen and Zimmerman [21] partition their book 'Rules of Play', a book that has more or less become the authoritative reference for teaching game studies. Although scholars may argue the relative importance of the three perspectives, it is today fairly widely accepted that they all exist, and that all three are relevant to the academic field of game studies in general as well as to the analysis of singular games.

To summarise, game analysis focuses on a singular game and deconstructs it from one or several analytical perspectives through a variety practical exercises. The central exercise is playing the game oneself, but the own play experience is not always sufficient to uncover a particular aspect of a game. Complementary exercises can include as diverse methods as observing players, reading online player discussions of the game, reading code, and conducting controlled experiments with the game.

3. THE ROLE OF GAME ANALYSIS IN EDUCATION

We now turn to the question of how, and where, game analysis is taught. In engineering programs, game analysis is seldom taught. For example, Zyda et al [26] describe a development programme where game analysis is not included. It seems also to be common for development-oriented courses to exclude game analysis and game critique [16], or include it only as part of the final assessment of a course project [3]. More integrative approaches are possible, as represented by the programme at Georgia Tech [4], which integrates analysis and design into the same program and even the same courses. The authors argue the necessity of teaching game design and analysis as an integrated whole, "You must make games to study them, and you must study games to make them". Such an approach is guided by the ingrained scientific ideal of engineering, in which education and training, deep knowledge and practical skills are combined in order to create innovation:

> "We think of computation itself as an expressive material, and digital media research as an aesthetic as well as technical practice."

In programs with a strong focus of humane sciences, game analysis is often equated with game critique, with courses that focus on how games create meaning as culturally situated constructs. For example, the 'critical approaches' module taught at Brunel University emphasises the development of a vocabulary for aesthetic critique of videogames[2].

[2] See

http://www.brunel.ac.uk/about/acad/sa/artsub/gamesdesign/bagamesdesign/typicalmodules

3.1 Documented Difficulties in Learning to Analyse Games

Learning to analyse games has proven to be difficult. Zagal and Bruckman [25] relate an interview study with twelve scholars teaching game studies at academic level. Their summary shows, that the methodological application of theory to the analysis of individual games proves to be an obstacle for many students. Zagal and Bruckman list the following issues.

The stability of the field of game studies. Teachers wrestle with what "the basics" of an introductory game studies course should be. They tend to draw upon a wide range of work from various fields outside game studies, as well as on article collections from recent journal issues and conferences. There is even a distinct lack of terminology for describing even the most basic aspects of play, at a level where the students can start to relate to their own play experience.

Heterogenity of student groups. As discussed in the previous section, game studies are taught to students in widely varying contexts, and many teachers also get very mixed student groups. Zagal and Bruckman identify this as creating issues primarily with very varying levels of previous game experience.

Problems with pre-existing game literacy. Zagal and Bruckman state that "the role of personal game playing experience, especially when it was significant, was often negative". Highly skilled players have a tendency to mistake proficiency of play with proficiency of analysis. In a similar vein, many students tend to slip into the style of commercial reviews, limiting their analysis to a listing of game features together with a personal opinion, 'is it cool or not'. Students 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. To address this issue, Zagal and Bruckman suggests concrete educational exercises such as requiring students to keep a play diary, and to play and analyse games together in class.

Hostility towards teacher and the game education context. High levels of pre-existing game literacy will sometimes lead to students challenging the teachers competence in particular (What games did you design? Have you played all the games I have?), as well as the educational context as such.

Medium issues. For some games (and this is not true only for computer games), it may take years to acquire the necessary skill to play them to their full potential. Hence, not only can high levels of game literacy create problems for students; low level of game proficiency may prohibit students to even complete the game assignments. Furthermore, even when players have the necessary skills (or when a game is reasonably easy to play), completing a game can require about 40 hours of gameplay. One of the interviewed teachers commented that '"Say you have twenty different games you want the class to have exposure to. Now imagine how many hours of play that would take!" The result is that many courses make assumptions about the game literacy of incoming students – simply because there is not enough time in class to play them to their full potential.

4. WHY IS GAME ANALYSIS DIFFICULT?

The difficulties encountered with teaching game analysis appear to mark it out as what Perkins [18] calls 'foreign knowledge', the kind of difficulty that arise when "current belief systems are comfortably familiar and sometimes deeply entrenched, making the new content appear bizarre or alien". Meyer and Land [14] identify very similar practices in literature studies as difficult

knowledge. A good example is the post-structuralist practice of deconstruction that looks for absence, rather than presence, in a text.

Perkins [18] argues that *constructivist* approaches to learning are particularly well suited to cases of difficult and alien knowledge[3]. A constructivist approach to learning focuses on the students' own exploration of a subject, with a focus on feedback (in every form, including teacher assessment as well as peer and self assessment) to guide the learning process. Constructivist approaches centre on methods and exercises that let students explore the subject on their own, rather than being told 'the right answer' from start. The goal is to make students "active, social, and creative learners" [18].

Achieving this is however difficult, unless students are aware of their own lack of understanding as well as motivated to learn. Exercises as well as assessment methods must be carefully constructed to challenge the students' current thinking, to allow new concepts and practices to be integrated into the students own practices. Perkins in particular stresses the importance of feedback from students *to the teacher*, to allow the latter to adapt the teaching strategy to what the students have understood and not understood. In this, it is central that students are able to assess and regulate their own learning process [15]; self-assessment and peer assessment are useful tools in this. Sadler [19] identified three conditions that are necessary for students to benefit from feedback:

1. what good performance is (i.e. the student must possess a concept of the goal or standard being aimed for);
2. how current performance relates to good performance (for this, the student must be able to compare current and good performance);
3. how to act to close the gap between current and good performance.

One key to a deeper understanding of the issues that arise in conjunction with teaching game studies lies in what *kind* of difficult knowledge that is game analysis. It could be argued that the idea of (deconstructive) game analysis is a threshold concept [14] in that it is a "transformative and irreversible idea fundamentally changing the way students will think about games", as well as integrative, in that the game analysis perspective apply to a wide range of games and gaming phenomena that the students' might not even have considered to be games. But I hesitate to call it so. Threshold concepts typically form the theoretical core of a discipline, so that grasping them is a necessary step towards a deeper understanding of the subject as such. It is hard to claim that something as widely scoped as deconstructive analysis can be a threshold concept, and furthermore that any such core concept can exist for game studies, which rather fosters a dialogue between multiple complementary and sometimes conflicting perspectives.

Given the heterogeneity of game studies, the subject is better described as a "way of thinking and practicing" [7]. The academic community around game studies is a clear example of what Wenger [24] calls a 'community of practice':

> "Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly. "

Although game studies is a fairly recently formed community, it has already developed an understanding of what is, and what is not, considered to be adequate methods for analysing games. The community culture is apparent in journals such as Game Studies, various game-related conferences, as well as in mailing lists such as the Gamesnetwork[4] list and websites such as Terra Nova[5]. In teaching game analysis, we aim – deliberately or not - to socialize our students into partaking of this culture.

4.1 Education versus Vocational Training

In 2011, NESTA published a report on the capability of the U.K. educational system to furnish the national game industry with capable and innovative developers. The report named 'NextGen'[6] emphasises the need for better computer education at (primary) school level, but does also state that universities do not supply adequate skills for entering the game industry that

> …"need job-ready graduates with more specialist technical skills who can start with a good understanding of production processes and the programming languages and software applications the industries use."

In its call for more targeted vocational training, the report caused quite a stir in the game studies community and was intensely discussed on the Gamesnetwork mailing list. A valid point, raised by numerous respondents, is that universities cannot train solely for the game industry, as many students will end up in other vocations.

But there was also a sentiment that the academics are supplying a kind of knowledge that is not generally in place in industry. From the discussion, it was clear that university teachers tend to see themselves as providing more long-lasting knowledge. One discussion participants mentioned the "the lack of corporate memory in the games industry". Another common thought was that there is a value to knowledge even if it is not directly marketable to industry, "the learning for learning's sake argument rather than for a particular and specific end", and finally participants emphasised the need for out of the box thinking in inventing new forms of gaming.

However tempting these views are in defending a scholarly attitude to game studies, the reader should now revisit the student's perception of what it means to be working in the games industry. As discussed by Zagal and Bruckman, some students believe they already understand enough of game design, being avid players. In a context where the scholarly subject itself is novel, the knowledge acquired only recently has begun to be taught at all, some core concepts exhibit threshold properties and requires a way of thinking and practicing that is alien to the students' perception of their target vocation, we should not be surprised to find student motivation faltering.

[3] It should be noted that constructivist approaches are not always beneficial to learning. According to Hattie [9] citing Dochy et al [5], problem-based learning does not enhance learning of the concepts as such, but facilitates learning the structures underlying concepts.

[4] http://www.digra.org/mailinglists

[5] terranova.blogs.com

[6] http://www.nesta.org.uk/publications/assets/features/next_gen

5. A DISCUSSION WITH PRACTICING UNIVERSITY TEACHERS

Perkins [17,18] as well as Meyer and Land [14] advocate constructivist approaches and inquiry-based approaches to encourage learning conceptually difficult knowledge. Game analysis has the potential to be the basis of a constructivist approach to learning, but whether it becomes one or not depends thus on how it is integrated into a learning context. It is thus of interest to understand how game analysis is taught as a concrete practice – what do students and teachers do together, to achieve a learning context?

To address this issue, the author initiated an online discussion around these topics with fellow academic teachers. The participants were recruited through the Gamesnetwork list as well as the Games-edu[7] mailing list, the latter focused on issues related to games in educational contexts, and the objective of the discussion was to start to build some kind of coherent understanding of how, and why, game analysis is taught. The author posed a list of open-ended questions, related to the context in which game analysis was taught, what games and what literature was used, what students' found difficult, and the practical tips and tricks that teachers used. In total, ten persons plus the author participated in the discussion that ensued. The discussion is summarised below, as reflections and comments to the particular difficulties of learning game analysis.

5.1 The Discussion Participants

We can identify three educational contexts and types of students. The first two are probably the most common contexts: the 'game designer/developer' context and the 'media and culture studies' context.

In the game designer/developer educations, we find **Peter**[8] and **John,** who teach combined game analysis and design courses at bachelor level. The author teaches in a similar context, but with less of a focus on design. **Amelie** teaches at a master program in media studies and information science where students come both from computer science and media studies. **Nicholas** teaches at a liberal arts university, and **Elina** teaches a range of courses related to various media programmes (creative technologies, creative studies, media and journalism, etcetera). Both of these context place an emphasis on game design, but less on programming as the more technical programmes. **Mariah**, finally, is an example of a teacher who primarily teaches in a culture and media context. She teaches 'interactive narrative analysis' rather than game analysis, as part of a "Comparative arts and media studies" program.

However, three of the respondents come from a very different context. After a long career as a game journalist, **Simon** now teaches classes that focus on using (existing) games in learning/teaching contexts. The students are primarily going into K-12[9] teaching or corporate training. **Sarah** teaches an undergraduate and a graduate course in game design for students in a programme focussed on the use of computer and communication technology in educational contexts, and **Andy** has taught game analysis for graduate students at university level, but *also* as part of K-12 educational programmes. All three place a distinct focus on how games can teach. These participants show how game analysis is making its way into educational contexts, where the purpose is to learn about how games can be used as pedagogical tools.

5.2 What is Considered Hard?

Most of the students face issues with learning to do any kind of deep analysis of games. Simon captures the issue elegantly:

> "I talk about moving from structural analysis to analysis of meaning. And as easy as that sounds, it's hard. Students are used to taking the meaning dished out in the box art, in the cut scenes and in the narrative and stopping there. So, it takes a big push to get them to start seeing that SimCity is really a Stalinist simulation, or that Grand Theft Auto is about purgatory and redemption, or even that Tetris might be a Marxist parable about work."

But the teachers vary greatly in how 'deep' they consider the issue to be. Nicholas sees it primarily as an issue of writing style:

> "The problem with teaching students who are strong fans is that they tend to have a hard time getting away from writing reviews as papers. I have steer them away from the 'I like the game because' mode, to a formal academic critique."

This can be contrasted with the approach taken by Peter, who has decided to instead go deep into a range of theories, even sometimes letting go of the direct application to game analysis:

> "The massively interdisciplinary nature of game studies and design means that there are many chunky threshold topics to get across. Concepts like Systems, Culture, Experience, I've found to be big hurdles for the students." … "I think since I take the time now to really explain things like cybernetics, semiotics, culture, etc it has been much more productive. In some respects it becomes less game studies, than an introduction to principles that could be useful when thinking about games."

Elina and Amelie, who teach in media faculties, face less issues with introducing an analytic approach. Amelie explicitly notices the difference between information science and media students:

> "In my course I believe that learning theory and how to do analysis is challenging for the information science students, and game design is challenging for the media students."

Finally, Elina faces very little problems with introducing game analysis:

> **"**They absorb essential ludology (as explained, e.g., in Salen and Zimmerman) very easily and start using technical terminology fairly quickly."

One possible conclusion of this is that game analysis is closely related to media studies in general, so that students with a background in this area come more readily to the subject. It is also very likely that students in media find the subject more directly relevant for their future careers, as journalists and media scholars, than students with their focus set on the games industry might do.

Amelie uses *design exercises* in order to overcome the knowledge gap for the information science students. It is likely that such exercises fulfil several functions. Firstly, they allow students to make use of previously acquired skills and link this to the

[7] http://seven.pairlist.net/mailman/listinfo/game_edu

[8] The names used in the article are pseudonyms.

[9] Corresponds to an age range of 5 – 19 years.

concepts and methods taught in the course, serving to bridge the gap between prior and new knowledge. Secondly, design exercises may serve as intrinsic motivators, as game design in general is perceived as fun [12] and may increase motivation both through an increase in the perceived relevance (for students that intend to go into the game industry) and through the visibility of the results [12].

5.3 Game Analysis Exercises

All teachers involved in the discussion include some kind of inquiry-based exercises. As expected, this typically involves playing and analysing example games: together in seminars or individually as homework assignments. There is however a split in the nature of these exercises. Information science teachers tend to integrate game analysis and design in a close loop, an approach in line with what was recommended by the Georgia Tech teachers (see discussion above). Sarah presents the most extreme example of this approach. In her full semester graduate course, students are expected to develop a working game towards the end of the semester, and each example game analysis ends with a question of how the game analyses has affected their own design work. Smaller design exercises are used by Amelie (discussed above), and Peter, who asks his students to design a board game with an educational purpose. Media studies teachers, however, focus their exercises entirely on analysis, with a strong emphasis on critical deconstruction. For example, Elina's students do both a media-critical analysis and an empiric study of the same game. Simon, who argues that there are four ways to approach learning through games: by playing games, designing or modifying games, and finally critiquing them, use exercises that let the students practice all of these.

The exercise structures vary greatly. Nicholas let the students play in class, presenting them with a game and a question related to a previously introduced concept. After some time of free play, he interrupts the game and asks the students to reflect on their experience, in a 'mix doing with thinking' approach. By contrast, Peter structures the exercises more as assignments, with deadlines and detailed graded feedback. Andy and Peter encourage or require students to keep a gameplay diary, 'practicing mindful play' as Peter puts it. Andy lets her students create a 'walk-through', identifying the game structures and available player actions in a game. Amelie employs gameplay seminars, in which a game is played and analysed collectively by the students, and the controls are handed around in the group during the seminar. The games are not selected to fit any particular subject; rather students are encouraged to bring in games to analyse. Myself, I have used homework assignments thematically arranged to related to a particular analytical perspective, and each with a selection of games to choose from.

The most ambitious and also most interesting approach is to run a single project throughout the class. This is possible in both media studies and in more design-oriented contexts. Elina, who teaches in a media studies context, organizes the exercises in her course into a miniature version of a research project. Students select a game of their own preference, and go through a series of exercises focused on the same game: they present it in class, do an empirical study, and write an essay all on the same game. Sarah's graduate course is the design-oriented counterpart: the students are expected to design and implement a game, and all exercises (each centred on analysing an existing game from a particular perspective) relate to this overarching design project.

Although all of these methods are inquiry-based, they vary in the extent they encourage students to introspect and self-regulate their own learning process [15]. The collective classroom exercises present a drawback in this respect, in that less engaged students are able to stay passive and hence, the room for feedback in either direction (student to teacher as well as teacher to student) is diminished. The assignment-based structures force students to be active, but instead face a problem in that students may focus on 'passing' instead of understanding what the assignments are about (ibid), encouraging a less self-reflective learning strategy. This is particularly true if every assignment counts towards the course grade. Peter (who largely uses this format) reports that half of the students tend to treat the course as 'something they just have to get through'.

From the perspective of self-reflection and bidirectional feedback, the most promising approach is probably the 'mini-projects' that Elina and Sarah employ. The use of a single game throughout the exercises emphasises the fact that there are multiple ways to analyse games, and gives ample opportunities to iterated feedback between student and teacher. It also creates a more authentic setting for the analysis exercises, something that can work as a strong motivator. The more realistic the project is, the better can it illustrate how game analysis can be used in practice; be it in design, research or journalism. In identifying the core elements that make her course appreciated by students, Sarah makes the following observations.

> "First, students feel that projects are authentic and meaningful. The assignments are small enough for novice designers to manage, but large enough for them to develop real skills. Getting feedback in class from their peers, out of class from playtest groups, and in writing from me is also a significant motivator."

This observation is well aligned with research on the role of inquiry-based methods and formative assessment in self-regulated learning [15]. From a practical perspective, such a project can be split up into several phases, with early deadlines for formative feedback and peer review sessions. In Sarah's design-oriented course, every second session focuses on design critique of the ongoing projects from the same perspective as the game exercises. The final grade can be given towards the end of the course, when the project is handed in for portfolio[10] evaluation.

5.4 Selecting Games

As discussed previously, a particular issue for any game analysis course is that it takes time and requires skill to play games. The discussion participants presented two main ways to address this problem: let the students choose games, or require students to play specific games (though often selectable from a list) as part of the course.

In the first camp, we find Simon, Elina, Amelie, Andy, and Peter. Simon, Elina and Amelie let each their students select their own games on which they write essays. Peter lets the class collectively decide on which games to analyse, based on which games they all already have played. Amelie asks students to bring in games for analysis and also brings some herself. Andy and Sarah let the students choose their own games for analysis, but supply a range of freely available games to choose from. Andy recommends the

[10] Portfolio grading is based on students handing in a (typically self-selected) collection of representative work, which often has gone through one or several previous iterations where the teacher already has provided feedback.

use of game demos for this purpose, as these are short, free, and highlight the core game mechanisms for a game.

The disadvantage of the 'free choice' approach is that students can avoid getting exposed to *different types* of games. Furthermore, all games are not equally suited for all types of analysis. Whereas Elina's 'mini-project' is perhaps the best example of an inquiry-based learning exercise, it comes at the expense of exposing students to a very narrow selection (one, in fact) of games, and it may also limit the types of analysis that the course can include.

In the second camp, we find Mariah, Peter, John, Nicholas and the author. Mariah uses a range of fairly main-stream games. In doing so she faces large difficulties with getting students up to speed with their game literacy, as many of her students have very little prior experience with computer games, and story-based games tend to require many hours (up to 40) of gameplay and considerable playing skills to finish. One method she recommends is pair play, where students team up to play a game together and share the controls.

Sarah, Peter, John, Nicholas and the author deliberately introduce games that are alien to the students. Peter focuses on bringing in games of which he feels the students have had too little exposure, with a special focus on non-digital games. Nicholas uses digital games only, but prefers to use 'indie' games, games that have a strong art stance and often challenge established notions of what constitutes a good computer game. Nicholas has even developed a portfolio of his own, of 'critical games' that directly challenge how computer games are typically designed. An example is the game that requires slow, rather than rapid, responses.

John has a well-developed strategy for selecting games to use. He selects only games that are "small/short and largely unknown to (hopefully) everyone in the class". He argues that with more mainstream games, students often have preconceived notions and experiences that can interfere with understanding the game from a scholarly perspective. Using less well known games also work as an equalizer between students with different gaming experience. John also points out that it is not necessarily the best games that create the best analysis exercises.

Although John argues his point well, a certain level of game literacy is often a goal of its own in these courses. Thus, there is often a point in introducing the students to particularly important games, especially in courses where many students have very little previous game experience and in courses that study games from a socio-cultural perspective. However, it may be a better idea to introduce well-known games in classroom and seminar exercises, where a teacher is at hand to steer away from the students' preconceived notions as well as leverage on student expertise for the benefit of less experienced students. Many teachers would probably also sympathize with Sarah:

> …"there's a lot to be learned from critiquing bad games, but I have so little time with my students that I can't countenance giving them anything that's less than awesome."

There is no best solution to the game selection problem. However, it is most likely a good idea to separate the goals of providing general game literacy from that of learning deep analysis methods. General game literacy seems to be best addressed in classroom and seminar exercises, whereas deep analysis principles are better learned through individual and group exercises that provide room for formative feedback, peer assessment and self-assessment.

5.5 Theoretical perspectives

All teachers bring in some scholarly literature to their courses, but there is very little consensus on what constitutes relevant theory. Given that the field of game studies is still in rapid development and most that teach are active scholars in the field, the teachers' own expertise tends to frame the subject of the course. For course material, there is a tendency towards a split between the teachers focused more towards information science, who prefer Salen and Zimmerman's book [20] or its complementary reader [21], and the media and arts teachers who select books with less emphasis on design and more on game aesthetics, such as Jesper Juul's *Half-Real* [10] or *Computer games as new media* [6]. All complement the course books with additional literature. In general, the sentiment seems to be that it is more important to go deep into a particular theory approach that one understand well, than to present every possible approach.

6. DISCUSSION

Game analysis exhibits several properties that make it a suitable candidate for becoming a signature pedagogy. Its most important feature is that it is a suitable approach to *bridge theory and practice*. In its most straightforward form, game analysis consists of playing a game and reflecting on it using deconstructive and reflective concepts from game studies, but it readily extends to a range of theories as well as methods of study. The key to game analysis is the selection of a focal game, which serves as a bridge between the abstract concepts and the concrete act of gaming.

As it stands today, game analysis functions at two of the three levels that Shulman discusses. It provides a deep structure concerning how the theoretical knowledge and practical know-how (of game studies) is best imparted, and it is based on an implicit, intrinsic valuation of deconstructive analysis over value-based judgments. What is lacking is a surface structure: the "concrete, operational acts of teaching and learning, of showing and demonstrating, of questioning and answering, of interacting and withholding, of approaching and withdrawing" that Shulman describes. From the example practices discussed in this article, we can see that there is still a distinct lack of a well-understood routine that serves to install the habit of critical deconstruction. There exist many approaches to teaching game analysis.

The author wishes to stress that such a surface structure could very well be in place, even when we as scholars disagree on the precise theories. The concept of game analysis is generic and abstract enough to be fairly resilient to advances in theories as well as changes in industry. Although the aspects that scholars will analyse and the theories for doing so may change over time, the overall approach is likely to stay similar, as will the intrinsic valuation of deconstructive analysis over value-based judgements.

Taking into account that game studies exhibits several properties that mark it out as 'foreign knowledge' [18], pedagogical research shows that methods of inquiry and self-regulated learning are to be recommended. Such methods are also already in place in many educational institutions. All of my discussion participants reported exercises that required students to practice game analysis in various cycles of 'think-do'. Most had also developed conscious strategies for how to select games to play and discuss during the courses, in order to deliberately challenge students' previous understanding of what games are and what it means to analyse them.

What frequently is lacking is motivational support, and support for self-regulated learning. In this, we know that repeated

formative feedback, including feedback from students to teacher, play a crucial role. Taking this into account, the 'mini-project' approach is particularly promising. Two of my informants used such approaches. One informant used a singular game that was analysed from several perspectives throughout the course. The other used several games, but tied them together through a game design project in which each analysis was used to inform a particular aspect of the design. Both of these approaches present an excellent basis for iterated formative feedback and self-regulated learning, but the design project also serves as an intrinsic (game design is fun) as well as extrinsic motivator, as it illustrates how game analysis could be used in a professional setting. This way, the exercise will not only help students learn, but it will also show that the knowledge is practically useful. One of the informants explicitly brought up the importance of students' self-reflection of *their own* goals for a course: why do they attend, and what do they expect to get out of it?

For most professionals, game analysis will just be one aspect of their job, and for that reason game analysis will never be the only pedagogy of an entire education. Still, game analysis is a useful skill for game designers, developers, journalists and scholars alike. If we as educators could foster a common skill in all these professional segments, the result could be a greater amount of shared knowledge and communication, benefitting the development of the industry as a whole. As educators, we are faced with a challenge, but also an opportunity: to collectively develop a scholarly practice that can transfer to the professional field of the game industry, and to provide a unifying perspective on game scholarship.

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